Canada's Amateur Radio Magazine | La Revue des Radioamateurs Canadiens

THE CANADIAN AMATEUR

MAY / JUNE 2023 – MAI / JUIN 2023

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Publications Mail Agreement # 40028682 Registration # 09866

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TCA
The Canadian Amateur

May / June 2023
Mai / Juin 2023

Canada's Amateur Radio Magazine
La Revue des Radioamateurs Canadiens

Volume 51 Number 3 – tcamag@yahoo.ca – Web Address: https://www.rac.ca/tca/

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The Canadian Amateur is published by Radio Amateurs of Canada Inc. / The Canadian Amateur est publié par la société Radio Amateurs du Canada Inc.

Indexed in the Canadian Periodical Index / Enregistré à l'Index des publications canadiennes : ISSN 0834-3977

Publications Mail Agreement Accord de publications diffusées #40028682. Registration / matricule #09866

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Printed in Canada by St. Joseph Communications
Ottawa, ON, Canada
Imprimé au Canada sur les presses de St. Joseph Communications
Ottawa, ON, Canada

Return Undeliverable Canadian Addresses to
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217-720 Belfast Road
Ottawa, ON K1G 0Z5

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"Located about 1,900 kilometres from the South Sandwich Islands, 2,500 kiometres from the southern tip of Africa, and 1,700 kilometres from Antarctica's coast, Bouvet is a lone volcanic island claimed by Norway in 1928.

Discovered in 1739 and later named for Captain Jean-Baptiste Charles Bouvet de Lozier, it lies about 500 kilometres south of the Antarctic Convergence, within the cold current surrounding the icy continent."

– see page 31 for the rest of the story!

Please send your articles now to the TCA Editor at tcamag@yahoo.ca

National & International

Technical

Departments

Volunteers Needed!

As you will see from the following pages, Radio Amateurs of Canada has a lot going on. We need your help in several areas including the new Auxiliary Communications Service (ACS), RAC Operating Awards, RAC Programs and Services, and Information Technology (IT) and website management. For more information visit : https://www.rac.ca/volunteer/

Operating

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, September 15 and November 15.

The Canadian Amateur is published in Canada six times per year to provide Radio Amateurs, those interested in radio communications and electronics, and the general public with information related to the science of telecommunications.

Articles, reviews, letters, features, suggestions, photographs and essays are welcomed. Manuscripts should be legible and include the contributor's name, call sign, phone number(s) and addresses (mail, email and packet, as applicable).

For a complete Author's Guide visit:

http://www.rac.ca/tca/

The Canadian Amateur is published by Radio Amateurs of Canada Inc., 720 Belfast Road, Suite 217, Ottawa, ON K1G 0Z5

Indexed in the Canadian Periodical Index: ISSN 0834-3977.

Publications Mail Agreement No. 40028682.

Registration No. 09866.

The Canadian Amateur, publié six fois par an, est destiné à fournir aux radioamateurs, à toute personne intéressée à la radio et à l'électronique et au grand public, des informations de toute nature relatives à la science des télécommunications.

Nous acceptons avec plaisir tout article, étude, suggestions, photos et lettres. Les manuscrits soumis doivent être lisibles et porter le nom de l'auteur, son indicatif, son ou ses numéros de téléphone ainsi que ses adresses postales, courriel et paquet s'il y a lieu. Si vous avez envie d'écrire pour TCA :

http://www.rac.ca/tca/

The Canadian Amateur est publié par la société Radio Amateurs du Canada Inc., 720 rue Belfast, Bureau 217, Ottawa, ON K1G 0Z5

Enregistré à l'Index des publications canadiennes sous le numéro ISSN 0834-3977.

Accord de publications diffusées par courrier : 40028682.

Numéro de matricule 09866.

Silent Keys – In Memoriam

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

VA3JBO – Johan Bouwer, of Fergus, Ontario, on February 27, 2023, at age 80

VA3MEG – Mel Gohm, of Courtland, Ontario, on January 16, 2023, at age 79

VE1BAT* – Reg Newell, of Yarmouth, Nova Scotia, on November 6, 2022, at age 70

VE1BBB – Ron Blue, of Amherst, Nova Scotia, on November 26, 2022, at age 74

VE1CHC – Rod Babcock, of Amherst, Nova Scotia, on December 16, 2022, at age 86

VE1COY – Chester van der Kooi, of Upper Nine Mile River, Nova Scotia, on January 28, 2023, at age 79

VE1CUE – Anne Marie Evans, of Brookfield, Nova Scotia, on January 2, 2023, at age 68

VE1DSC – David Cochran, of Riverview, New Brunswick, on November 27, 2022, at age 88

VE1FAY – Faye D'Eon, of Milton, Nova Scotia, on January 5, 2023, at age 85

VE1GGG – Gloria Turner, of Lunenburg, Nova Scotia, on December 20, 2022, at age 80

VE1GWR – Gerry Ross, of Springhill, Nova Scotia, on October 22, 2022, at age 66

VE1HF – Daryl Stevens, of Steeves Settlement, New Brunswick, on December 5, 2022, at age 61

VE1KAR – Karl Findley, of Mount Uniacki, Nova Scotia, on January 23, 2023, at age 79

VE1OO – Jim Holmes, of Ashdale, Nova Scotia, on February 13, 2023, at age 71

VE1TXL – Bob Jeffery, of Halifax, Nova Scotia, on November 11, 2022, at age 69

VE1VEC – Paul Mullin, of Antigonish, Nova Scotia, on January 28, 2023

VE2AH – Pierre Fischer, of Nicolet, Quebec, on January 6, 2023, at age 79

VE2JT – Mark Macpherson, of Cote St-Luc, Quebec, on January 14, 2023, at age 90

VE2VRU – Vern Poirier, of Chapeau, Quebec, on February 3, 2023, at age 76

VE3AOA – Tom Jory, of London, Ontario, on January 17, 2023, at age 92

VE3BCA – Jim Thompson, of Vineland, Ontario, on December 1, 2022, at age 99

VE3COP – Gerry Letford, of Fenwick, Ontario, on January 28, 2023, at age 78

VE3CXU – Doug Kuhn, of St. Clements, Ontario, on March 5, 2023, at age 86

VE3DPB – Bert de Kat, of Troy, Ontario, on February 1, 2023, at age 92

VE3EL – John Brummell, of Stittsville, Ontario, on March 18, 2023, at age 80

VE3GHT – Carl Sole, of Verona, Ontario, on December 16, 2022, at age 89

VE3HA – Gordon Roberts, of Oro, Ontario, on March 8, 2023, at age 90

VE3IXR – Ron MacDonald, of Walkerton, Ontario, on December 23, 2022, at age 65

VE3JFI – Ted Bakker, of Auburn, Ontario, on January 7, 2023, at age 84

VE3LJQ – Mark Coady, of Selwyn , Ontario, on November 30, 2022, at age 67

VE3KXB – Harold Knapp, of Peterborough, Ontario, on November 9, 2022, at age 102

VE3NPF – Brian Hay, of Port Colborne, Ontario, on February 16, 2023, at age 67

VE3OLN – Len Nixon, of Trenton , Ontario, on February 24, 2023, at age 79

VE3PGY – Peggy Foley, of New Lowell, Ontario, on September 12, 2022, at age 63

VE3RVA – Bob Hansen, of Thunder Bay, Ontario, on December 18, 2022, at age 79

VE3XBH – Brian Herling, of Mississauga, Ontario, on February 2, 2023, at age 65

VE4ADP – Ray Pike, of Dauphin, Manitoba, on January 17, 2023, at age 85

VE4AEY – Paul Arsenault, of Winnipeg, Manitoba, on March 4, 2023, at age 91

VE4GJN – Gilles Normandeau, of Winnipeg, Manitoba, on February 23, 2023, at age 67

VE6CAO – Duane Baker, of Medicine Hat, Alberta, on February 8, 2023, at age 83

VE6DLC – Randy Westby, of Red Deer, Alberta, on October 27, 2022, at age 61

VE7AL – Mel Porritt, of Maple Ridge, British Columbia, on February 22, 2023, at age 82

VE7GJK – Gerald Fix, of Maple Ridge, British Columbia, on February 26, 2023, at age 64

VE7NF – Oran Flory, of Port Alberni, British Columbia, on February 14, 2023, at age 84

VE7XT – Richard Thompson, of Victoria, British Columbia, on December 5, 2022, at age 63

VE7XTD – Donald (DJ) Piltinsgrud, of Richibucto-Village, New Brunswick, on February 10, 2023, at age 59

VE9BIL – Bill Sneath, of Riverview, New Brunswick, on December 9, 2022

VE9BTC – Normand St-Père, of Beresford, New Brunswick, on February 23, 2023, at age 84

VE9CKR – Bob Boudreau, of Saint-Edouard-de-Kent, New Brunswick, on December 6, 2022, at age 59

VE9DI – Dianne O'Dell, of Dieppe, New Brunswick, on December 24, 2022, at age 81

VE9DOC – Emile Collette, of Acadieville, New Brunswick, on October 17, 2022, at age 91

VE9VL – Victor Lanteigne, of Rogersville, New Brunswick, on March 20, 2023, at age 85

VE9WF – Wally Fisher, of Riverview, New Brunswick, on November 28, 2022

VY2ME – Allison Ellis, of O'Leary, Prince Edward Island, on October 25, 2022

Note: * In the above list an * indicates that a call sign has been reissued. The list of Silent Keys is prepared by volunteers. Please send obituary notices by email to rachq@rac.ca with a copy to: ic.spectrumamateur-spectreamateur.ic@ic.gc.ca. For more information visit: https://www.rac.ca/silent-keys/

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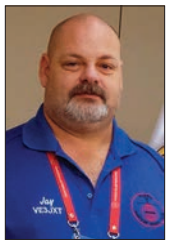

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For Community and Emergency Service reports and articles please see pages 56-59.

President's Message / Message du Président

Phil A McBride, VA3QR
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Hello and Happy Spring to everyone! It wasn't a terrible winter here in Acton, Ontario but I'm glad it's over. My motorcycle has now been released from captivity and my trailer is ready for whatever the season brings our way.

As previously reported, this is a very special year for our national organization. Thirty years ago, on May 3, 1993, Radio Amateurs of Canada was born from the merger of Canada's then two national organizations – the Canadian Amateur Radio Federation and the Canadian Radio Relay League. The 1993 merger was a key development in the history of Amateur Radio in Canada, a history that began almost eight decades earlier. As with every significant anniversary, this is a time for celebration and reflection and this will be a special theme at all events this year.

For the seventh year in a row, we will once again be participating as an exhibitor at the Canada-Wide Science Fair (CWSF) and STEM Expo – Canada's largest youth STEM outreach and promotion event – which will be held from May 14 through 19 in Edmonton, Alberta. During the pandemic it was a virtual event so we are looking forward to meeting in person with students, teachers, parents and other exhibitors and introducing them to the "Wonderful World of Amateur Radio". RAC Alberta/NWT/NU Director Stephen Lee, VA6SGL, is working closely with representatives of the Quarter Century Amateur Radio Club and the Northern Alberta Radio Club and it is shaping up to be a very "cool and exciting event". I'd like to thank everyone who has volunteered to organize this vitally important event and I look forward to reading all about it in the next issue of TCA magazine.

The Dayton Hamvention 2023 will be starting just as the Canada-Wide Science Fair ends and is scheduled for May 19 to 21 at the Greene County Fairgrounds and Expo Center. I will once again be bringing my trailer and will be camping on the grounds – a wonderful option and a definite benefit of the new location. The theme of Hamvention 2023 is "Innovation" and it definitely captures the spirit of what Amateur Radio is all about. I am looking forward to seeing you at Booth 2504 at Hamvention.

The Burlington Amateur Radio Club (BARC) was formed in 1972 and has been enjoying a year-long celebrating of its 50th anniversary since last fall. BARC is a RAC-affiliated club and is another great supporter of our organization, and I am looking forward to joining them at their special Year-End Banquet on June 8 to celebrate this significant milestone.

Bonjour, le printemps est enfin arrivé, sachons en profiter! L'hiver n'a pas été trop pénible, ici à Acton (Ontario), mais je suis heureux qu'il soit fini. Ma moto a été remise en liberté, et ma roulotte est prête à nous offrir tous les agréments que cette saison peut nous procurer.

Comme je l'ai déjà indiqué, cette année revêt une importance toute spéciale pour notre organisation nationale. Il y a 30 ans, le 3 mai 1993, Radio Amateurs du Canada a vu le jour suite à la fusion des deux organisations nationales qui existaient déjà dans notre pays, la Fédération des radio amateurs du Canada et la Ligue canadienne de la radio amateur. Cette fusion a été un événement majeur dans l'histoire de la radio amateur au Canada, une histoire qui avait commencé presque huit décennies plus tôt. Comme pour tout anniversaire important, on se doit de faire une pause pour célébrer les progrès accomplis et entreprendre un processus de réflexion, et c'est cela qui constituera un thème particulier de tous les événements inscrits à notre calendrier de cette année.

Pour la septième année consécutive, nous participerons de nouveau en tant qu'exposant à l'Expo-Sciences pancanadienne et à l'Expo STIM, le principal événement organisé au Canada pour promouvoir et faire connaître les programmes STIM auprès des jeunes du 14 au 19 mai à Edmonton (Alberta). Pendant la pandémie, il a fallu se contenter du mode virtuel pour tenir cet événement, et c'est pourquoi nous sommes particulièrement impatients de rencontrer enfin en personne des étudiants, des enseignants, des parents et d'autres exposants, et de leur faire découvrir « le Monde merveilleux de la radio amateur ». Le directeur de RAC pour l'Alberta/les TNO/le NU, Stephen Lee, VA6SGL, collabore étroitement avec les représentants du Club de radio amateurs Quarter Century et du Club de radio amateurs du Nord de l'Alberta, et tout semble présager que cet événement se distinguera par la qualité et le niveau de son programme, qui s'annonce aussi diversifié que passionnant. Je tiens à remercier tous ceux et celles qui ont fait don de leur temps pour organiser cet événement d'une importance cruciale, et suis impatient de lire le compte rendu détaillé qui sera présenté à son sujet dans le prochain numéro de TCA.

La Hamvention de Dayton 2023 commencera juste au moment où l'Expo-Sciences pancanadienne prendra fin, et elle aura lieu du 19 au 21 mai dans l'enceinte de la Foire et du Centre des expositions du Comté de Greene. Je m'y rendrai une fois de plus en remorquant ma roulotte et ferai du camping sur le terrain réservé à cet effet; il s'agit là d'une option formidable et d'un avantage incontestable offert par le nouvel emplacement aménagé par les organisateurs. Le thème de la Hamvention 2023 est « l'innovation », un terme qui reflète de manière éclatante l'esprit de toutes les activités liées à la radio amateur. J'espère vivement avoir le plaisir de vous rencontrer au kiosque 2504 à la Hamvention.

Le Club de radio amateurs de Burlington (BARC) a été créé en 1972, et il organise, depuis septembre dernier, des activités qui se poursuivront pendant toute une année pour célébrer son cinquantième anniversaire. BARC est un club affilié à RAC, et il s'est souvent signalé par le vigoureux soutien qu'il apporte à notre organisation; c'est avec le plus grand plaisir que je me joindrai à ses membres pour assister au Banquet

The new Auxiliary Communications Service (ACS) is ramping up and we have been working very hard on its implementation. Our efforts have paid off as we have received countless inquiries from governments, non-governmental organizations (NGOs) and other organizations who not only want to hear more about the new ACS, but would like to be part of its implementation in Canada. Please see the Public Service / ACS column on page 50 to find out more about this initiative and on how you can help!

One of the last club activities before the summer break is Field Day, which will take place on the weekend of June 24-25 (see pages 28 and 51). Amateurs have been taking part in Field Day in Canada and the United States since 1933. Field Day is a wonderful opportunity to show off Amateur Radio to our communities and provide a fun get-together for Amateurs and people curious about our avocation. It's also a wonderful opportunity to highlight the community service, technical, sport and educational aspects of the Amateur Radio Service. As usual, my family will be camping this week and I'll be operating as VA3QR/P 1B ONS from Meaford, Ontario.

As illustrated above, volunteers are our lifeblood and the programs, activities and events described here and in the pages of this magazine would not be possible without them. One of these volunteers, Pat Dopson, VE3HZQ/VE3VC, has resigned as the RAC Director for the Ontario North/East Region. I would like to thank Pat for his dedication to Amateur Radio in Canada – not only as Director but as Deputy Director – and I wish him well. We are now looking for a volunteer to fill the remainder of Pat's term, which ends on December 31, 2024 (see page 14).

Another key volunteer is Bryan Rawlings, VE3QN, who was inducted into the Canadian Amateur Hall of Fame (CARHOF) on Saturday, April 15. I was pleased to represent RAC at the formal induction ceremony in Ottawa. Bryan's contribution to the Amateur Radio Service in Canada and internationally as our representative at World Radio Conferences is unparalleled. His efforts have been instrumental in not only protecting our spectrum but expanding it, and he was primarily responsible for obtaining 2200 metres, 630 metres and the new 15 kHz segment at 60 metres for Amateurs in Canada and around the world. We will be including a tribute to Bryan in the July-August 2023 issue of *The Canadian Amateur*.

spécial de fin d'exercice qu'ils tiendront le 8 juin pour célébrer le franchissement de cette étape importante.

Le nouveau Service auxiliaire de communications (SAC) atteint rapidement sa vitesse de croisière, et nous avons participé très activement à sa mise en œuvre. Nos efforts ont été fructueux, à en juger par les innombrables demandes de renseignements que nous avons reçues de la part d'entités gouvernementales, d'organisations non gouvernementales (ONG) et d'autres organisations qui souhaitent non seulement en savoir plus sur le SCA, mais aimeraient en outre participer à sa mise en œuvre au Canada. Pour obtenir de plus amples renseignements sur cette initiative et savoir comment fournir votre aide, veuillez vous reporter à la rubrique consacrée au Service public et au SAC, qui figure à la page 50.

L'une des dernières activités entreprises par les clubs avant le début des vacances d'été est la Journée sur le terrain, prévue pour la fin de semaine des 24 et 25 juin (voir les pages 28 et 51). Les amateurs du Canada et des États-Unis prennent part à la Journée sur le terrain depuis 1933. Elle offre une excellente occasion de présenter la radio amateur sous son meilleur jour à nos collectivités et permet aux amateurs et aux personnes curieuses de découvrir ce passe-temps passionnant de se rencontrer tout en se divertissant. Cela nous donne en outre une fantastique occasion de mettre en lumière les aspects techniques, sportifs et éducatifs du Service radio amateur, ainsi que les avantages qui en résultent pour la communauté. Comme d'habitude, ma famille fera du camping pendant cette fin de semaine, et j'exploiterai ma station en arborant l'indicatif VA3QR/P 1B ONS à partir de Meaford (Ontario).

Comme indiqué ci-dessus, les bénévoles sont la force vive de notre organisation, et les programmes, activités et événements évoqués dans ce message et dans les autres pages de cette publication ne seraient pas possibles sans eux. L'un de ces bénévoles, Pat Dopson, VE3HZQ/VE3VC, a démissionné en tant que directeur de RAC pour la Région Nord-Est de l'Ontario. J'aimerais remercier Pat du dévouement dont il a fait preuve pour promouvoir la radio amateur au Canada, non seulement en tant que directeur, mais aussi en qualité de directeur adjoint, et je lui souhaite tout le bonheur possible au cours des années à venir. Nous espérons maintenant trouver un bénévole qui acceptera de prendre la relève de Pat jusqu'à la fin de son mandat, c'est-à-dire jusqu'au 31 décembre 2024 (voir page 14).

Un autre bénévole ayant joué un rôle crucial est Bryan Rawlings, VE3QN. il a été intronisé au Temple de la renommée de la radio amateur du Canada le samedi 15 avril. J'ai eu le plaisir de représenter RAC à la cérémonie officielle d'intronisation à Ottawa. La contribution apportée par Bryan à la promotion du Service radio amateur au Canada et à l'échelle internationale en tant que notre représentant aux Conférences mondiales des télécommunications reste inégalée. Ses efforts ont joué un rôle déterminant non seulement dans le cadre des initiatives visant à protéger notre spectre, mais aussi à l'élargir, et c'est à lui que l'on doit, au premier chef, le succès des démarches entreprises pour obtenir les bandes de 2 200 et 630 mètres et le nouveau segment de 15 kHz sur la bande des 60 mètres pour les amateurs du Canada et des autres pays du monde.

Nous sommes toujours à la recherche de bénévoles dévoués, et vous pouvez trouver une description de certains des postes clés vacants dans la page Web intitulée « Volunteer Opportunities » (Possibilités de bénévolat) de notre site Web à l'adresse https://www.rac.ca/volunteer/. Il s'agit notamment des postes d'informaticien/webmestre, de chargé de l'organisation des activités sur le terrain de RAC, de chargé des services aux jeunes, et de traducteur, pour n'en citer que quelques-uns.

Les préparatifs de la Conférence pancanadienne et Assemblée générale annuelle de RAC 2023 battent actuellement leur plein

We are always looking for dedicated volunteers and you can find a description of some of the key vacant positions on our "Volunteer Opportunities" webpage at https://www.rac.ca/volunteer/. These include IT/Webmaster, RAC Field Organization, Youth Services, Translators and many more.

Preparations for the RAC Canada 2023 Conference and Annual General Meeting are now in full swing (see page 64). These events will be held in conjunction with the celebration of the Halifax Amateur Radio Club's 90th anniversary which will take place from August 18 to 20. The RAC Board of Directors and Executive are looking forward to visiting Halifax and attending our first in-person Planning Meeting since the pandemic.

I have been self-employed for more than 23 years and as the RAC President I have been applying a best practices approach to the organization. With the help of the RAC Board, Executive and staff and other volunteers, we are working to modernize the business practices of the organization and this will be a focus of our Planning Meeting. I will provide more information in my President's Message to RAC Members at our 30th Annual General Meeting which will be held on Sunday, August 20 in Halifax. You will find a formal announcement of the AGM on page 64 .

It's going to be a busy spring and I look forward to seeing you all at events over the next few months and talking to you on the air.

– 73! Phil A. McBride, VA3QR/VA3KPJ, RAC President and Chair

(voir page 64). Ces événements se tiendront conjointement avec la célébration du 90e anniversaire du Club de radio amateurs de Halifax, qui aura lieu du 18 au 20 août. Les membres du Conseil d'administration et de l'Exécutif de RAC auront le plaisir de se rendre à Halifax et d'assister à la première Réunion de planification organisée en mode présentiel depuis le début de la pandémie.

Je travaille à mon compte depuis plus de 23 ans, et en qualité de président de RAC, j'ai appliqué une approche fondée sur les pratiques optimales à notre organisation. Avec l'aide du Conseil d'administration, de l'Exécutif et du personnel de RAC, et avec le soutien d'autres bénévoles, nous nous efforçons de moderniser les pratiques de fonctionnement de l'organisation, ce qui constituera l'un des principaux points qui seront examinés lors de notre Réunion de planification. Je fournirai de plus amples renseignements à ce sujet dans mon Message du président, que je présenterai aux membres de RAC à notre 30e Assemblée générale annuelle, qui se tiendra le dimanche 20 août à Halifax. Vous trouverez un avis officiel de convocation à l'AGA à la page 64.

Le printemps qui commence va être une période chargée, et c'est avec le plus grand plaisir que je vous rencontrerai tous et toutes dans le cadre des événements prévus au cours des prochains mois, et que je bavarderai avec vous sur les ondes.

Phil A. McBride, VA3QR/VA3KPJ
Président et chef de la direction de RAC

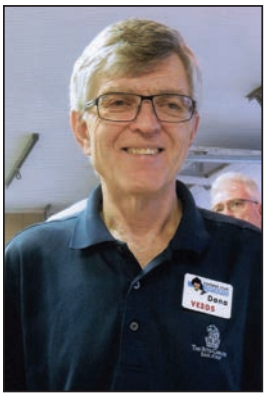
– Traduction par Jacques Roland, VA3DLZ. Merci Jacques!

Six Metres and Down

Dana Shtun, VE3DS | ve3dss@hotmail.com | www.qsl.net/ve3dss

The view of the aurora in Thunder Bay. Photo by Randy Gottfred, VA3OJ.

50 MHz and Solar Cycle 25 DX



Dana Shtun, VE3DS

In March, the fireworks started on 50 MHz as the maximum usable frequency (MUF) got a boost from high solar activity with the flux hitting into the 180s.

Things actually got started in February, with an intense "X2" flare and Coronal Mass Ejections (CME) hitting the Earth, triggering a weird opening off a "hot spot" (the maximum reflection spot) out over the south Atlantic. From this hot spot, stations in the Canary Islands were worked on February 21 starting at 1442 UTC with EA8DX in IL28 followed by EA8RH, EA8TL both in IL18, then the band opened to EA2KR in IN92, F4BKV in IN95, and finally EA7ST in IM87 – all worked not direct but pointed at 120 degrees Azimuth! Across the lake John, VE3EJ, copied 3B9FR briefly, but couldn't complete.

On February 22, the band opened briefly to Argentina with LU5DF worked in GF02 at 2006 UTC. Then on February 27, the CME hit and the VE4VHF/B beacon from EN19 was copied on 50.037, as was VY0SNO/B from Baffin Island FP53. VE3VN in FN25 was worked on Aurora CW with 55A signals both ways. Also worked was VA2WA in FN36 with 57A signals, VE3EN in FN25 with 55A , K2KA in FN42 with 55A, W1GF in FN43 with 57A, W1JR in FN42 with 59A, K8ZR in EN92 with 57A, and VA3CW in FN04 with 55A. The Aurora faded out about 2201 UTC here as the hot spot moved west, opening the band in VE5, VE6 and VE7.

The A index hit 90 that night and the K scale 7 so things were quite disturbed. Good news for VHFers, not so good for HF operating. The Station A and K indices show the fluctuations in the magnetic field, tied to specific geographic locations. For the new guys, I quote from Solarham.net:

"The A index was invented as there was a need to derive some kind of daily average level for geomagnetic activity. Because of the non-linear relationship of the K scale to magnetometer fluctuations, it is not meaningful to take averages of a set of K indicies. What is done instead is to convert each K back into a linear scale called an equivalent three- hour range 'a' (small a) index.

The daily A index is merely an average of 8 'a' indicies. Needless to say, the higher the K value (between 0 and 9) the more intense the geomagnetic storm. You can read more at https://www.solarham.net/a.htm. Kudos to Kevin, VE3EN, for maintaining this superb website over the years!

On Aurora, because the CW signal is doppler distorted by the electron cloud spinning into the ionosphere, no one has a T9 note so we use "A" instead. But keep in mind that really intense solar storms can produce T9 Auroral E signals. I have experienced this once on 144 MHz with K0MQS in Iowa, and many times on 50 MHz.

In fact, if you want to work Hawaii on 50 MHz during major storm openings point north – yes north! This was discovered by Mike, VE3FGU, during the

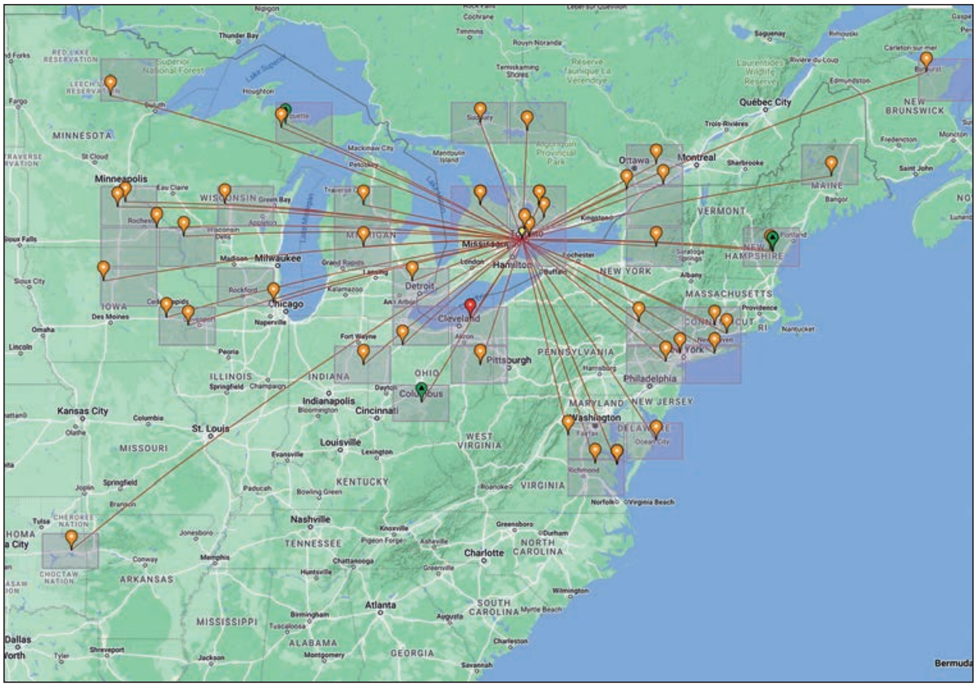
great March 12-15, 1989 Aurora, when the K index hit 9 and the A index was 248. It has also happened twice since then: once to me and once to Don, VE2DFO.

The big news was the DX of March 7, with a moderate opening to Florida on Es that then popped into Ecuador with HC1MD/2 worked at 1837 and 1902. The opening then started to creep west as the South Americans began working into the south Pacific. Then at 2109 I worked FK8HA in New Caledonia, grid RG37 for DXCC #151 at a distance of 13,750 kilometres, and a new CQ Zone, Grid and Field. We also had a partial contact with FK8IK, but lost him in the rapid QSB.

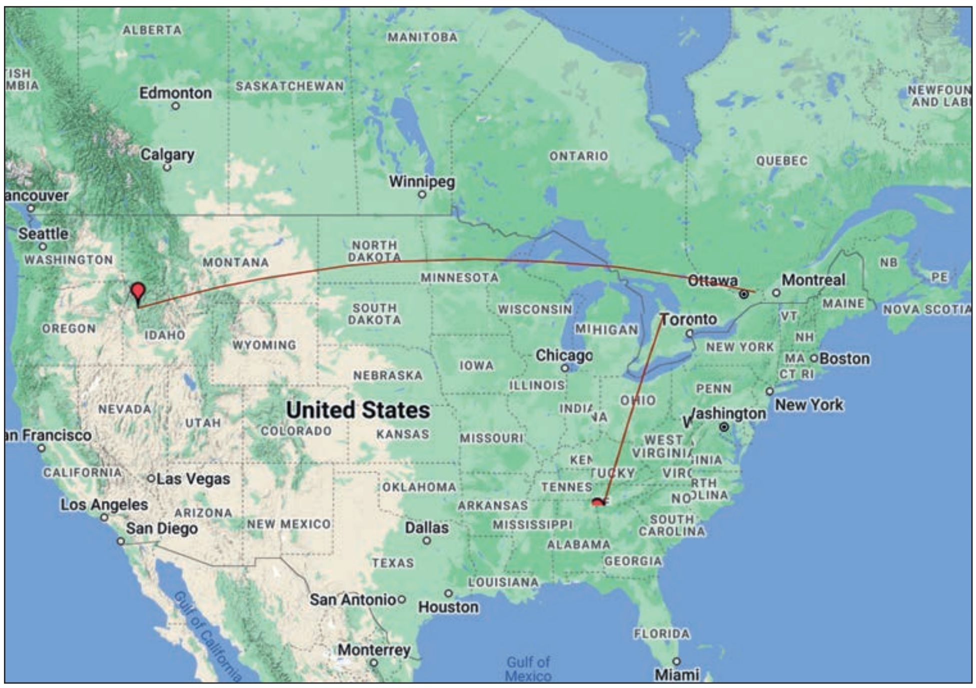
The following day, March 8, found Glenn, VA3DX, Joe, VE3BW and John, VE3EJ, working C5C in The Republic of Gambia in grid IK13 at 1555 UTC. Then at 1643, I worked VP8NO in the Falklands for a new DXCC #152 and a new grid GD18. Mike, VP8NO, called in as he had copied Glenn, VA3DX, who was working Florida stations with 100 watts at the time.

Mike was only QRV for about 10 minutes and then disappeared. In an email that he sent me, Mike explained that he was just starting to work on his heating boiler and had heard the signals, but he had to get back to fixing the boiler. He promised to be back if the band opened. Well, he was back into Canada on 50 MHz on March 11 and other days with a widespread opening. I also worked VP8LP at 1600 UTC, for a second Falklands station on 50 MHz. VP8LP went on to work a number of Canadians, all very pleased to work new DXCC! Out in FN25, Ron, VE3VN, commented that he copied EB8FA but signals were too weak to make contact.

March 12 brought more DX with an opening to South America with HC2AO in FI07, HK3O in FJ24, HC1DZ in FI09, and PV8DX in FJ92 worked. Things then went quiet as the flux dropped down into the 150s, at least for the time being. On March 20, the far side of the sun had a major flare and on March 23 a predicted G2 storm (the severity scale from 1-5) caused by a stream of solar wind from a “massive” coronal hole on the sun, turned into a monster G4 event. I had commented to VE3EN that the Aurora should be starting at around 4 to 5 pm, and at 2106 UTC Kevin was heard calling CQ on 50.099.



The extent of contacts by VE3DS during the March 23/24 Aurora on 50/144/222 MHz.



Two very long-haul Auroral contacts: VE3VN in FN25 to KG7CW in DN14 Idaho; and VE3IIM in EN94 to W9PR in EM74 Georgia, using a dipole.

Signals seemed quite good and once we found the hot spot, signals were 59A. Over the next eight hours the Aurora continued, and I logged over 50 stations including K2DRH and NN9K in EN41 at 1000 km, KA9FOX in EN43 at 1000 km, N0AV in EN32 at 1200 km, Bill, K0AWU, in EN37 at 1166 km, and Connie, K5CM, in EM25 at 1600 km, on 50 MHz. We heard a lot of “pings” too, indicative of the Auroral E-Region, but could not copy anyone, *but check Ron VE3VN’s report around that same time a 0301 UTC.* The last contact was on 50 MHz with W4KD in EN70 at 0400 UTC.

During the opening, we worked three stations far south in FM17: K4WMS, AB4SF and N4HB. Rich, K1HTV, in FM18 was worked with 59A signals both ways so we kind of figured that this was a big Aurora.

Meanwhile up in EN94, Tim, VE3IIM, in Hanover, Ontario worked into Georgia with a contact to W9PR in EM74, a distance of 1200 km. Tim was running a simple dipole and an ICOM IC-7300 transceiver at 100 watts. He mentioned that he worked 17 stations that night on 50 MHz! He credited Scott, VE3SCP, with alerting him to the big Aurora.

On 144 MHz, we only managed to find Tony, K8ZR, in EN91, with 59A signals both ways, despite my meager 150 watts. I had checked 222 but no one was on, then about 10 minutes later Dave, K1WHS, in FN41 fired up, after hiking up the mountain in snowshoes, and Peter, VA3ELE, worked him with 25 watts. Dave runs 1500 watts and four big Yagis from his mountain top location and boy was he loud on 222. We worked him right away with 300 watts, and looked for others. We did pick up a new grid by working N8PUM in EN66 with 55A signals from the Upper Peninsula of Michigan. We also had a partial contact with W8PU in EM89 in Ohio, but lost him as the Aurora shifted. Where was everyone else?

Further east, Ron, VE3VN, in FN24 did work into Idaho on Auroral E, with KG7GW in DN14 at a distance of 3,300 kilometres at 0301 UTC. Ron mentions that signals were pure Auroral tone and not typically clear Auroral E. Among his other contacts starting at 23:17 were K0TT in EN34, KA0PQW in EN33, W9TA in EN63, VA3SK in FN06, NN9K in EN41, KA9FOX in EN43, finishing with W4KD in EN70 at 03:43 UTC.

Out west we got a great report from Paul, K7CW, in CN87 just south of the border in Washington State. Paul also is VE7IB. Contacts there started at 22:58 with VE7DAY in CO70 on Q65, W7GJ in DN27, VE7SL in CN88 and VE7HR in 2330, all on SSB, VA6ZO in DO32 on CW, VE7DX in CN79, VEd7FW in CN89, K6IPF in CN80, VE7EHP in CO90, VE7BEE in DN09, VE7WF in CN89, VE7RS in DN09, VE7GDH in CN88, NO0T in DM88, N5XI in DM09, VE5SF in DO70 and many others. The last contact was at 03:42 UTC. Paul also mentions that it was a treat to get back on 6m CW and work the "buzz " session, hi.

Orin, VE7BEE, in DN09 sent along a report as well. His contacts started at 03:00 UTC with N7BAV in DN95, VE7DX in CN79 both on CW, KG7CW in Dn14, K7CW in CN87 all on SSB , VE7VW in Cn89 and last one was KG7CW in DN14 both on CW.

Eddie, VE3KRP, in Thunder Bay was on as well, working across the northern tier of the United States. He mentions working WB8RJY in EN72, W9XX in EN63, K0TT in EN34 and K0SIX in EN35. He said, "as the Auroral curtain came over top of us no more signals were heard."

Its been over 10 years since we had an Aurora of this intensity and it was something to behold. During this Aurora the K index hit 7.5 and the A index hit 70. In fact NASA posted a picture taken from space showing the Aurora down south over the Carolinas and west out over Oklahoma. There were a lot of pictures of the Red and Green Auroral curtains in the papers and on the internet in the morning.

The great photo of the aurora on page 8 was taken by Eddie, VE3KRP, and sent to me by Randy, VA3OJ, who is located near Thunder Bay, Ontario. Some of the digital guys were having success with Q65 on Aurora so we ought to see more action there, as well as on SSB for the non-CW ops. For us, CW rules on Aurora. There is nothing as exciting as the roar of a heavily modulated CW signal to get the DX blood pumping! I have included a map on the previous page showing how widespread the contacts were. In addition, the VY0SNO/B on Baffin Island was heard out on the east coast that night and many of the southern US beacons were in as well on Aurora.

The disturbed conditions brought a widespread opening on the next day with many Argentine stations in including: LU5FF in FF99 who we worked with 30 watts; CE3SX in FF46; LU9AEA in GF05; Dale, CE2SV in FF47; and LU4FW in FF97 for a new grid, down in the south part of the country. Also in on the action were VE3NEA, VE3NCD, VA3DX, VE3EJ, VE3EN, VA3ELE, VE3VN, VA3WEB, VE3WY, VA3TO, VE3BW and VE3EK – all working South American stations.

I really have to shorten the time delay on the amplifier, three minutes is an eternity when the DX pops in – something to be said for modern instant on amps. We had an incomplete QSO with ZL1RQ on March 24 at 2023. He was hearing me fine but I lost him in the QSB. ZL1RQ commented that his amp was broken and he was just running 250 watts. We just could not complete the contact despite trying on 50.323 MHz. It is a matter of time until we bridge that one though. Exciting stuff!

March 25 was a banner day if you lived in Florida, with almost everyone there working VK, ZL, FK, 3D2AG in Fiji and FO5QB stations for hours into the wee hours of the morning. In addition FO5QB worked into EA8DO on March 26! Oh to live in the equatorial zone, eh. Of course, let's see what the summer E season will be like, and then next fall. Will we have daily F2 DX? Stay tuned!

222 MHz Activity: Tuesday nights

For several years, certain days have been set aside for VHF activity and Tuesdays happen to be 222 Activity Night. From about 7 pm onward ops get on 222.1 SSB / CW or 222.174 digital and make contacts to see how propagation is and generally meet and greet. If you have not tried it, get on. If you have FM get on 223.5 and make some noise there.

From Toronto, area stations regularly work K1WHS in Maine (FN43), K9MRI in EN70 in Indiana, and K8TQK in EM85 near Dayton, Ohio. So, get on and give it a try.

Chasing Awards

I have been working DX on VHF since 1970 and in that time I've filled a lot of logbooks and, more recently, computer logs and the American Radio Relay League's Logbook of The World (LoTW). In that time, I've also collected a lot of QSL cards from all over the planet – not only on VHF but on HF – and on 50 MHz I have earned Worked All Continents, Worked All States, DX Century Club (DXCC), VHF/UHF Century Club (VUCC), Worked All Zones (WAZ) and RAC's Canada Award. I focused on 50 MHz for a good part of that time, but had initially started chasing WAS on 144 MHz.

Over the winter, I sat down and organized my collection with LoTW and thought it would be interesting to see how many VUCC grids I had on each band. I had updated 50 MHz, recently completed 144 MHz but had left 222 and up. So going band by band from 222 through 3456 MHz I found that I had a significant number of grids confirmed and more not confirmed, either due to the other op not being on LoTW or me being just too distracted to send cards. However, I have cleared my backlog of cards owing, and have been sending out for the various bands. Hopefully, finishing VUCC on these bands up to 3456 MHz.

Moonbounce: Bob Morton, VE3WY, shown on the right next to Svend de Bruyn, VE3SWN, has been assembling an array of 16 x 7-element Yagis for 144 MHz EME and plans to get it up on the tower this spring. The array will put FN04 solidly on the EME map, with a KW behind it. Watch for more information in an upcoming issue of *The Canadian Amateur* magazine.

Oddly, I'm one of the original VUCC/WAS card checkers starting with the Canadian Radio Relay League and moving over to Radio Amateurs of Canada at the merger in May 1993 – 30 years ago! – so I've checked a lot of VUCC cards for VHF, UHF and Microwave including 10 GHz, 24 GHz and 47 GHz, but of course not my own.

Even in this digital age the old saying "the job isn't finished until the paperwork is done" applies. hi.

Aircraft Scatter (33 cm DX)

While getting my VUCC act together, I noted that I was missing FN25 on 902 MHz. Stu, VE2XX, thought he might be able to help with that and dug out his old 903 MHz transverter and put together a 60 watt amplifier into a pair of 33-element loop Yagis.

At my end I have 100 watts and a single 33-element loop Yagi. We talked about working if there were some tropo or aircraft scatter. I've had really good luck on 33 cm on tropo as propagation on that band is much like 432 MHz so we set up a sked on Tuesday night March 22, and right away I copied Stu's signal from just west of Montreal at 2300 UTC.

We were on 903.1 MHz so the band is noisy there from smart meters, but his unusual and distinctive "chirpy" signal was easy copy. With QSB however it took us about an hour to catch a wave of aircraft scatter and/or tropo long enough to complete the QSO – all on CW. Next on the list is FN35 on 1296 MHz with Rene, VE2UG, using Q65 digital mode.

Microwave DX

Hugh, VA3TO, Kevin, VE3KH and Ron, WB2WGH, have been working a motorized waveguide antenna switch for 47 GHz. Ron has developed a control board setup and a number of the Rochester and Ontario microwave guys are in the process of integrating the controller with a suitable waveguide switch purchased off eBay.

Speaking of bands, I have been working on reconfiguring the microwave amplifiers here and rebuilt the 1296 and 902 MHz amps, adding new power supplies and antenna relays better suited for those bands. The next step will be 3456 MHz, adding the option to operate at 3401 MHz so we can work the US guys, as well.

At some point I want to try some Moonbounce or Earth-Moon-Earth (EME) as well so I have to keep each band self-contained in case I want to operate from the driveway, as my north-facing backyard doesn't lend itself to low declination moonshots – and frankly at those frequencies the less coax the better.

Contest Activity

The ARRL June VHF Contest is just around the corner from June 10-12. There are numerous operating classes including 3-band, rover, low power, mixed analog/digital and old school analog. This year there are plaques sponsored by Neil, VE3SST, for Low Power Single Op and Unlimited Rover, plus Limited Rover (4 bands) by the Rochester VHF Group.

There are still many June VHF plaques for Canada that have no sponsors: Single Op High Power, Multi Op, QRP, Analog Low Power and Analog High Power. If your club wants to sponsor one, check out the ARRL's website. The cost including shipping is $80 US. Visit http://arrl.org/plaques-and-awards for more information.

– 73, Dana VE3DS

TCA

Amateur Radio Satellites

Keith Baker, VA3KSF/KB1SF
kb1sf@yahoo.com

Youth Initiatives

During its Dayton Hamvention forum in May 2022, the Radio Amateur Satellite Corporation (AMSAT) formally introduced their plans for its Youth Initiative. In the planning stage for two years up to that time, the program is now proceeding in a series of phased releases.

In that announcement, Frank Karnauskas, N1UW, AMSAT Vice-President of Development, provided highlights of the program saying, "The Youth Initiative takes a radically different approach to introducing youth to Amateur Radio and Satellites. It approaches youth in terms that are *already central to their everyday lives*. Whether it be climate change, pollution control, preservation of natural resources, meteorology, or a career in broadcasting or transportation industries or even the military, the use of satellites is pervasive in virtually everything we do".

Frank went on to say that, "Our message to youth is: 'Satellites in Space Help Us Live Better Lives Here on Earth'. Once we have gained the youth's interests, we can (hopefully) then engage them in experiences and exercises that then use Amateur satellites and Amateur Radio as their 'laboratory' or 'classroom'.

Also unique to this effort is the fact that this is a community-based program that makes the experiences available directly to youth, their parents and all youth organizations. While our program will be promoted though our trademarks, KidzSat (for grades 5-7) and BuzzSat (for grades 8-12), all content is openly and freely available."

Satellite operating is often a family activity. Here AMSAT Board Member and Vice-President of Operations Drew Glasbrenner, KO4MA (right) coaches his son Willem, KO4UYE, on the finer points of portable satellite operating at the 2023 Orlando Hamcation in Florida. (Courtesy: VA3KSF)

AMSAT's Executive Vice-President Paul Stoetzer, N8HM (right) helps Grace Papay, KE8RJU, make a contact at AMSAT's 2022 Hamvention Satellite Demonstration Station. (Courtesy: VA3KSF)

Frank then went on to summarize key components of the Youth Initiative that serve as the engagement points with youth. For example, KidzSat.com and BuzzSat.com are websites that provide age-appropriate activities and exercises that cultivate the general interests of the project into understanding how satellites play a role in our daily lives. Activities range from a simpler "merit badge" level to a complete course on satellite meteorology. Participating youth can earn certificates of completion that would be useful for university or college admissions or even job applications.

AMSAT is also establishing a network of online Software Defined Radios (SDRs) that will serve as ground stations for youth to experience (first-hand) such activities as receiving images and telemetry from actual satellites as they pass overhead. Accompanying activities will also guide youth through decoding and analyzing the images and data received. A fleet of 200+ ground stations is planned so that virtually every youth has access to real-time satellite experiences. AMSAT hopes that, from this starting point, a fair share of kids will become interested in the communications process and will go on to set up their own "dongle-based" ground station and (perhaps) even go on to obtaining an Amateur Radio license.

A fleet of CubeSat simulators referred to as Non-Orbiting Earth Science Experiments (NOESE) is also planned. The NOESE "birds" will transmit online telemetry for five separate values associated with climate change. Participants will learn how to download telemetry, convert it into useful data and have opportunities to study the information for short or long-term study. The NOESE simulators will be deployed with the SDR ground stations so that a network of data collection points will be available for local access and for comparison.

LEO Satellites Carrying Educational Payloads

The websites, SDR ground stations and NOESE simulators are all designed to cultivate interest in youth into getting on the air and interacting with AMSAT satellites. Another part of the project (Nicknamed LOWER for "Lower Orbit Within Everyone's Reach") includes a family of satellites that will feature higher power output to make reception by beginners an easy task. Educational payloads will be mainly based on store-and-forward imaging and digital messaging, an experience that youth are

already comfortable with via their cellphones. And, of course, these satellites will host a combination of FM repeater and CW/SSB transponders for general Amateur Radio use.

Karnauskas concluded the kick-off presentation by saying:

"The Youth Initiative is not only the right thing to do, it is the essential thing to do. By focusing on what the AMSAT Articles of Incorporation direct us to do – 'Advancing scientific and educational skills and knowledge' – we can appeal to a broader segment of society that can also provide the financial support and critical resources that AMSAT needs to continue flourishing."

More information about the AMSAT Youth Initiative can be found at: KidzSat.com and BuzzSat.com. Donations to the project via the AMSAT general fund can be made using the "donations" tab on the AMSAT website at www.amsat.org.

SAREX and ARISS

Back when I was a member of the AMSAT Executive, I always viewed our involvement with the Shuttle Amateur Radio Experiment (SAREX) and the Amateur Radio On the International Space Station (ARISS) programs as AMSAT's "Crown Jewels".

ARISS has since evolved into an international working group, consisting of delegations from 15 countries including several countries in Europe as well as Japan, Russia, Canada and the United States. The organization is run almost entirely by volunteers from their country's national Amateur Radio organizations, including the American Radio Relay League (ARRL) in the USA and the international AMSAT (Radio Amateur Satellite Corporation) organizations from each country. Canada has two delegates to this group, one sponsored by the Radio Amateurs of Canada (RAC) and another delegate sponsored by AMSAT-North America (AMSAT-NA) as their membership also includes Canadians.

ARISS lets students worldwide experience the excitement of talking directly with crew members on the International Space Station, inspiring them to pursue careers in science, technology, engineering and math, and engaging them with radio science technology through Amateur Radio. ARISS also inspires students worldwide to pursue interests and careers in science, technology, engineering and math through Amateur Radio communications opportunities with the ISS crew.

During their contacts, students learn about life on board the space station and explore the Earth from space through science and math activities. ARISS provides opportunities for the school community (students, teachers, families and community members) to become more aware of the substantial benefits of human spaceflight and the exploration and discovery that occur on spaceflight journeys. Students have the opportunity to learn about space technologies and the technologies involved with space communications using Amateur Radio to do it.

ARISS-STAR

A relatively new initiative by the ARISS organization, the ARISS-STAR project will enable youth to reach "stellar" heights through a project that includes a number of activities. These include remote control of robots using digital Amateur Radio techniques, a Mission Control-like interface and wireless communication to emulate NASA's control of rovers on Mars and robots on the ISS. It also involves youth performing challenging robotic maneuvers via closed courses with other youth groups in adjacent rooms, across town and (for some "expert" teams) through the ARISS radio equipment flying aboard the ISS.

The whole idea is to help youth learn about Amateur Radio and, hopefully, create enough interest that will result in them earning their Amateur Radio licenses. More information about all of these ARISS efforts and ways to donate to the cause can be found at www.ariss.org and www.ariss-usa.org.

Wrap Up

By now, it should also be painfully obvious to all of us in Amateur Radio that, unless and until we begin to meet and attract youth to our fraternity where they are (and not where we think they ought to be), our beloved hobby will continue to wither and eventually die. Highlighting (and then financially supporting) programs like AMSAT's Youth Initiative as

well as the ARISS project will most certainly help to both "keep Amateur Radio in space" but to also attract (and keep!) younger members of our fraternity once we old "crusty curmudgeons" have long since passed on.

In the meantime, and as always, you can get the very latest information about the current status and future plans for our fleet of Amateur Radio satellites via the AMSAT website at: www.amsat.org.

TCA

Dayton Hamvention

Come visit the RAC Booth 2504: Volunteers Needed

Radio Amateurs of Canada will once again be operating a booth at the Dayton Hamvention, the world's largest Amateur Radio gathering, on May 19, 20 and 21 at the Greene County Fairgrounds and Expo Center.

The RAC booth 2504 will once again be in Building 2 along with the International Amateur Radio Union, the American Radio Relay League and other national organizations.

So come visit the RAC booth 2504 and talk to your RAC volunteers.

Notice to RAC members residing in the Ontario North/East Regions
Avis aux membres du RAC résidant dans le régions de l'Ontario Nord/Est

Call for Nominations of Candidates for Regional Director to serve on the Board of Directors of Radio Amateurs of Canada Inc.

The Secretary of Radio Amateurs of Canada Inc. hereby solicits nominations for the position of Director for the Ontario North/East Region (postal codes K and P).

If required, an election for this position will be held in August 2023. The Director will take office immediately to complete the two-year term ending December 31, 2024.

1. The Candidate:
   - must be a Full Voting Member of RAC
   - must have reached the legal age of majority
   - must reside in the Region for which they are nominated
2. A candidate may not nominate himself/herself.
3. The nomination form will:
   - be printed or typed
   - clearly indicate the candidate's name, call sign and RAC membership number
   - clearly indicate the names, call signs, RAC membership numbers and original signatures of ten (10) or more full voting members of RAC
4. The nominators must have reached the legal age of majority and must reside in the same Region as the candidate whom they are nominating.
5. Each candidate must:
   - sign the nomination form, indicating a willingness to be nominated
   - include with the nomination a brief biographical sketch/CV limited to 500 words succinctly setting out their background and qualifications. A candidate choosing to submit a biographical sketch in both English and French languages will be allowed 500 words in each language. The biographical sketch will not include any campaign platform material.
6. **All original nominations and supporting documentation, including the biographical sketch, must be received** by the Secretary of RAC at the address indicated below by 12 noon on Tuesday, July 4, 2023.

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

Appel de mises en candidature pour le poste de directeur de région siégeant au conseil de direction de Radio Amateurs du Canada inc.

Le Secrétaire de Radio Amateurs du Canada inc. sollicite des candidatures pour le poste de Directeur pour le région de l'Ontario Nord/Est (codes postaux K et P).

S'il y a lieu, une élection à ce poste sera tenue en août 2023. Le directeur entrera en fonction immédiatement pour terminer le mandat de deux ans se terminant le 31 décembre 2024.

1. Le candidat :
   - doit être membre en règle de RAC
   - doit avoir atteint l'âge légal de la majorité
   - doit résider dans la région pour laquelle il est mis en nomination
2. Un candidat ne peut se nominer lui-même.
3. Le formulaire de mise en nomination devra :
   - être dactylographié ou imprimé
   - reproduire clairement le nom du candidat, son indicatif d'appel et son numéro de membre chez RAC
   - reproduire clairement le nom, l'indicatif d'appel, le numéro de membre RAC et les signatures originales d'au moins dix (10) membres en règle de RAC
4. Les présentateurs doivent avoir atteint l'âge légal de la majorité et demeurer dans la région du nominé.
5. Chaque candidat doit :
   - signer le formulaire de mise en nomination, indiquant son accord d'être mis en nomination
   - inclure avec la mise en nomination une courte note biographique/CV, limitée à 500 mots, décrivant succinctement ses antécédents et ses qualifications. Un candidat qui désire soumettre sa biographie en anglais et en français se verra alloué 500 mots dans chacune de ces langues. Les notes biographiques ne devront inclure aucun élément de la plate-forme électorale.
6. **Tous les documents originaux de mise en candidature et les documents reliés**, incluant la note biographique, devront être reçus par le secrétaire de RAC à l'adresse indiquée ci-dessous avant 12h00 le mardi 4 juillet 2023.

Il est suggéré (mais pas obligatoire) que les documents de mise en candidature soient expédiés par courrier recommandé.

It is suggested (but not required) that the nomination forms be sent by registered mail. **Faxed or emailed documents will not be accepted.**

- Clearly indicate on the mailing envelope that Nomination Documents are enclosed.
- The envelope will be held unopened until after the closing deadline of July 4, 2023. After this date, the Election Committee, under the supervision of the RAC Secretary, will open all submissions, review the documentation for accuracy, completeness and validity, and then announce the results of the Call for Nominations. The decision of the Election Committee is final.
- Should a balloted election be required, ballots will be mailed from RAC Headquarters on or before July 28.

Nominations must be sent to the address provided below. Clearly indicate on the envelope: "Nomination Documents".

Secretary, Radio Amateurs of Canada
720 Belfast Road, Suite 217
Ottawa, ON K1G 0Z5

Les documents expédiés par courriel ou par télécopieur ne seront pas acceptés.

- Indiquez clairement sur l'enveloppe qu'elle contient des formulaires de mise en candidature.
- L'enveloppe restera scellée, jusqu'après la fermeture des mises en candidature le 4 juillet 2023. Après cette date, le comité électoral, sous la gouverne du secrétaire, ouvrira toutes les candidatures soumises, et vérifiera la documentation quant à sa validité, son exactitude et sa complétude, et annoncera ensuite le résultat de cet appel de mises en candidature. La décision du comité électoral sera finale.
- Si une élection était requise dans l'une des régions, les bulletins de vote seraient postés du quartier général de RAC le 28 juillet 2023 ou avant.

Les mises en candidatures doivent être envoyées à l'adresse suivante. Indiquer clairement sur l'enveloppe : « Documents de mise en candidature ».

Le secrétaire, Radio Amateurs du Canada
720 Chemin Belfast, Suite 217
Ottawa, ON, K1G 0Z5

TCA

"QUA – A Topical Digest"

Electronic Construction and Software

Allen Wootton, VY1KX
Box 21217 | Whitehorse, Yukon
vy1kx@rac.ca

Recently, I was reading an article in which modern software development was compared to modern electronic construction wherein component modules are used instead of the discrete components that were used in previous times. The author suggested that modern software tends to be composed of software blocks obtained from various sources and linked, by the user, with a few lines of code in the same way in which inexpensive functional circuit boards can be linked with a few wires to make useful devices. This does seem to be the way in which many people work with both electronic circuits and software. For example, the huge variety of very useful electronic modules that can be purchased for amounts that are far less than what it would cost for the parts alone and the range of projects that people create using them, in conjunction with devices like the Arduino or Raspberry Pi, show how effective this approach can be.

I sometimes try working with circuits and software in this way but generally, due to the relative simplicity of most of the projects I attempt, I find individual components and microcontrollers programmed in assembly language usually suit my needs. I also find using discrete components and assembly language provides me with interesting challenges and the satisfaction of having (I think) a better understanding of the project, all for a microcontroller at less than the cost of a cup of coffee.

A voltmeter with Morse Code readout

Sometime ago I made a simple microcontroller-based circuit that measures a voltage and provides an audible Morse code readout. Because the Morse readout is limited to the digits 0 to 9, a decimal point and the letter "V", it is easy to interpret even for those who are not proficient in Morse. The code is sent at about 20 wpm, but this can be adjusted with minor changes to the software. The circuit diagram is shown on the next page. If you would like the matching software just send me a request via email.

The LM78L05 voltage regulator provides a 5.0 volt reference voltage for the the microcontroller's analog to digital converter (ADC). The voltage divider composed of the 390 kilohm (kΩ) and 100 kilohm resistors and the 10 kilohm potentiometer determine the maximum voltage (about 24 volts in this example) that can be measured.

At the maximum, the voltage on the ADC pin (pin 7) should be 5 volts.

For a different measurement range, different resistors could be used in the voltage divider with appropriate changes to the constants used in the software. These necessary changes are outlined in the annotated software description.

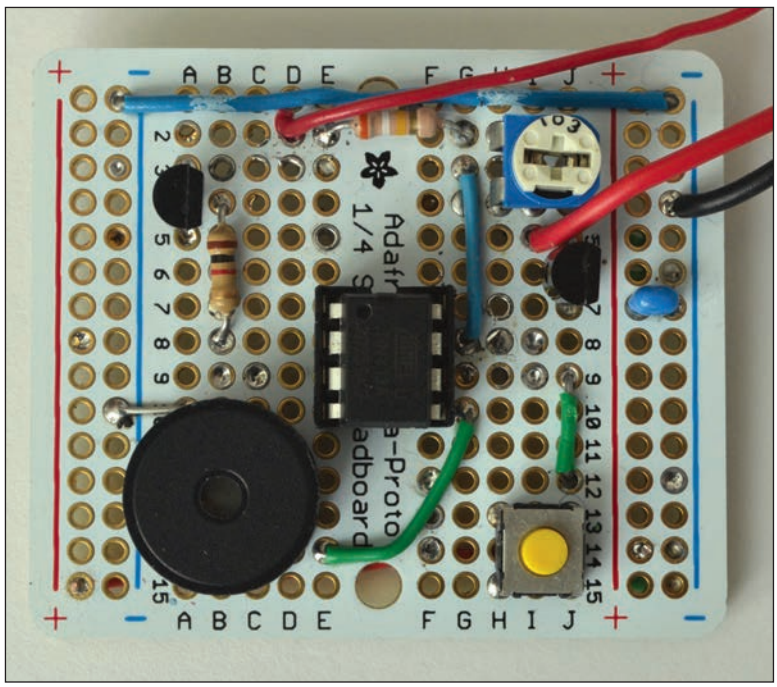


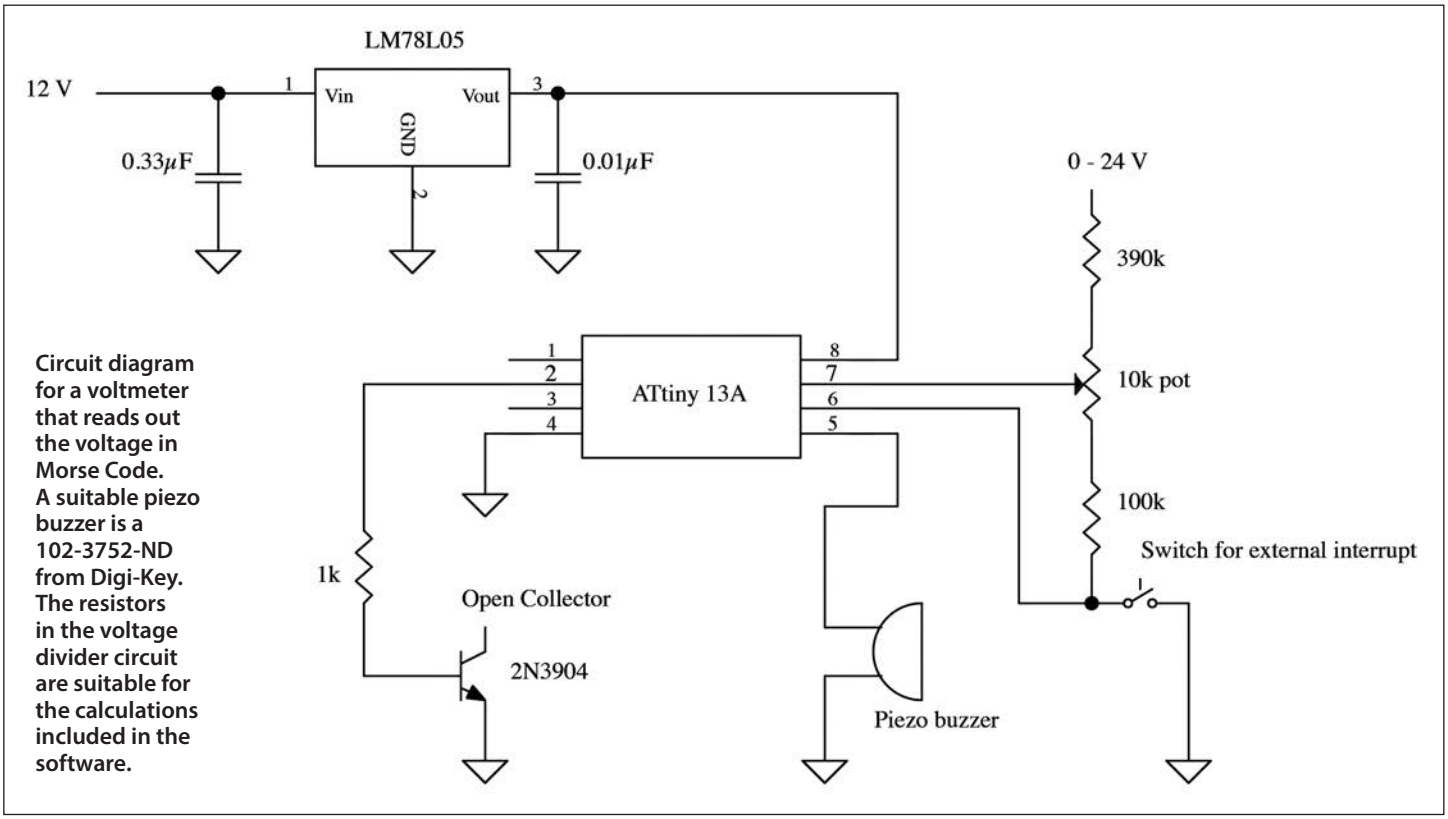
Figure 1. The audible voltmeter constructed on a small piece of perf board.

The 10 kilohm potentiometer allows the voltmeter to be calibrated against a digital voltmeter.

On the circuit diagram on the next page I have shown the voltage input to the LM78L05 voltage regulator to be 12 volts, but other voltages can be used too, as long as they are above the 7 volt minimum requirement of the voltage regulator and don't exceed its maximum of 35 volts. The voltage divider circuit can also be connected to the same voltage that supplies the voltage regulator if that is the voltage being measured.

When sending the voltage, the output at pin 5 is toggled on and off at about 800 Hz so as to produce a tone from the piezo buzzer. The output at pin 2 is turned on and off to match the Morse characters – it can be used to key a transmitter as if with a Morse key. I have drawn the circuit diagram to include a 2N3904 transistor switch. Depending on the application, this transistor switch may or may not be required. Pin 2 goes high (5 volts) in step with the Morse characters.

Closure of the push-button switch connected to pin 6 initiates the voltage measurement and readout. Instead of a push-button, some alternative method of starting the



Circuit diagram for a voltmeter that reads out the voltage in Morse Code. A suitable piezo buzzer is a 102-3752-ND from Digi-Key. The resistors in the voltage divider circuit are suitable for the calculations included in the software.

measurement can be used. For example, in one application I have used some additional circuitry to remotely trigger a voltage readout.

The software for this voltmeter uses two freely available assembly language routines available from Microchip. The first is contained in Application Note AVR200, an 8 x 8 multiplication routine. It is needed to convert the analog to digital conversion (ADC) result from the ADC at pin 7 to an 8-bit scaled value from 0 to 256 that accounts for the values used in the resistive divider.

Next this binary number is converted to a binary coded decimal (BCD) number using the routine from Application Note AVR204. Whereas I don't think I could have written these routines myself, with some perseverance I was able to follow every step in both the multiplication and BCD conversion.

Finally, the program uses a Morse code routine that I adapted from a Basic Stamp manual to send the measured voltage via Morse code. A photo of the voltmeter is shown in Figure 1 on the previous page.

A Morse Code Assembly Language Routine

While the voltmeter project may be of interest, I think it is the Morse code routine that may be especially useful to others. This routine codes letters and numbers into 8 bits, with 0 signifying a dit and a 1 signifying a dah.

The first 5 bits, from left to right, code for the letter or number whereas the last 3 bits indicate the number of elements (dits or dahs). Here are some examples:

Letter V: 0001x100, starting from the left, the digits 0001 indicate …- and the three digits on the right show that the letter V has 4 elements, so the x can be a 0 or a 1; it is ignored.

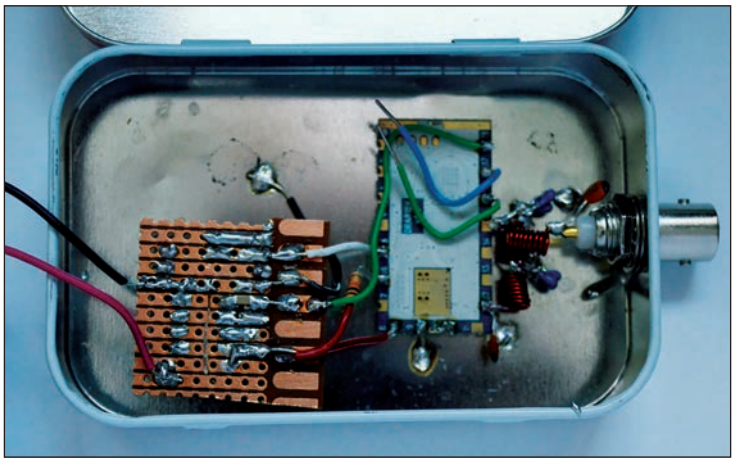


Figure 2: A 2 metre foxhunt beacon that uses the Morse code routine for identification. The transmitter is a DRA818V transceiver module located to the centre right of the Altoids tin. Components to the right of the transceiver module provide a low pass filter on the transceiver's output.

Letter A: 01xxx010, again, starting from the left the digits 01 indicate .- and the three right-hand digits specify 2 elements. The digits indicated by x are ignored.

Number 1: 01111101, now the three right-hand digits indicate that all of the first five digits are needed to send the number 1. Likewise, for all other numbers from 0 to 9, the three right-most digits of the binary number will be 101 because 5 elements must be sent. Just the left -most digits will be different.

Since the voltmeter reads to the nearest hundredth of a volt, a decimal point is also needed in the voltmeter Morse code routine. However, a decimal point (or period) requires six elements to be sent and these overlap with the last three digits

of a byte so a small adjustment to the program is required. In this adjustment, 6 element characters ending in a dah are coded with the three right-hand digits set to 7 in binary (i.e., 111). Although 6 element characters ending in a dit – for example, a question mark – are not needed for the voltmeter, they are coded with the last 3 digits indicating 6 (e.g., Period: 01010111, Question Mark: 00110110). I have used the Morse code routine for a number of projects other than the voltmeter. For example, Figure 2 on the previous page shows a 2 metre band foxhunt beacon enclosed in an Altoids tin.

The microcontroller circuitry is constructed on the perf board circuit on the left. It keys a DRA818V module to send a short transmission and call sign identifier. The DRA818V is available for about $17. It provides transmit and receive capabilities, but it must be programmed for use, and for a clean signal it requires the addition of a low pass filter on its output.

A Radio Panadapter

While many of the latest generation of radios include a panadapter, most older and some new ones do not. There are options for including panadapters in these radios by adding a tap to a radio's intermediate frequency, but each of these requires some internal minor modifications to the radio, a process that may not appeal because of warranty issues, or because of the need to solder to the radio's circuit board and/or drill through the radio's case to provide an external connection. You can see some examples online at https://kd2c.com, https://www.sdr-kits.net and https:www.tspelettronica.com.

I was very interested to see some work that George Privett, VY1GP, did with a Kenwood TS-590S owned by the Yukon Amateur Radio Association (YARA) in which he showed an alternative approach. Instead of an internal connection, this alternative is to use an external one, right at the antenna connection. Figure 3 shows how this can be done using an MFJ-1708SDR switch.

On receive, both the SDR and the transceiver are connected to the antenna. A splitter inside the MFJ-1708SDR matches impedances so as to ensure that both receivers receive the same signal level. Since each will receive half the power this means a 3 dB signal strength reduction, but this should be negligible and easily made up with gain in either receiver. On transmit, relays in the module ground the SDR antenna connection while maintaining the transceiver's connection to the antenna. Isolation between the SDR and transmitter is very important to avoid damage to the SDR. In his YouTube video #148, David Casler, KE0OG, wrote a review of the MFJ-1708 in which he provides some measurements of the isolation provided by the device. A Google search for https://youtu.be/nchpTOfdjol; brings up the selection for video #148.

Switching between transmit and receive is provide by two means. The preferable way is to use the PTT connection between the radio and the MFJ-1708SDR. With this connection, as soon as the transceiver goes into transmit mode the SDR is disconnected from the antenna and its input grounded.

Figure 3: The MFJ-1708SDR switch that allows the safe connection of an antenna to both an SDR receiver and a transceiver. The antenna is connected to the coax connecter in the centre, the transceiver and the SDR receiver on the other two. There is also an MFJ-1708B-SDRS model on which the SDR connection is an SMA instead of an SO-239. This change of connectors would prevent confusion between connections.

The MFJ-1708SDR also includes an RF sensing circuit and this provides rapid switching at the start of any transmission even if the PTT line is not connected. This could be an important safety consideration if that PTT line is accidentally disconnected. In his video David, KE0OG, also gives some measurement of the RF levels and switching times, both of which seem to be satisfactory for protection of the SDR..

For the SDR, George used the RTL SDR shown in Figure 4 (https://www.rtl-sdr.com). This is a relatively low cost SDR but it seems to give satisfactory performance. Various software options can be used with this SDR. Better, more expensive options are available such as the SDRplay radios (https://www.sdrplay.com) which come with proprietary SDRuno software but which can use other software as well.

A very nice feature of this panadapter arrangement is that the same computer that decodes the data from the SDR can be used to provide bidirectional control between the SDR program and the transceiver using a free program called "Omni-Rig" (http://dxatlas.com > omnirig).

Figure 4: The RTL SDR dongle used by VY1GP.

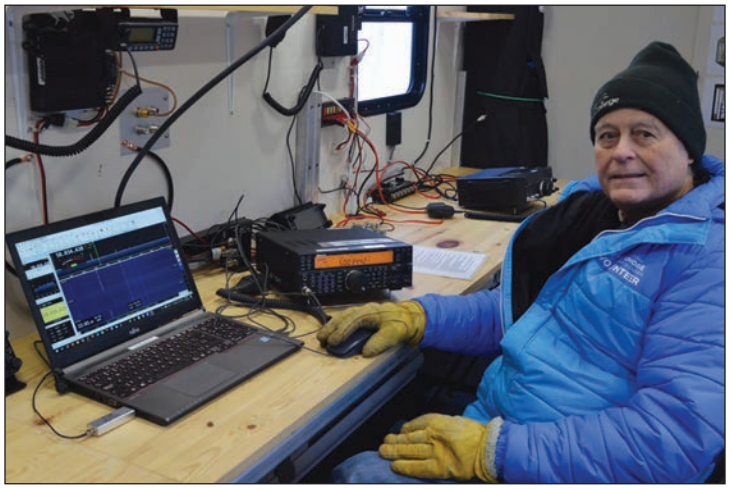


Figure 5: George Privett, VY1GP, on a cold February day in the Yukon Amateur Radio Association's trailer with the MFJ1708SDR and RTL SDR panadapter connected to a Kenwood TS-590S and a laptop computer.

The above photo (Figure 5) shows George, VY1GP, with the whole setup operating in the YARA trailer.

George kept good records of his panadapter project and he sent me a list of required items and their costs. Excluding the computer, they are:

- MFJ-1708 SDR switch: US $139.95
- MFJ Assessory Power Cable: US $17.95
- RTL-SDR dongle kit: US $39.95
- RCA audio cable: Cdn $9.50
- 2 x 6' coax cable: Cdn $36
- 2 x 2' coax cable: Cdn $24
- USB CAT cable for FT-890: $48.66
- USB hub: $14.99
- Short USB connector for dongle: $8.98

When I checked the price of the MFJ-1708B-SDRS at RadioWorld in Toronto it was $205, a bit more than the MFJ-1708B-SDR at $195. Both are slightly updated, more recent models than the one George used.

Reader's Feedback

In response to my January/February 2023 QUA column I received a very interesting email from Ken Staples, VA7CGM. Ken says:

"A few years back I was repairing my Simpson 270 and needed a 50 uA current source for calibrating the meter movement. The Simpson meters, unlike many of the other analog meters, allow for calibration/adjustment of the movement itself. You can get the movement working accurately before adjusting or repairing the rest of the meter. I managed to cobble something together to get the alignment done, but like you had to use another meter to calibrate the current source to calibrate the meter.

I was reminded how when I started my career in electronics we had to share a couple of old Simpson 260 meters amongst a shop full of young techs. The department eventually splurged on fancy new Beckman DMMs for everybody. From then on, we all zealously did our preventative maintenance measurements

down to the millivolt with the new DMMs. Someone had the audacity to point out that equipment tolerances were actually good out to a quarter volt, but that didn't matter to us.

We really wanted to wring every millivolt out of our measurements using those new DMMs. In actual fact the Simpsons, when calibrated properly, are perfectly fine for most measurements back then as well as today.

These days I use my newer Chinese DMM mostly for audible continuity checks and higher resistance checks. I still use the Simpson for most ad hoc voltage checks, but mostly for the enjoyment of it."

In a follow up email Ken also outlined some really good advice. "When I worked in the industry and if I happened to be mentoring/teaching other techs, I tried stressing the importance of having an expectation of the measured result before you hooked up any test equipment. This was especially critical when doing power measurements or when there was a risk of damaging equipment. Knowing what you are measuring is the first step, then choosing the right test equipment for the job was next."

Also via email, Chuck Hooper, VE3CQH, added some interesting perspectives regarding instruments. I particularly liked his observation that the purchase of a Ukrainian-made AA-30 antenna analyzer taught him "as much about antennas as my previous 60-odd years of hamming."

The SARC Communicator

Just as I was finishing this column I received a notice via email that the March/April 2023 issue of the Surrey ARC "Communicator" digital edition was available for download.

As has been the case with previous editions, I am amazed at its breadth of interesting Amateur related articles. I haven't yet had time to read much of this edition, but I found the biographical information about Bill Hewlett (of Hewlett Packard) and the insightful comments or Kevin McQuiggin, VE7ZD/KN7Q, regarding artificial intelligence (with Amateur Radio examples) very interesting. I know that there are many other equally informative and interesting articles there too just waiting for me to have some time to read them. I really recommend this outstanding publication to you.

Please contact me at vy1kx@rac.ca if you have any questions or comments about this column – 73.

Bryan Rawlings, VE3QN, Inducted into Canadian Amateur Radio Hall of Fame

Bryan Rawlings, VE3QN, was presented his Canadian Amateur Radio Hall of Fame (CARHOF) plaque at a Special Meeting co-sponsored by the Ottawa Valley Mobile Radio Club, the Ottawa Amateur Radio Club and the National Capital Chapter of the Quarter Century Wireless Association.

On Saturday April 15, 2023, there was a special meeting organized and attended by members of the Ottawa Valley Mobile Radio Mobile Radio Club; the Ottawa Amateur Radio Club and the National Capital Chapter (70) of the Quarter Century Wireless Association – all of which Bryan, VE3QN, is a member.

This special gathering was organized to honour Bryan with the formal presentation of his Canadian Amateur Radio Hall of Fame plaque following his appointment as a member of the Hall last November for his outstanding contributions to Amateur Radio in Canada and internationally.

The CARHOF plaque was presented to Bryan by Radio Amateurs of Canada President Phil McBride, VA3QR.

Besides awarding Bryan with his CARHOF plaque, the special meeting was also an opportunity to further honour Bryan with the award of "Life Membership" to the Ottawa Valley Mobile Radio Club presented by Club President Barry Allison, VE3NA, for Bryan's service to the Ottawa Amateur Radio community and his wonderful presentations to the OVMRC. And further, the gathering was an opportunity to present Bryan with his QCWA Century Club Certificate (nicely framed) awarded to QCWA members that have attained 100 in the sum of their age and years of membership in the QCWA organization. This was presented to Bryan by QCWA Chapter 70 President Dave Parks, VE3AV, and Awards Chair Pat Brewer, VE3KJQ.

The gathering was attended by Bryan's wife Louise and by Christine Hsu from Innovation Science and Economic Development Canada (ISED) who served as Chair of the Working Party 5A Preparatory Meetings at the World Radiocommunications Conference in 2015 and worked closely with Bryan in his role as RAC Special Advisor.

Special thanks to Colin Guillas, VA3CSG, who provided the IBEW Local 586 Union meeting hall for the awards tribute to Bryan. Food and refreshments were served. This was the first in-person gathering of the three sponsoring clubs since the pandemic began in March 2020.

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 for the Hall specifies that the appointment as Member of the Hall is made 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". 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.

In 1964, Bryan obtained a Bachelor of Science Honours Degree in Mathematics from Loyola College in Montreal. He then joined Bell Canada in 1964 and served in various management positions until 1994 including Director of Network Operations (Quebec Region). In 1968, he was part of a Bell team that visited Saudi Arabia to bid on a contract to manage their new telephone system. In 1978, he moved his entire family to Saudi Arabia and lived there for several years when Bell won the contract.

RAC President Phil McBride, VA3QR, presenting CARHOF plaque.

OVMRC VP Norm Rashleigh, VE3LC, and Bryan Rawlings, VE3QN.

From 1966-1972, Bryan was a Lecturer at Dow Planetarium. He served as Chairman for the Riyadh International Community School Board from 1972 to 1982. In 1992, he moved to Moscow to head a small joint venture between Bell Canada and a Moscow Telephone Company. Following his retirement from Bell in 1995, he returned to Riyadh and worked with Saudi Telecom as General Advisor – Network Operation.

Bryan was first licensed as VE2AME in Montreal in 1959. Despite long absences from Amateur Radio while living overseas (Saudi Arabia 1978-88 and 1995-200, and Russia 1992-1993), Bryan has again been an active Amateur since 2002 – now signing VE3QN from Ottawa.

From 2006 until 2020, Bryan represented Canadian Amateur interests as the main RAC contributor to the planning for and attendance at the International Telecommunications Union (ITU) World Radio Conferences in 2012, 2015 and 2019. This involved not only attendance at the Conferences themselves, but also at national and international meetings in preparation for the Conferences. He also played a key role in obtaining support, both nationally and internationally, for Amateur-related issues including successes in gaining Amateur access to frequencies at both 60 metres and 630 metres. He was successful in establishing and maintaining excellent relationships with our regulator – Innovation Science and Economic Development Canada (ISED) – and was instrumental in obtaining Canadian support for both of these spectrum issues.

As a member of the Canadian national delegation at the ITU meetings, he played an important role in the discussions, both in the meetings themselves and in side discussions that helped obtain support for these initiatives. His tact, diplomacy and the respect he was able to garner from delegates from other countries played no small part in reaching successful conclusions that benefited Amateurs worldwide. Christine Hsu, Manager, Mobile Spectrum Planning Engineering, Planning and Standards Branch for ISED wrote:

"He has the ability to discern quickly the needs of others and moved efficiently to provide key information to alleviate the concerns of opposing administrations, provide recommendations, and/or directions to other participants to ensure the Canadian objectives are met. He is one of the friendliest and kindest people that I know, which has gained him the respect of his international counterparts and helped with international negotiations.

Furthermore, Bryan is a walking encyclopedia of knowledge when it comes to Amateur services, and he loves to share his knowledge with anyone who will listen including his successor to WP5A meetings and WRCs. He has also been liaising with ISED the needs of the Canadian Amateur community for many years and has an ability to communicate effectively with all of the employees at ISED from the Director level to our students. He goes the extra step to even encourage a few of us to become certified Amateur Radio operators."

Just as importantly for Canadian Amateurs, Bryan also played a vital role in getting the operational arm of ISED to agree to and implement domestic rules making these bands available to Canadian Amateurs. He has also authored several articles in *The Canadian Amateur* magazine to make Canadian Amateurs aware of issues that arise internationally and the work that goes on to protect Amateur interests internationally.

Bryan is active in several local Amateur Radio clubs in the Ottawa area and is also active on the air on both HF (CW, SSB and digital modes) and VHF (FM).

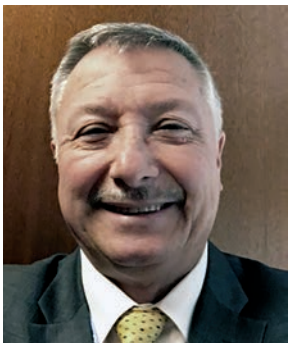
Radio Amateurs of Canada and the Board of Trustees of CARHOF sincerely congratulate Bryan Rawlings, VE3QN, on his appointment to the Hall of Fame.

Then It was Bryan VE3QN 's turn to provide some remarks in response in which he spoke eloquently about his time working with ISED on the international representation of the interests of Canadian Amateur Radio in maintaining and gaining further access to Amateur Radio RF spectrum. He later wrote to the OVMRC Executive sharing his thanks with a statement that read:

"I would like to thank the Executive and members of the OVMRC for the magnificent event they staged on April 15 in my honour. It has been an honour to serve Canadian Radio Amateurs for the past many years and your reception today makes all my efforts worthwhile."

For more information on the Canadian Amateur Radio Hall of Fame please visit: https://wp.rac.ca/carhof/

Defence of Amateur Radio Fund (DARF) 2022 Annual Report



Serge Bertuzzo, VA3SB

RAC International Affairs Officer

DARF Trust Financial Summary for 2022	
Starting balance	$33,142.07
Donations and income on investments	$3,305.32
Disbursements	$0
Ending balance	$36,447.39
Net change	+$3,305.32

The sole purpose of the Defence of Amateur Radio Fund (DARF) Trust is to support the travel expenses of a certified Amateur(s) as a member of the Canadian official delegation at the International Telecommunication Union's World Radiocommunication Conferences (WRC) and Preparatory Meetings, usually held in Geneva, Switzerland.

World Radiocommunication Conferences – organized and held by the International Telecommunication Union (ITU) every four years – update the *Radio Regulations*, the international treaty that, among other things, sets out the frequencies on which radio services such as the Amateur Radio Service may operate.

The RAC delegate's role is to assist our regulator – Innovation, Science and Economic Development Canada (ISED) – with all WRC agenda issues that may influence allocations to the Amateur Radio Service. This may include helping defend existing Amateur bands from being reallocated or being subject to harmful sharing by other interested parties. There may also be an agenda item offering the opportunity to advocate for a new allocation or to defend the use of existing Amateur Radio spectrum by other Services seeking to gain access to the spectrum.

Radio Amateurs have a seat at the table – in fact, there is a specific Working Party which includes the Amateur and Amateur Satellite Service in its title – but they need to be able to participate directly. While allowing RAC membership of the Canadian delegation, ISED does not provide any funds towards their participation. As most of these meetings are usually held in Geneva, one of the most expensive cities in the world, DARF's funding is essential.

The DARF Trust's role is to provide funding for our delegate's travel and living expenses in order to attend these various conferences. Without DARF, there would be no Canadian Amateur presence at these international meetings or in the many pre-meetings that take place developing and working out what ultimately becomes Canada's position.

ITU-R face-to-face meetings have resumed.

After a couple of years of either no meetings or fully virtual meetings due to the global pandemic, 2022 saw the resumption of face to face ITU meetings.

WRC representatives Paul Coverdale, VE3ICV and Bryan Rawlings, VE3QN, have continued to be actively involved as part of the Canadian official delegation to many domestic and ITU Preparatory Meetings.

Canada is one of a small number of countries – Australia, Germany, Japan, The Netherlands, the United Kingdom, the United States and Brazil – who regularly include a Radio Amateur in their official delegation. Over the years, Canada has contributed strongly and gained an excellent reputation. These Amateur delegates work closely with each other and with the International Amateur Radio Union (IARU) representatives including IARU President, Tim Ellam, VE6SH. This is important as WRC decisions are ultimately made only by the ITU Member States.

The IARU is one of many industry Sector Members representing various special interests – such as telecommunications companies, marine and air carriers – that attend ITU meetings, but have no vote.

Donors to DARF

Individuals:

Thomas Godden, VE3TWG $37

Les Arnott, VE3UCW $50

Robert Jones, VE3ADJ $100

François Daigneault, VE2AAY $100

Richard Parlby, VE7ZEP $25

Stiig Larsen, VE3LBX $20

David Green, VA7DG $25

Rick van Gastel, VE3HVA $75

Peter Knazko, VE3ZKZ $100

Angus Richard, VE3IGX $50

James Thompson, VE3AHC $100

Mark Perren, VE7ARN $100

Ron Schwartz, VE3VN $100

Wayne Stacey, VE3QO $25

Stefan Fridriksson, VA3FDX $50

Colin Kopp, VE7CPU $10

Angus Richard, VE3IGX $50

Keith Thompson, VE3HHT $50

Robert Paxton, VE7RPX $25

Amateur Radio Clubs:

Calgary Communications Club $100

Fredericton Amateur Radio Club $100

Mississauga Amateur Radio Club $100

North Shore Amateur Radio Club (BC) $100

Ottawa Valley Mobile Radio Club $300

Throughout the ITU Study Cycle preparatory process, our delegates to the Preparatory Meetings regularly keep us all up to date – through ongoing articles in *The Canadian Amateur*, on the RAC website and via Twitter – on the issues and processes that ultimately determine Amateur Radio spectrum around the world.

The DARF Trust was created by Tom Atkins, VE3CDM and Bill Loucks, VE3AR, in 1991 to provide funding to ensure that a Canadian Radio Amateur would be part of these critical processes. Over the years, this need has only grown more critical with the explosion of mobile services and the need for more spectrum to service.

Issues related to Amateur Radio which have been worked on during 2022 include: pressure from the IMT industry on Amateur allocations in the 3300-3500 MHz and 10-10.5 GHz bands; possible interference at the bottom end of the 50-54 MHz band from spaceborne radar sounders; possible restrictions on Amateur operation in the 1240-1300 MHz frequency band due to instances of interference with the radio-navigation satellite service (Galileo, GPS etc).

Another potential threat to the Amateur Radio Service is Wireless Power Transmission for Electric Vehicles (WPT-EV), which is a new technology that will form part of the infrastructure options for electric vehicle charging.

While many radiocommunications services are likely to be significantly impacted by wireless charging technologies, the Amateur Radio Service – including Radio Amateurs of Canada – has been at the forefront in pointing out the interference potential in recent international meetings. We are continuing to monitor the issue.

DARF is an independent legal Trust, which is administered by Radio Amateurs of Canada to ensure that any funds disbursed are used for the purposes allowed by the Trust as follows:

1) Ensure that there are sufficient funds on hand for the Amateur delegate's expenses to attend WRC meetings.

2) If sufficient funds are on hand, to also support travel to Preparatory Meetings when issues directly affecting Amateur Radio spectrum are being debated.

While it may seem that this is a once-every-four-year expense limited to participation in the Conference, the most potential impact RAC and the other Amateur representatives may have occurs during the many preparatory sessions where the real work to shape, negotiate and defend allocations take place.

Our delegates typically attend two of these meetings each year, each lasting 10 to 12 days. Even with discounted airfare and hotel rates, it is expensive to send a person to Geneva to work and live for two to four weeks each year.

If you have not contributed to DARF, please consider making a personal donation and suggest a club donation to DARF at your next meeting. Donations of any amount are welcome. Every dollar helps and will only go to defending and expanding our access to spectrum. The Financial Summary provided in the

table on the previous page shows that DARF is still viable and will be able to support our delegate for several years to come. However, inflation and the trend that new donations are less than expenses continues to be worrisome in the longer term.

The insatiable demand for mobile device connectivity means continued and increasing pressure on spectrum from large corporate and government interests as well as from other Radio Services such as the Satellite and Space Sciences Service). Only a strong Amateur presence at the ITU table to defend the bands we already have will protect the future of Amateur Radio. Without the funds to work with, our voices will not be heard. So once again, please consider a donation.

Donations can be made online by clicking on the "Donate" link at the top of the RAC website or sent to RAC HQ. One easy way to donate is to include an extra $10 or $20 or more when you renew your RAC membership. Please make your cheque payable to "Radio Amateurs of Canada" and note in the memo field "DARF donation". Call or email RAC HQ at rachq@rac.ca if you wish to donate by other payment methods or have a question on how to donate.

For more information about DARF and the World Radiocommunication Conferences please visit:

https://www.rac.ca/darf/

https://www.rac.ca/wrc/

73, Serge Bertuzzo, VA3SB
RAC International Affairs Officer

RADIO MAGIC

Robert C. Mazur,
VA3ROM
va3rom@gmail.com
www.va3rom.com

Introduction: I fondly remember my first (1973) Radio Shack "Science Fair" 65-in-1 electronic project kit. Its components were mounted inside a wooden box on thick colourful cardboard with images/text plus umpteen small spring connection coils (see Figure 1). Many enjoyable hours were spent building AA-battery powered circuits using various lengths of #22 coloured insulated wires strung from spring coil to spring coil. But sometimes there were so many colourful lengths of intertwined wires that it was often difficult to figure out what was wrong when a circuit didn't work. Instead of hunting for the wrong wiring connection(s), it was just easier to take it all apart and start over again.

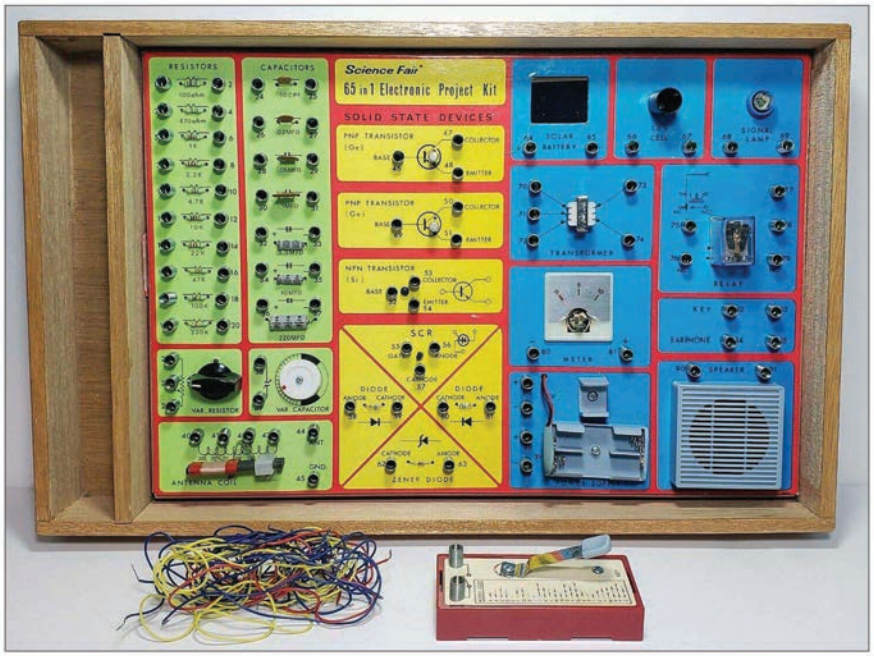


Figure 1: Science Fair 65-in-1 Electronic Projects Kit. I can't remember what happened to mine, but they are still available in good condition on the used market. Image credit: eBay.

Fast forward 50 years, several LEGO-style building block electric/electronic project kits are on the market to construct the same circuits except parts now snap together allowing builds in three-dimensions (3D)! Parts are no longer fixed in place and can be moved around like jigsaw puzzle pieces, increasing creativity and versatility while minimizing inter-component connection errors and fault finding frustration.

Snap to It! – The most popular on the market (among several clones) is the original called "Snap Circuits" (originally "Snap Kits"). It was first introduced in the early 2000s by the family owned/operated US-based company Elenco Electronics Inc.

Snap Circuits has won numerous awards over the years and is very popular among educators, hobbyists, students and parents. It is used in classrooms to teach STEAM (science, technology, engineering, arts and mathematics) encouraging students to think outside the box, be more creative instead of copycat, to develop their problem-solving skills, and allows students to experiment with and experience real-world applications of subjects they're learning about. But I digress…

Instead of spring coils and wires, solid straight blue links have button snaps at each end, spaced evenly along their varying lengths are used. A large, clear acrylic master base plate has short prongs onto which components are snapped in place. Electric/electronic parts are mounted on/in acrylic base plates that are many times larger than they are) having different shapes, sizes and colours with text descriptions stamped on the base plates (see Figure 2).

Because of their size, Braille labelling can be easily added on their undersides. Other components can be snapped on top of others to build circuits vertically or horizontally. We can't get rid of wires altogether and insulated #22 coloured ones of various lengths are available with button snaps at each end. There are also ones with a snap at one end and a DuPont pin at the other, which are used for connecting to solderless breadboard circuits and/or devices with socket headers, or making 3.5 mm mono/stereo jack-to-snap or Anderson pole-to-snap adapters.

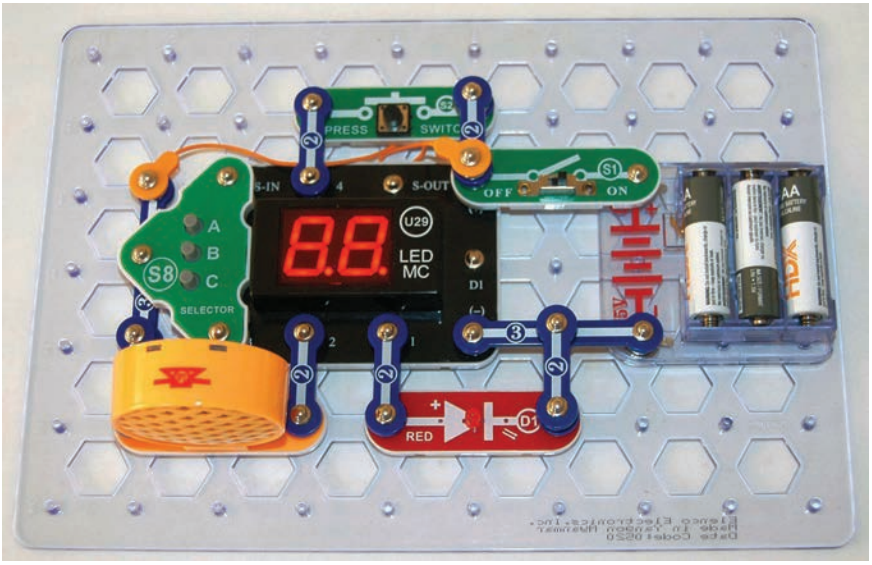


Figure 2: Snap Circuits Meets Mr. Morse. Based on components available in the Snap Circuits ARCADE kit, it will become a Morse code practise oscillator (CPO) and code trainer.

The entire Snap Circuits product line is designed to make it much easier for anyone to handle and identify parts by sight or touch regardless of age or physical ability, and to learn by building basic, intermediate and even advanced electric/electronic circuits that can also be interfaced with microcontrollers (specifically Arduino, PICAXE or micro:bit).

Elenco offers variety and versatility from their deluxe 750-in-1 projects kit with custom ABS case and custom cut foam component compartments (see Figure 3) to the less expensive 750-in-1 kit in a colourful cardboard box with plastic parts tray. Or start out with the less expensive 100-in-1 projects kit then add the separate 300, 500 and 750-in-1 plus computer interface add-on upgrades as you progress.

Figure 3: Snap Circuits Pro 750-in-1 w/Computer Interface in Custom Case. Buy the entire package or start out small and add upgrades kits later on.

Alternatively, there are even less expensive single subject snap kits to try first (see Figure 4). To help decide, you can download the Snap Circuits kit manuals and compare them to see which are applicable to your current/future electric/electronic or microcontroller STEAM learning needs for home, school, group or club use. Elenco has produced excellent, free to download student and teacher's Snap Circuits guides that go into far greater technical details in exploring and explaining various electric/electronic concepts than the come-with kit manuals can do.

Figure 4: Introduction to Electromagnetism Snap Kit. Inexpensive and basic but it can be "spiced up" by adding a simple Hall sensor (after physicist Edwin Hall), which detects and converts magnetic fields we can't feel or see into electric signals we can use as a proxy.

You can purchase most Snap Circuits kits from RobotShop Canada including replacement and ancillary parts, other Canadian hobby electronics retailers (ABRA, Sayal or Amazon) or direct from Elenco – albeit they charge a really hefty cross-border handling fee and only ship via UPS (add broker fee plus HST). But now that the border is open, those of us who live near a US border post office usually have inbound packages shipped there (often free shipping within the US, too) then drive down to bring them back into Canada.

Imagine; Design; Build – Elenco added Bluetooth capability to their latest microcontroller kits including a free smartphone app for coding and remote control using the powerful and versatile PICAXE 20M2+ microcontroller (by Revolution Education Ltd). But, for some reason, their Bluetooth enabled 20M2+ microcontroller "Discover Coding" and "Explore Coding" kits has only output ports only so it's a stunted processor, IMHO, because it can't accept real-world input from external analog/digital devices. However, it can control servo motors and this is used effectively in the 4-wheeled robotic rover "Code Journey" kit (see Figure 5). It can autonomously explore the "Martian" surface (backyard or schoolyard) carrying a smartphone, live-streaming video from the "red planet"; imagination today brings invention tomorrow.

Figure 5: Snap Circuits Microcontroller Rover Robotics is a really interesting area of engineering and exploration using a microcontroller to give autonomous artificial intelligence (AI) to robotic devices.

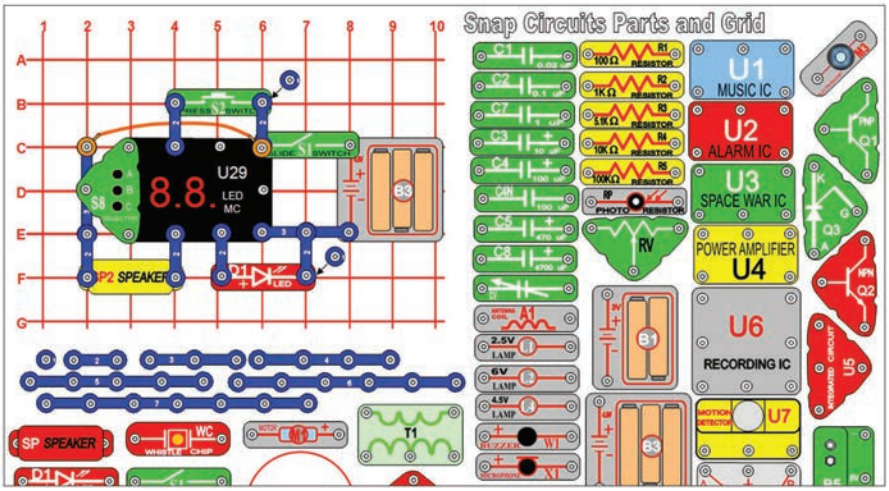


Figure 6: Snap Circuits ARCADE (Electronics and Microcontrollers). This stand-alone kit builds a three dimensional, microcomputer controlled "arcade" with some imaginative pre-programmed games along with various electric/electronic experiments.

And some "imaginers" may want to dream up new or enhance current circuits as well as post their designs for others. For this purpose, Elenco provides a "Designer Showcase" webpage as well as a free MS Word (only) "Designer Template" (see Figure 6). Virtual circuit simulation isn't possible so you'll have to build the actual proof-of-concept circuit then "tune for smoke" to see if it works or goes poof! Been there, done that.

The Black Box and Blockly –

Elenco developed a 3D "arcade" snap kit around a specially customized, pre-programmed PICAXE 08M2+ LED MC (part U29) microcontroller with user accessible output and input ports (Figure 7). There's a lot of neat "stuff" hidden inside its large, shiny black acrylic housing, and a younger version of me would have cracked it open to have a look "under the hood". But Elenco supplies the black box schematic plus the undocumented "spaghetti" source code (625 lines) so I put my hammer away, built some Arcade projects using U29, and reverse engineered the software to reveal the hidden "magic" behind its "tricks".

With reference to Figure 2, the Morse CPO snap gadget in waiting can't do much of anything except look good as electronic wall art until you code and load ("burn") a program into its runtime memory with the step-by-step

Figure 7: Morse CPO Designer Template Example. Once you create a design, it's easy to build the real-world, three-dimensional circuit.

Canadian Amateur Radio Hall of Fame Award Nominations

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".

Nominations must be prepared using the Canadian Amateur Radio Hall of Fame Nomination Form at: https://www.rac.ca/carhof/ Nomination documents may be submitted to the Board of Trustees by email or by regular mail, but the preferred method is by email in PDF format as these are much easier to process. Please send the PDF documents directly to the CARHOF Chair at: carhof@rac.ca

All nominations for Member of the Canadian Amateur Radio Hall of Fame must be received at RAC Headquarters at the address provided below by Friday, September 30. Late nominations will be considered in the next year. Once received, all handling shall be conducted in a secure and confidential manner.

For information visit: https://wp.rac.ca/carhof/

RAC Amateur of the Year Award Nominations

Through the Amateur of the Year Award, Radio Amateurs of Canada recognizes the outstanding contributions made by Canadian Amateurs.

It is the intent of the Board of Directors of Radio Amateurs of Canada to recognize the outstanding Canadian Radio Amateur of the Year, each year such candidates are nominated. 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 and received at RAC Headquarters by **September 30** for consideration for the current year. Please send Nominations to:

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

For more information please visit:
https://www.rac.ca/rac-amateur-of-the-year/

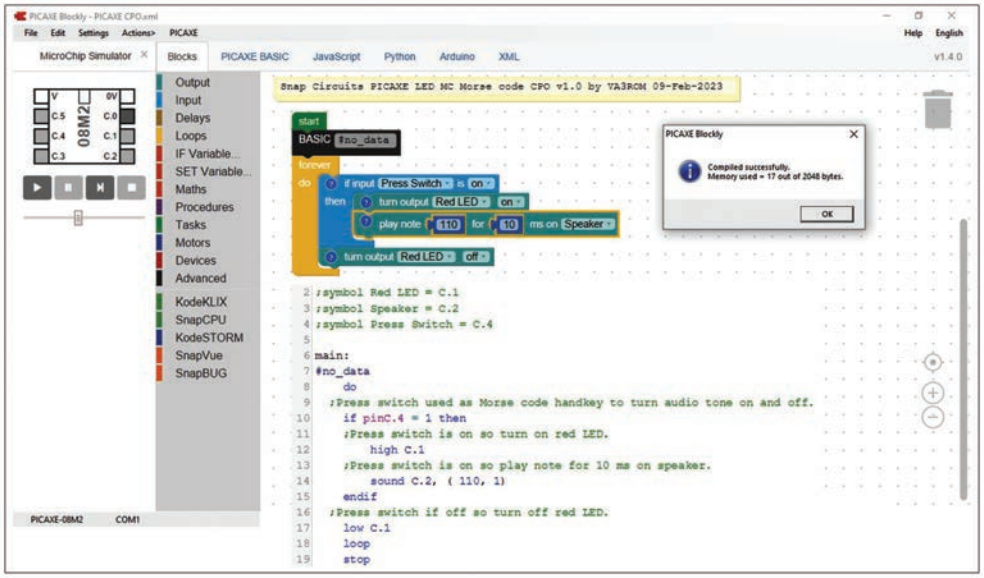


Figure 8: PICAXE Blockly Coding Example. Only a few blocks are needed to code a simple Morse CPO. Blockly can also convert code blocks into the equivalent PICAXE BASIC line code.

instructions on how to do what you want it to do. An old programmer's axiom "garbage in, garbage out" (GIGO) causes problems for novice coders when learning any computer language syntax (grammar). There a graphical object-oriented programming (OOP) platform to help mitigate this problem called "Blockly", which was developed by a team of Google programmers in 2011. PICAXE Blockly is Revolution Education Limited's variant for their amazing PICAXE microcontrollers (see Figure 8).

There are also standalone computer and internet (cloud) based versions for the Arduino microcontrollers.

Blockly makes microcontroller programming a snap because it can check your code for errors ("bugs") plus run virtual world input/output simulations.

Figure 9: Snap Circuits and LEGO Bricks. The Bric Structures kit combines basic structural engineering with electronics.

For the AFOL in All of Us –

For adult fans of LEGO (AFOL) Elenco created a special "Bric2Snap" adapter and LEGO Bricks base plate supplied with the Bric: Structure Kit (see Figure 9).

You can now easily interface many LEGO Brick builds with Snap Circuits to add voice, sound and light effects and even microcontroller robotics using servo motors to bring static builds to life.

My Final

Part 2 continues on with using the Snap Circuits Arcade plus a few other nifty snap kits – 73

References and Resources

ABRA Electronics – https://tinyurl.com/mr2ynaxb

Blockly for Arduino (web based) – https://tinyurl.com/5n85z3nc

Blockly for PICAXE (computer based) – https://tinyurl.com/4m4k2rpc

Blockly for PICAXE (web based) – https://picaxecloud.com

LEGO – https://www.LEGO.com/en-ca

micro:bit – https://microbit.org

PICAXE (Revolution Education Ltd.) – https://rev-ed.co.uk

Robotics Education – https://robotixeducation.ca

RobotShop – https://ca.robotshop.com

Sayal Electronics – https://shop.sayal.com

Snap Circuits (Elenco) – https://tinyurl.com/2p84je9r

Snap Circuits Designer Showcase – https://tinyurl.com/bddsh8m5

Note: The Designer Template's instructions seem to be for pre-Word 2000 and don't work with my Word 2003. I've made changes to the instructions to be in line with how Word 2003 and hopefully later versions of Word handle graphical objects. The revised Designer Template is included with this article's supporting (zip) files available on my Radio Magic webpage.

Snap Circuits e-Learning (PDF) Guides – https://www.elenco.com/e-learning

Snap Circuits Product Manuals – https://www.elenco.com/manuals

RAC Regulatory Roundup

Field Day is Coming: June 24-25

Dave Goodwin, VE3KG
RAC Regulatory Affairs Officer

For many Amateurs and Amateur Radio clubs one of the biggest events of the year will soon be upon us. Field Day (FD) is a combination campout, BBQ, social gathering, emergency communications exercise, public relations opportunity and, most importantly, an operating event. On the air, it feels a lot like a contest. It takes place from 1800 UTC Saturday June 24 to 2100 UTC June 25.

For the general public Field Day is often their first exposure to Amateur Radio. They are often invited to try making a radio contact under the direct supervision of a qualified Amateur. That supervising Amateur is the "control operator".

For many new Amateurs, Field Day is their first exposure to a Multi-Operator station and may be their first opportunity to make a contact on the HF bands. Most of the action on Field Day takes place on the HF bands. So, what if you hold only a Basic certificate? A Basic certificate confers privileges only on Amateur frequencies above 30 MHz. Can a Basic Amateur operate on HF when joining the club's Field Day operation?

If a Basic Amateur wants to operate beyond his or her privileges, they must be supervised by a "control operator" who has those privileges. That doesn't mean the supervising operator has to press the PTT, but the supervising operator should be present and able to exercise control of the transmitting functions. Trusting an unqualified or less-qualified person from a distance isn't good enough. If faced with a choice between supervising the BBQ at Field Day and supervising less-qualified operators, the responsible "control operator" must choose the less-qualified operators.

The choice of call sign is important. One major purpose of a call sign is to identify the person responsible for the operation of a transmitter. If someone holds a Basic certificate, they cannot be responsible for the operation of a transmitter below 30 MHz. A station operated with the call sign of a Basic certificate holder will therefore be limited to operating only on Amateur frequencies above 30 MHz.

A club call sign is registered to a trustee. All club station trustees must hold an Advanced qualification, therefore the club station may be operated with all Amateur privileges. That doesn't give an unqualified person or a less-qualified person the latitude to do whatever they want when using a club call sign. They are still bound to the privileges they have earned, and must be supervised by an appropriately-qualified "control operator" when operating beyond the privileges they have earned.

Our regulations are not highly elaborate, so they don't cover every possible contingency. Field Day or other multi-op situations are not free passes for unqualified people or less-qualified people to do anything they want. They are opportunities for newer, less-qualified Amateurs and more senior, more highly-qualified Amateurs to share experience and knowledge.

Our Exams Need Updating

First, a bit of review: there are currently three Amateur Radio examinations in Canada:

- The Basic Exam
- The Advanced Exam
- The Morse Code Exam

Passing the Basic exam in the essential first step. A candidate cannot go on to take the Advanced or Morse Code exams unless they have first passed the Basic exam. Additional privileges come with passing the Morse Code and Advanced exams.

The Canadian Basic certificate allows very extensive privileges. The Basic exam is a very steep first step into Amateur Radio, much steeper than similar exams in most other countries. Each Basic exam contains 100 questions. The exam is structured so that each candidate will receive one

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question from each of 100 specific topics. Within each topic area, there are up to 11 possible questions. The Basic question bank has approximately 1,000 questions in total.

The broad lines of the Basic exam are based on a recommendation of the International Telecommunications Union (ITU) for the minimum content of Amateur Radio exams. You can see ITU-R M.1544 "Minimum Qualifications of Radio Amateurs at:

https://www.itu.int/dms_pubrec/itu-r/rec/m/R-REC-M.1544-0-200108-S!!PDF-E.pdf

There isn't a lot of detail in that document and each country implements the recommendation in its own way.

We can look to another document for the inspiration for the Canadian Advanced certificate exam. The European Conference of Posts and Telecommunications (CEPT) has a highly detailed recommendation for the content of the Harmonised Amateur Radio Examination Certificate (HAREC). The Canadian Advanced is not officially equivalent to a HAREC, but it is recognized as "equivalent enough" that visiting Canadian Advanced Amateurs may operate in CEPT countries with the same privileges as someone holding a HAREC-compliant Amateur licence. You can find the HAREC syllabus at the link provided below.
See Annex 6, which starts on page 12.

https://docdb.cept.org/download/e4b9c459-5726/TR61-02.pdf

The Advanced exam has 50 questions drawn from 50 topic areas. Each topic area has a maximum of 11 possible questions. There are over 500 possible questions in the Advanced Question Bank.

You can see the distribution of topics in Innovation Science and Economic Development (ISED) Canada's "RIC-3 – Information on the Amateur Radio Service". Section 5.1 lists the 100 topics of the Basic exam and 5.3 lists the 50 topics of the Advanced exam. The actual question banks are also available on ISED's website.

Problems with the Exams

Currency: Amateur Radio is in constant development. Techniques, practices and technology are constantly evolving and emerging. In a very few years, Software Defined Radio (SDR) has moved from experimental to the mass market. Five years ago, FT-8 did not exist but now it has become the most popular digital data mode. Digital voice technologies have become more widespread. Remote control of stations is much easier now than just a few years ago. Our current Question Banks have not kept pace with some innovations.

Quality: Some of the questions in the banks are poorly-worded. Some of the right and wrong answers are poorly-written or poorly-translated. One observer figured out that most of the longest answers in our multiple-choice exams are the correct answers. Some questions would be best used on trivia nights, some are outright nonsense, and others are irrelevant to Amateur Radio.

Volume: The challenge in updating the exams is that it's easier said than done. ISED, RAC and RAQI have worked well in the past to revise the exams from time to time. ISED makes regular incremental changes to the Question Banks. Reviewing and updating 1,600 questions is an enormous task. Doing so with consistency for quality is very hard.

RAC Examination Standards Committee

Last year, RAC established a new standing committee: the Examination Standards Committee (ESC) also known as the Comité des normes d'examens (CNE). The ESC-CNE mission is to develop specific recommendations to improve the quality of the Basic and Advanced Question Banks. RAC will then bring these recommendations to ISED who will decide what, if any, changes to make to the Question Banks.

The ESC-CNE's members are all members of RAC who are either instructors in Amateur Radio courses or ISED-Accredited Examiners (AEs). The committee has 20 members from nine provinces. In addition to their Amateur Radio qualifications, many of the 20 members bring professional expertise: we have two university professors, several people who have been instructors or evaluators in professional development and training, and one with excellent professional skills in the development of multiple-choice question (MCQ) exams.

In January, RAC's ESC-CNE held its first meeting. We chose to prioritize the Basic Question Bank. This is the most-frequently-written exam and it affects the greatest number of people. We divided the 100 topics amongst us and undertook a comprehensive review of every single question and every single answer, including the wrong answers. One single topic could include 11 questions and 44 possible answers. Each member of the committee took at least five topics. With five topics, each committee member is looking at no less than 55 questions with a combined total of 220 right and wrong answers.

In our work, we are guided by best practices used in MCQ examinations in technical and professional environments. Both the right and wrong answers must meet a standard. The wrong answers have to be credible, even if incorrect. This ensures that the exams truly are a test of knowledge.

Within the ESC-CNE, we have a sub-committee of three people whose mission is to ensure the consistency of approach throughout the exam. The ultimate product will be a set of recommendations to ISED. These recommendations could find that many questions and answers can remain exactly as they are. Others may require only minimal modification, and still others may have to replaced in whole or in part.

Ultimately, it is ISED who will decide what, if any, changes to make. The general syllabus for the exams is set in RIC-3, and we may make some recommendations for change to that syllabus.

Members of the Committee

The committee consists of:

Chair: Dave Goodwin, VE3KG

Members:

- Al Penney, VO1NO/VA1AVR
- Frank Davis, VO1HP
- Art Gunn, VE9BP
- Brent Taylor, VY2HF
- Yvon Hachey, VE1VON
- Fred Archibald, VE1FA
- François Daigneault, VE2AAY
- Gaétan Trépannier, VE2GHO
- Michel Dumais, VE2SIG
- Dave Newcombe, VE3WI
- Rod Clifton, VE3ISO
- Mark Richardson, VA3OBO
- Geoff Bawden, VE4AE
- Franis Pitre, VA6FP
- Don Tolson, VE7ATJ
- Frank VanderZande, VE7AV
- Peter Driessen, VE7AB
- Tony Fonseca, VA7TF
- John Schouten, VE7TI

Fred, VE1FA, François, VE2AAY and Dave, VE3WI, form the Review Sub-Committee.

Our plan is to deliver our recommended changes to ISED later in 2023.

This presentation will be in a single, comprehensive document for each of the Basic and Advanced Question Banks.

ISED will decide if, how and when to implement our recommendations.

Stay tuned to this column for more information as time progresses.

Countdown to World Radio Conference (WRC-23)

Report on ITU-R Conference Preparatory Meeting | Geneva, March 27 – April 6, 2023

Paul Coverdale, VE3ICV
RAC Special Advisor
World Radiocommunication Conference

Several months prior to the World Radiocommunication Conference (WRC), a Conference Preparatory Meeting (CPM) is held. The aim of a CPM is to prepare a consolidated report for WRC, based on the outcome of studies addressing WRC Agenda Items (see below) which have taken place since the previous Conference.

Radio Amateurs of Canada participated in this meeting under the auspices of our regulator Innovation Science and Economic Development Canada (ISED). Amateurs were also included in the delegations from Australia, Brazil, Netherlands, United States, Japan and Malaysia. The International Amateur Radio Union was also represented.

Agenda Item 1.12:

"to conduct, and complete in time for WRC 23, studies for a possible new secondary allocation to the Earth exploration-satellite service (active) for spaceborne radar sounders within the range of frequencies around 45 MHz, taking into account the protection of incumbent services, including in adjacent bands"

The concern to Amateurs over this agenda item is possible spillover of energy from the radar sounder into the lower end of the 6 metre Amateur band. Geographic and temporal operational restrictions on these radar sounders already provides a low likelihood of them causing interference in practice, but there will also be a restriction on the power flux density (pfd) they can produce at the earth's surface which will provide additional assurance.

From left: Flávio Archangelo, PY2ZX; Jon Siverling, WB3ERA; Dave Sumner, K1ZZ; Paul Coverdale, VE3ICV; Hans Blondeel Timmerman, PB2T; Yudi Hasbi YD1PRY; and Dale Hughes, VK1DSH

Paul Coverdale, VE3ICV, at the ITU-R Conference Preparatory Meeting.

Agenda Item 9.1b:

"Review the amateur service and the amateur-satellite service allocations in the frequency band 1240-1300 MHz to determine if additional measures are required to ensure protection of the space-to-Earth segment of the Radio Navigation Satellite Service (RNSS) operating in the same band."

The concern to Amateurs over this agenda item is possible future restrictions to Amateur operation in the 23cm Amateur band (secondary allocation) due to the potential for interference with RNSS (primary allocation).

Guidelines are being finalized which are intended to assist Administrations and the Amateur and Amateur-Satellite Services to ensure the protection of the RNSS (space-to-Earth) in the frequency band 1 240-1 300 MHz, taking into account operational data which indicate a relatively low population of actively transmitting stations, and operating characteristics which are neither of long duration nor persistent in nature.

Next Steps

A more complete report on the Conference Preparatory Meeting will be included in the next issue of TCA. The World Radiocommunication Conference (WRC-23), where final decisions will be made on all of the agenda items, takes place from November 20 to December 15, 2023 in Dubai, United Arab Emirates.

There are two more meetings of WP5A planned prior to WRC-23 to complete the remaining technical work. RAC will coordinate with the IARU and remain engaged to ensure that the documents finally agreed to be taken to WRC-23 provide as favourable a position as possible with respect to agenda items impacting Amateur Radio.

Stay tuned to the RAC website and TCA for future updates.

The Bouvet Island DXpedition 3Y0J

"The most remote uninhabited place on Earth" | Clublog #2 Most Wanted Entity

Cezar Trifu, VE3LYC

Located about 1,900 kilometres from the South Sandwich Islands, 2,500 kiometres from the southern tip of Africa, and 1,700 kilometres from Antarctica's coast, Bouvet is a lone volcanic island claimed by Norway in 1928. Discovered in 1739 and later named for Captain Jean-Baptiste Charles Bouvet de Lozier, it lies about 500 kilometres south of the Antarctic Convergence, within the cold current surrounding the icy continent.

Cone-shaped, with a radius of almost four kilometres, the island is 93% covered by glaciers and constantly battered by intense storms. A protected nature reserve since 1971, Bouvet is often nicknamed the "most remote uninhabited place on Earth". No permit is needed to go onshore and overnight, as long as the enacted guidelines are followed.

The National Polar Institute of Norway installed in 1977 a weather station on the west side of the island and various staff and associates operated in the HF bands during work visits. Such activities took place in 1977, 1978, 1997, 2000/01 and 2007/08, resulting in 20,773 QSOs, 80% of which (or 16,637) were logged by Chuck, N4BQW, as 3Y0E. The first DXpedition was organized in 1989/90 by LA1EE, LA2GV, JF1IST, F2CW and HB9AHL, who made 47,558 contacts as 3Y5X. Two other groups unsuccessfully attempted to reach Bouvet in 2018 and 2019.

Our Project

Bringing Bouvet on the air was picked up in 2020 by Amateur Radio DXpeditions (ARD), established in Norway by Ken Opskar, LA7GIA, Rune Øye, LA7THA, and Erwann Merrien, LB1QI, who became co-leaders of the 3Y0J project. The team also included: Adrian Ciuperca, KO8SCA, Axel Schernikau, DL6KVA, Bill Straw, KO7SS, Dave Jorgensen, WD5COV, Gjermund Bringsvor, LB5GI, Mike Crownover, AB5EB, Otis Vicens, NP4G, Pete Meyer, N0FW, and I (Cezar Trifu, VE3LYC).

Since the grounds of the weather station were off limits due to regulations, a careful analysis of the available photographic material led to the decision to attempt landing at Cape Fie, on the southeast side of the island. Cape Fie also appeared to be the only safe site, outside the weather station area, to set up camp and overnight.

The project's cost was $705K, of which $450K was allocated to retain the services of *Marama*, a 101-foot yacht, and its crew. The team contributed $240K, while the remaining part was secured through fundraising from donations made by numerous Amateur Radio groups and individuals. Team members incurred further personal expenses including airfare, accommodation, camping gear and side trips to Norway that totalled about $60K.

On the Way to Bouvet

On January 12, 2023, the team met in London, England from where we flew on a military supply plane to Port Stanley in the Falkland Islands. There, Captain Olivier and his crew Charles and Nina welcomed us on board the *Marama*.

Nicknamed the "warehouse manager", I'm working with Axel (left) to decide how food is packed.

The project was based on a four-step, phased camp built-up on the island. Most of the equipment and dehydrated food were packed in sealed drums, boxes or bags, each of them bearing a specific number in the sequence, and shipped from Norway by ocean cargo, in mid-September 2022.

Everything had to be unloaded from the container, items brought with us on the plane packed in the right drums or bags, and then all moved to the boat for storage during the voyage. Work on the shore was well coordinated, but things went slower on the boat. Each item was stored based on a loading plan so that it could be retrieved easily. Then, everything had to be well strapped to avoid shifting during sailing, and some of this work was redone several times to obtain the desired results. Meanwhile, the Captain alerted us to a storm developing in South Georgia. He decided to give it time to recede by delaying our departure a bit, and by also taking a slightly southern route. We lifted the anchor in the afternoon of January 17. A few days into the voyage, we saw several icebergs. The boat's radar system was able to spot the bigger ones, but it was difficult to find the smaller ones though fog or at night. To avoid them, Captain Olivier adjusted the course to the northeast, sailing through a relatively calmer zone between two stormy weather fronts. Safety first!

Almost all of the team members experienced seasickness to various degrees. Most of them managed to get used to it and were able to spend time socializing and serving meals. We took turns for watches, in pairs, on duty every 15 hours for one hour and a half. Steering the boat in high wind was challenging so much so that Captain Olivier decided that during the second week at sea our team would only do daylight watches.

Between January 23 and 30, we operated maritime mobile using our home call signs. We used a 20 metre dipole antenna, tuned to various bands between 10m and 30m using the Elecraft K3S internal tuner. As such, we made 5,588 QSOs from 17 different grid squares with 2,707 stations.

Finally, on the evening of January 30 the *Marama* anchored, past sunset, off Bouvet. We were all very excited.

Zodiac Landing

Everyone was up at 5 am the next morning and worked in groups to prepare the components associated with the first step of the camp build-up plan. Ken and Peter went scouting the shore from the sea, driven by Charles in one of the boat zodiacs, aiming to attempt landing if possible.

Before long, Ken confirmed on VHF that they landed safely and no trad climbing – which relies on natural features and placed gear (and removable gear) – was required to reach the cliff. He then asked for Mike and Dave to come over and they landed by zodiac.

On the boat, we prepared the ladder needed to reach above the beach, which Charles transported to the surf, from where he threw a rope allowing those on land to pull it over. Things were progressing well when we hit a snag. It was critical to use our larger zodiac, stored inside the lazarette, but it was too risky to open it in the high ocean swell and waves. It took at least six hours to put it on water and the boat crew worked hard to ensure that the land team received it before darkness.

The long morning drizzle stopped later on, but the land team had minimal dry clothing and spent the night tucked in a ravine that offered some protection against the wind. Still, they had to walk from time to time to warm themselves up. Next day, they were delivered clothing, sleeping bags, food, water and one of the large tents. Unfortunately, they couldn't secure the tent and its anchors which were lost at sea. They did receive though a small tent for two and a special protective tarp for outdoor sleep, in which they spent the second night.

The need to regroup and rethink our strategy was apparent, but the land team kept working on Day 3 to redesign the loop system. Our original unmanned landing system consisted of a rope moving freely between a buoy anchored at sea, and rings attached to two anchors on shore, placed deep into the sand. As the sand was hit and displaced by the surf, those anchors were ineffective and one of them pierced the zodiac, which had to be patched on the beach. As such, the sand anchors were replaced with several bolts drilled into large rocks to secure the rope on shore.

The land team returned to the boat in the morning of Day 4 and then sat down with the rest of the team to discuss how best to continue.

The Plan

The new plan consisted of transporting to shore the operators, equipment and supplies on the loop system. A storm was in the forecast so we had to do this quickly and set up camp. The decision was then made to scale down the equipment to a minimum. The radio gear would consist of two transceivers, several vertical and dipole antennas, with three fiberglass and one aluminum masts.

A Honda 2kW generator would be used to power the transceivers, but to keep the fuel consumption low there would be no amplifiers. For camping we would bring one tent, mats, a heater and two paraffin stoves for boiling water, one for spare. Aside from the water and food supplies, we also decided to bring 50 litres of gas and 20 litres of paraffin. We aimed to bring additional components over time, once the camp was built.

Eight operators were ready to land, who were divided in two groups of four. Peter would be driven by zodiac to the buoy, about 100 metres from shore, after which he would check and tighten up the loop system. Then, he would pick up the first group of operators – Ken, Mike, Erwann and Bill – and bring them to the buoy, where they would jump in the water in survival suits and wearing harnesses, 10 metres apart.

Each one would be attached to the loop line with a carabiner, and would then pull himself hand over hand to shore. The suit would keep the body warm and floating, preventing the water from reaching inside clothing.

At the beach, each operator would stand up and hold well to avoid being pulled back at sea. The second group – Rune, Axel, Adrian and I – would follow the same procedure.

Setting Up Camp

After all operators were safely on shore, Peter then brought various supplies, camp and radio components to the buoy, and attached them to the loop line, while some of the operators pulled them to the beach, and others took them from there to the cliff.

With all the materials on shore, four operators went to install the tent up the hill. It took a few hours, under a 40-knot wind, to drill holes and install rebar anchors a half-inch in diameter, secure the frame, and place lots of rocks on the tent's skirt to protect the tent from the elements.

We finished the installation under pouring rain and darkness, exhausted and soaked wet. A hot meal quickly improved our mood, after which we prepared the mats and sleeping bags. The tent was barely sufficient for nine people so it took a while to hunker down, but in the end we all fell asleep.

Operating

The next morning, half of us worked on setting up three vertical antennas, while the other half on reinforcing the tent and housekeeping. We first installed a 15m vertical antenna, followed by a 12m one using fiberglass masts, after which we put up a 30m vertical using an aluminum mast. The next day, the 12m vertical was replaced by a 17m one, since this band offered a much wider propagation window.

We ran two-hour shifts and each operator had to decide what mode to use during his shift. At daytime, we normally operated shifts on 15 and 17m, but at night only on 30m. All operators ran CW, but just five and six of us ran SSB and FT8, respectively. The pile-ups were as wide as 50 kHz in SSB and 30 kHz in CW. With simple antennas and only 100 watts in SSB/CW, our signals must have been weak, which often required us to repeat the copied call signs several times. Despite intense intentional interference, jamming and tuning on our frequencies, as well as our call sign being pirated, we remained composed, trying to give out as many contacts as possible.

The gas generator operated well during daytime, but ran into problems once the temperature dropped at night. Some water must have made it into its reservoir, froze in the cold, the little crystals impeding its normal running. Our efforts to clean the carburetor were unsuccessful, which prevented us from operating during the last four nights on the island.

Life on the Island

We spent 10 days on Bouvet Island, withstanding two consecutive storms with wind gusts of up to 55 knots. Tent anchors, antenna guys and radials were periodically checked to keep the tension balanced. Other than our sleeping bags, all our personal belongings – as well as tools, supplies and toiletry – were placed outside the tent in sealed drums or under a tarp. Those not on shifts took turns with housekeeping, but also enjoyed strolling around, hiking the volcanic landscape, and taking close photos of the chipstrap and fur seal colonies. Individual macaroni, gentoo and king penguins could also be encountered, as well as a variety of birds, among which the skuas and giant petrels were most common.

The ocean swell remained high and was sometimes more than 15 feet high. A large portion of the glacier broke off the cliff in chunks and landed on the beach, altering the landscape. The temperature oscillated between 3°C and 5°C during the day, higher when the sun shone through the clouds, and was –3°C to –5°C at night. Below the camp, a rapid stream of glacier water would often be found partly frozen in the morning, on each of its rocky shores. In some mornings, everything was also covered by a thin layer of snow.

A Changing Forecast

The weather forecast indicated that a few days after the storms the swell would decrease to 6.5 feet, offering a good window for transports to and from the island. It was important to decide if the upcoming window should be used to bring in more items – including a diesel generator, two more transceivers, two amplifiers, a few more vertical antennas, food and water supplies, as well as diesel and paraffin – or to pack up everything and leave.

All team members were asked to express their opinion and we ended up evenly split between those favouring to bring in more equipment and continue the operation until the next window of extraction, and those opposed. The latter members were concerned by the difficulty of bringing more equipment, mainly the 108 kg diesel generator, as well as the uncertainty and delay of a next extraction. The components already in the camp weighed 670 kg, plus 70 kg of supplies brought later on. The items and supplies considered for the continuation of this project were estimated at 500 kg.

Taken all aspects into consideration, the co-leaders decided to terminate the radio operations and takedown the camp. As such, radio transmissions ended on February 13 at 18:51 UTC, and next morning everything was packed up and transported down to the beach. The surf was low and allowed us to beach the zodiac several times, taking everything and everyone back to the boat.

The Return Home

After reorganizing the cargo, we sailed to Cape Town, where we docked on February 27. This marked the end of a long voyage and we were left with a range of feelings about this challenging project. Apart from being thankful that everyone was healthy, it was difficult not to be happy that we succeeded to bring Bouvet on the air, making more than 18,000 contacts and more than 8,600 Amateurs happy in the process. However, we couldn't really be satisfied with the results in terms of number of contacts, which were well below expectations.

We proved that safe landing is possible at Cape Fie, despite the continuously changing shoreline. Our planning allowed us to bring along the materials and tools necessary to extend the landing window by using a reliable loop line. Needless to say, we also had the advanced knowledge and experience required to adapt to the ever-changing local conditions.

As expected, transporting all the materials from the beach to the camp site, on highly inclined and rugged slopes, demanded physical fitness. Moreover, such a project requires endurance and resilience from all the participants. This is why it is important for the team embarking on such remote projects to include more people with proven experience in extreme conditions and survival skills. These qualities and skills might be just as important if not more so than having good technicians and operators.

Our Thanks

We owe a great deal of gratitude to our Lead Sponsor, NCDXF, along with almost 100 other groups and 2,000 individuals who generously supported this project. Our thanks also go to all corporate sponsors. You can find the complete listings on our website at http://www.3Y0J.no.

We remain indebted to Stig Lindblom, LA7JO, Peter Lund, LA7QIA, Morten Kvernmoen, LB8DC, and Max George, NG7M – who let us use their transceivers and amplifiers – and to our radiopilots Morten Nordby, LA3MHA, Steve Hass, N2AJ, Rich Seifert, KE1B, Siso Hennessey, HK3W, Lee Moyle, VK3GK, and Champ Muangamphun, E21EIC

I wish to express, on behalf of the entire team, our genuine and high appreciation to Peter Madej, whose hard work and dedication provided us with an invaluable logistical support. Thanks go also to Olivier for his expertise, and to Charles and Nina for their skills in manouvering the zodiac. Nina's cooking talent and pleasant smile contributed to making our very long voyage enjoyable.

Cezar Trifu, VE3LYC, is a passionate DXer and expeditioner, having operated from many new and rare Islands On The Air (IOTA) groups. He is serving on the Board of IOTA Ltd., and is member of A1 Op Club, CDXC, FOC, RAC, and RRC.

The Statistics

We made 18,623 QSOs, of which 8,657 (46.5%) were with unique stations from 133 DXCCs. A total of 11,750 (63.1%) contacts were in CW, 2,229 (12.0%) in SSB, and 4,644 (24.9%) in FT8. Band statistics are provided in the table below and reveal that almost 95% of all contacts were on 15m, 17m and 30m.

Band	QSO	Percentage
10m	666	3.6
12m	177	1.0
15m	6156	33.1
17m	6785	36.4
20m	229	1.2
30m	4610	24.7

Continental distribution of contacts shows that the propagation conditions favoured Europe on 15m, Asia on 17m, and North America on 30m. The relatively lower percentage of contacts on 30m was due to the generator problems on several nights.

Continent	QSO	Percentage
Africa	311	1.7
Asia	6623	35.6
Europe	7697	41.3
North America	2900	15.6
Oceania	372	2.0
South America	720	3.9

A total of 100 VE stations (ranked #14 among the 133 DXCCs) made 175 contacts (ranked #17), of which there were 32 on 15m, 48 on 17m, 2 on 20m, and 93 on 30m.

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Patrick Kierans, VE3KPA
R King, VA7DX
Joshua King, VE7KXZ
David Kingsland, VE3MDX
Glen Kinner, VE5GHK
Erland Kirste, VE7EFK
David Klatt, VE5GN
Boris Kohut, VE4BG
Brian Konopski, VE4KON
Larry Konowalchuk, VA4LMK
Gordon Kosmenko, VE6SV
Mersudin Kozo, VE2KME
Luc LaCasse, VE2LLX
Leslie Laffoley, VE9ASN
David LaHay, VE7FVW
Ken Laker, VE3LRK
Robert Laramée, VE2KZW
Don Latter, VE7DIL
Derrick Lau, VA3LGT
Al Law, VE3FZ
Samuel Leach, VO1CBL
Gregory Leck, VA2LCK
Francis Leclerc, VE2FLP
John Lediett, VE3FVC
Barrie Lennox, VE3AOI
Stan Leschinsky, VE3TW
Ritchie Leslie, VA7RLX
Joel Levis, VE3CJJ
Trevor Lien, VE5TDL
Carolyn R. Liggins, VE1CRL
David P. Lopetinsky, VE6ELL
John Lorenc, VA3WM
Peter Lower, VE3KWM
Gordon Lowick, VE7YMJ
James Ludwar, VE6JWL
Eric Lusk, VE7EMI
Erin Lutz, VE5EML
Ancil Lynch, VA3FIP
Paul Lynott, VA3PNL
Jory Maccan, VE6JBM
Charles MacDonald, VA3CPY
Richard MacDonald, VA1UAV
Glenn MacDonell, VE3XRA
Ian MacFarquhar, VE9IM
Mike MacGregor, VE3QMM
Darcey MacInnes, VA7DKY
John MacKay, VE7EEX
Robert MacKenzie, VA3RKM
Neil Macklem, VE3SST
Pierre Mainville, VA3PM
Alan Mallett, VA7AWM
John Marn, VA3JSM
Bruce Marshall, VA6BRM
Dan Martin, VE6GDM
Darie Marza, VA3HFC
Gregory Mason, VE4AMN
Marc Masson, VE2MMH
Gabriel Mazzeo, VA3CWT
Phil McBride, VA3QR
Don McCallan, VA3GFD
Duncan McCansh, VE3OM
Dwayne McCormick, VE3CQQ
Hugh McCully, VE3AYR
Aaron McDonald, VA6LIT
Brian McDonnell, VA3CBG
Doug McDougall, VE3DGY
Leonard McDougall, VA5MCD
Ian McEachern, VA7IM
Steve McEdwards, VA3TPS
John McGrath, VE3JPW
Ken McIntosh, VA7KBM
Andrew Allan McKay, VA4XRY
David McKinlay, VA3IR
L. David McLennon, VO1LM
Grant Mcsorley, VY2GAM
Martin Menard, VA3EIC
Robert Millar, VE3LNV
Roger Miller, VE3ROG
Ken Miller, VE3KQR
Eric Mills, VE1AST
Michael Milosevic, VE3EQM
Vladimir Milutinovic, VE3JM
J.T. Mitchell, VE6OH
Andrew Mitchell, VA3CW
Paresh Mody, VE3PQX
Lenard Moen, VA3HBR
Marcel Mongeon, VA3DDD
Greg Moore, VE7GMQ
Bob Morton, VE3WY
John Moylan, VA3YOM
Michael Mucciaccio, VA3MMU
Wilf Mulder, VE7OHM
Gordon Murray, VE3JSJ
Bruce Murray, VE6BRZ
Darrell Murray, VE6DRZ
Mykhailo Mykhno, VE7WOA
Robert Nash, VE3KZ
Jim Nelson, VE6ACR
Wayde Nie, VA3NCA
Chris Nielsen, VA6JCN
David Niemi, VA3NIE
Allan Niittymaa, VA3KAI
Ken Niles, VA3YYK
Brian Nilsson, VE3SLB
Richard Norwood, VA3EJN
Andrew Norwood, VE3YTP
Mark Nowicki, VE3MNA
Arron Oberman, VA7ZZA
Keith Olson, VE4VO
Alex Opotchanov, VE6ALO
Bernhard Osthoff, VE6JWG
Jeff Page, VA3OBJ
Phil Parker, VE3GFX
Gordon Passmore, VA7GAP
Brad Paterson, VA6AKF
Bruce Patten, VE7PTN
Cleve Patterson, VE7NKD
Bruce Patterson, VE7XBP
Tony Pattinson, VE2KM
Kevin Pausche, VE7KWP
Colin Pavey, VA3FP
Irmgard (Geddie) Pawlowski, VE3CJX
Bruce Payan, VE7CGN
Tim Pekkonen, VE3UO
Steve Pengelly, VE3STV
Karen Peori
Raymond Perrin, VE3FN
Brent Robert Petersen, VE9EX
Lars James Petersen, VE9LJ
Jim Pierce, VA1YZX
Richard Pierik, VE1RPX
Dale Pilsworth, VA6OK
Eric Pinkerton, VE3EPN
Bruce Poirier, VA3WBO
Gary Pollock, VE1GMP
Gregory Popelas, VA3CBN
Peter Potjewyd, VE3WYD
Terry Potts, VE3TEP
John Potts, VE6JWP
Scott Prior, VA7LMP
Tim Pychyl, VA3PYC

https://www.rac.ca/maple-leaf-operator/

Theodore Arthur Rachwal, VE9AQM
Victor Rowell Radovan, VE4RWL
Kolya Ramirez-Hughes, VE5KE
Paulo Ranzani, VE8PR
Norm Rashleigh, VE3LC
Tony Ratcliffe, VE6AER
Bryan Rawlings, VE3QN
William Redmond, VA3WBR
Steve Regan, VA3MGY
David Reid, VE6BIR
Gilles Renucci, VE2TZT
Guy Richard, VE2XTD
Earl Richardet, VE7QJ
Randall Risto, VE6RND
Simon Rizzardo, VE7RIZ
Jeff Robb, VE3MDC
Ted Robb
William Robinson, VE3ARE
Donald Robinson
J. Mark Robinson, VE3JMR
David Rogers, KB9YYM
David Rosenfeld, VE3BAK
Allan Ross, VE7WJ
Shaun Rossi, VE3FNI
Louise-Michelle Rouillard, VA3AQV
Eric Rouse, VA3FYB
Don Rowed, VE3KII
Dave Rowlinson, VE3ZDR
Cary Rubenfeld, VE4EA
Denis Rule, VE3BF
Rick Ruschmeier, VE3IMN
Ken Rusnak, VE3EFZ
Robert (Bob) Ryll, VA7RYL
Ted Rypma, VE3TRQ
Bunty Saini, VA3KBM
Mason Salmon, VE7PMD
Edward Samborski, VE3TAS
Dan Sanchez, VE7EOZ
David Sangwin, VA3NSC
Anthony Santen, VE3EPE
Kim Schaffer, VA3ZXC
Mark Schellenberg, VE7JWU
Bill Scholey, VE7QC
John Scott, VE1JS
Don Scott, VE7DLD
David Scott, VE3ZZU
Ian Seddon, VE3HUT
Zachary Seguin, VA3ZTS
Gord Settle, VY1GS
Gordon Sharkey, VE7RYE
Ian Shaw, VE3IJS
Harold Shepherd, VE3HSB
Pietra Shirley, VE4PXL
Paul Shiryaev, VA3PAW
Joseph Shynn, VA3GOC
Kevin Sidlar, VA3SID
Andre Silveira Santos de Souza, VA2HAS
Antonio Simonetta, VE3WZM

Glenn Simpson, VE3GTS
Ron Sinclair, VE3JRN
Kirk Sinclair, VA3KXS
Jack Sinclair, VA3WPJ
Erik Skovgaard, VE7MDL
Jon Slaco, VA7NOJ
David Slik, VE7ILH
Curt Smecher, VE7CAS
Douglas Smith, VE3OUI
Patrick Speer, VE7PJS
Mark Spencer, VE7AFZ
Ron Spencer, VA3RSX
Tom Spina, VE7TKS
Edward Spingola, VA3TPV
RJ Spitz, VA7UY
Mike Stafford, VE6MEX
Michael Stagg, VA6CNC
Peter Stec, VE3TOT
David Steels, VE3UZ
Rob Steenweg, VE1CHW
Roger Stein, K7SJ
Al Stephens, VE3NXP
Bruce Stevenson, VA3BSR
David Stewart, VA4DJS
Patrick Stoddard, VA7EWK
William Stunden, VA3ZA
Brian Summers, VE7JKZ
Walter Szyc, VE3SYZ
Hiroshi Takahashi, VA7LET
Rainerio Tayco
Malcolm Taylor, VE6YL
Art Tendies, VE4AK
Leonardo Terceiro, VE6KLE
Richard Tervo, VE9AS
Jim Thiessen, VA3KV
David Charles Thompson, VE3SXY
William Thompson, VE3WTK
Stephen Tian, VE6TLM
Doug Tompkins, VE3IDT
Jason Toms, VE3TBE
Jason Tremblay, VE3JXT
Jean-François Tremblay, VA2FW
Gerry Trueman, VE7GGT
Yori Tsuji, VE4ACX
Ian Turnbull, VE7TGI
Paul Twa, VE7KWA
Scott Ullrich, VE7RSU
William Underwood, VE1WLU
Richard Upfield, VA3RMU
Bernard Van der Stichele, VA3VDS
John Van Egdom, VE6XJV
Michael Van Kuyk, VE7KPZ
John van Loenen, VA3FVL
Bernard Van Tighem, VE7BVT
Rob Van Wyck, VE3FLB
Robert Vanderminnen, VA3RMV
Pierre Vella-Zarb, VE3VZP
Derek Vermette, VA4AFK
Maurice-André Vigneault, VE3VIG

New Members | Nouveaux membres

Uttra Bhushan, VE4UAB
Shawn BoothRoss, VA7NIN
Daniel Chartier, VA6SKD
Paul Cray
Brett Emerson, VE3SJA
Constantine Emmanouil, VA3KOX
Albert Everett, KF5LNM
Alexandra Faucher, VE7NXP
Dietmar A Fichter, VE3CG
Nicholas Field, VA3NPW
Stuart Gale, VE7OMT
Adolph Galonski
Mark Gibbs, VE7QMG
Nelson Governo
Sebastien Gravit, VA2UAS
Shawn Gullette
Donald Harkness, VA3NG
Jeff Hetherington, VE3CW
Allan Jamison, VE7BRD
Ken Johnson, VE4KWJ
James Kelly
Ryan Kerr, VA6FTW
Richard Kettle, VE3QRK
David Lambert, VE3KGK
Peter Laws, VE2UWY
Marc Leblanc, VA3MLH
David Leinbach, VA7NJD
Gary Lines, VA6GSL
William Linington, VE3IUK
Richard Loken, VE6BSV

Greg Loucks, VE9PHX
Lee Luker, VA7LPL
Ken Marianix, VE6TX
Steve Martak, VA3RCI
Paul Mizzi, VE3HPC
Wensheng (Alex) Niu, VE9WS
Brad O'Brien
Matthew Pearson, VE7YMP
Jim Pierce, VA1YZX
Dale Rex, VE3JFB
Simon Rizzardo, VE7RIZ
Cory Rushford, VE6CYT
Joan Santos, VE4KEN
Charles Scharlau, NZ0I
Dmitry Sevostiyanov, VA7DVO
Patryk Siedlik, VE4POL
Leandro Silva, VE7LSI
Paul Smith, VE3PS
Brian Spilsbury, VE3GUE
Tom Spina, VE7TKS
Jeffrey Suchan
Dino Tavares
Anthony Taylor, VE1KOI
Rylan, Vroom, VE3RVQ
Andrew Werbowy, VE3AWK
Alexander Whittaker, VA3TFZ
Allison Wiebe, VE4JJL
Carlos Wiebe, VE4CRW
Aaron Young, VE3YWA

Welcome! Bienvenue! | Thank You! Merci!

Stephen Vinokuroff, VE7WCZ
Earnest Vinson, VA3EWV
Rob Walker, VE3RWY
Scott Waller, VE3OCB
Jim Watson, VE3PJW
James Webb, VE3WA
Joel Weder, VE6EI
Gerald Welch, VE6WCE
David Wendt, VE3EAC
Sean Wenzel, VA3WNZ
David Westerman, VE7DVQ
Gerard White, VO1OR
Donald Whitty, VE9XX
Brice Wightman, VE3EDR
James Wilkins, VE7UVL
Kenneth Williams, VE9KW
Thomas Willms, VE7TXL
Alan Wilson, VE1AWW
Maureen Wilson, VE3MWL
Glenn Wilson, VA3XOG
Rodney (Rod) Wilson, VE3RXN

Bruce Winter, VE7HBW
Scott Winton, VA3RSW
John Wiseman, VE7BVS
Richard Wodzianek, VA7RLW
K. Scott Wood, VE1QD
Allen Wootton, VY1KX
Robert Wortman, VE9RLW
Clayton Wozney, VA3WOZ
Leo Yoshinaka, VA3EBI
Fei Zhou, VA3EMQ
Zhixu (Steven) Zhu, VA3GLQ
Mariusz Zienkiewicz, VA2MZS

London Amateur Radio Club Holds NVIS Exercise

Brian Jurkowski, VE3KLT

In January 2023, the harsh conditions of winter had a firm grip on southern Ontario as I tuned into a local VHF ARES (Amateur Radio Emergency Service) net. When net control operator Doug Elliott, VA3DAE, asked if there was interest in an NVIS exercise, Brian immediately volunteered to serve as net control operator for the event.

The exercise was coordinated by the London Amateur Radio Club which encouraged regional Amateur Radio operators to make use of "Near Vertical Incidence Skywave" propagation. The low take-off angle of most HF antennas results in a large "skip zone" that usually extends several hundreds of kilometres. In this region, the signal is still ascending to or descending from the ionosphere, skipping over stations along the way. VHF and UHF signals have limited range and are often obstructed by terrain. Many stations may be too close for HF operation, yet located in an area where VHF/UHF communication is not an option. This creates a gap that can be quite detrimental to emergency operations.

Fortunately, that gap can be easily overcome with a form of propagation known as Near Vertical Incidence Skywave (NVIS). An antenna is deployed in such a way as to focus most of its RF energy upward. The resulting reflection off the ionosphere is more focused on the area around the operator. This allows the operator to communicate with other stations up to a distance of 500 kilometres or more.

The exercise was scheduled for the afternoon of February 5. In preparation for the event, I drafted a detailed communications plan. I noted that, based on the VOACAP HF predictions (https://www.voacap.com/hf), the 40 metre band would be ideal for NVIS operations. I then selected three operating frequencies in case of QRM and noted that I intended to operate portable for this exercise to avoid high RFI when operating from home.

A backup net control operator was designated and it was decided that, at a minimum, each station checking in for the event should provide their location, power output, and exchange a signal report with net control.

Despite the winter weather Brian Jurkowski, VE3KLT, chose to serve as net control for the NVIS exercise from his Jeep in a local park in London, Ontario.

On the day of the exercise, I loaded up my Jeep with all the radio equipment needed plus some spare components. My primary radio was a Yaesu FT-891 transceiver with an Icom IC-7100 transceiver as backup. I packed a 67-foot random-wire antenna with a homemade 49:1 unun. In case a backup antenna was needed, I brought my trusty Wolf River Coils "Silver Bullet 1000" with an 8-foot collapsible whip that he could lay over on its side for NVIS use.

With everything loaded up, I headed to a nearby park. I was looking forward to operating from that location as I had been there before and knew there would be a very low noise floor. I backed the Jeep into a parking space adjacent to a long row of shrubs and several trees with low-lying branches.

A few minutes later, I pulled a 67-foot random-wire antenna through some branches about as high as I could reach, and stretched a 17-foot counterpoise wire on the ground. Both wires were attached to a homemade 49:1 unun with feedline going through the back window of the Jeep and into an MFJ-945D (manual) tuner that sat on the dashboard for this event. Tuning up the antenna system was a breeze thanks to a NanoVNA my wife bought me for Christmas last year.

A few minutes before the start-time of the exercise, I quickly discovered someone running a Parks On The Air (POTA) activation on the frequency I hoped to use. I reminded himself that this is why we document backup frequencies and I switched to the secondary frequency. Once there I heard someone operating on a nearby frequency creating too much QRM to continue there.

Concerned that I was running out of options, I switched to the last frequency on the list and was relieved that nothing was heard even after transmitting "Is this frequency in use" multiple times.

It was now the top of the hour and time to start the exercise. I keyed up the microphone, gave my call sign phonetically and introduced myself as the net control operator for the regional NVIS exercise. I immediately had my first check-in! After exchanging signal reports, along with the other stations' power output and location, I called QRZ and there was a full-blown pile-up (meaning several stations were trying to check in at the same time). The pile-ups continued for well over an hour. Each time, I would pick one station out of the crowd, then confirm their call sign and proceed with exchanging the information expected for the exercise. The volume of traffic that was heard every time I went to take another check-in was a clear indication of great interest in this exercise.

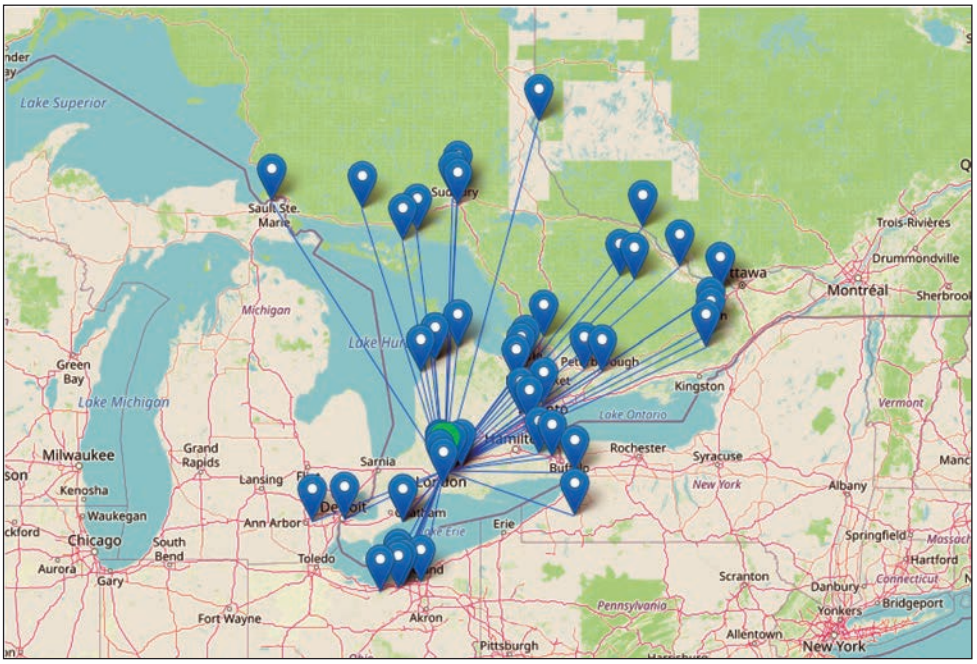
Approximately one hour into the exercise, I received a warning that my battery was low. Moments later the critical warning indicated that I was about to lose power so I made the decision to hand over operations to the backup net control operator. It was later discovered that the alert was a false alarm caused by misconfigured "low voltage" thresholds on the system I used to monitor battery status.

After the exercise, an After-Action Report was prepared to document various results from the exercise. The exercise ran for just over 90 minutes. In that time there were 74 check-ins – not including three stations who checked in twice after the change in net control operator. Contacts from this exercise were logged from 1.3 kilometres to over 500 kilometres from the net control's operating position. This reaffirms the usefulness of NVIS operations for filling that gap between VHF/UHF and the HF skip zone.

A review of notes from the day revealed some significant lessons learned.

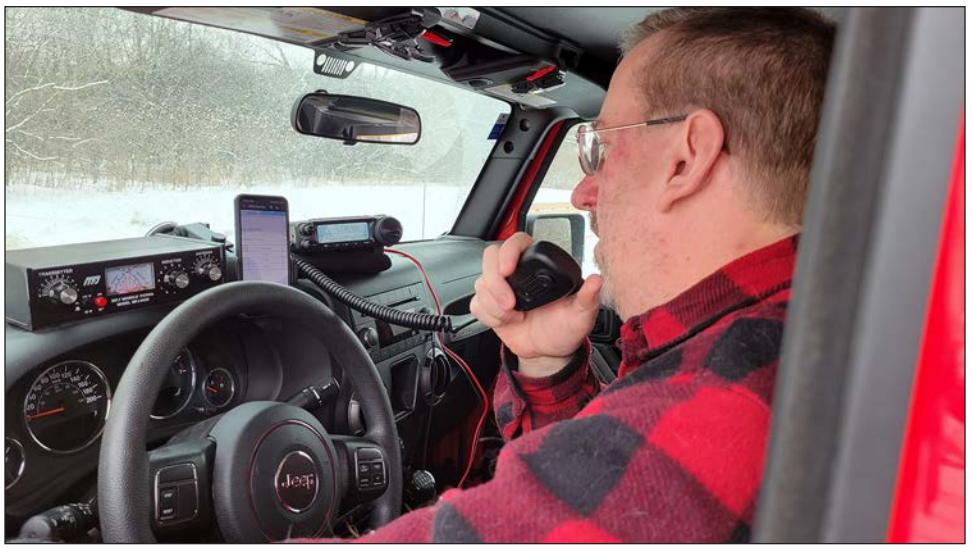
The third (and last) frequency listed for this event had to be used due to traffic on the first two. In future events, the last frequency listed will be followed with information on which direction to go from there. We will head up or down the dial as needed until an open frequency is found on which the exercise can be carried out.

The battery monitor that was misconfigured has since been reprogrammed to avoid similar false alarms in the future. Although it turned out to be a false alarm, this incident served as a good reminder of the need for redundant power. I am now looking at a solar panel to supplement his power system.



A map of the greater southern Ontario region illustrating the contacts logged during the Near Vertical Incidence Skywave (NVIS) exercise.

Another valuable lesson was learned when a fellow member of the London Amateur Radio Club brought it to my attention that, while operating QRP, I couldn't break through the pile-ups to check in. Going forward, net control will prioritize check-ins from those stations operating low-power, followed by portable stations.



Brian Jurkowski, VE3KLT, making a contact from his Jeep during the NVIS exercise.

The London Amateur Radio Club would like to thank everyone who participated in the event. Discussions are already underway about conducting another NVIS exercise in the spring.

As an Amateur, the only thing that gives me more joy than spreading the word about Amateur Radio in an article like this is taking part in the events that make such a story. On behalf of the London Amateur Radio Club, I would like to thank every Amateur who participated in the event by checking in and providing your information for our logs. We look forward to doing it again soon. If you are interested in participating in the next exercise, please visit our website at http://www.larc.ca as we will post information regarding future events there.

Brian has always been interested in science and technology. He began experimenting with electronics as a teenager and now works as a Senior Systems Administrator for a software company.

In the summer of 2020, he decided to pursue Amateur Radio and received his Basic with Honours in November of that year. He enjoys studying emergency communications and portable operations such as Parks on the Air and on camping trips.

RAC Canada Day Contest 2023 Rules: July 1

Note: Please check the RAC website for any updates to the RAC Canada Day Contest Rules

Bart Ritchie, VE5CPU –
RAC Canada Day Contest Manager

Each year on July 1, the anniversary of Canada's Confederation, Radio Amateurs of Canada sponsors the Canada Day Contest and Amateurs all over the world are invited to Canada's Birthday Party on the air.

Contest Period: 0000 UTC to 2359 UTC on Thursday, July 1.

Bands and Modes: 160, 80, 40, 20, 15, 10, 6 and 2 metres, CW and phone (SSB, FM, AM, etc.)

Suggested frequencies: CW – 25 kHz up from the band edge and for SSB – 1850, 3775, 7075*****, 7225, 14175, 21250 and 28500 kHz. Check for CW activity on the half-hour.

***Note:** For 7075 kHz please watch for conflicts in the band plan where there are overlaps with other modes of operation.*

Exchange: Stations in Canada send RS(T) and province or territory. VEØs and stations outside Canada send RS(T) and a serial number.

QSOs: Contacts with stations in Canada or VEØs are worth 10 points. Contacts with stations outside Canada are worth 2 points. Contacts with RAC official stations are worth 20 points.

RAC official stations are: VA2RAC, VA3RAC, VE1RAC, VE4RAC, VE5RAC, VE6RAC, VE7RAC, VE8RAC, VE9RAC, VO1RAC, VO2RAC, VY0RAC, VY1RAC and VY2RAC.

You may work any station once on each of the two modes, on each of the eight contest bands. It is **prohibited** to make CW contacts in the conventional phone sub-bands and phone contacts in the conventional CW sub-bands. Contacts or soliciting QSOs through a repeater during the contest period is not allowed.

Contacts in the RAC Canada Contests also count towards the RAC Canadian Portable Operations Challenge Award. Please see page 61 for information.

Multipliers: Thirteen in total, Canada's 10 provinces and three territories. Each multiplier may be counted once on each mode on each of the eight contest bands.

The multipliers, with their postal abbreviations and prefixes are: Nova Scotia [NS] (VE1, VA1, CY9, CYØ); Quebec [QC] (VE2, VA2); Ontario [ON] (VE3, VA3); Manitoba [MB] (VE4, VA4); Saskatchewan [SK] (VE5, VA5); Alberta [AB] (VE6, VA6); British Columbia [BC] (VE7, VA7); Northwest Territories [NT] (VE8); New Brunswick [NB] (VE9); Newfoundland and Labrador [NL] (VO1, VO2); Nunavut [NU] (VYØ); Yukon [YT] (VY1); and Prince Edward Island [PE] (VY2).

Certain special Canadian prefixes in use at the time of the contest may also apply; however, there may be no more than 13 multipliers on each band/mode. Please use the multiplier abbreviations, in square brackets, noted above.

***Note:** in the event a station is unable to make a contact with a Canadian station, there will be granted a multiplier count of 1 to facilitate the proper calculation of the final score since a multiplier of zero (0) would not create a valid calculation of a final score.*

Final Score: The total QSO from all bands multiplied by the total number of multipliers from all bands.

Categories:

All categories are designed to be multi-mode, Phone and CW categories except for the two single operator single mode categories. It is required that single operator all bands' categories have at least one contact in both modes to differentiate those categories from the single model categories. All other categories may operate single mode if so desired recognizing that it reduces their potential contacts and multipliers.

Special thanks to all of our sponsors for their support of the RAC Canada Day and RAC Canada Winter Contests.

The following categories are eligible for plaques or certificates as detailed in the Awards section of the rules.

1) Single Operator All Bands High Power (SOABHP) >100 watts – **Radioworld**

2) Single Operator All Bands Low Power (SOABLP), max. 100 watts output – **Contest Club Ontario**

3) Single Operator All Bands QRP (SOABQRP), max. 5-watt output All Bands & Single Band – **Radioworld (See Note 8)**

4) Single Operator All Bands CW only, (SOABCW only), any authorized power – **Gary Bartlett VE1RGB Memorial by the Maritime Contest Club**

5) Single Operator All Bands PH only (SOABPH only), any authorized power – **Saskatchewan Contest Club**

6) Single Operator Single Band (SOSB), any authorized power – **Radioworld (See Note 9)**

7) Single Operator Assisted High Power (SOAHP) > 100 watts – **TBD (See Note 3)**

8) Single Operator Assisted Low Power ** (SOALP), max. 100 watts output – **TBD (See Note 3)**

****Note: QRP entrants who wish to use assistance will be placed in the low power category.**

9) Multi-Operator Single Transmitter High Power (MOSTHP), >100 watts – **Alfa Radio (See Note 4)**

10) Multi-Operator Single Transmitter Low Power (MOSTLP), max. 100 watts output – **Tony Allsop VE3FTA Memorial by the Mississauga Amateur Radio Club (See Note 4)**

11) Multi-Operator Multi-Transmitter (MOMT), any authorized power – **Radioworld**

Special Category Plaques

For the Canada Day Contest a special trophy is awarded for the highest Single Operator (no power classification) Foreign Entrant – **Larry Kayser VA3LK Memorial by Alan Goodacre, VE3HX**.

For the Canada Day Contest there is a "Rookie" subcategory plaque sponsored by **RadioSport Manitoba** and the **Winnipeg Amateur Radio Club**. For detailed information

regarding the qualifications for the Rookie plaque, please refer to item 14 of the Category Notes. Previous rookie winners of this contest are ineligible for an additional Rookie Plaque in this contest. Additional details on contest categories, limitations, exceptions, callouts and Rookie plaque eligibility appear in the Category Notes and in Table 1.

Category notes:

Please check the RAC website for any revisions due to the global pandemic. Should your country have any gathering restrictions due to any health directives, please make sure your category of entry complies with any physical gathering limits as it pertains to any multi-operator entries.

1) The contents of a log that is submitted for a specific category must reflect that category including any multimode or single mode QSO requirement that may apply to the category.

In the event of a conflict between the actual content of the log and the stated category in the Cabrillo header or contained in other elements of the entry material, the actual contents of the log will be used to determine the category of entry where possible. In the event this cannot be determined or in the event where a log does not identify the entry category, the entry will be classified into the Multi-Operator, Multi-Transmitter, any authorized power category.

Any entrant who wants to enter a specific category (i.e. Single Band entry) but who also worked additional contacts outside that category **may** submit those additional contacts in a **separate** check log file. Do not include them in the main entered category log file.

2) Where the categories have a power class and the submitted log does not clearly identify the power class entered, then the log will be treated as if the highest power class for that category was entered.

3) **Single operators** who receive assistance in identifying potential new QSOs and/or multipliers from an Amateur Radio Spotting Network – including Skimmer and similar technologies or any type of Packet Cluster system – during the contest must classify their log as being in one of the two Single Operator Assisted categories. To indicate an assisted entry use the Cabrillo heading "Category-Assisted: Assisted" in your log file to identify this entry classification. As noted in the category description, any QRP entrant claiming "Assistance" will be placed in the SOALP category as there is no QRP assisted class.

All multi-operator categories allow the use of spotting assistance without special identification.

4) In the Multi-Single category only one transmitter and one band are permitted during the same time period (defined as 10 minutes). **Exception:** One, and only one, other band may be used during any 10-minute period, if and only if the station worked is a new multiplier. In other words, the Multi-Single Transmitter class allows a second station to "hunt" and work multipliers only on a single separate band during any 10-minute period. This limitation is placed on the category to force strategic decisions regarding band changes by the team.

5) Multi-Multi category stations may operate the eight contest bands simultaneously, but only one transmitted signal per band is permitted at any time.

6) For all multi transmitter categories, all transceivers, transmitters and receivers operated by the multi station participants/entrants must be within a single 500-metre diameter circle and the antennas must be physically connected by RF transmission lines to the transceivers, transmitters and/or receivers.

7) Operators in either the Multi-Multi or Multi-Single categories should note that a distributed contest station is permitted in the RAC contests, however such operations are not eligible for awards.

A distributed station is defined as a station which does not have all transceivers, transmitters and/or receivers operated by station operators/participants/entrants located within a single 500-metre diameter circle of each other. Distributed Multi-Multi operations must identify such operations as part of their Cabrillo form log submission as a SOAPBOX comment or summary sheet document. Those individuals using distributed station operations must do so in accordance with the regulations governing Amateur Radio operation in their jurisdiction.

8) Any entry that claims QRP power levels other than QRP Assisted will be placed in the Single Operator All Band QRP category as that is the only entry class supporting QRP power levels. There is no recognition of any single band or single mode QRP operation as such categories do not exist.

9) Although there is only one Single Operator Single Band category that qualifies for a certificate or award, it is intended that the published results would show High Power or Low Power. To facilitate this break out of the listings, your entry should indicate the power class you used.

10) Operators who have participated in any multi-operator category entries may not contact the station they have participated in if they were to operate as part of another entry in the same contest. In addition, guest operators at any station regardless of entry category may not claim contacts with the station host owner or host station mobile call for points or multipliers.

11) Remote operations of a *single station* under the same call sign where all transceivers, transmitters and receivers are within a single 500-metre diameter circle – the antennas must be physically connected by RF transmission lines to the transceivers, transmitters and/or receivers – is explicitly permitted.

Those operators using remote operations must do so in accordance with the regulations governing Amateur Radio operation in their home and remote station jurisdiction. Remote operation of more than one station under the same call sign, or remote operation of more than one station by the same licensee under differing call signs, is prohibited during the contest period.

12) Single Operator 1 VFO (SO1V), Single Operator 2 VFO (SO2V) and Single Operator 2 Radio with one VFO shown for each radio (SO2R) entries are allowed in all categories.

Table 1: Summary of Category Elements, Limitations and Eligibility							
Category	**Power Level**	**Logged Band Requirement**	**Mixed Mode Contacts Required**	**Assisted Use Allowed**	**Transmitted On-air Signals**	**10 Minute Rule Applies**	**Rookie Plaque Eligible**
SOABHP	>100 W	2 or more	Yes	No	1 at any given time	No	Yes
SOABLP	>5 to100 W	2 or more	Yes	No	1 at any given time	No	Yes
SOABQRP	<5 W	1 or more	Yes	No	1 at any given time	No	Yes
SOABCW only	Any	1 or more	No, CW only	No	1 at any given time	No	No
SOABPH only	Any	1 or more	No, Phone only	No	1 at any given time	No	No
SOSB	Any	1 only	Optional	No	1 at any given time	No	No
SOAHP	>100 W	1 or more	Optional	Yes	1 at any given time	No	No
SOALP	<100 W	1 or more	Optional	Yes	1 at any given time	No	No
MOSTLP	<100 W	1 or more	Optional	Yes	1 run, 1 multiplier on different band	Yes	No
MOSTHP	>100 W	1 or more	Optional	Yes	1 run, 1 multiplier on different band	Yes	No
MOMT	Any	1 or more	Optional	Yes	1 per band	No	No

13) Self-spotting and requesting other operators to spot your station by any means is strictly prohibited for any Canada Day Contest entry categories

14) **"Rookie"** is defined as a single operator who was first licensed as a Radio Amateur less than 36 calendar months (three years) prior to the date of the contest. Any level of Amateur Radio licence available from the licensing jurisdiction of the entrant qualifies for the category. The three supported categories that qualify for the "Rookie" plaque have a multi-mode requirement as differentiation from the single mode categories. Further, we are trying to encourage entrants to explore both SSB (Phone) and CW aspects of the contest thus **requiring a minimum of one CW and one SSB contact** to be made in the qualifying single operator categories that qualify for adjudication for the "Rookie" plaque.

The participating licensed Amateur is required to self-declare their eligibility, but the RAC Contest Management Committee reserves the right to request proof of eligibility to assist in resolving any disputes.

Eligible Categories for Rookie Plaque:

Participants are eligible for the Rookie Plaque in the following categories.

Note: only one plaque is available across the three categories designated below.

- Single Operator All Band Low Power (SOABLP)
- Single Operator All Band High Power (SOABHP)
- Single Operator All Band QRP Power (SOABQRP)

Log Identification of Rookie Overlay Category:

Your submitted log will need to indicate your entry in the Rookie category by indicating with a **"Category-Overlay: Rookie"** line in the Cabrillo log file header. You may need to manually enter this line if the logging software you use does not support this category overlay. This can also be selected when submitting a log via the RAC Web Log Submission System. In addition, "Rookie" entrants will need to indicate the date they were first licensed by adding a comment with that information in a "Soapbox:" field in the Cabrillo header. An example would be: "Soapbox: First licensed in January of 2020."

While the scores from the single mode, unlimited and multi-op "Rookie" entries will be noted in the contest results, only Rookie entrants in the SOABHP, SOABLP or SOABQRP categories will be eligible for the Rookie plaque. While there is only a single Rookie plaque determined by the results from the three eligible single operator categories, a Rookie entrant will still be eligible for the plaque for the single operator category they have entered should they achieve the highest score for that category. Should they qualify for a certificate based on the normal criteria for certificates, they will be further awarded that certificate.

Contest Awards:

Plaques will be awarded to the top-scoring entrants in each category, as noted above in the category list. **Special thanks to our sponsors for their ongoing support!**

Certificates will be awarded to the top-scoring entrant in each category, where a log containing a minimum of 50 gross QSOs has been submitted, in each of the following:

1) Canadian provinces or territories

2) Continental US call districts, W0 through W9 as well as Alaska and Hawaii. US Commonwealths, Territories and Possessions such as Puerto Rico, US Virgin Islands, etc will be treated as equivalent to a DXCC country

3) DXCC country, excluding Canada and the US

To facilitate the proper allocation of certificates, all US stations should indicate their actual US call district based on their actual address, as provided in the Cabrillo header, if different than indicated by their call prefix.

DX stations should indicate the actual country of operation if different than indicated by their call prefix by indicating the country as part of the portable call sign designator.

RAC stations will compete and be considered the same as any other entrant for eligibility to plaques and certificates.

Results: Will be published in *The Canadian Amateur* magazine published by the Radio Amateurs of Canada. The results will also be published on the RAC website.

Entries: All entries must be electronically submitted by 23:59 UTC 14 days after the end of the contest (**July 15, 2023**). The preferred method is to submit logs via the Web Log Submission system at www.contest.rac.ca

For the current contest year, we will also accept logs sent via email to canadaday@rac.ca. Electronic email entries will be confirmed by return email by the contest manager. This is a manual process, so do not expect an immediate reply.

For the current contest year, we will also accept logs sent via mail, postmarked no later than 14 days after the end of the contest.

Send paper entries to:

Radio Amateurs of Canada
720 Belfast Road, Suite 217
Ottawa, Ontario, Canada K1G 0Z5

Paper mail entries must contain a summary sheet showing score calculation, a dupe sheet listing calls worked on each mode on each band, a multiplier check sheet and log sheets. Log sheets must show time, band, mode, call of station worked, exchanges sent and received and claimed for each QSO. New multipliers must be clearly marked in the log.

For those submitting paper logs, the contest entry forms are also available on the RAC website at:

http://wp.rac.ca/contesting-results/

Special Note:

1) The contest management team will be phasing out email and paper logs at some point in the future, so we encourage you to update your processes and software to accommodate use of the Web Log Submission system and the required Cabrillo- formatted logs.

2) Any entry with 100 or more contacts should be submitted in digital format using the contest log submission system or, while supported, via email.

3) The required electronic format is the RAC Cabrillo format. The files must be submitted in plain ASCII/Text format. The current Cabrillo logging format / standard is available from the RAC web site at: https://www.rac.ca/contesting-results/, under the heading of RAC Cabrillo V3.3

4) When submitting any electronic log please use a unique identifier by naming the file using your call sign with a file extension of .LOG, .CBR or .TXT (e.g., yourcall.LOG). If you email your log, please send the file(s) as attachments. Do not paste the log file into the text of your message as there may be issues with the formatting making it difficult to properly extract the log. Large files may be zipped if necessary.

If you have questions about these rules or need help with preparing or submitting your log or have any other questions, please contact **Bart Ritchie, VE5CPU at ve5cpu@myrac.ca**.

For the previous year's contest results, visit the RAC website in the Contest section at: http://wp.rac.ca/contesting-results/

The Sports Page: The Canadian Contest Scene

Self-Spotting: Part 2

Tom Haavisto, VE3CX | ve3cx@rac.ca

In my last column, I indicated that the American Radio Relay League had updated the rules for the ARRL contests to allow self-spotting. Many of us saw this as a big deal, as it changes how we have been contesting for many years. Now that the new rule is in place, it seems the effect of this rule change has been minimal. For CW and digital modes, they are spotted automatically by the skimmer network. Adding self-spots have been largely unnoticed.

The difference is noticeable for phone contests. There is no phone skimmer so spots need to come from people who are manually generating spots. Some contesting software such as N1MM has been updated to generate self-spots when you call CQ. Other software may have seen similar updates. Check the documentation if you wish to start generating self-spots when you call CQ. Some skimmer sysops have set their respective nodes to block self-spots, but I expect this will change as people realize the move to self-spotting is not a big deal. Admittedly, many of us expected the rule change to cause far more issues than it has.

What is the end result? Some other contests such as State QSO Parties and the Russian DX Contest have changed their rules to allow self-spotting. Some contesters are not happy with the change and will continue to operate without self-spotting. As always, check the rules for your favourite contest to see if self-spotting is now permitted, and then decide for yourself if this will help your contesting efforts. At the end of the day, *you need to feel good about your effort and what works best for you.*

World Radiosport Team Championship 2022 (in 2023)

The World Radiosport Team Championship (WRTC) is held every four years, and has been called the "Olympics of Amateur Radio". As you may have guessed, the pandemic threw the schedule off a bit so WRTC 2022 will be held this year from July 8-9, 2023 in Bologna, Italy. The WRTC is held as part of the IARU HF World Championship Contest.

You can find the rules at http://www.arrl.org/iaru-hf-world-championship and some information on how you can be part of WRTC 2022 at: https://www.wrtc2022.it/

In short, there will be 63 two-person teams in Italy that will be competing to be the winners. Canada will be represented by Gilles Renucci, VA2EW and Victor Androsov, VA2WA as a team and Todd Bendtsen, VE5MX and John Sluymer, VE3EJ, as a team. They operate using a modified version of the International Amateur Radio Union's rules, but they will be operating in the IARU contest. Each team will have a unique call sign assigned to them by the WRTC and every effort will be made to offer a level playing field for the competitors.

For example, all teams will be limited to 100 watts and each team will be using a single tribander for 10-15-20 metres and wire antennas for 40 and 80 metres. Each team brings their own radios and most of their own equipment. As you can well imagine, there is a significant commitment by the competitors to operate in the WRTC. Not only in qualifying – a multi-year process – but actually being there. Each team will be assigned a referee. Dave Goodwin, VE3KG and Gerry Hull, W1VE/VE1RM, will be referees, but will most likely be assigned to other teams. The referee will monitor the two-person team to ensure they are in compliance with the rules for the duration of the contest.

If you are interested in learning more about how the team competition works, there is a book by J.K. George called "Contact Sport: A Story of Champions, Airwaves, and a One-Day Race around the World". It is available for sale at online bookstores and details the events of WRTC 2014. It is a fascinating story and I highly recommend it if you are at all interested in WRTC. It detailed the efforts of the organizers, competitors and the many hundreds of volunteers that helped make the event successful. The cover features a picture of a tent – this is where each team operated from during WRTC 2014. There is not a lot of detail about where teams will be operating from during WRTC 2022 (in 2023), but initial indications are each team will be operating from a farmhouse Bed and Breakfast.

Many of us have never been to the Olympics, let alone been able to participate as a competitor. We have to settle for watching the Olympics on TV, and cheer our favorite competitors as they compete in various events. WRTC is different, in that you can cheer for your favourite teams and also contact them as part of the IARU contest!

Contesting by its very nature is a contact sport. Competitors contact other Amateur stations around the world during WRTC, and you can help by contacting WRTC stations during the IARU.

You get to participate, not just be a spectator!

During the competition, there will be a real-time scoreboard on the WRTC website where you can see how different teams are doing and find the latest news. However, the identity (call sign) of each team will remain secret during the contest and they will only be revealed after the contest is over. This is meant to help each team compete on a level playing field.

CQWW WPX – CW – May 2022

Call	QSO	Mult	Category	Score
VC2A (VA2WA)+	3,054	1,022	SOAB HP	10,188,318
VY2TT (K6LA)	3,500	953	SOAB HP	10,006,500
XL3A (VE3AT)	3,158	944	SOAB HP	9,133,200
CF2T (VA2EW)	2,916	945	SOAB HP	9,035,145
VC7M (VE7JH VE7KW VE7UF VE7ZO @VE7UF)	3,127	967	M2	8,675,924
VX7GL (VE7GL VA7RR VA7OO VA7OM VA7AO)	2,721	869	M2	7,079,743
VX9ML (VE9ML VE9BK)	1,754	755	M2	4,747,440
VC6R (VE6TL VE6RST VE6SV)	1,962	737	M2	3,729,957
VE3EJ	1,630	834	SO15 HP	3,317,652
CG2Z (VA2CZ)	1,450	756	SOAB LP	3,070,116
VE3NE	1,038	563	SO40 HP	2,483,393
VX3KI (VE3KI)	1,321	568	SOAB LP(C)	2,377,648
VE3NZ	992	526	SO40 HP	2,172,906
VE7SAR (VE7LWW VA7XB VE7ZD VA7VJ VE7NX)	1,330	576	M1 HP	1,988,928
VE3MIS (VA3JK)	1,200	560	SOAB HP	1,748,880
VE5MX	1,077	580	SOAB HP	1,658,220
VE6BBP	1,111	587	SOAB HP	1,598,401
VE3MGY	1,076	498	SOAB LP(T)	1,509,936
VA3AR	819	435	SO40 HP	1,448,550
VE9AA	1,051	567	SO15HP(C)	1,419,201
VG7OM (VA7OM)	972	576	SO20 HP	1,266,048
VA3TNM	811	473	SOAB HP	1,125,740
VE3OI	743	461	SOAB LP(T)	1,007,746
VE3YAA (VE3DQ VE3SSR)	715	450	M1 HP	956,250
VA7KO	858	418	SOAB HP(C)	892,012
VE3TM	710	499	S20 LP(T)	855,286
VE2FK	754	405	SOAB HP	813,645
VA3FF	698	395	SOAB LP(C)	793,950
VA1MM	631	389	SOAB HP	746,880
VE2IR	722	393	SOAB LP(T)	738,840
VE3GFN	702	372	SOAB LP(T)	729,492
VA3WB	532	349	SOAB LP	554,561
VE3CT (VE3UTT)	446	331	SOAB HP	462,738
VE3VY	460	303	SOAB LP	428,139
VE9HF	498	330	SO20 HP(C)	390,060
VE3AQ	470	282	SOAB LP	354,474
VE3KOT	390	273	SOAB LP(R)	319,956
VA3SB	429	266	SOAB LP	300,314
VE3TW	377	265	SOAB HP	280,635
VE3HEU	405	244	SOAB LP	259,128
VA3FH	390	241	SOAB HP	252,086
VE3UZ	400	260	SOAB HP(T)	238,160
VA7VK	373	207	SOAB HP	218,592
VX5UO	381	241	SOAB LP	212,562
VE3YT	331	241	SOAB HP	204,127
VE3NFN	400	280	SOAB LP	193,760
VE3KTB	296	199	SOAB LP	187,060
VE6KC	283	243	SOAB HP	182,007
VA3OKG	268	216	SOAB LP(R)	175,176
VA4HZ	298	231	SOAB LP	168,399
VE7JKZ	261	190	SOAB HP	153,710
VE3KP	210	169	SOAB HP	130,468
VO1BQ	211	167	SOAB HP(C)	118,069
XK1AAA	294	199	SOAB HP	115,619
VE2HLS	227	202	SO20 LP	115,342
VE2IEA	226	195	SO20 LP	105,300
VE2OWL	199	181	SOAB LP	96,473
VA3FN	201	156	SOAB LP	93,912
VA3EON	239	160	SOAB LP	93,600
VA3PAF	219	148	SOAB LP	91,760
VE3QO	207	155	SOAB LP	89,590
VE2HEW	196	151	SOAB LP	87,278
VE6WR	205	170	SOAB LP(T)	84,660
VX1ANU	213	169	SO15 HP	75,374
VE3SSR	183	134	SOAB LP	74,102
VE4DL	225	165	SOAB LP(C)	73,260
VE4GV	218	143	SOAB HP	68,497
VA3EJN	202	141	SOAB LP	59,925
VC2Z (VA2UR)	178	145	SOAB HP	53,795
VG7RN	148	118	SOAB HP	50,740
VE6UM (VE6BMX)	176	134	SO15 LP(C)	50,116
VE3JZT	160	124	SOAB LP	50,096
VE3KQN	148	115	SOAB QRP	49,105
VE3LMS	150	139	SOAB LP	46,148
VA3EC	140	116	SOAB LP	44,544
VA3TMV	153	120	SOAB LP	41,160
VA3ROC	142	113	SOAB LP	38,533
VO1HP	126	110	SOAB LP	38,390
VE2QV	126	106	SOAB LP	34,980
VE3MDX	114	109	SOAB HP(C)	33,354
VA3PM	128	107	SOAB LP	31,458
VO2AC	98	86	SOAB HP	29,068
VY2ZM	77	68	SO160 HP	25,636
VE4IM	125	102	SOAB LP	25,500
VX5ZX (VE5ZX)	124	112	SO15 HP	25,088
VE3EUS	87	74	SOAB LP	24,346
XK2LI (VY2LI)	110	95	SOAB LP(C)	21,090
VA1CC	92	91	SOAB LP	19,656
VX6WQ (VE6WQ)	94	89	SO QRP 15M	17,711
VA6BGE	101	78	SOAB HP(R)	17,316
VA1RST	56	55	SO40 HP(C)	16,170
VA7DZ	88	80	SOAB HP	15,920
VE9KK	81	72	SOAB LP(T)	14,904
VE9OA	82	71	SOAB HP	12,638
VE3EKA	81	73	SOAB LP	12,483
VE3NRT	66	63	SOAB LP	12,033
VE3MVM	60	55	SOAB LP	11,935
VA7XU	83	66	SOAB HP	11,748
VA7ST	67	56	SOAB LP	8,568
VE3ZY	58	57	SO20 LP(C)	8,037
VE3HG	47	44	SOAB LP	6,644
VE7AB	45	43	SOAB LP(C)	6,020
VG3TTB	45	43	SOAB LP	5,805
VE7IO	52	48	SOAB HP	5,376
VE2/PY2KGB	49	48	SO20 QRP	4,992
VO1CH	43	43	SO15 HP	4,988
VE7BGP	50	43	SOAB LP	4,429
VE6JTW	72	65	SOAB LP(R)	4,420
VE3FZ	46	43	SOAB LP	4,386
VE7NI	50	43	SOAB QRP	4,042
VX3OU	36	35	SOAB LP	3,920
VA2QR	37	37	SOAB HP	3,811
VA7MM (VA7MM VE7CNF)	36	32	M1 LP	3,712
VE3AYR	33	30	SO40 LP	3,570
VA3IJK	43	39	SOAB LP	3,432
VA6TI	43	39	SOAB QRP	2,769
VE7GOG (VA7QCE)	35	30	SOAB LP(C)	2,280
VE7MR	20	20	SO40 LP	1,740
VE7ARN	18	18	SO40 LP	1,134
VE5KS	18	17	SO10 LP	901
VA3IIF	30	30	SO15 LP(C)	900
VG7DX	14	13	SO10HP	507
VA7ZM	15	14	SOAB LP	350
VE3VIG	12	12	SOAB LP	276
VA6RCN (VE3RCN)	9	9	SOAB LP(T)	162
VE2GT	3	3	SO80 HP	36
VG4JP (VA4JP)	2	2	SO15 LP	8

Checklog: VE3WG

* denotes log was received after the 5 day deadline and is not eligible for awards.

Overlay category: (R) Rookie, (T) Tribander/Single Element, (C) Classic

You can contact various WRTC teams during the IARU contest, but you won't know the nationality of any team until later. This is meant to encourage you to contact as many WRTC stations as possible, not only your "favourite" teams.

You can also visit Italy's Emilia Romagna region and according to the WRTC website "participants and visitors will also have the opportunity to take part in organized tours of the area. If you're interested in the history of radio and telecommunications, the Radio Tour is an excellent option. This day tour takes you to the Guglielmo Marconi House and Museum in Sasso Marconi, where Marconi invented the radio in 1895. Visitors can explore the museum and see some of the earliest radio equipment, as well as the room where Marconi sent his first radio signal."

There is information on the WRTC website for visitors, along with a request for volunteers. You can spend a few days with top contesters from around the world. Or you can simply be an observer to the event. I had planned on attending the event in person, but for a variety of reasons, plans changed and I won't be able to be there. In speaking with people who went to WRTC 2014 and WRTC 2018, it was truly an amazing experience.

So please get on, contact the WRTC stations, and cheer the competitors to victory!

Hope to see you on the bands – Tom, VE3CX

CANADIAN PRAIRIES QSO PARTY – May 2023

Call	QSO	Mult	Category	Score
VE5MX	1123	115	SO HP	129,145
VE4VT	715	115	SO HP	82,225
VE6TL	569	112	SO HP	63,728
VE4EA	511	113	SO HP	57,743
VE5UO	553	98	SO LP	54,194
VE5SF	517	101	SO LP	52,217
VE4GV	481	92	SO HP	44,252
VE6AO	395	88	MS	34,760
VA6AN	362	58	SO LP	20,996
VE5GC	247	85	SO LP	20,995
VE5KS	250	76	SO LP	19,000
VE4BB	328	53	SO HP	17,384
VE6BBP	228	72	SO LP	16,416
VA4HZ	209	75	SO LP	15,675
VE6RST	234	59	SO HP	13,806
VE4AA	188	63	SO LP	11,844
VE4WSC	200	45	MS	9,000
VA6HEM	137	44	SO LP	6,028
VE6CA	150	40	SO HP	6,000
VE5CPU	125	44	SO HP	5,500
VE4JBB	97	54	SO LP	5,238
VE5ZX	122	38	SO LP	4,636
VA6MA	103	39	SO LP	4,017
VE4SF	105	35	SO LP	3,675
VA7BEC	63	41	MS	2,583
VE2NTT	57	30	SO HP	1710
VE7CV	49	29	SO HP	1421
VE3WG	48	25	SO LP	1200
VE3TW	42	28	SO HP	1176
VE3VN	40	29	SO LP	1160
VE9ML	44	24	MS	1,056
VE3MV	39	27	SO LP	1053
VA6RCN	46	22	SO LP	1,012
VE2GT	35	23	SO HP	805
VA6BGE	45	17	SO HP	765
VE3CX	39	19	SO HP	741
VE2CWQ	29	21	SO HP	609
VA7RN	27	22	SO HP	594
VE7XF	27	22	SO HP	594
VE9VIC	25	21	SO LP	525
VE3KOT	23	20	SO LP	460
VE6WMS	24	19	SO LP	456
VE7JH	25	18	SO LP	450
VE2FK	22	18	SO HP	396
VA3RSA	21	16	SO LP	336
VE3CT	19	16	SO HP	304
VE3UTT	19	16	SO HP	304
VE5WD	23	12	SO LP	276
VE6CLE	19	14	SO LP	266
VE3IDT	17	15	SO LP	255
VA3FN	16	15	SO LP	240
VA4SMC	60	4	SO LP	240
VA3KRJ	17	14	SO LP	238
VA3PC	14	14	SO LP	196
VA7ST	16	12	SO LP	192
VE6AX	27	7	SO LP	189
VE3ZY	15	12	SO LP	180
K3SV	13	13	SO LP	169
VA3IDD	13	13	SO LP	169
VY2GF	13	12	SO LP	156
VE7IO	12	11	SO HP	132
VE6JF	18	7	SO LP	126
VE7AHT	11	10	SO LP	110
VE5CON	12	9	SO LP	108
VE4MR	13	8	SO LP	104
VA3IJK	11	9	SO LP	99
VA3IK	11	8	SO HP	88
VA3RKM	9	9	SO LP	81
VE3HEU	9	9	SO LP	81
VA6CNC	13	5	SO HP	65
VE9WH	8	8	SO LP	64
VE4EV	15	4	SO LP	60
VE7BGP	8	7	SO LP	56
VE3HZ	5	5	SO LP	25
VE6SYD	6	4	SO LP	24
VA4JP	5	4	ROVER	20
VA6TI	4	4	QRP	16
VE3AYR	4	4	SO LP	16
VE7YAH	4	4	SO LP	16
VY2LI	4	4	SO LP	16
VE6JY	5	2	SO HP	10
VA3PAF	3	3	SO LP	9
VE3DQN	3	3	QRP	9
VE3JZT	2	2	SO LP	4
VE3AC	0	0	ROVER	0

7 QP – THE 7TH CALL AREA QSO PARTY – May 2022

Call	QSO	Mult	Category	Score
VE5MX	269	108	SOCW HP	87,156
VE3YT	204	71	SOMIX HP	42,387
VE3KP	193	63	SOCW HP	36,477
VE3MV	120	62	SOCW LP	22,320
VE3TW	130	59	SOMIX HP	20,945
VE7CV	84	56	SOMIX HP	12,432
VE2FK	68	45	SOCW HP	9,180
VE2GT	56	26	SOMIX HP	4,342
VA3PAF	42	34	SOMIX LP	4,114
VE3FH	45	29	SOCW LP	3,915
VE3MGY	43	30	SOCW LP	3,870
VA3FN	44	29	SOCW LP	3,828
VE3TG	48	23	SOCW LP	3,312
VE3HEU	34	26	SOCW LP	2,652
VA3RKM	32	26	SOCW LP	2,496
VE3TM	32	25	SOCW LP	2,400
VE7IO	31	25	SOCW LP	2,325
VE7BGP	31	21	SOMIX LP	1,890
VA3ROC	26	19	SOMIX LP	1,387
VE9OA	24	19	SOCW LP	1,368
VA3IJK	22	17	SOMIX LP	1,105
VE6CLE	24	22	SOPH LP	1,056
VA3PC	22	22	SOPH LP	968
VE3KOT	18	15	SOCW LP	810
VA6RCN (VE3RCN)	17	15	SOMIX LP	705
VE3HZ	20	17	SOPH LP	680
VE3KG	15	15	SOCW HP	675
VE3KJQ	16	11	SOCW QRP	528
VE3DQN	13	12	SOCW QRP	468
VE3JZT	13	12	SOMIX LP	456
VA7USD	15	13	SOPH QRP	390
VE3OU	11	10	SOPH LP	220
VE3KTB	10	8	SOMIX LP	176
VE3AC/M	4	4	SOPH LP	32
VE9RLW	4	3	SOPH LP	24
VE6SYD	0	1	SOPH LP	2

Checklog: VA2EBI

NEW ENGLAND QSO PARTY – May 2022

Call	Category	CW QSOs	SSB QSOs	Total QSOs	Counties	Score
VE3TG	SOLP	195	73	268	61	28,243
VE3MV	SOLP	193		193	48	18,528
VE3TW	SOHP	142	56	198	53	18,020
VE3KP	SOHP	175		175	50	17,500
VE3YT	SOHP	161	21	182	48	16,464
VE2FK	SOHP	173		173	45	15,570
VE3NFN	SOLP	110	37	147	46	11,822
VE3TM	SOLP	116		116	47	10,904
VE2GT	SOHP	63	42	105	43	7,224
VE1ZAC	SOLP	65	40	105	41	6,970
VE3HZ	SOLP		114	114	48	5,472
VE3KOT	SOLP	75	6	81	34	5,304
VA3FN	SOLP	77		77	34	5,236
VA3RKM	SOLP	67		67	36	4,824
VA3RSA	SOLP	75		75	32	4,800
VE3MGY	SOLP	67		67	31	4,154
VE6TL	SOHP	54	12	66	30	3,600
VE5MX	SOHP	51		51	34	3,468
VE3AQ	SOLP	57		57	30	3,420
VY2LI	SOLP	55		55	30	3,300
VA2EBI	SOHP	49	5	54	31	3,193
VA1MM	SOLP	52		52	29	3,016
VE3AYR	SOLP	49		49	29	2,842
VA3IJK	SOLP	25	24	49	27	1,998
VA3PC	SOLP		55	55	36	1,980
VE3PQ	SOLP	40		40	24	1,920
VE9RLW	SOLP		48	48	36	1,728
VE3KG	SOHP	32	2	34	26	1,716
VA3PAF	SOLP	26	12	38	24	1,536
VE3DQN	SOQRP	33		33	23	1,518
VE3KJQ	SOQRP	29		29	22	1,276
VE3AC	SOLP		42	42	29	1,218
VE3JZT	SOLP	21	14	35	21	1,176
VE1RF	SOLP		39	39	27	1,053
VE3KTB	SOLP	16		16	15	480
VA2PHK	SOLP	13		13	12	312
VE7BGP	SOLP	11	1	12	9	207
VE7IO	SOLP	11		11	9	198
VE3OU	SOLP		13	13	11	143
VE6CLE	SOLP		2	2	2	4

VOLTA RTTY CONTEST – May 2022

Call	QSO	Mult	Category	Score
VE2BVV	240	72	SOAB	52,721,280
VE2QV	26	19	SOAB	129
VY1XY	13	9	SO20	30

Checklog: VE3MGY

ARRL JUNE VHF CONTEST – June 2022

Call	QSO	Mult	Category	Section	Score
VE3MIS (VA3CW VA3ELE VA3FIP VA3HES VA3JK VE3KFL VE3MYO)					
	478	234	LM	GTA	127,764
VE3OIL/R	359	191	R	GTA	123,768
VE5MX	548	199	SOLP	SK	106,067
VE3WCC (VA3IGO VE2ZAZ VE3FN VE3IRR VE3KI VE3XRA)					
	375	185	UM	ONE	87,690
VE3DZ	395	194	SO3B	GTA	75,078
VE3WY	341	190	SOHP	ONS	62,700
VE3WJ/R	181	152	R	GTA	54,568
VA6AN	290	135	SOLP	AB	38,880
VE3DS	203	128	SO-ALG-LP	GTA	38,784
VE3EJ	238	135	SOHP	GTA	31,455
VE2EBK	234	122	SOLP	QC	26,962
VE3VN	234	111	SO-ALG-3B	ONE	25,530
VE3NRT	216	120	SOHP	GTA	24,120
VE3RX	177	124	SOHP	ONN	21,576
VA3IKE	162	120	SO3B	ONS	20,640
VA2BN	200	97	SO3B	QC	18,042
VY2HF	227	80	SOLP	PE	17,680
VE3MDX	161	105	SOHP	GTA	16,170
VE3WG	144	70	SO-ALG-LP	GTA	10,710
VE3GKT/R	142	69	RL	GTA	10,695
VA2VT	138	78	SOP	QC	10,530
VE6BMX	116	80	SOHP	AB	9,920
VE2DLC	154	57	SO-ALG-LP	QC	8,493
VA7DX	139	64	SOLP	BC	8,256
VE1RSM	124	68	SOLP	MAR	8,092
VE7DAY	113	72	SOHP	BC	8,064
VE3KG	110	70	SO-ALG-HP	ONE	7,700
VE6KC	104	57	SO-ALG-LP	AB	6,726
VE1BZI	117	57	SOLP	MAR	6,555
VX7DX	110	60	SOHP	BC	6,360
VE3SST	98	64	SO3B	ONE	6,208
VA3TIC (VA3WW)	102	68	SOLP	ONE	6,188
VE3ELL	81	64	SOHP	ONS	5,504
VA6WWW	92	60	SO3B	AB	5,340
VO1KVT	101	50	SO-ALG-HP	NL	5,050
VE2NTT	89	58	SOLP	QC	5,046
*VE3LFS	80	68	SO3B	ONN	4,828
VA7ROH	123	33	SOLP	BC	4,521
VE1DAC	93	53	SO3B	MAR	4,452
VE9AA	94	47	SO-ALG-HP	MAR	4,371
VE3TM	84	47	SO-ALG-3B	ONE	3,901
VE1JBC	77	52	SOHP	MAR	3,796
VE3ADQ	82	45	SOLP	ONN	3,420
VA3KRT	64	46	SO-ALG-3B	ONE	2,898
VE2OTA	65	46	SOLP	QC	2,806
VA3PAF	59	42	SOLP	ONS	2,394
VA7SC	66	25	SO-ALG-LP	BC	2,325
VA7ST	61	38	SOHP	BC	2,242
VA3FN	54	40	SO-ALG-LP	ONS	2,080
VE7HR	62	23	SO-ALG-LP	BC	1,978
VE2NR/R (VE2DDZ)+	41	31	R	QC	1,922
VE3KH	32	21	SO-ALG-LP	ONS	1,827
VE3IQZ	48	38	SO-ALG-3B	ONE	1,824
VO1HP	44	36	SOLP	NL	1,548
VE6MB	38	35	SOLP	AB	1,470
VE6WMS	49	32	SO3B	AB	1,408
VG3RSA	39	32	SO3B	GTA	1,184
VE3QC	42	29	SOLP	ONE	1,160
VE3RWJ	89	9	SOFM	ONS	1,089
VE3GFN	39	28	SO-ALG-LP	GTA	1,064
VE3EUR	37	28	SOLP	ONE	1,008
VE2HAY	37	24	SO-ALG-LP	QC	960
VA6RCN (VE3RCN)	36	30	SOLP	AB	930
VE3RKS/R	30	26	RL	ONS	754
VE4GV	30	25	SOHP	MB	750
*VG7OTC/R (VA7OTC)	46	14	RL	BC	728
VE9RLW	30	21	SO-ALG-LP	MAR	609
VE3EG	30	18	SO-ALG-3B	GTA	594
VO1CH	31	18	SO-ALG-LP	NL	540
VE7AFZ/R	31	14	RU	BC	490
VE3IMU	56	6	SOLP	GTA	456
VA2LGQ	21	19	SO-ALG-3B	QC	399
VE3RXH	20	17	SO3B	ONE	323
VE7AB	21	13	SO3B	BC	260
VE3HX	18	14	SO-ALG-LP	ONE	252
VA2DG	23	8	SOFM	QC	240
VE6GTZ	15	15	SOLP	AB	210
VE7KSB	21	10	SOLP	BC	190
VE3JGL/R	8	9	RU	ONE	171
VE3RVZ	12	12	SO-ALG-LP	ONE	144
VE7JH	18	6	SOP-ALG	BC	126
VE3AYR	26	3	SOFM	GTA	120
VX2GT (VE2GT)	12	10	SO-ALG-HP	QC	110
VA3YI	12	9	SO-ALG-3B	GTA	108
VA3CJZ	36	2	SO-ALG-LP	ONS	100
VA6MA	11	9	SO-ALG-LP	AB	81
VE3TOK	10	7	SO3B	ONS	70
VX7VIE	10	6	SOP	BC	60
VE2HIT	8	8	SO-ALG-LP	QC	56
VE7BGP	10	6	SO3B	BC	54
VA3MZD	7	7	SOP-ALG	ONS	49
VA3MW/R	5	2	R	ONE	32
VE2GT/R	5	7	RL	QC	28
VE1KAO	5	5	SO3B	MAR	25
VE2KHC	2	2	SOLP	ONE	16
VA2WDW	3	3	SOFM	QC	15
VE3KCN (VE3SWR)	5	2	SO-ALG-LP	ONS	10
VE3JZT	3	3	SOLP	ONS	9
VA2YZX	3	2	SOP-ALG	QC	4
VA3RKM	3	3	SOP	ONE	3
VA3RQX	1	1	SOLP	GTA	2

Note: an * indicates received after the deadline and/or are not eligible for awards.
3B -Single Op 3-Band; A - Single Op; B - Single Op High; FM - Single Op, FM Only; Q - Single Op Portable; L - Limited Multiop; M - Multi Multi; R - Rover; RL - RL; RL - RL; RU - UnRL

INDIANA QSO PARTY – May 2022

Call	QSO	Mult	Category	Score
VE3KP	52	29	SO HP	3,016
VE3MV	53	23	SO LP	2,438
VE3JZT	42	31	SO LP	1,674
VE3HZ	47	35	SO LP	1,645
VE3TW	30	22	SO HP	1,144
VE5MX	28	18	SO HP	1,008
VA3IJK	24	18	SO LP	648
VE3PQ	19	15	SO LP	570
VA3PAF	21	16	SO LP	512
VE3KG	16	12	SO HP	384
VE3DQN	15	12	QRP	360
VE2FK	13	13	SO HP	338
VA3PC	20	14	SO LP	280
VE3AC	18	15	SO LP	270
VE6TL	8	7	SO HP	98
VE3TM	7	7	SO LP	98
VA3RKM	7	6	SO LP	84
VA2EBI	6	6	SO HP	72
VE2GT	6	5	SO LP	60
VE9RLW	9	6	SO LP	54
VE6CLE	3	3	SO LP	9
VE7BGP	2	2	SO LP	8
VE7IO	1	1	SO LP	2

KENTUCKY QSO PARTY – June 2021

Call	QSO	Mult	Category	Score
VE3TW	33	23	SO HP	1,880
VE2FK	29	22	SO HP	1,676
VA3PAF	18	14	SO LP	1,424
VE3PQ	12	10	SO LP	820
VE3MV	12	11	SO LP	806
VE3JZT	15	13	SO LP	690
VE3AYR	7	7	SO LP	396
VA3FN	8	6	SO LP	392
VE3AC	9	9	SO LP	362
VA3PC	8	8	SO LP	328
VE3HZ	8	8	SO LP	328
VE2GT	5	4	SO LP	272
VE3DTI	3	3	QRP	254
VA3IJK	3	3	SO LP	236
VA3RKM	2	2	SO LP	216
VE3DQN	4	4	QRP	196

DELAWARE QSO PARTY – May 2022

Call	QSO pts	Mult	Score
VE3HZ	70	4	1,170
VE3MV	100	5	1,050
VE3TW	100	5	1,050
VA3IJK	50	3	650
VA3RKM	100	3	650
VE3JZT	40	3	530
VA3FN	80	3	530
VE3ETE	30	3	410
VY2LI	60	3	410
VE2FK	80	4	370
VE3TM	80	2	370
VA3PC	30	2	290
VE3AC	30	2	290
VA3PAF	20	2	210
VE5MX	40	2	130
VE9RLW	10	1	90
VE3CRU	10	1	90
VE3DQN			

Contest Calendar: May, June and Early July 2023

10-10 Int. Spring Contest, CW	0001Z, May 6	2359Z, May 7	http://www.ten-ten.org/index.php/activity/2013-07-22-20-26-48/qso-party-rules
ARI International DX Contest	1200Z, May 6	1159Z, May 7	http://www.ari.it/
7th Area QSO Party	1300Z, May 6	0700Z, May 7	http://7qp.org/
Indiana QSO Party	1600Z, May 6	0400Z, May 7	http://www.hdxcc.org/inqp/rules.html
Delaware Qso Party	1700Z, May 6	2359Z, May 7	https://www.fsarc.org/qsoparty/rules-2022.htm
New England QSO Party	2000Z, May 6	0500Z, May 7	https://neqp.org/rules/
New England QSO Party	1300Z, May 7	2359Z, May 7	https://neqp.org/rules/
CQ-M International DX Contest	1200Z, May 13	1159Z, May 14	https://cqm.srr.ru/en/rules/
Canadian Prairies QSO Party	1700Z, May 13	0300Z, May 14	https://cpqp.ve6hams.ca/
VOLTA WW RTTY Contest	1200Z, May 13	1200Z, May 14	http://www.contestvolta.com/rules.pdf
50 MHZ Spring Sprint	2300Z, May 13	0300Z, May 14	https://sites.google.com/site/springvhfupsprints/home/2022-information
Arkansas QSO Party	1400Z, May 20	0200Z, May 21	http://www.arkqp.com/
His Majesty King of Spain Contest, CW	1200Z, May 20	1200Z, May 21	http://concursos.ure.es/en/s-m-el-rey-de-espana-cw/bases/
CQ WW WPX Contest, CW	0000Z, May 27	2400Z, May 28	http://www.cqwpx.com/rules.htm
Kentucky QSO Party	1300Z, Jun 3	0100Z, Jun 4	http://www.kyqsoparty.org/rules/
ARRL Inter. Digital Contest	1800Z, Jun 3	2400Z, Jun 4	https://contests.arrl.org/dig/
VK Shires Contest	0600Z, Jun 10	0600Z, Jun 11	http://www.wia.org.au/members/contests/wavks/
Asia-Pacific Sprint, SSB	1100Z, Jun 10	1300Z, Jun 10	http://jsfc.org/apsprint/aprule.txt
Portugal Day Contest	1200Z, Jun 10	1159Z, Jun 11	http://portugaldaycontest.rep.pt/rules.php
ARRL June VHF Contest	1800Z, Jun 10	0300Z, Jun 12	http://www.arrl.org/june-vhf
All Asian DX Contest, CW	0000Z, Jun 17	2400Z, Jun 18	https://www.jarl.org/English/4_Library/A-4-3_Contests/2022AA_rule.htm
Stew Perry Topband Challenge	1500Z, Mar 11	1500Z, Mar 12	http://www.kkn.net/stew/
West Virginia QSO Party	1600Z, Jun 17	0400Z, Jun 18	https://www.qsl.net/wvsarc/2022-west-virginia-qso.html
His Majesty King of Spain Contest, SSB	1200Z, Jun 24	1200Z, Jun 25	http://concursos.ure.es/en/s-m-el-rey-de-espana-ssb/bases/
Ukrainian DX DIGI Contest	1200Z, Jun 24	1200Z, Jun 25	http://izmail-dx.irc.net.ua/
ARRL Field Day	1800Z, Jun 24	2100Z, Jun 25	http://www.arrl.org/field-day
RAC Canada Day Contest Rules_eng.pdf	0000Z, Jul 1	2359Z, Jul 1	https://www.rac.ca/wp-content/uploads/2022/05/CanadaDayContest2022_
DL-DX RTTY Contest	1100Z, Jul 1	1059Z, Jul 2	http://www.drcg.de/dldxrtty/dl-dx-rtty-english.html
Marconi Memorial HF Contest	1400Z, Jul 1	1400Z, Jul 2	http://www.arifano.it/contest_marconi.html
IARU HF World Championship	1200Z, Jul 8	1200Z, Jul 9	http://www.arrl.org/iaru-hf-world-championship

Note: In the above chart an * indicates Local Time. The "Contest Calendar" 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.

ARKANSAS QSO PARTY – May 2022

Call	Category	Score
VA3PAF	SOMIX LP	1,082
VE3MF	SOMIX LP	875
VE3HEU	SOMIX LP	870
VG3RSA	SOMIX LP	818
VE2GT	SOMIX HP	808
VE3MV	SOMIX LP	745
VA2QR	SOMIX HP	523
VA3IJK	SOMIX LP	508
VE3AC	SOSSB LP	470
VE3PQ	SOCW LP	360
VE3DQN	SOMIX QRP	344
VE3JZT	PORTABLE	288
VA2KD	SOSSB LP	220
VE9RLW	SOSSB LP	209
VA3FN	SOCW LP	24
VE3AYR	SOCW LP	4
VE3HZ	SOSSB LP	4

CQ-M INTERNATIONAL DX CONTEST – June 2022

Call	QSO	Mult	Category	Score
VE3NNT	188	57	SOABCW HP	30,495
VA3TNM	133	38	SOABCW HP	14,364
VE3CT	30	21	SOABCW HP	1,827
VE3EY	48	21	SOABCW HP	2,814
VE3FH	36	17	SOABCW LP	1,598
VA2EBI	57	15	SOCW20 HP	2,385
VE6SYD	1	1	SO20SSB HP	3

Checklog: VA2OBW

ALL ASIAN DX CONTEST, CW – June 2022

Call	QSO	Mult	Category	Score
VE3CT	242	155	SOAB	36,270
VA7KO	231	142	SOAB	33,654
VA6WWW	74	56	SOAB	4,144
VA3AR	64	51	SOAB	3,162
VE7IO	56	49	SOAB	2,744
VE3EY	54	49	SOAB	2,646
VA3TNM	51	38	SOAB	1,862
VA2EBI	44	37	SOAB	1,628
VE5MX	45	33	SOAB	1,485
VE3VN	5	5	SOAB	25
VE6GTZ	13	11	SO20	132
VE4DL	5	5	SO20	25
VE3BR	3	3	SO20	9
VE3HX	2	2	SO20	4

HIS MAJESTY KING OF SPAIN CW CONTEST – May 2022

Call	QSO	Mult	Category	Score
VE3TM	160	67	SO LP	14,070
VE2FK	79	39	SOAB HP	3,861
VE3NE	65	34	SOAB HP	2,686
VA3IK	50	29	SOAB HP	1,914
VE3EUS	12	11	SO20	198
VE9OA	7	6	SOAB HP	66

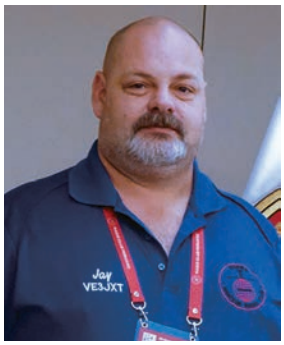
Checklog: VE3KOT

WEST VIRGINIA QSO PARTY – June 2022

Call	Category	Score
VE3TW	SOHP	1,720
VE9ML	SOLP	1,190
VA3GKO	SOLP	1,112
VE3HZ	SOLP	860
VA3PAF	SOLP	624
VE1RF	SOLP	520
VE7CV	SOLP	497
VE3JZT	SOLP	442
VE3AYR	SOLP	424
VA3IJK	SOLP	390
VE9RLW	SOLP	230
VE3KOT	SOLP	191
VA2KD	SOLP	164
VA3FN	SOLP	170
VE3MV	SOLP	156
VE3DQN	QRP	148

Message from RAC Community Services Officer

Jason Tremblay, VE3JXT | Community Services Officer | community@rac.ca



The new Auxiliary Communications Service (ACS) is ramping up and we have been working very hard on its implementation. Our efforts have paid off as we have received countless inquiries from several organization including governments and non-governmental organizations (NGOs) and others who not only want to hear more about the new ACS, but would like to be part of its implementation in Canada.

In December 2022, I was pleased to meet with Bernard (Bernie) Derible – Ontario's Commissioner of Emergency Management and Deputy Minister of Emergency Management within the Treasury Board Secretariat – and other representatives of several Ontario NGOs. At the meeting we discussed Emergency Management Ontario's the plans and goals.

We have also attended several meetings since then and we have discussed a wide range of topics including possible future programs and building a stronger relationship with Emergency Management Ontario. One of the meetings was held at the Provincial Emergency Operations Center (PEOC) and RAC President Phil McBride, VA3QR and I had the opportunity to test the radio equipment in the PEOC radio room with the help of our local communications teams.

I am also working with York University's "CIFAL York" program to develop the final stages of the Auxiliary Communications Training Program (https://www.yorku.ca/cifal/). CIFAL York is an internationally sponsored program through UNITAR (https://www.unitar.org/) United Nations Institute for Training and Research (1963-2023). There are 30 plus facilities located around the world with the focus of building local programs to benefit communities, provide information and training sessions and conduct research. CIFAL York has connections with Emergency Management and other professional organizations across Canada and with their assistance we are developing accredited programs that meet the requirements of Emergency Management.

CANWARN Update

We are also pleased to be working with Geoff Coulson again this year to provide CANWARN training. He is a Meteorologist with 37 years experience including 35 years with Environment Canada as an Operational Forecaster, Trainer, Outreach Officer and Warning Preparedness Meteorologist (WPM).

As a Meteorologist, he provided a variety of clients with weather information from media to other levels of government and the private sector. He managed the CANWARN Storm Spotter Program in Ontario and was a member of the Provincial Flood and Forecasting Committee for several years. Since his retirement, Geoff has continued to provide weather presentations.

We are also planning to hold a special online Zoom event in June at which you will have an opportunity to chat with Geoff and I and ask questions. We will provide more information on the RAC website at https://www.rac.ca/canwarn/.

New Section Managers

As previously reported we have made several changes to the Field Organization including how we appoint Section Managers.

In January, RAC Vice-President Al Boyd, VE3AJG, and I met with Bill McMaster, VY2WM/VY2EM, from Prince Edward Island and Ron Pettigrew, VE6RWP, from Alberta. Bill and Ron were the first two Amateurs to go through the new Section Managers approval process and it worked very well as you will see from their bios.

I would like to congratulate Bill in his new role as Section Manager for Prince Edward Island. I also congratulate Ron who will be taking over for Garry Jacobs, VE6CIA, in Alberta in June. Thank you both very much for being taking part in this new process and helping to develop a stronger leadership for the RAC Field Organization. I look forward to working with both of you in the future.

Bill McMaster, VY2WM

I was born in Kingston, Ontario in 1957, and grew up in Gananoque. I was licensed in 1978, when I was attending the University of Waterloo, and was assigned the call sign VE3LCQ. After graduating with a degree in Physics I joined the Royal Canadian Mounted Police and was posted to Brandon, Manitoba where I took the call sign, VE4AHM.

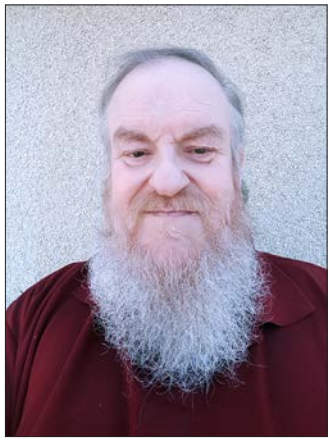
I upgraded to an Advanced Amateur licence in 1981 and shortly after obtained the second Digital Amateur Radio certification issued in Manitoba. I moved to Ottawa in 1983 and was given the call sign VE3OJX. I moved to Prince Edward Island in July 1991 and chose VY2WM as my call sign.

I am now a retired Software Engineer and have been the President of the Charlottetown Amateur Radio Club for the past three years. I often operate a remote station at my cottage QTH on the east coast of PEI. I had been active in EME on

432 MHz running a 4 x 19 element antenna array and 1KW on 70 cm using my other call sign VY2EME. I am currently assembling a 3cm EME station consisting of a 1.8m solid dish with a 432 MHz transverter, and a 35 watt RF amp.
I operate a VHF RMS gateway for Winlink Packet and VARA FM messages.

I'm also an amateur beekeeper and enjoy beach walking with my wife.

Ron Pettigrew,VE6RWP



I was born in Port Arthur, Ontario in 1957 and grew up in Winnipeg and then St. Albert, Alberta.

I worked as a Gas Plant Operator for Imperial Oil for 10 years and a System analyst for them for three more after that. I then worked as a Support Specialist and an Asset Manager for Hewlitt-Packard. I am currently Semi-retired.

I completed my Basic with Honours Certificate in May 2017 and my Advanced in December of the same year. I obtained my RAC Certified Emergency Coordinator (CEC) designation in October 2018.

My primary interest in Amateur Radio is Emergency Communications and I have been active in the Amateur Radio Emergency Service since becoming an Amateur. I worked on RAC's National Winlink Training Plan Committee and on the rewrite of the RAC ARES training guide.

I was appointed as the Assistant Emergency Coordinator for Edmonton and Area ARES on July 19, 2019 and I took on the role of Assistant Section Manager for the Alberta, Northwest Territories and Nunavut Section in February 2020.

I sit on the NGO Council of Alberta as the ACS/ARES Alberta Section Representative.

TCA

Tips on How to Prepare for Field Day 2023

Michael Hickey, VE3IPC
Ontario East Section Manager

Early May is a good time to plan for Field Day which is held this year on the weekend of June 24-25. Here is a guide with steps to have a successful Field Day.

Review last year's Field Day and decide on objectives based on the lessons learned.

Choose the Field Day site location and obtain any necessary approval.

Designate a Public Relations person to write up and submit promotional media articles to the media well in advance.

Invite your local Mayor and Emergency Management personnel and other NGOs.

Designate a volunteer who can provide visitors with a tour of your Field Day operation and explain its purpose and also describe the benefits of the Amateur Radio Service.

Prepare displays, pamphlets, posters, copies of TCA magazines and so on.

Inspect the site and make drawings with notes to plan the event while onsite, but record everything. All details need to be brainstormed.

Create a detailed plan and share with your FD Team member and with members of your club or ARES/EmComm group. Don't forget Murphy's Law and make contingency plans for any eventualities.

Find all of the equipment and inspect, clean and repair them for installation onsite. These include tents, generators, solar panels, extension cords and power bars.

Find all antenna support components and inspect, clean and repair them if needed.

Unroll wire antennas, inspect and make them ready for operation.

Inspect all radio coaxes, connections, connector adapters and test everything.

Identify and log each item. Repeat for all directional antennas, verticals and their support systems as well.

Once everything has been found, inspected and made ready for FD:

Prepare all kits for travel and then place them in proper storage until deployment.

Take a complete inventory of all parts, tools and equipment and note who they all belong to.

Locate FD site washroom facilities and make sure they are suitable. Remember, things can change quickly without notice.

Plan out all food and drinks and everything that this will entail.

Consult your FD drawings for Comms tents installation vis-a-vis the antennas, plus the rest area and food tent locations.

Prepare for all water requirements for both drinking and dishwashing.

Organize the kitchen area including all recycling and garbage disposal.

Look for a practical spot to install your generator and take into consideration noise, extension cord lengths, strip bars, and a safe place to store generator fuel.

Organize security and crew shifts for the FD site and not just the Comms tents.

Consult the Field Day Contest Rules and learn what counts for FD points.

Take photos, videos and keep records of the event, and always include "lessons learned" in the debrief reports, specially noted for all.

On the morning of Field Day 2023:

Set up according to plans and practices.

Consult your team radio operator's schedules.

Have a separate sign-in sheets for both guests and radio operators as part of the official record for the report.

Set up your display sign on a highly visible spot so everyone knows where the event is taking place.

After the event is over prepare a detailed report, based on the debrief, and send it to your RAC Section Manager.

Please also consider preparing an article and photos and send them to the TCA Editor at tcamag @yahoo.ca.

Lastly, have a great time but watch the weather closely – it can be full of surprises on Field Day!

TCA

The Beginning of the Mid-Island AREDN Network

Ron Rowe, VE7RQX

In the very early days of the pandemic, a very small group of Amateurs from the communities of Qualicum Beach, Parkville and Nanaimo in British Columbia gathered on Zoom to talk about an interesting technology they'd come across called Digital Mobile Radio (DMR). Now, most Amateurs will probably roll their eyes to think that DMR is something "new", but for those on Vancouver Island – where the most common phrase is "that's not how we do it here" – DMR was a hard sell in a region of C4FM and System Fusion repeaters. Of course, AREDN – the Amateur Radio Emergency Data Network – was something unheard of.

I had been trying to bring up interest in AREDN and also HamWan – "a modern, multi-megabit, IP-based, digital network" at http://hamwan.org/ – for six months prior to the meeting, but without success. Aside from a very small group of Oceanside Amateurs, the wider community was simply not interested in trying new technologies. The Mid Island DMR group is, by its very nature, a group of Amateurs interested in network technologies and trying new things so I felt safe enough to bring up the topic of moving away from Packet Radio to higher bandwidth technologies using the Microwave Bands allocated to Amateur Radio. Namely, AREDN and HamWAN.

As luck would have it, Amateurs in Nanaimo already had some Microwave equipment in storage from when they had provided communications support for the "Great International World Championship Bathtub Race and Nanaimo Marine Festival" (https://www.bathtubbing.com/). Although they were not familiar with AREDN, they were very curious about it as were the other Amateurs who attended the meeting.

Within a couple of weeks, several Nanaimo Amateur Radio Association members had pulled out their old Ubiquity gear, Internet phones (IP) and purchased some MikroTik hAPs and dishes. Soon Amateurs on the Mainland also took up the challenge as did those in Parksville/Qualicum Beach when a group order was placed with the Solimedia technology e-store in Vancouver.

Nanaimo has continued to act as the lead in the project and they made the decision to adapt AREDN instead of HamWAN because AREDN was easier to set up and operate. The end result of that initial DMR meeting is a regional AREDN network with one Emergency Communications save under its belt and big plans for the future.

Ladysmith Amateur Radio Emergency Data Network (AREDN)

Devan Banman, VE7LSE

The first RF installation in our network was at Ladysmith, which is a town located on the 49th parallel north on the east coast of Vancouver Island.

I decided to just go ahead and purchase the necessary equipment to see how it all worked. I have a repeater tower here on the property and thought this would be a good location to try it out.

I installed 2 MikroTik 19 dBi sector antennas and ran the outdoor rated Cat 5 cable into the repeater shack and hooked it up to the Power over Ethernet (PoE) injector.

The data side of the PoE injector was then jumpered from each port to connect the two sector nodes together. Voltage from the 12-volt battery bank goes through a 12V to 24V converter and up to the sectors. A few days later Chris Anton, VE7TOP, and I went to Ladysmith just across the bay to see if we could make a connection. Lo and behold we had no difficulty making a connection. We thought, "this was pretty cool! Let's try another location a little further away." We then went south about seven kilometres and tried again and were still able to make a good connection. As a result, we happily announced that we had now had AREDN coverage in the Ladysmith area. More tests were conducted by Mike Lamont, VA7MLZ, and we also tried some Voice over Internet Phone (VoIP) connections with some success.

It was now time to get some users on the network. I installed a MikroTik dish at my house and pointed it up the hill to make a connection. It worked and got a great signal. My station in the shack consists of a MikroTik HAP, Cisco SPA 525 IP phone, a Raspberry Pi running FreePBX for a SIP (Session Initiation Protocol) phone server and the dish connected to my sector antennas. A short time later we got our Mount Benson high altitude site – 9 kilometres west of Nanaimo – installed with two 19 dBi sector antennas. Tests were done around the Nanaimo area and on Gabriola Island at first. Chris, VE7TOP, also did tests in the Parksville area with success.

In the summer of 2022, Andrew McPhee VA7ASI, and I worked on linking my sector nodes to his off-grid nodes on Salt Spring Island (see page 54). We initially pointed a dish from those nodes to Mount Benson's nodes. The distance between them was on the fringe of good signal strength and quality so we decided to try and link to my nodes instead. After pointing my dish at his we got great results with over 30dB signal-to-noise ratio (SNR). We were very happy. I'm now in the process of linking to the Mount Benson nodes in Nanaimo to complete the link from Salt Spring Island to the rest of the network over RF.

We have a few services running on the network now. Our main PBX phone server is hosted by Kyle McLaughlin, VE7ODG, in Nanaimo and it has been working great! I also host a backup one on a Raspberry Pi 3B. The two are trunked together so that they can both be used and you can call extension numbers from one to the other. We also have a link to the Alberta PBX phone system as well.

Some users have set up external phone numbers as landlines. Several of the Amateurs on the network are hosting MeshChat services for text messaging between users. We do have live flight tracking over the network and that is hosted on a FlightAware Flight Feeder Raspberry Pi setup you can get from FlightAware. It's pretty cool seeing the beacons from the nearby aircraft! As a group, we hope to start implementing IP cameras at some of the sites.

AREDN has been a fun and interesting learning experience and we hope you check it out!

Nanaimo AREDN – Chris Anton, VE7TOP

Jumping into something totally different in Amateur Radio like AREDN is always a lot easier if there is some existing equipment available to play with. We were fortunate that the Nanaimo Amateur Radio Association had a variety of Ubiquiti Rocket M5 transceivers, 5.8 GHz dishes and sector antennas available tucked away in a cupboard. This gear had been purchased to set up video links to cover a local bathtub race. Think of a small planing hull married to a fibreglass bathtub and powered by a 10 HP outboard motor racing on a 25-kilometre course on largely open ocean. The project worked well and then the gear was stored away at our clubhouse.

After a lot of reading and research on the AREDN site it looked like we could try this "firmware flashing" challenge. First to flash was a MikroTik hAP and, after a number of valiant attempts, the Ubiquiti Rocket M5 transceivers were flashed and running AREDN. Tunneling across the internet between hAP units showed us how the AREDN software looked and how we could configure the nodes. Now the question was, could we talk to anyone using RF.

Chris, VE7TOP, doing the first RF tests from Nanaimo to Ladysmith (VA7DXX's QTH).

Kevin, VE7KGV, Devan, VE7LSE and Gord, VE7UY, completing the Mount Benson sector install.

One of our members David Evans, VA7DXX, has a QTH location on a high ridge south of Nanaimo. Using the Ubiquiti Airlink tool it looked like there was a 23-kilometre line of sight from there to a high elevation subdivision in Nanaimo. With a sector antenna at one end and a small and a medium dish at the other, we discovered how easy and well an AREDN connection could be made. The Airlink tool makes it easy. Drawing the line on the satellite view from one site to the other is simple. Zoom in on one site and then know you don't have to be able to see the other site, you only have to point to the street lamp a block away which lies directly under the Airlink plot. Amazingly with a little adjustment we had a good +20 dB connection and by driving to another high elevation site we had a 28-kilometre link.

Nanaimo sits on the east side of Vancouver Island and directly behind the city is Mount Benson with an elevation of about 1,100 metres. This site hosts a variety of VHF and UHF repeaters courtesy of Cercomm Electronics Ltd who have a commercial telecom site at the summit. If we wanted an AREDN site with great coverage this was the natural location. Sulo Poystila, VE7SUL, at Cercomm has always been a great supporter for the Amateur Radio community so he and his staff were happy to support our plan for the site. This is a great site with only one significant challenge. One third of the year the site is inaccessible due to snow and winter storms. Whatever equipment we mounted up there would need to be able to survive the winter and be stable enough to keep working without any maintenance.

The design was for two Ubiquiti 120-degree sector antennas mounted together, one pointed southeast and one pointed northwest to provide coverage all across Nanaimo and covering 80 kilometres along the east coast of Vancouver Island. Putting this all together though would require funds and the local Amateur community came together with donations to buy the antennas, the cable, mounting hardware, batteries and a power supply. All this was connected together and tested down below in a garage courtesy of Jack Olsen, VE7GDE.

Even in the summer access to the site is a challenge for any vehicle. Courtesy of Cercomm we were able to hitch a ride up to the site where they helped us get the antennas installed.

Fortunately there was an existing 4-inch mast located in the middle of the communication building which was perfect for this installation. Unfortunately, we had only brought 2", 2.5" and 3" clamps. The good news was that a length of 2.5" pipe was found underneath the building along with the necessary Sinclair pipe to pipe connectors so we were in business. The pipe was only long enough for one antenna but that was now operational. A huge thanks to Drew from Cercomm for doing the installation up on the edge of the roof with a huge drop down below.

Many weeks later a second trip up the mountain with a longer pipe was made. Gord Patalla, VE7UY and Devan Banman, VE7LSE, pulled everything apart and reassembled with both antennas in place. It was now September so we were running out of time. Tests had shown that the antennas were angled too far down. It was also pointed out by Dave from Cercomm that the entire installation was too high and might be subject to excess movement in the winter 160 km/h winds.

A third trip was made to raise the antenna angle, lower everything closer to the roof line and get ready for winter. Kevin Gerlach, VE7KGV, joined Devan and Gord for this trip. Amazingly it all worked with great coverage provided to small, medium and large dishes aimed from down below the mountain. We had one station connecting from 96 kilometres with a larger dish. Very small 6" square MikroTik SXT antennas worked from 10 kilometres while 18" and 24" dishes provide excellent connections out to 35 kilometres.

This installation has now been operational for 18 months without any interruptions in service. Our current network consists of Amateurs who are now connected over RF and tunnels (over internet) connections from Comox to the Vancouver area. In addition, we are connected to the AREDN network in Alberta which provides the network with MeshPhone and other neat services.

We have recently installed a sector antenna and link dish pointing to Mount Benson to bring AREDN to our main Nanaimo repeater site at Lost Lake. The sector antenna will be used to cover parts of the Sunshine Coast as there are a few AREDN active Amateurs over there. Currently connected to the system is Patrick Truchon, VA7FI, who is linked by RF to the Mount Benson site. He also graciously hosts the West Coast AREDN (www.wcaredn.ca) website for us!

Salt Spring Island AREDN – Andrew McPhee, VA7ASI

Amateur Radio Emergency Data Network (AREDN) is a game changer when it comes to throughput speeds. We have all sent Winlink messages over VHF, paused and waited for the connection, then the little green progress bar to migrate across the screen all while trying to minimize the size of our message. With AREDN that is not the case. Instantaneous send, Wi-Fi style data transfer speeds, VoIP Phone, live video feeds, chat features and more make up a very cool mode of communication to experiment with. Furthermore, in an emergency, having internet speed throughput is a game changer for communication!

Getting involved with AREDN can happen in a variety of ways. An initial approach is to check the AREDN map to see if there are any nodes that you might have line of sight with. You can find the map at: https://www.arednmesh.org/content/aredn-map

If there are nodes available then I encourage getting an antenna and a router. If there aren't any nodes, then you can still get started by getting an AREDN compatible router (https://www.arednmesh.org/content/supported-platform-matrix) and using your own internet to tunnel into the network and see what is there. With AREDN, you are using commercially available hardware and then flashing Amateur Radio firmware onto it for Amateur capabilities. Thus, making sure you have compatible hardware is key! There is lots of information on the AREDN website about this.

Gord, VE7UY, testing the VoIP phone connection after installing the Mount Benson sector antennas!

Devan, VE7LSE, performs the first test from Salt Spring Island to Mount Benson nodes.

The MikroTik hAP, which sells for about $60, is the router that most people in the area use. This is what is needed if you want to connect a phone, computer, antenna etc. The bare minimum for connecting to AREDN is one of these and tunneling in. Solimedia is located over in Vancouver but is often sold out. I have also seen products available on eBay for similar price points but you have to look around.

For antennas, I am a big fan of the MikroTik LHG XL HP5 Which sells for roughly $115. Again, these are often sold out so you may have to poke around for availability. Depending on proximity and visibility of the node you are trying to hit there are a variety of antenna options out there.

We were fortunate on Salt Spring Island to get a grant from Amateur Radio Digital Communications (ARDC) which gave us funding to establish a backbone link to the Vancouver Island Mesh Network and build it out to Fernwood School.

To achieve this we installed a remote node on Mount Belcher. For antennas, it consists of a 30 dBi dish on Ch 135 with a 5 MHz bandwidth pointed towards Mount Benson, which actually has a fantastic connection to a Woodley Range dish as well giving us two points of connectivity. There is a 16 dBi 120-degree sector antenna on Ch 133 with 5 MHz Bandwidth pointed at the north end of the island and a 27 dBi dish on Ch 140, 5 MHz pointed at Fernwood School.

We have 200 watts of solar power going through a Renogy MPPT Charge controller to replenish a 100 Ah LiFePO4 battery with self-heating technology for the cold days. In addition, we are using a Victron SmartShunt connected to a Raspberry Pi running Venus OS to give us remote battery monitoring capabilities on the network. In the box, we have a 12V to 24V up converter feeding a Power over Ethernet (PoE) injector to power the antennas. We are also using a 12V unmanaged network switch to allow all the antennas, Raspberry Pi and additional add-ons to talk to each other. Down the road we are hoping to add a pan/tilt/zoom (PTZ) IP camera to the site to help with wildfire detection and monitoring on the north end of the island.

At the time of writing this article, VA7ASI on the north end of the island and Fernwood School are both connected to the Vancouver Island mesh network through RF which is pretty exciting. Through conversations with other Amateurs on Salt Spring Island and nearby Thetis Island, there is a great deal of interest in using the infrastructure that has been created to join into the network which only helps increase the stability and viability of the network. I look forward to seeing the network continue to grow in coverage and include more hams in the surrounding area. A huge thank you goes to the Amateur Radio Digital Communications organization for providing the initial funding to get this project going on Salt Spring Island.

More info:
https://wcaredn.ca/
http://www.ve7na.ca/aredn/

Gabriola Island AREDN – Paul Giffin, VA7MPG

Starting in 2021 the Coast Emergency Communications Association (CECA) has been working in collaboration with the Nanaimo Amateur Radio Association (NARA) regarding the establishment of an AREDN network.

In a proof-of-concept program the Coast Emergency Communications Association worked with the Gabriola Fire Rescue to establish a link between the #1 Fire Hall and the AREDN site on Mount Benson. Due to the topography on both Gabriola Island as well Vancouver Island multiple challenges were encountered. While members of both organizations were able to install AREDN in their homes, the bulk of the connections were via the tunnel network. Radio links provided additional challenges.

Coast Emergency Communications Association maintains a radio room in the #1 Hall of the Gabriola Fire Rescue. This radio room not only serves Gabriola Island, but is part of the Nanaimo Regional District and the City of Nanaimo communications network. It also serves as a station in the Provincial Emergency Radio Communications System. The room has VHF, UHF and HF capability on both voice and digital modes. In addition a packet VHF/UHF node is operational 24/7.

The AREDN dish was installed on a 50-foot tower located at the old #1 Fire Hall. This tower provides the radio link to Mount Benson as well as a radio link to the new fire hall. As part of the AREDN network a phone was installed in the radio room. This phone was also associated with two different PBX locations on Vancouver Island. A phone number and a link to the Telus network was also installed.

In late November 2022, a storm hit the Georgia Strait Basin bringing very strong winds and a lot of rain. During this storm the aerial cable between Gabriola and Vancouver Island containing phone and fibre optic cables severed. It is my understanding that when the cable severed the ends of the cable came in contact with the high voltage lines that bring power to Gabriola island. When this occurred all communication as well as power was lost on the island. The population of 4,000 plus people lost their 911 and lifeline connections. In addition the bank and nearly all computers, cash

Gabriola AREDN Node temporary first set up on the roof with 40 watt solar panel and 80 Ah 12volts.

registers, ATMs and other equipment went out of service. In essence there were no communications.

Coast Emergency Communication members attended #1 Fire Hall and began their work. One of the first things that occurred was the local Fire Chief was able to speak directly to the Emergency Program Coordinator at the Regional District of Nanaimo via AREDN. This allowed the response to begin immediately even as the Emergency Operations Centre (EOC) was being activated.

It was subsequently learned that when the cable came in contact with the high-tension power lines there was damage to the power lines. While BC Hydro did their best they could not provide full power to the island for several days. It also took several days to repair the fibre optic and phone cables.

While there was never any doubt AREDN would work, the question was could we make it work given our topographical conditions, not to mention all the trees and water in our coverage area. What was set up as a proof of concept worked out very well in a real emergency. We are now working with the local medical clinic to see if they can be included in the network.

Bottom line is AREDN was there and worked well when it was needed. An excellent example of Amateurs working together to provide service to their communities.

https://groups.io/g/Mid-Island-AREDN-Mesh-Network
https://www.arednmesh.org/

Community and Emergency Service Reports (ACS/ARES)

BRITISH COLUMBIA / YUKON:
Acting SM: Bill Gipps, VE7XS
A/SM: David Musselwhite, VY1XY
A/SM: Neil King, VA7DX
STM: Al Ross, VE7WJ
SEC: Acting Al Munnik, VA7MP
SEC: Terry Maher, VYIAK (Yukon)
OOC: Dennis Wight, VE7IJJ
ACC: Karla Wakefield, VA7KJW
CEC: Gursimran Gill, VA7GUR
SBM: Fred Orsetti, VE7IO
Website: www.va7mpg.ca

January-February SM Report:

If you have an item of interest to include in this section, please send it to the Acting Section Manager Bill Gipps, VE7XS, at bill.gipps@gmail.com and to the TCA Editor at tcamag@yahoo.ca.

Scouts Tour and Field Activities – Richard Wodzianek, VA7RLW

The Coquitlam Amateur Radio Club VE7SCC had the pleasure of hosting Les Scouts francophones de Maillardville at our club facilities and in the field at Coquitlam's Mundy Park to enlighten them about Amateur Radio and demonstrate how it can be useful with their Scouting activities such as camping, hiking and much more.

We wish to thank Magalie, Siena, Thomas, Alain and Jovan, VA7JOV, for approaching us, and the club members Ian, VE7HHS, Carlos, VA7CFK, Paul, VE7TL, Phil, VE7KJR, Vic, ,VE7ZSH, Arron, VA7ZZA and Richard, VA7RLW.

Public Service Honour Roll
January: VE7XLH 84; VA7MPG 185; VE7GN 100; and VE7WJ 82
February: VE7XLH 85; VA7MPG 135; VE7GN 100; and VE7WJ 81

ALBERTA:
SM: Garry Jacobs, VE6CIA
SEC: Brian Davies, VE6CKC
STM: Don Moman, VE6JY
OO: Don Moman, VE6JY
wp.rac.ca/ares-alberta-yellowknife-nwt/

January-February SM Report:

Edmonton and Area – EC Colin, VA6CCB

Edmonton ARES was invited to attend an annual Canadian Forces exercise in Edmonton as observers. The intent is for ARES to participate fully in future exercises and to learn how best we can interoperate with our partners during a disaster.

Foothills Area – EC Wally, VE6BGL

Work is progressing on the Amateur Radio Emergency Data Network (AREDN) mesh network including development work on open source M17 digital. More information will be provided on the new Alberta Digital Radio Communications Society website as it develops – https://adrcs.org/adrcs/

Red Deer and Area – EC Stephen, VA6SGL

I organized a demonstration for the Central Alberta Amateur Radio Club meeting of a new gateway set up running VARA FM in Red Deer. Unfortunately, I did not realize the building we were using was clad with stucco. The wire mesh reinforcement makes for an effective Faraday Cage. I will try again at the next in-person meeting with perhaps an outside antenna.

The Sunday evening ARES net remains well attended, usually running 20-30 check-ins around the Central Alberta area.

SM Garry, VE6CIA –

Several changes for the RAC Auxiliary Communications Service are now taking place. One significant change is the removal of the Northwest Territories from the Alberta Section to form a new Territories Section with the other Territories.

We will be happy to report any updates from the Northwest Territories until things are in place in the new Section. Thanks for the reports obtained from the areas guys and please keep them coming.

– 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); Grant Delaney, VA4GD (LGD of Pinawa and surrounding municipalities); Andrew Webb, VE4PER for Portage la Prairie area.
wp.rac.ca/ares-manitoba/

January-February SM Report:

Winnipeg ARES – Jeff Dovyak, VE4MBQ

Winnipeg ARES held a hybrid meeting on January 17.

Glen Napady, VE4GWN, attended the Manitoba Disaster Management Conference from January 25-27 using the complimentary registration that Winnipeg ARES received. Jeff Dovyak, VE4MBQ and Kurt Sargent, VE4GIS, attended the event on behalf of their employers.

Traffic Totals
January: 4
February: 2

ONTARIO – GREATER TORONTO AREA:

SM: Rick Harrison, VA3NV
ASM: George Davis, VE3OGP
SEC: Rick Harrison, VA3NV
ASEC: Robert Galambos, VA3BXG
va3bxg@gmail.com

January-February SM Report:

York Region ARES
EC Mike Crabtree, VA3MCT

The York Region Amateur Radio Club tested both phone and Winlink communications with the Provincial Emergency Operations Centre (PEOC) on February 3, supported by both York Region Emergency Management Office (VA3YEM) and the Markham Emergency Management Office (VA3MEO).

Thanks to Benny, VE3MUU, Barry, VA3LLT and Chris, VE3NRT, for manning the York Region Emergency Operations Centre (EOC) and Alan for manning the Markham EOC. The test showed great collaboration between areas within the region and also to external groups working under the guidance of Robert, VA3BXG, during the planning phases.

Thanks also to RAC President Phil McBride, VA3QR and RAC Community Service Officer Jason Tremblay, VE3JXT, for manning the PEOC and helping build bridges with the province. A full report is available upon request showing tests completed and actions arising. Please send any requests to emcomm@yrarc.org.

The range of positive tests that were completed while working with the province will likely make it easier to work with regional and city municipalities, spurred on by the concerns over last year's Rogers outage that has highlighted most of Canada's vulnerability. We are now working with the York Region Emergency Measures Organization on a range of remediation tasks to improve the operational systems.

Our local YRARC Winlink Wednesday is going strong with 15 training sessions – each session building upon the previous session. Topics have included: Peer to Peer communications; radio; modems; antennas; Winlink for emergency communications; GPS mapping; and message forwarding.

We have introduced three more operators to Winlink and they are now operational using RF and not just Telnet connectivity.

73, EC Mike Crabtree, VA3MCT

ONTARIO NORTH:

SM: Allan (Al) Boyd, VE3AJB
ve3ajb@vianet.ca
STM: Patrick (Pat) Dopson, VE3HZQ
dopsonp@vianet.ca
SEC: Stiig Larsen VE3LBX
slarsen@vianet.ca
OBM: Paul Caccamo, VA3PC
va3pc@ciinet.org
Web: http://ontario.racares.ca

January-February SM Report:

Things have been very busy on the Field Services front and the Auxiliary Communications Service program planning and implementation phase is well underway. RAC Community Services Officer Jason Tremblay, VE3JXT and I have met with all Ontario Section Managers and a new Ontario Section Manager Committee has been formed and are sharing ideas and information. Section Managers throughout Canada have also met and are working on a National Committee dealing with the issues of each province and programs running in respective areas. It is a slow process but it is moving ahead and I will provide updates as things develop.

Elliot Lake – EC Bob Young, VE3ETE

Our Tuesday evening net participation was a bit lighter and averaged 87 check-ins. Our NCS Earl, VE3AB, continues with the CW and SSB nets on 144.200 MHz, followed by the FM net on Tuesday nights, in order to give our more numerous FM stations first chance at checking in.

The C4FM digital net is still well attended. The local CEMC continues to be copied with our Winlink weather reports. I attended seven Manitoulin ARC Zoom meetings and checked into the Procomm net eight times. There were seven XRF-103 reflector check-ins made (D-Star Digital Mode). I also checked into ONTARS nine times on Sunday mornings.

In January, I sent in a log for the Winter Field Day Contest (Phone) for 48 QSOs. In February, there was one check-in to the North Western Ontario ARES net, but band conditions were spotty. In February, I sent in a log for the ARRL WW DX Contest (Phone) for 55 QSOs, but I only worked the first day of the contest.

Amethyst District –
DEC Warren Paulson, VE3FYN

We have resumed the monthly Emergency Operations Centre HF nets. These nets allow us to check the operation of our equipment at our EOC stations and to practise their operation. We have also adopted VARA Chat as a text-based HF net coordination tool during poor propagation. We used JS8Call in the past, but it is much more difficult to use. VARA Chat's new broadcast feature increases its usefulness.

Thunder Bay – EC Brad Harris, VE3MXJ

Monthly EOC nets have returned and the weekly HF ARES net continues on Wednesday nights on 80 metres.

Atikokan – EC Warren Paulson, VE3FYN

With monthly EOC nets resuming, some general maintenance was completed at our EOC station, VA3EOA, located at the Town Hall. There was no activity in February, other than participating in weekly nets.

Fort Francis – EC Rod Davis, VE3RYD

In January, we continued to practise the new VARA Chat program and participated in the EC meetings. At the end of the month we did a check-in from the EC at the Fire Hall. The month of February was quiet. We did EOC checks and check-ins. The weather was a little cool. I checked on the radio system at the EOC and made updates to its software.

Sioux Narrows – Nestor Falls
EC Woody Linton, VE3JJA

We installed scanners at both the Primary EOC and Secondary EOC. The primary EOC was used for district-wide monthly EOC tests. In February, I was based at home but obtained the northwestern Ontario information via our Zello connection on the Blackhawk repeater, which works well to British Columbia.

Dryden – EC Bob Ernewein, VE3YDN

Scott, VA3EXT, is looking to put our C4FM/Digital repeater online at our EOD/DFS Fire Hall Command Centre. This will be available when we get network access to our site section of the Fire Hall library from where we operate.

Sudbury – EC Marc Savignac, VE3SNA

As the new Emergency Coordinator, I will be working on reviving our local ARES group and reconnecting with the Emergency Operations Centre. These will be my first undertakings since COVID stopped all ARES activities and group meetings.

Manitoulin Island and North Shore –
Acting EC Allan Boyd, VE3AJB

An examination and inventory of all EOCs on Manitoulin is underway and will be completed by this summer. A check of all equipment and operation levels will also be done.

– 73, SM Allan Boyd, VE3AJB

DECs Reporting:
VA3s: PC
VE3s: FYN

ECs reporting:
VA3s: ECO
VE3s: FYN, ETE, JJA, MXJ, RYD, SNA, TGI, YDN and ZDR.

ONTARIO EAST:

SM: Michael Hickey, VE3IPC
Email: ve3ipc@gmail.com
SEC: Michael Hickey, VE3IPC
STM: Vacant
OBM: Paul Caccamo, VA3PC,
va3pc@ciinet.org
Web: http://wp.rac.ca/ares/

January-February SM Report:

With summer arriving, Amateur Radio clubs, EmComm groups and teams are busy preparing for this year's Field Day which takes place on June 24-25.

ARES EmComm Group Leadership Reports:

Submitted by Prescott-Russell (PR-ARES)
GC Lance Peterson, VA3LP

PR-ARES Group Coordinator Lance Peterson, VA3LP, reports that on Tuesday, February 21, PR-ARES members, with the assistance of the Township of Russell Community Emergency Management Coordinator (CEMC), ran tests on the Diamond X-50 dual band antenna located on the communications tower behind the Russell Township Fire Station 2.

The MFJ-259B antenna analyzer indicated that the SWR across both Amateur bands was in excess of 5 to 1, which was more than the usual 1.6 to 1 and measurement. The NanoVNA network analyzer also indicated very erratic behaviour across both bands, which is indicative of poor coax due to possible water infiltration and resistance build up, broken internal connections in the antenna or lightning strikes on coax or antenna. Since the antenna system was exhibiting high reflection back to the source, it was too dangerous for our radios to be connected and any further testing was stopped. It was decided to have a professional company come out to test the coax and antenna and make any necessary repairs.

Participants were GC Lance Peterson, VA3LP, Harry Ratajczak, VA3ZAK, Gilles Beaulieu, VE3NPI, Mickael Papineau, VA3PAI and Leo Yoshanaka, VA3EBI.

The group then travelled to the Village of Embrun to inspect a building as the CEMC was wondering if the group could use it as a place to provide emergency radio communications for the Municipal Emergency Control Group (MECG) group. Located near the Town Hall Council Chambers and directly behind the primary Emergency Operations Centre for the Township of Russell, the building was previously used as an ambulance station and had heat and light and gathering places as well as washroom facilities.

One room in particular would be good for radio operations as it was where coaxial

cables and other cables were terminated so we requested that it be made available to the PR-ARES group during emergency activations and training. In addition, there was a microwave link (most likely 3.2 GHz or 2.4 GHz (Wi-Fi) that, although disabled, was connected directly to the EOC building and could be utilized for both voice and digital connections between the MECG and PR-ARES Group.

On February 21, SM Mike, VE3IPC, went to the United Counties of Prescott & Russell (UCPR) primary EOC in Hawkesbury to test the most powerful Diamond X-700HNA dual-band repeater vertical antenna and radio station equipment. This antenna was installed three years ago and had not been tested since the start of the pandemic in 2020. The antenna test went very well, but the cross-needle SWR/power meter indicated that at the low VHF frequencies the power out was only 35+ watts and at higher VHF frequencies the power was 55 watts. SWR varied but was showing to be very good so the antenna test was successful on both bands.

Repeaters tested were: Alfred, Ontario; and Covey Hill, Rigaud, Pine Hill and Ripond in Quebec. All were all successful but there was an initial problem in reaching the Hammond/Rockland repeater and also with Moose Creek. One purpose for the test was to see if Russell Fire station Diamond X-50 dual-band antenna was operational and to see if a connected radio there could reach Hammond, Alfred, Rigaud repeaters and possibly even the Pine Hill 146.805 repeater to make contact with the Hawkesbury station. As indicated in the previous report by GC Lance, VA3LP, the Russell antenna failed and so that test could not be performed.

Before leaving the building Mike, VE3IPC, unplugged the power supply and removed the coax from the back of the radio but left it visible as a reminder for the next visit. This is to help prevent the station from getting hit by lightning as the tower on the roof is most likely *not* grounded.

Submitted by the Stormont, Dundas & Glengarry ARES – GC Earle DePass, VE3IMP

The **Stormont, Dundas & Glengarry (SD&G)-ARES AuxComm Group Coordinator Earle DePass, VE3IMP,** reports that the group is in association with the Saint-Lawrence Amateur Radio Club (SVARC). This club continues to hold its monthly hybrid meetings which have interesting Guest Speakers.

Coffee Klatches where members can socialize with each other are held on the second and fourth Saturdays of each month, starting at 8:30 am at Spinners Restaurant in Cornwall.

RAC FIELD ORGANIZATION REPORTS

National Traffic System (NTS) Net Reports

Net (Manager)	Sessions	QNI	QTC
January 2023:			
APSN (VE6JY)	31	2913	15
Alberta ARES (VE6JER)	9	422	26
Aurora (VE7GBO)	31	3685	27
BCEN (VE7XLH)	27	177	9
BCYTN (VE7WJ)	31	572	44
CECA (VE7GBK)	5	133	14
MEPN (VE4JS)	31	1030	0
MMWXN (VA4GD)	31	634	2
MRS (VE4HK)	9	302	0
MSMN (VE4AJ)	22	536	0
Saturday (VE4AJ)	4	94	0
February 2023:			
APSN (VE6JY)	28	2710	13
Alberta ARES (VE6JER)	8	339	15
Aurora (VE7GBO)	28	3540	22
BCEN (VE7XLH)	27	102	67
BCYTN (VE7WJ)	28	473	35
CECA (VE7AKE)	4	102	6
MEPN (VE4JS)	28	861	1
MMWXN (VA4GD)	28	520	0
MRS (VE4HK)	8	281	0
MSMN (VE4AJ)	20	474	0
Saturday (VE4AJ)	4	95	0

Repeater Checks (ongoing):

Our eight repeater systems continue to function very well. The SVARC weekly net is conducted on each Monday at 7 pm. The net first starts on VE3SVC (147.180 MHz+). Checks are then made by switching the net to the VE3PGC (UHF) repeater where an EchoLink check is performed.

A check is also performed on VE3VSW, VA3FHA then DMR, Ch. 2. This process confirms the serviceability of nearby Seaway Valley Amateur Radio Club (SVARC) repeater systems at least once a week, should they be required by the (SD&G)-ARES / RAC Auxiliary Communications Service (ACS). On average there are 20 total check-ins. The weekly reporting system has been enhanced to show the names and call signs of those who check in in addition to the total number.

Sadly, in late December, Art Horovitch, VE3AIH, who was one of our AECs became a Silent Key. Fortunately, last December we were able to present him with an award in recognition of 60 as an Amateur Radio operator.

South Glengarry ARES Projects:

The VA3FHA repeater, which was installed on August 29, 2022 at the Beaver Brook landfill site, continues to function well.

Submitted by Peterborough ARES – GC John deLegran, VE3VL

The **Peterborough ARES Group Coordinator John deLegran, VE3VL,** reports that in January the leadership team met with the City Emergency Management staff to discuss ACS, Winlink and a proposed HamWAN project for Peterborough City/County. There was good support from the City on all initiatives as they proceed. The City has a new EOC and ARES radio checks began again in March.

Winter Field Day was a seasonal success hosted by Paul, VE3AXT, with participants John, VA3NW (Event Coordinator), Wayne, VE3WRL, Dave, VE3SD, Rick, VE3IQZ, Sean, VA3WNZ, Jon, VE3XOE, Terry, VA3IX, Peter, VE3GYY, Andrew, VE3AND and Phyllis, VA3PVB. Phyllis also provided us with a crock-pot of hot delicious beef stew.

The group tested the call-out/check-in procedure using text messaging with follow-up voice calls where necessary. All 15 active members checked in to the ARES net within 10 minutes. The radio equipment was checked in February at the County EOC site by Barry, VE3BLM, Rick, VE3IQZ and Martin, VA3OMW.

There were an average of 13 check-ins to the weekly net in January and February.

Submitted by Almonte ARC EmComm – GC Phil St-Germain, VE3CIQ

The Almonte ARC EmComm Group Coordinator Phil St-Germain, VE3CIQ, reports that the members have performed maintenance and tests of the Almonte Hospital EOC's radio station equipment. The EOC HF station works well and Bob used it to check in on a 40 metre net.

The Icom IC-2820 dual band transceiver has also been reprogrammed so that its frequencies reflect the changes to the area repeaters. The channel list to the six dozen needed repeaters on simplex were also parsed.

Bob, VE3AKV, also programmed the club's Go-Box Icom IC-2820 radio and once it will be used to clone the EOC radios so both will be set the same way.

Eastern Ontario and Severn

GCs (ECs) or Assistants reporting: VA3LP, VE3VL, VE3IMP and VE3BQP

OBS reporting: VE3IQZ

QUEBEC / QUÉBEC:

SM: Sylvain Lamarre, VE2LAM
lamarrsy@yahoo.com

January-February SM Report:

In the first few months of the year, new presentations were made to several regional teams of the Government of Quebec's Public Security Ministry about RAQI's Emergency Measures processes and protocols.

Through the years there have been changes to the staff at the regional offices and some were not familiar with Amateur Radio and what it can offer in times of crisis.

The teams of Abitibi-Témiscamingue, Mauricie and Québec regions participated in the presentations and were very enthusiastic about what they saw and the exchanges they had.

Special thanks to RAQI's Regional Coordinator for Abitibi-Témiscamingue Jean-Michel Vien, VA2XJM, and RAQI's Provincial Coordinator Gaétan Leclerc, VE2LGE, for their hard work on the presentations.

Worth mentioning: On April 6 freezing rain and an ice storm had Amateurs from some of the most affected regions around Montréal being placed on a "pre-alert" status. They stayed near their radios "just in case", but no active nets were put in place as the situation did not bring down normal communications.

Sylvain Lamarre, VE2LAM,
RAQI Emergency Measures

Rapport SM d'janvier et février :

Au cours des premiers mois de l'année, de nouvelles présentations ont été faites à plusieurs équipes régionales de Sécurité Civile du ministère de la Sécurité publique du gouvernement du Québec sur les processus et protocoles des mesures d'urgence de RAQI.

Au fil des ans, il y a eu des changements dans le personnel des bureaux régionaux et certains ne connaissaient pas la radio amateur et ce qu'elle peut offrir en temps de crise.

Les équipes des régions de l'Abitibi-Témiscamingue, de la Mauricie et du Québec ont participé aux présentations et ont été très enthousiastes de ce qu'elles ont vu et des échanges qu'elles ont eus.

Un merci spécial au coordonnateur régional de RAQI pour l'Abitibi-Témiscamingue Jean-Michel Vien, VA2XJM, et au coordonnateur provincial de RAQI Gaétan Leclerc, VE2LGE, pour leur excellent travail sur ces présentations.

À noter : le 6 avril, de la pluie verglaçante et une tempête de verglas ont placé les amateurs de certaines des régions les plus touchées autour de Montréal en état de « pré-alerte ». Ils sont restés près de leurs radios "au cas où", mais aucun réseau actif n'a été nécessaire car la situation n'a pas affecté outre mesure les communications normales.

Sylvain Lamarre, VE2LAM,
Mesures d'urgence RAQI

– 73, Sylvain, VE2LAM

PRINCE EDWARD ISLAND

SM Bill McMaster, VY2WM
bill@vy2wm.ca

January-February SM Report:

The Prince Edward Island Amateur Radio community has been quite active. There are a number of weekly nets, both on 2m and 80m, which enjoy regular attendance. In addition there is a 2m Simplex net which meets once a month and is giving local Amateurs a clearer picture of their VHF simplex coverage.

The Charlottetown Amateur Radio Club (CARC) sponsored a Basic soldering workshop in the Makers Space at the Charlottetown Learning Library Centre. Fourteen participants from the general public as well as club members attended the workshop. One new Radio Amateur, Ricardo Angel, VY2AN, participated in Winter Field Day and activated a Provincial Park at the same time.

A number of PEI Amateurs participate each week in the Winlink Wednesday exercise. This has been aided by the addition of a VHF RMS Gateway capable of accepting both Winlink Packet and VARA-FM messages. This is the first RMS Gateway on Prince Edward Island and goes a long way to improving Winlink Service in emergency scenarios. Efforts are underway to relocate this gateway to further improve the coverage of this asset.

The CARC are now delivering their second Basic Radio course in the last six months. There are 16 individuals taking the course which is being delivered at the Canadian Red Cross Headquarters in Charlottetown. The club wishes to acknowledge and thank the CRC for providing this excellent venue for this course.

There is an increased interest in CW within the PEI Radio community with a number of Amateurs studying on their own, and using the web-based daily practise website at https://morsel.fun. We are awaiting the delivery of Morse code practice keyers from an order placed earlier in February. There is talk of organizing a CW net to give participants a chance to practise their skills on the air with other local Amateurs.

Preparations have started for Field Day 2023 activities. In addition there will be a special activation of one of the four remaining Buffalo aircraft in Summerside PEI later in July.

Bill McMaster, VY2WM
President, Charlottetown Amateur Radio Club
– www.charlottetownarc.com

The Club Corner / Bits and Pieces

A Very Young Amateur Interviews A Very "Well Seasoned" Amateur

Phillip Boucher, VE3BOC | phillipjboucher@gmail.com | www.phillipjboucher.com

Paul Tyschuk, VE6UFO, the Secretary/ Treasurer for the Quarter Century Amateur Radio Club (QCARC) in Edmonton, Alberta submitted the following article and I am happy to include it here. It clearly illustrates the longevity of the Amateur Radio Hobby and Service and its appeal to people of all ages.

The Quarter Century Amateur Radio Club is honoured to have Star and Gordon as members. Star did a great job conducting the interview and putting her article together.

Star holds the Basic with Honours qualification. Gordon has been a Radio Amateur for 85 years, likely the longest licensed Amateur worldwide, an accomplishment that most of us will never be able to achieve.

Star and Gordon both received awards from the QCARC in recognition of these achievements.

An interesting bio of Gordon's long carreer in broadcast radio can be found at https://edmon tonbroadcasters.com/ bios/skutle-gordon/

Also check out Gordon's CJCA scrapbook at http://infoese.ca/skutle. html. More pictures from the interview are on the Quarter Century Amateur Radio Club Facebook page.

73, Paul Tyschuk VE6UFO – QCARC Secretary Treasurer

Send in your bits and pieces, tales and adventures, questions, comments and articles to Phillip Boucher, VE3BOC at phillipjboucher@gmail. com

Star Covington, VA6SCC,

This is Star Covington, VA6SCC, of Edmonton, Alberta and I'm an 11 year old new ham. On April 1, 2023, I got to interview a man who may be the World's Oldest Living Ham! And this is no April Fools joke! Gordon Skutle, VE6DG, who is 103 years old, has been a licensed ham for 85 years!

Gordon has been around broadcast and ham radio for most of his life and certainly longer than most of us have been alive. We were welcomed into Gordon's Edmonton home by three generations of Skutles: Gordon, his daughter, and his granddaughter Michelle Skutle, VA6MSH. Also there were my younger brother, my dad Kirby Covington, VE6MFX, Jim Camp, VA6JC and Paul Tyschuk, VE6UFO, from the Quarter Century Amateur Radio Club (QCARC – http://www.qcarc.net).

While this interview was very informal, it was a lot of fun to sit around the dining room table and listen to his stories of years gone by. He told us stories of the 1930s as a young child, which he called "the hungry thirties", and what it was like searching for radio parts after the Second World War in his quest to build homemade radios.

Upon the dining table were many framed certificates and awards from Gordon's long life in radio. He had a stack of QSL cards from every corner of the globe dating back to the 1940s. What a time to be alive!

I asked Gordon what started him in radio and he related to me a story of him at a young age building a crystal radio set with the parts obtained through the Eaton's catalogue. What a great way to start the hobby!

Gordon Skutle, VE6DG and Star Covington, VA6SCC of the QCARC.

I haven't talked very far on my radio, but Gordon has talked all the way to Israel! I enquired about what his first radio was, and he said it was an Emerson radio. Do they even make those anymore? When asked what his favourite part about Amateur Radio was, he immediately mentioned Morse Code! He sure enjoyed his CW. Displayed on the table was a shiny Vibroplex Bug I could tell was Gordon's favourite.

The best radio he ever owned was a Hammarlund, that he made better by putting parts of another radio in it. It seems Gordon was very good at making hybrid, homebrew radios. He even made a chassis for a radio out of an old car door. He had no power tools so he had to make the hole for the tube socket with a cold chisel and round it with a file. Talk about ingenuity! We had a really good time together and I'm very glad I could participate in it! Meeting Gordon was inspiring and motivational for me.

I wish to sincerely thank the Skutle family for this amazing experience. As a new ham, it means a lot to me.

– 73! Star Covington.VA6SCC

The RAC Challenge Update: February and March

Dave Goodwin, VE3KG

Congratulations to John, VE3FDZ, who led the pack in both February and March. Nick, VA2VT, Jeff, VE3JZT and Richard, VE1RPX, were also leading entrants in both months. They were joined in the top five by Richard, VA3VGR, in February and by Michael, VE7KPZ, in March.

In February, 19 Amateurs braved the elements to activate POTA parks, ARLHS lighthouses and SOTA summits in six provinces. One hundred and three (103) portable operations were reported by these 19 operators. Keen satellite operator Richard, VA3VGR, was the only one to cross a provincial boundary, activating 11 different grid squares in ON, QC, SK and AB in multiple POTA parks.

During March, 21 people submitted reports for the RAC Challenge. These 184 portable operations took place in five provinces: NS, QC, ON, AB and BC. POTA Parks, ARLHS lighthouses and SOTA summits were all activated. Jeff, VE3JZT, was the leading park and grid square activator during March, with 32 parks in five grids activated.

Coureur des bois Certificates

"Coureurs des bois" / "Runner of the Woods" played an important role in the exploration of North America and were vital in establishing trading contacts with Indigenous peoples.

In recognition of this history, Radio Amateurs of Canada is also offering awards to Amateurs who participate in several portable operations and are based on the number of reports submitted.

I'm pleased to report five new Coureur des bois certificates have been earned:

Bronze (25 portable operations):

- Richard Pierik, VE1RPX
- Mike Avotins, VA6MWA

Gold (100 portable operations):

- Richard Nolet, VA3VGR
- Mike Bingley, VE6FXL
- Gerry Bell, VE3PYJ

Coureur des bois Silver awards are available when RAC Challenge participants report 50 portable operations since the award began on July 1, 2021.

Some activators in the RAC Challenge have provided a little background and photos of their activations. On March, 11, Tom Cort, VA2NW, reported:

"This past Saturday, I went into the field for some portable QRP CW operating using the Venus SW-3B with an AlexLoop Walkham magnetic loop antenna. This was three events in one: Polar Bear Moonlight Madness Event, RAC Portable Challenge, and a Parks on the Air activation (VE-5958). The operating location was Hampton Park in Ottawa, Ontario. The weather was great at a few degrees above freezing with the sun shining and very little wind. It's my first Parks on the Air activation that didn't involve at least a 15-minute hike.

"I really advertised this one (and so did Ante, VA2BBW) and encouraged people to come along and operate or just stop by to say hello. Well, it worked. We had over a dozen visitors and several activators operating different stations. Any outing where I have fun and make a few contacts is a success in my book, but this was extra special as I met a bunch of new (and very friendly) people and got to see some old friends which I haven't seen in 10 years or so. It was so much fun, I'm hoping to arrange something like this again next month in a different park. Stay tuned :)

"I ended up with 30 contacts in the log. My first and last contacts were on 30m, and the rest were on 20m. The furthest contact was with WO0S, about 2100 kilometres away in Englewood, Florida. There was a bit of a competition for closest contact. I made five contacts on 20m with stations in Ottawa. In total, there were three park-to-park contacts.

"I recorded a short video from my operating location: https://youtu.be/JWrlv4a2lyU"

Monthly Winners
February and March

RAC Challenge Top 5: February 2023		
Place	**Name/Call**	**Points**
1st	John McGrath VE3FDZ	42,280
2nd	Nicolas Gagnon VA2VT	17,062
3rd	Richard Pierik VE1RPX	13,660
4th	Richard Nolet VA3VGR	6,144
5th	Jeff Zimmerman VE3JZT	4,720

RAC Challenge Top 5: March 2023		
Place	**Name/Call**	**Points**
1st	John McGrath VE3FDZ	104,342
2nd	Jeff Zimmerman VE3JZT	88,160
3rd	Richard Pierik VE1RPX	31,470
4th	Nicolas Gagnon VA2VT	14,700
5th	Michael Van Kuyk VE7KPZ	11,740

Tom Cort, VA2NW

The RAC Challenge is all about getting out of the house and enjoying Amateur Radio. You can find more information about the RAC Challenge at: https://www.rac.ca/rac-challenge/

Coming Events:

Simcoe County Spring Hamfest
Simcoe County Amateur Radio Enthusiasts
Date: Saturday, May 13
Place: Barrie, ON; Grenfel Community Centre, 1989 County Road 40 Sunnidale Road
Time: Vendors 8 am; Public 9 am to noon.
Cost: Vendors $5; Public Free but donations are welcome.
Talk-in: 146.55 MHz simplex no tone
Info: Brant Smith, ve3ume@scare-radio.com 289-802-1480
W: http://scare-radio.com/Scare-Radio.com/Home.html

NPARC Big Event
Sponsor: Niagara Peninsula ARC
Date: Saturday, May 27
Place: Stevensville, ON; Black Creek Community Centre, 2959 Baker Road
Time: Vendors 7:30 am; Public 9 am.
Cost: Indoor 6-foot tables $15; Outdoor Tailgate places $10.
General admission $10.
Info: nparcbigevent@gmail.com
W: https:/nparc.ca

37th Annual Smiths Falls Flea Market
Sponsor: Rideau Lakes Amateur Radio Club
Date: Saturday, June 3.
Place: Smiths Falls, ON; Smiths Falls Curling Club, 13 Old Sly's Road, Smiths Falls (same location as previous years)
Time: Vendors 7 am; Public 9 am
Cost: Tables (appx 2.5 ft x 5 ft) $10 (admission not included); Public: $5 per person (includes door prize ticket), youth under 16 admitted for free.
Talk-in: VE3RLR on 147.21 MHz+ tone removed for the duration of the event.
Info: Contact ve3rlr@gmail.com
W: https://www.ve3rlr.ca/p/httpsgoo.html

Central Ontario Hamfest
Sponsor: Guelph ARC | Kitchener-Waterloo ARC
Date: Sunday, June 4
Place: Kitchener-Waterloo, ON; Waterloo Regional Police Association Recreation Park
Time: Indoor vendors 7 am; Tailgaters 8 am; Public 9 am to 12 noon,
Cost: Public $8; Youths 12 & under are free.
Talk-in: 146.970, Offset; -0.6, (CTCSS 131.8)
Info: Contact info@hamfest.on.ca
W: https://www.hamfest.on.ca/

London Vintage Radio Club Flea Market
Sponsor: London Vintage Radio Club
Date: Saturday, June 10.
Place: Guelph, Ontario; 394 Edinburgh Road at corner of Speedvale and Edinburgh in the East side of the parking lot of Hammond Manufacturing.
Time: Vendors and public 7 am.
Cost: Vendors $10; Public no charge. Vendors please bring your own table.
Info: Contact: larry.asp@sympatico.ca
W: http://lvrc.homestead.com/fleamarket.html

Steeltown Tailgate Treasures 2023
Sponsor: Hamilton Amateur Radio Club
Date: Saturday, June 17
Place: Grimsby, Ontario; St. Joseph Church, 135 Livingston Avenue. All parking is free on site after going through the admission area.
Time: Vendors 7:30 am; Public 9 am.
Cost: Vendors $10; includes admission – please bring your own table.
Public: Adults $5 each; Children no charge.
Talk-in: THARC repeater 146.760 MHz -600 Hz 131.8 tone.
Info: Barry, VE3ISX, ve3isx@gmail.com to book your table space.
W: https://hamiltonarc.com/events/Tailgate/index.html

Ontario Hamfest (Milton)
Sponsor: Burlington Amateur Radio Club
Date: Saturday, July 8
Place: Milton, ON; Milton Fairgrounds. Vendors and tailgaters use Robert Steet. Public entrance via Thomas Street.
Time: Vendors and tailgaters 7am; Public 9 am.
Cost: Vendors $5 per person + $10 per single-width vehicle space.
Public: $5 per person;.
Children 12 or under, free with adult.
Talk-in: 146.520 MHz
Info: Email buckmelbuckmel@gmail.com
W: https://www.barc.ca/ontario-hamfest

Manitoba Ham Fest
Sponsor: Brandon Amateur Radio Club
Date: Saturday, August 12
Place: Austin, Manitoba on the site of the Manitoba Agricultural Museum.
Time: Public 11 am to 3 pm.
https://www.brandonarc.ca/
Cost: Public $5.
Talk-in: ve4mtr 146.91 or 146.52
Info: Contact Stan Penner, VE4SJP, at ve4sjp@gmail.com. For tables contact Brian Beadle, VE4BCB, at bcbeadle@mymts.net
W: https://www.brandonarc.ca/

Hanover Ham Haul
Sponsor: Local Amateurs
Date: Saturday, August 12
Place: Hanover, ON; Hanover Drive-In Theatre. Enter at ticket booth.
Time: Vendors 8:30; Public 9:30 until 1 pm.
Cost: Admission $5 per person and $5 per vendor space. Children under 12 free. Please bring your own table. All proceeds after expenses go to the support of local charities.
Talk-in: 146.520 simplex, no tone
Info: davemargetts@bmts.com.
W. https://www.ontars.com/

London Amateur Radio Club Annual Hamfest
Sponsor: London Amateur Radio Club
Date: Sunday, August 20
Place: Dorchester, ON; 4939 Hamilton Road.
Time: 9 am to 12 noon
Cost: Public $8; Tables and Tailgating $7 plus $8 admission
Talk-in: VE3OME 145.450 PL 114.8
Info: Email LARChamfest@gmail.com
W: http://www.larc.ca

Ottawa (Carp) 2023 Hamfest!
Sponsor: Ottawa Amateur Radio Club, Inc.
Date: Saturday, September 9
Place: Ottawa (Carp), ON; Carp Agricultural Fairgrounds in the W. Erskine Johnston Arena, 3882 Carp Road
Time: Commercial Vendors 7:30 am; Private vendors: 8 am; Public: 9 am to noon.
Cost: Vendor tables: $17 per 8-foot table. Please book tables early to reserve your preferred table location. Admission: $6. Children 12 and under are free.
Talk-in: VE2CRA, 146.94-, 100 Hz
Info: Ed, VE3WGO, hamfest@oarc.net
W: https://oarc.net/hamfest2023

Simcoe County Fall Hamfest
Simcoe County Amateur Radio Enthusiasts
Date: Saturday, September 16
Place: Barrie, ON; Grenfel Community Centre, 1989 County Road 40 Sunnidale Road.
Time: Vendors 8 am; Public 9 am to noon.
Cost: Vendors $5; Admission is free but donations are welcome.
Talk-in: 146.55 MHz simplex no tone
Info: Brant Smith, ve3ume@scare-radio.com 289-802-1480
W: http://scare-radio.com/Scare-Radio.com/Home.html

Kingston Amateur Radio Club Hamfest
Sponsor: Kingston Amateur Radio Club
Date: Saturday, October 14.
Place: Kingston, ON; Royal Canadian Legion (Branch 560), 734 Montreal Street.
Time: Vendors 7:30 am; Public 8:30 am.
Cost: Vendors $10/table; Public $5/person.
Talk-in: VE3KBR 146.94(-) Tone 151.4
Info: Tim, VA3TIC, va3tic@gmail.com or Greg, VE3PJ, greg.foster@sympatico.ca
W: https://www.ve3kbr.com/main.html

Montreal South Shore Hamfest
Sponsor: Club Radio Amateur Rive-Sud de Montreal
Date: Saturday, October 21
Place: Longueuil, QC; Bingo Longeuil, 1591, blvd Roland-Therrien Longueuil (10 minutes from downtown Montreal).
Time: Vendors 6 am; Public 8:30 to 11:30.
Cost: Public $10; Tables $10 plus admission
Talk-in: VE2RSM 145,39 MHz, CTCSS 103,5 Hz
Info: Francois Drien, VE2FDA, 450-672-9994, hamfest@ve2clm.ca
W: http://www.ve2clm.ca

The RAC QSL Bureau System

The RAC Outgoing QSL Bureau service is available to RAC members, RAC affiliated clubs (club call only) and QSL Managers who are members of RAC. Your RAC membership number must accompany each shipment of QSL cards. There are limits and restrictions for use of the Outgoing QSL Bureau. For more information, surcharges, card sorting details and some handy tips, please visit http://wp.rac.ca/ or http://www.magma.ca/~ve3exy/bureau.html.

Member Societies of the International Radio Union (IARU) operate a worldwide system of QSL Bureaus. Radio Amateurs of Canada, as the Canadian member-society, operates a National Incoming QSL Bureau, and sponsors the Incoming Bureaus for the 12 Canadian call areas. Cards received by the National Incoming Bureau from IARU Member Societies are sorted and forwarded to the Incoming Bureau in each call area. All domestic cards (VA-VE-VY) to Canadian Amateurs are to be sent directly to the RAC National Incoming Bureau and not to the Outgoing Bureau.

Note: Domestic cards sent to the Outgoing Bureau will experience a delay. Only cards for destinations outside Canada are to be sent to the Outgoing QSL Bureau. The Incoming QSL Bureau service is a user-pay system, using one of four methods to get cards to you: (A) envelopes; (B) credits; (C) labels; or (D) combination credit with labels . *Note: Method B is preferred.

Web: http://wp.rac.ca/the-rac-national-incoming-qsl-bureau/

National Incoming QSL Bureau
Ed Spingola, VA3TPV, Manager
PO Box 83
Streetsville, ON L5M 1L5

RAC Outgoing QSL Bureau
PO Box 11156, Station H
Nepean, ON K2H 7T9
T: 613-670-3230
E: ve3exy@rac.ca

VE1 – VE0 Bureau (B)
Brit Fader Memorial QSL Bureau
Sponsored by the Halifax ARC
Roger Stein, VA1RST
12 Canary Crescent
Halifax, NS B3M 1R1
burch.craft@gmail.com
www.halifax-arc.org/pages/qsl-bureau.html

VE2 Bureau (A, B)*
Jacques Dubé, VE2QK
Résidence du Jardin
897, rue St-Pierre, apt. 104
Trois-Rivières, QC G9A 4W5
jacques.dube@cgocable.ca

VA3/VE3 Bureau (B)
Michael Brickell, VE3TKI
PO Box 46
Streetsville, ON L5M 2B7
bureau-manager@ve3qcb.ca
https://ve3qcb.ca

VA4/VE4 Bureau (B)
Harm Hazeu, VE4HAZ
7 Ashley Cove
Winnipeg, MB R2G 2Z3
ve4haz@gmail.com

VA5/VE5 Bureau (B)
Todd Bendtsen, VE5MX
616 Moffet Drive
Weyburn, SK S4H 2M7
ve5mx@sasktel.net

VA6/VE6 Bureau (B)
Jerry Spring, VE6TL
206 Hampstead Place NW
Calgary, AB T3A 5J2
springjl@yahoo.com
http://www.buro.ve6hams.ca/

VA7/ VE7 Bureau (B)
Ken Clarke, VE7BC
PO Box 1109
100 Mile House, BC V0K 2E0
ve7bc27@gmail.com

VE8/VY0 Bureau (A, B)*
John Boudreau, VE8EV
PO Box 3099
Inuvik, NT X0E 0T0
ve8ev@rac.ca

VE9 Bureau (B)
Rino Deschenes, VE9VIC
8 B rue Jeanne Mance
Kedgwick, NB E8B1G8
ve9vic@hotmail.com
Web: "VE9VIC" on QRZ.com

VO Bureau (B, C)*
Bill Kirby, VO1BB
60 McNiven Place
St. John's NL A1A 4X1
vo1bb@yahoo.ca

VY1 Bureau (A, B)
Allen Wootton, VY1KX
Box 21217
Whitehorse, YT Y1A 6R8
vy1kx@rac.ca

VY2 Bureau (A, B)
Douglas Silliker, VY2DS
1072 Barbara Weit Road
Summerside PE
C1N 4J8

RAC AGM / AGA | CONFERENCE / CONFÉRENCE 2023

RAC Annual General Meeting

The Radio Amateurs of Canada is pleased to hold its Annual General Meeting (AGM) in Halifax, Nova Scotia. The AGM will be hosted by the Halifax Amateur Radio Club (HARC) in conjunction with its 90th Anniversary Gala Dinner and Conference, which is being held at the same location.

All RAC members are encouraged to attend the Annual General Meeting which will be held as a hybrid event (both in-person and online).

Date: Saturday, August 19.

Time: 3 pm (Eastern Time)

Agenda items will include:

1) Report of the President

2) Review of the 2022 finances

3) Appointment of auditors for 2023

A Question and Answer period will follow the AGM proceedings. 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 members of the RAC Board of Directors and Executive and is open to all RAC members. Stay tuned to the RAC website for more information.

Assemblée générale annuelle de RAC

Les Radioamateurs du Canada sont heureux de tenir leur assemblée générale annuelle (AGA) à Halifax, en Nouvelle-Écosse. L'AGA sera organisée par le Halifax Amateur Radio Club (HARC) en conjonction avec son dîner de gala et sa conférence du 90e anniversaire, qui se tiendront au même endroit.

Tous les membres de l'ACFC sont encouragés à assister à l'assemblée générale annuelle qui se tiendra sous forme d'événement hybride (en personne et en ligne).

Date : dimanche 20 août

Heure : 15h00 (heure normale de l'Est)

Les points à l'ordre du jour incluent :

1) le rapport du président

2) la présentation des états financiers de 2022

3) nomination de l'auditeur pour 2023

Une période de questions et de réponses suivra les procédures de l'AGA. 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.

Les membres du conseil d'administration et de l'exécutif de la RAC participeront à la réunion et seront ouverts à tous les membres.

Restez à l'écoute pour plus d'informations.

– https://www.rac.ca/agm –

Halifax Amateur Radio Club's 90th Anniversary Gala Dinner and Conference: August 18 to 20

The Halifax Amateur Radio Club (HARC) in Nova Scotia is celebrating its 90th anniversary with a special **Gala Dinner and Conference**. This event is a must-attend for Amateur Radio enthusiasts who are looking to connect with other Amateurs, learn about the latest trends in the hobby and celebrate HARC's historic milestone.

The Conference will feature a range of presentations and discussions on various topics related to Amateur Radio including emergency communications, contesting, digital modes and more. There will be opportunities to ask questions and interact with the presenters, creating a valuable learning experience for all attendees.

Radio Amateurs of Canada will be holding their Annual General Meeting on Saturday, August 19 as part of their 30th Anniversary Celebrations.

In addition to the Conference, the Halifax ARC's 90th Anniversary Gala Dinner will provide an opportunity to socialize and network with other Amateurs. The evening will feature a delicious meal, live music and a celebration of HARC's 90 years of contributions to the Amateur Radio community.

The event will take place at a prestigious venue in Clayton Park West, Nova Scotia, and will provide an elegant and sophisticated setting for the celebration.

Overall, the HARC 90th Anniversary Gala Dinner and Conference is a wonderful opportunity for Amateur Radio enthusiasts to come together, share their passion for the hobby, and celebrate the achievements of the Halifax Amateur Radio Club.

For more information please visit:

http://www.halifax-arc.org/

RAC OFFERS BOTH BASIC QUALIFICATION STUDY GUIDES

The Hamstudy Basic Study Guide 2021/2022

Hamstudy Basic 2021/2022 is the 4th edition of a Study Guide that is published by Radio Amateurs of Canada. The content mirrors the subscription-based self-study course offered at http://www.hamstudy.com.

This is the perfect reference for new Radio Amateur enthusiasts. It provides everything needed to qualify for the Basic Exam.

- √ Innovation, Science and Economic Development's complete examination Question Bank
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- √ Basic qualification is required to obtain your call sign
- √ Exams are multiple choice – 70% to pass
- √ 80% or higher marks gives you access to the HF bands

For more information visit http://www.hamstudy.com/

The Canadian Amateur Radio Basic Qualification Study Guide, 9th Edition – 5th Printing

This Study Guide includes all information required to pass the current Innovation, Science and Economic Development's examination. Please see the ad on page 9 for information on the new 5th printing.

Coax Publications Study Guides are revised bi-annually or whenever changes occur in the Question Bank.

- √ Matched to the Question Bank update in 2020 with more context for the new and revised questions
- √ Still includes unlimited time access to the acclaimed online Student Success Pages support
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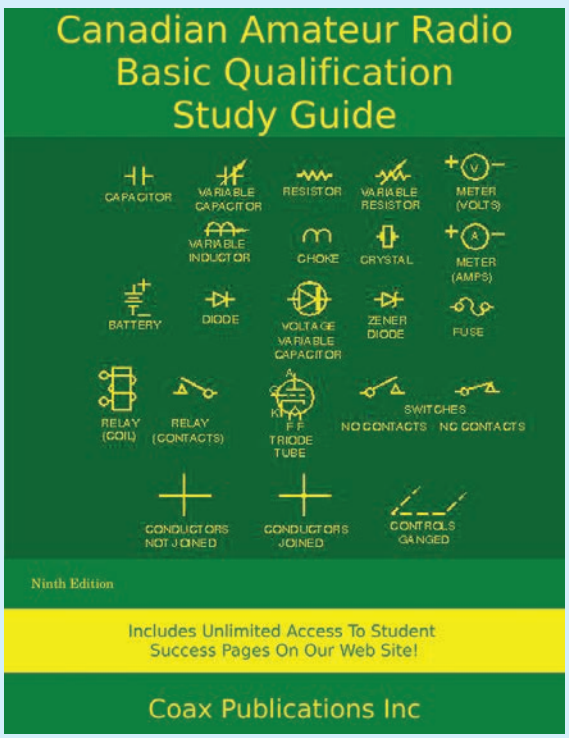
For more information visit https://www.rac.ca/study-guides-2/



For more information about getting started in Amateur Radio visit: https://www.rac.ca/how-to-begin/

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