The October 2024

NARA Newsletter

President's Message – Randy VE7FAA

This year seems to have flown by, and as we are now into October it is time to again think about attending NARA's upcoming annual general meeting, voting in executive elections, and renewing our NARA memberships. The AGM takes place Nov. 14 and more details on that appear in this newsletter.

Over the last few years NARA's membership has increased to about 100 and I feel that this is because our club remains very active, is always moving forward, and pushing boundaries with new ideas and activities. As further evidence that NARA is always moving forward, I am pleased to report that the Mount Benson APRS digipeater is now operational. The coverage is very good, as expected, and we have Mason VE7PMD to thank for spearheading this project, plus a special thanks to Sulo VE7SUL and Island Communications Ltd. for hosting our equipment.

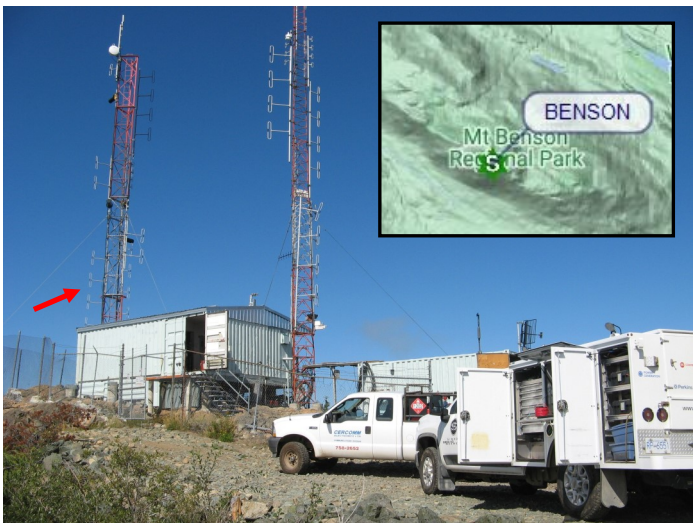
At the November AGM members will be asked to vote for the positions of vice president, secretary, and three directors. Nominations can be sent to the NARA secretary VE7LSE at ve7lse@gmail.com.

Please also remember it is time to renew your membership. Details of how to renew are included in this newsletter. Dues became payable in September and can be renewed anytime up to Nov. 30. By renewing your membership you will be sure to be kept up to date with everything that is going on in NARA, both through emails and via the *NARA Newsletter*.

I also want to remind everyone that the annual fall Basic course starts in October, with course details and instructions on how to join also provided elsewhere in this newsletter. We are fortunate to have a dedicated training group who give this Basic training course every autumn, and this year for the first time a CW course. This will be the fourth year that the Basic course has been given by the current training group. In that time more than 30-plus new amateurs have been trained, from as young as nine years old to those in their 70s. Thank you to our NARA Training Group members.

Mount Benson APRS Operational

NARA's long planned digipeater, callsign VE7NA, is now operational from Mount Benson. Allowing for coupler and coax losses and adding the antenna gain, the effective radiated power (ERP) from the antenna is about 8 Watts. At a height of 1,023 metres above sea level the calculated range is nearly 114 kilometres. Initial reports describe the coverage as "amazing" and NARA is hoping that some gaps in the APRS coverage north of Nanaimo along Highway 19 will be filled in. In addition, this new digipeater now provides enhanced coverage west of Mount Benson for those enjoying activities in the back country. Also, APRS coverage for the annual bike race will now be a given without the use of temporary APRS nodes.

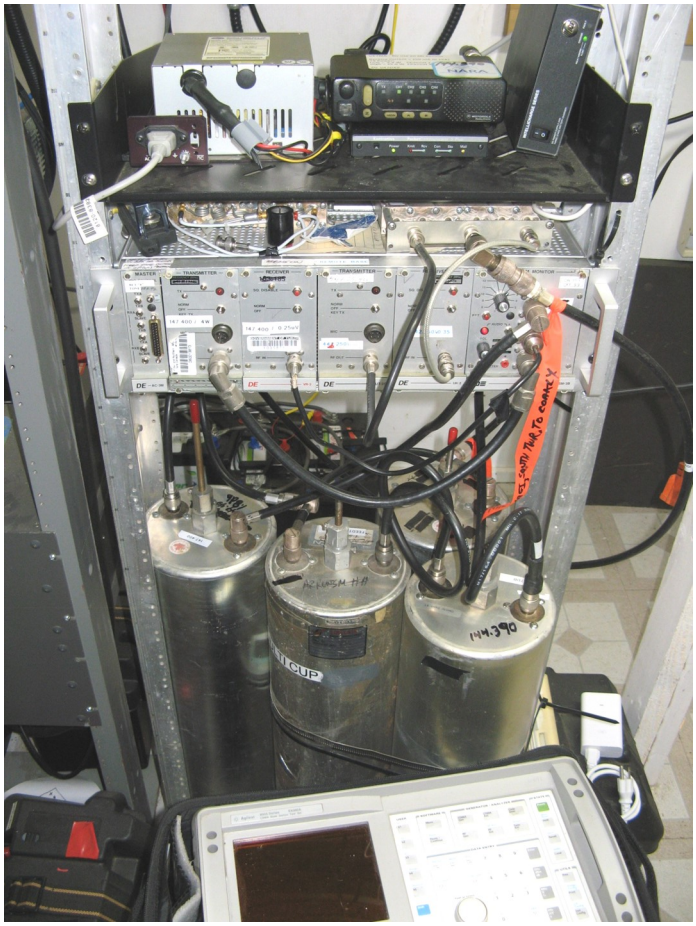


The red arrow marks the 4 bay antenna system used by the NARA VE7NA digipeater on Mount Benson.

The actual installation of the Mount Benson digipeater was done on Sept. 12 by a team from Island Comms. We have lots of people to thank for working on this project. Great thanks from NARA go to: Mason VE7PMD for overseeing the project from start to completion; David VA7DXX for donating the transmitter/receiver; Mason (again) for donating the TNC; Devan VE7LSE, a member of the NARA APRS team, for advice and support. And extra special thanks go to Island Comms. for hosting the site at Mount Benson, chiefly to Sulo VE7SUL, the owner of

Island Comms. Also, thanks to the installation team, Dave and Drew from Island Comms., plus Jeff who was there to look after the amateur radio multi-coupling side. The Mount Benson APRS site is a very welcome addition to the APRS infrastructure on Vancouver Island.

The equipment rack at Mount Benson showing the NARA power supply, transceiver and TNC.



The NARA VE7NA digipeater seen on the top shelf in the rack cabinet. Below is the MIRA 2m remote base station equipment. NARA thanks MIRA and Jeff for letting NARA multi-couple into the 4-bay 2m antenna system which is providing such good coverage for the new APRS digipeater.

NARA Annual General Meeting, Elections, Membership Dues & Annual Audit

NARA's annual general meeting will be held Thursday, Nov. 14, at the Air Cadets building at 719 Nanaimo Lakes Road, about 200 metres south of Wakesiah Avenue. It starts at 7 pm. This is a hybrid in-person and online meeting that will be available via Google Meet for those unable to physically attend. The link for Google Meet will be sent to all NARA members prior to the AGM.

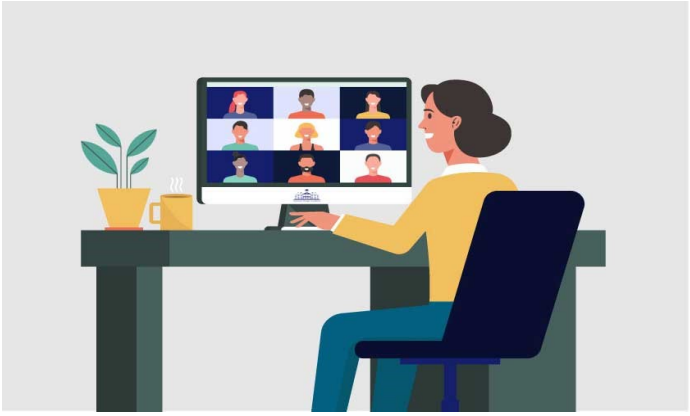
According to NARA bylaws the positions up for election at this year's AGM are vice president, secretary, and three directors. Please email any nominations to the NARA executive secretary, Devan VE7LSE at **ve7lse@gmail.com.**

NARA bylaws also state that annual membership dues became payable in September and members have until Nov. 30 to renew. The present dues are $30 per year for individuals and $45 per year for family. The easiest way to pay annual dues is by e-transfer to **naraetrans413@gmail.com**. NARA is registered for auto deposit so no need for passwords. Also, if you go to the web page **https://ve7na.ca/join-now/** you can pay by PayPal. You can also provide cash or a cheque to the NARA treasurer.

NARA is also looking for volunteers to assist with the mandated annual financial audit. The bylaws state that an annual audit must be done either by hiring a professional auditor or by appointing two NARA members who are not members of the executive to check over the books. One member volunteered for the audit at the September General meeting to assist with the audit. If you can assist the club in its financial audit please contact the NARA Secretary, Devan VE7LSE at **ve7lse@gmail.com**.

NARA Fall Basic Course

A reminder that NARA's Training Group will be running a Basic ISED exam course starting this month. The course starts Oct. 1 and will be delivered via Google Meet. There will be 10 sessions starting at 7 pm on Tuesday evenings, with opportunities to take the ISED Basic Certificate exam during early December. To obtain full information on the course please email the NARA Training Group via **training@ve7na.ca.**



NARA's Fall Basic training course starts on Oct. 1.

Ham Happenings Electronics Swap Meet

There was a great turnout for this year's Ham Happenings swap meet on Sunday, Sept. 8, hosted by the Cowichan Valley Amateur Radio Society.

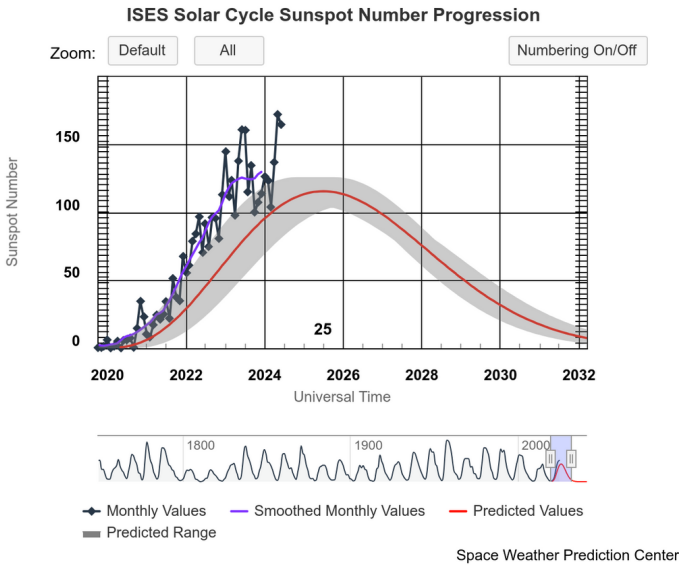
The event was attended by 156 amateurs including nine volunteers. There were 19 tables and the main door prize was won by Art VE7ER of Ladysmith. Thanks to CVARS.

Next year's Ham Happenings will be in Victoria.

This year's Ham Happenings organized by CVARS.

How is DX – David VA7DXX

Sunspot Cycle 25 continues to perform above expectations. While the sun remains very active as we get closer to the mid-2025 peak of the cycle, the potential for long distance communication remains high.



The latest sunspot numbers for Cycle 25, thanks ISES.

As a reminder of just how short the history of amateur radio is, UK special event stations GB2NZ and GB2ZL are being operated this month to commemorate the first amateur radio contact between Britain and New Zealand, at the dawn of amateur radio DXing, 100 years ago. That contact took place Oct. 18, 1924. At the UK end was an 18 year old student, Cecil Goyder, G2SZ, operating from the Mill Hill High school in NW London. At the New Zealand end was 28-year-old Frank Bell, Z4AA, located in Dunedin on New Zealand's South Island.

Radio pioneer Cecil Goyder, G2SZ, often nicknamed 'England's Marconi' pictured in 1924. Cecil was a boarder at Mill Hill high school in NW London. Cecil started his radio experiments earlier but his famous contact with New Zealand was on Oct 18, 1924 at 07:10 hours GMT.

Contacts between the UK and New Zealand are now routine and I have a friend near Christchurch, NZ, who works another friend in Kent, south east of London, almost every day.

I remember quite clearly the thrill of my own first contact with New Zealand, with ZL1AH, from Ealing in west London in 1962. The contact was on 20m CW and I was running a dipole and 50 watts. New Zealand and the UK are at the 'antipode', that is the point on the Earth's surface that is diametrically opposite to it. We don't really have an antipode from Nanaimo. The nearest would be either Crozet Island (prefix FT5W) in the south Indian Ocean or perhaps the Kerguelen Islands (prefix FT5X), again in the south Indian Ocean. Neither island is inhabited, though they do have scientific research stations, and are not typically active on amateur radio except for DXpeditions.

There were several great DXpeditions in September which I personally followed. For some time now I have not just hunted DXpeditions and new Islands but in doing so have been trying to increase the number of bands on which I have worked these DX entities. For example, I had previously worked Sable Island on four bands, but thanks to the CY9C DXpedition I have now worked the island on four new bands: 10, 12, 15 and 80m. Likewise with the KH8T DXpedition to American Samoa, I managed three new bands on CW. Thanks to Keith VE7KW who was a member of the KH8T team.

Logos from the September CY9C and KH8T DXpeditions

Island-wise, I worked eight new islands during September but still have a long way to go. There are well over 1,000 island groups to work under IOTA (the Islands on the Air program), and I have not yet managed to work 400. One notable new island for me this month was a contact in Indonesia with 7E4M on Mendanau Island, to the east of Sumatra and west of the much larger Belitung Island. This is a long path from Nanaimo at some 13,000 kilometres. On the morning of Sept. 14 signals from 7E4M were peaking at S3 on 20m CW. The operator was not saying if he was listening up the band, which is normal for any DXpedition, so I was not clear if they were listening on their own frequency, which would be unusual, or listening up. Since 7E4M was working only European stations I could not hear anyone calling them so I called blind about 1.5 KHz up in the hopes that they would hear me. Although I was reading 7E4M at Q5 they were not receiving me as well. They did hear me but the nearest that they came to my callsign at that time, after several tries, was UA7XX.

IOTA OC-144, Mendanau Island activated by 7E4M

As with most DXpeditions if they just don't hear you, or can't quite get your callsign, the best thing to do is get out of the shack for a time and make a cup of coffee (or whatever your favorite hot brew may be). That is exactly what I did, returning to the shack about 20 minutes later. Steve Jobs of Apple had what he called a 'ten minute rule.' If he was stuck for an answer after ten minutes he would go for a walk, clear his head and return to the problem later. Isaac Asimov first described this technique. In my case after 20 minutes I returned to the shack to find that the signal from Indonesia was stronger, peaking 559, but they were still working European stations. After just a few minutes the operator heard me, got my callsign correctly on the first go, and we completed the contact. Mendanau Island is classified as OC-144 in the IOTA program. The DXpedition was there only for a couple of days, so a lucky catch.

We have to thank the seven-member 7E4M team from Indonesia and all those that spend time activating rare DX locations via DXpeditions. It really is marvelous that a large number of people all around the world share this fascinating hobby with us, the Amateur Radio Service.

During October we can expect DXpeditions from the following countries: Samoa (5W0TE), Svalbard (JW5X and a second DXpedition, callsign not yet known), Nauru (C21MM), Guyana (8R1TM), Chatham Island (ZL7IO), Vanuatu (YJ0VV), Mozambique (C91BV), Cayman Islands (ZF2XX), Jamaica (6Y), Malawi (7Q1), eSwatini (3DA0DL) and Burkina Faso (XT2MD).

Personally, I will be looking especially for the African DXpeditions to Mozambique, Malawi, eSwatini, and Burkina Faso.

The SSB leg of the very popular CW Worldwide DX Contest takes place over the weekend of Oct. 27-28, which for SSB fans should not be missed. Activity levels will be high and a great opportunity to work some good DX.

NIARS Fundraising for the ITS

During September the North Island Amateur Radio Society sent out a flyer for those who might want to support the Island Trunk System. The flyer notes that during this year's August north Island work bee it was discovered that the batteries at the Shelly Mountain ITS repeater site are in in urgent need of replacement.

NIARS is setting an initial fund-raising target of $3,000. This amount is required not only for new batteries at Shelly Mountain, but also to fund two additional batteries and a new charge controller at the Newcastle Ridge site.

The NIARS fundraising flyer was released in early September, and since then initial donations have allowed NIARS to do some additional work at the Woss repeater site and install the new charge controller at Newcastle Ridge. This work was done over the weekend of Sept. 21-22 by Kevin VE7KGV, Mike VA7MLZ, and Jordan VE7HBI. Great thanks to Kevin, Mike, and Jordan for getting the work done before winter arrives in the sub-alpine in mid-October and makes the sites inaccessible for the next six months.

The Island Trunk System is a vital asset to all amateurs on Vancouver Island and beyond. Every little donation helps, so please consider supporting the Island Trunk System. You can e-transfer to **niars8594@gmail.com** or go to the NIARS website to use PayPal. The NIARS website is **https://niars.ca/donations**.

Please support the Island Trunk System with a donation.

'Not Back to school'

On Tuesday, Sept. 3, Devan VE7LSE set up a radio station at Nanaimo's "Not Back to School Picnic." Parents of home learners remarked that amateur radio would be great topic to learn about and could count toward school credit. Students enjoyed tuning in and contacting amateur radio operators in other countries. Families took home amateur radio information flyers.

A great demonstration of radio. Thanks to Katherine VA7HN and Devan VE7LSE, and to the parents of the children for their permission to use this 'not back to school' picture.

220 MHz Equipment

Many local amateurs frequently ask about 220 MHz mobile transceivers available on the market because suitable 220 radios seem difficult to find. Alinco does make the DR-CS25T 220 MHz mobile, which has been around for some time in previous models. Recently a new 220 MHz radio has appeared on the market. This is the Retevis RT9000D single band VHF or 220 or UHF mobile. It is available locally from Fleetwood Digital Products, likely as a special order. Since the installation of the VA7DXH 220 MHz repeater in Ladysmith, local 220 MHz activity has increased. VA7DXH is on 224.040 MHz, minus shift of 1.6 MHz and a tone of 141.3 Hz. It provides good mobile and hand-held coverage in the mid-Island area. NARA hosts a net on this repeater at 10:30 am local time each Saturday morning.

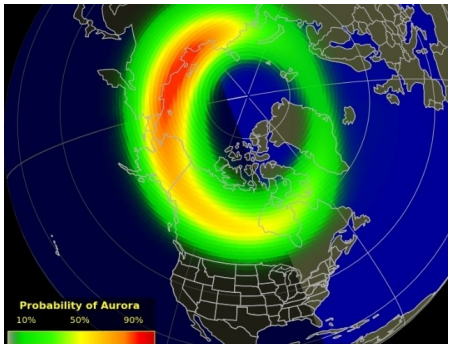
On special order the Retevis RT9000D is available for the 220 MHz band.

‘CME Strike Sparks Widespread Red Aurora’ - David VA7DXX

This headline was taken from the Space Weather site on the morning of Sept. 12. A CME hit Earth’s magnetic field that day at 3:30 GMT (UTC). It was apparently due to debris from a dark plasma explosion on the Sun four days prior. The CME impact produced a G3-class geomagnetic storm, giving deep red auroras across Canada and the United States. Remember that the time taken for a CME to hit the Earth depends on the mass and velocity of the CME plasma. In this case it took four days to reach us.

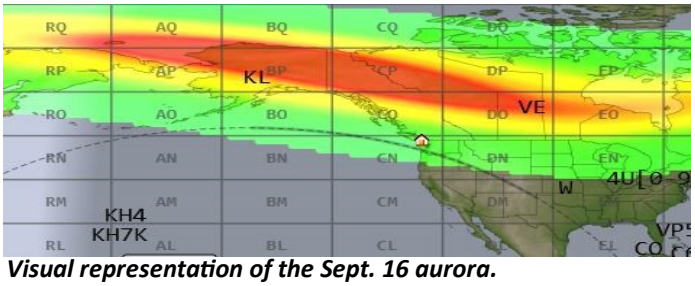
As the CME had been forecast to hit the Earth, I checked for auroral activity at around 11:30 pm on Sept 11. Auroral activity was up but likely not enough at that time to produce a visual aurora. But conscious of the fact that there might be an aurora during the night I set my alarm for 2:30 am. This paid off because at 2:30 am the visual aurora was so strong that I could easily see the huge red glow. Of course, not too many people will have seen it at that time. I considered trying out the 6m band, but since most people were likely asleep I did not switch on the radio.

This picture was taken by David VA7DXX at 02:50 am Pacific time on the morning of Sept 12. The lights of Nanaimo in the bottom of the picture.



The auroral simulation from the Spaceweather site on the morning of Sept 12, 2024.

Another CME impacted Earth on the evening of Sept. 16, causing another severe geomagnetic storm with visual aurora reported as far south as the Texas panhandle. Unfortunately for us the sky clouded over and we were not able to see the northern lights this time in the Nanaimo area.



Visual representation of the Sept. 16 aurora.

There was also another excellent aurora on the evening of Sept. 24, but the overcast sky and heavy rain again prevented any observation from the mid-Island area.

NARA’s New Website

NARA executive member Brandon VE7TZB (director) has spearheaded moving NARA’s website to a new server, which means that BCWARN will now host the new site. The transition to the new server has been seamless. The address for NARA’s website is at https://ve7na.ca/.

Sunnus Farm Presentation

NARA members will recall that for the third year in a row NARA was fortunate enough to hold its annual ARRL Field Day event at the end of June at Sunnus Farm in Yellow Point; a first-rate Field Day site on the water with excellent take-offs and high trees for low-band wire antennas. NARA is most appreciative to the Sunnus family and each year the club makes a presentation to the family as a token of thanks.

Ron Sunnus and Mike VA7WPM checking out the bench presented by NARA (by Mike & David VA7DXX) to the Sunnus Farm.

Hewitt Lines VE7HU (SK)

The NARA Newsletter sadly notes that Hew Lines, VA7HU, became a Silent Key in August. He died early in the morning of Aug. 27. Hew would have turned 79 in November.

Though Hew's main residence was Sidney, he and his wife Sandi, VA7SPS, spent a fair bit of time in Nanaimo. They stayed at Living Forest campground for weeks at a time and used it as a base to explore the north Island.

On one of those explorations the Island Trunk came to their rescue when Hew and Sandi had an accident near Woss on Highway 19 as they returned from Port McNeil. Though not injured they still needed assistance, and of course there was no cell phone coverage. So Hew put out a call on the trunk, which got a prompt reply, and help was on the way. Hew was grateful forever afterward for the ITS and those who assisted that day.

When in Nanaimo Hew attended NARA meetings and coffee klatches, and also became involved with the Coast Emergency Communications Association (CECA).

Hew and amateur radio were a perfect match. He was a man who enjoyed a technical challenge. His coffee klatch tales of getting his 3D printer to work to his exacting specifications were inspiring. Hew got into amateur radio at a young age, became proficient in CW when that was the main way of being a ham, and he eagerly followed as the hobby shifted into new areas.

A friend of Hew's, Rick VE7TK, said that Hew worked all modes but really enjoyed CW. He was also part of a small group of hams in the Victoria area building QRP kits.

We also remember Hew for his military service. As a military radio operator, he flew on the CP-107 Argus and then its successor, the CP-140 Aurora, hunting submarines. Military bases where Hew was stationed include Lahr, Germany, where he was licensed as DL2YI, and Goose Bay, Newfoundland and Labrador. He also worked as a military air traffic controller.

After leaving the Canadian Armed Forces, Hew moved over to Nav Canada to oversee the installation of new air traffic control equipment at airports across Canada. Although Sandi and Hew first met at high school they reconnected shortly after Hew retired and they were married in 2018.

We are unaware of any service for Hew. The Newsletter will advise of any details should we learn of one.

Hewitt Lines VE7HU, 1945 to 2024.

Murray Thierauf VE7MST (SK)

NARA extends its condolences to the family and friends of Murray Thierauf, VE7MST, a CVARS member from Duncan who became a Silent Key on Sept 16. He was 57.

Murray was well known up and down the Island as one of the regular net controllers on the daily CVARS morning net on the Island Trunk. He was also a member of the CVRD Emergency Communications Team.

The following is taken from the tribute page on the website of H.W. Wallace funeral services in Duncan.

Murray was raised in the Cowichan Valley. Graduating from CSS. He worked many years at Port Alice mill until it closed. Returning back to Duncan he worked as a flagger. "Murray's passion was being a member of Cowichan Valley Amateur Radio Society. He made many great friends while volunteering at events: Ladysmith light up, organized races, and tower maintenance on Mount Brenton to name a few.

Memorial service at a later date. In lieu of flowers or celebrations consider a donation to Cowichan Valley Amateur Radio Society (www.cvars.ca)
e-transfer: treasurer@cvars.ca."

Visit from Scotland

Brian GM4OIJ, from Inverness, Scotland, spent two weeks of his vacation during September in Ladysmith, followed by a week in the Victoria area. During Brian's time in Ladysmith he and his wife Frankie made an afternoon visit to David VA7DXX and Rosemary G0NDB, attended the south end coffee klatch the next day, and got onto the Island Trunk System making a number of contacts. Brian and Frankie are now back home and he is hoping to make an HF contact with David VA7DXX when conditions permit.

Brian GM4OIJ pictured in David's shack.

NARA Volunteer Positions

The NARA executive is seeking volunteers for two new positions, for fundraising and to co-ordinate tech talks.

The volunteer position of Grants and Funding Manager would involve looking for any grants that might be available to NARA and working with the executive to make appropriate applications.

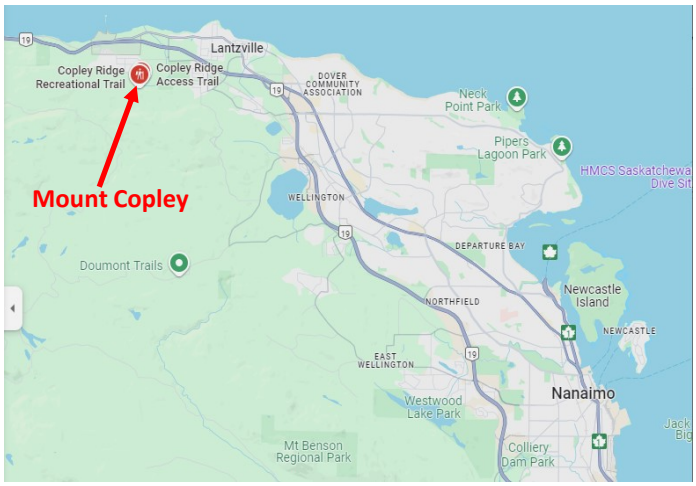
NARA is also looking for someone to head up its popular tech talk activity. This is an organizational role to assist finding appropriate tech talks and setting suitable dates and times, which could be in-person, on Google Meet or hybrid in-person and online.

If you are interested in either role, please contact Devan, VE7LSE, NARA's secretary at **ve7lse@gmail.com**.

Mount Copley

After several years of waiting there now seems to be some progress at the proposed Mount Copley site, in which NARA and CECA have an interest for a potential repeater site.

NARA plans to conduct further VHF/UHF tests from the Mount Copley site this winter. Signal reports are most welcome so watch for an email announcing radio tests from this site.



Mount Copley relative to the Nanaimo area.

NARA Executive Meetings

To help accommodate an executive member, NARA on a temporary basis will hold its executive meetings on a Monday. As always members are able to attend NARA's executive meetings. The dates and times for NARA's Google Meet executive meetings are always sent to all members via email.

Google Meet

NARA Meetings for October

October 7: NARA Exec. Meeting — Google Meet
October 10: NARA General Meeting — hybrid meeting

NARA Coffee Klatches

Day	Frequency	Time	Location
Tuesday	Weekly	10:30 am	**South end Smitty's:** #50 10 the Street
Thursday	3rd Thursday of the month	7:00 pm	**Tim Hortons**: 2320 Northfield Road
Saturday	Weekly	9:00 am	**North end Smitty's:** 2980 North Island Hwy, the Rock City Centre

APRS Update

If you are you driving north of Campbell River as far as Port McNeil or Port Hardy, and you have APRS in your vehicle, you will be pleased to learn that the Woss iGATE went on the air on Sept. 12. While the Woss mountain digipeater was active it was not relaying APRS positions to the outside world. The new iGATE, located in Woss itself, means that passing vehicles will now appear on the APRS.fi website.

The Woss iGATE installed on Sept. 12 is shown on the left.

Jamboree on the Air 2024

Jamboree on the Air (JOTA) is an annual Scouting event which allows Scouts, using amateur radio, to exchange greeting messages around the world on short wave radio. There is nothing like the excitement of having a live two-way radio contact to stimulate an interest in amateur radio.

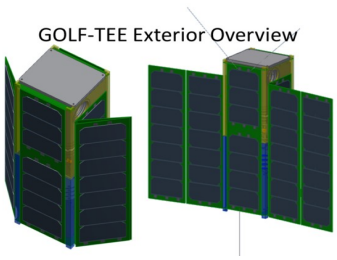
This year's JOTA takes place on Oct. 21. There will likely be some local Scout activity in the Nanaimo area, but this will not be a NARA event. However, the Campbell River Search and Rescue hall will see some JOTA activity organized by the Strathcona Regional District. Members of the public are invited to drop by to learn about amateur radio and ask questions.

The Satellite Downlink: GreenCube is Officially Offline; Now What?

Bruce VE7PTN

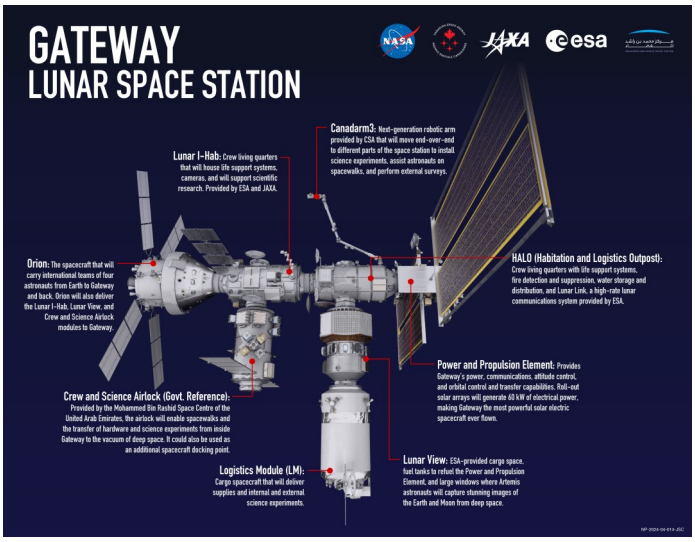
Over the last few months, I have provided updates on the on-again/off-again nature of the GreenCube packet satellite. With its relatively high-altitude Medium Earth Orbit (MEO), it has taken a beating from solar radiation. Well, as of early September it seems like the Sun has won the battle. Nothing has been heard from the satellite by its controller, Sapienza Space Systems and Space Surveillance Laboratory (S5Lab), for weeks now. GreenCube is no longer responding to commands, and they assume that the onboard radio has been damaged such that it is no longer functional. This is sad news of course for such a popular satellite. That said, it has lasted much longer than similar satellites in MEO.

Now that GreenCube is no more, there is no other amateur radio satellite in orbit with the same multi-continent footprint. Satellite DX options from western Canada are once again limited. There is no replacement satellite in the works, mainly because launch opportunities to MEO are limited. However, in three to five years there will probably be something similar launched. The Radio Amateur Satellite Corporation (AMSAT) does have a project underway called "GOLF". This stands for "Greater Orbit, Larger Footprint" and aims to launch satellites to MEO or even High Earth Orbit (HEO), defined as orbits above 35,786 km. (GreenCube orbits about 5,800 km.) Some launches were planned for 2022, but these did not happen, and the project is behind schedule. For more information on the GOLF program, see the AMSAT website: https://www.amsat.org/greater-orbit-larger-footprint-an-introduction-to-the-amsat-golf-program/.



A preliminary concept for "GOLF-TEE", the first element in the AMSAT GOLF project, with TEE standing for "Technology Exploration Environment." This would be a LEO amateur satellite with two systems needed for higher orbits to be tested. First, an Attitude Determination and Control (ADAC) system to allow active pointing of the satellite's antennas which will have significant gain. Second, a deployable solar array which will allow more power to be generated than is possible with solar cells attached to the sides of a small spacecraft. Image from the AMSAT website: https://www.amsat.org/greater-orbit-larger-footprint-an-introduction-to-the-amsat-golf-program/.

Although, a few years away, NASA is planning to deploy a space station in lunar orbit. Called "Gateway," it is part of the NASA Artemis program. It will have some similarities with the current International Space Station (ISS), so it might include amateur radio equipment. That would be the ultimate in footprint! Nothing has been announced yet, but I am sure that AMSAT has been in discussion with NASA about opportunities.



An illustration of the planned Gateway lunar orbit space station. Hopefully amateur radio gear will be installed like it is on the International Space Station. Image from the NASA website: https://www.nasa.gov/reference/gateway-about/.

Part of what made GreenCube special was that the radio was enabled for packet operation. But there are other satellites where packet operation or similar digital modes are available right now. The ISS has an APRS digipeater that has become more popular lately due to longer operational periods. (Previously it was mostly switched off.) Using this digipeater, it is possible to make a single-hop APRS QSO over a large distance. I have done this a couple times using the APRS capabilities of my Kenwood TH-D74 connected to an Arrow II portable antenna. The experience was clumsy to say the least. The Kenwood's user interface is not optimized for the fast-paced nature of satellite QSOs. However, the Green-Cube Terminal Program written by Carsten Groen (OZ9AAR) includes an ISS APRS interface that I have yet to try. This feature would allow me to use my robust automated satellite station and should be much more functional than a handheld APRS unit. So, I will put this on my to-do list and provide an update later.

Technically, any SSB-capable satellite could allow for digital QSOs via WSJT-X. Not many operators seem to be doing this. However, since GreenCube went down there is more discussion and interest in this within the satellite community. I have even noticed one operator posting a planned FT4 operation on the RS-44 satellite via the website: https://hams.at. I have yet to connect my ICOM IC-9700 to WSJT-X; so, there is some learning and configuration to do before I try a satellite QSO. With the weak signal capabilities of FT4, I may have better luck with working RS-44 over the Arctic and into northern Europe than I do with voice.

One satellite operation I have not tried is "moon bounce" or Earth-Moon-Earth (EME). In this mode, an operator sends a packet signal directed at the moon with the hope that enough radio energy is reflected by the moon's surface back to earth to be picked up by another station. To be proficient at this requires a high-power transmitter and a high-gain antenna. I have neither. But it sounds like with my existing satellite station I could be successful with EME on the 70cm band, provided the other station has the power and gain to do the heavy lifting for me. So, another thing to add to my learning to-do and report back.

The 70 cm EME satellite antenna system built by Carsten Groen (OZ9AAR) in Denmark. Photo from Carsten's website: https://moonbounce.dk/hamradio/ham-radio-current-systems/70cm-eme-system.html.

In other news, I continue to make progress toward my Con US Gridmaster award (satellite contact with each of the 488 grid squares in the continental US. My count is now 461! That's all for this month. 73.

The volunteer group of NARA members producing this newsletter would like to thank all those who provided material for this month's issue.

The November issue of the NARA Newsletter will be published late on or around November 7. The final date for contributions will be November 4.

News items and comments should be mailed to:

news@ve7na.ca