The November 2025

NARA Newsletter

President's Message - Randy VE7FAA

NARA has its Annual General Meeting on Wednesday Nov. 12 and this will be the last occasion at which I will preside over NARA meetings as president. I have served as president of NARA for eight years and it is a Bylaws requirement that I now need to step down from this position. Being president of NARA has meant a lot to me and I do want to continue to serve the Association in other ways.

NARA has certainly come a long way in the past eight years. The Association has been involved with more events involving the public and many more projects. From the bike races, science fairs, the bathtub race and projects involving repeaters, APRS, the Island Trunk System and AREDN, to building things including Meshtastic nodes. Not forgetting our annual field day and many other contests including those in which our members have achieved first place. I would also like to thank our newsletter team for recording NARA's events and our Basic exam training group. Our IT side has benefited greatly because many members have made special contributions to our technology. We have a membership with very diverse interests and it is good that several of our members are world class in their chosen fields of amateur radio. And our membership has grown steadily to well over 100 as the list of NARA activities has expanded and developed.

Of course, the loss of our club house to a fire in March 2022 was unfortunate, but we have found a new home with the 808 (Thunderbird) Wing which is so mutually beneficial. We have helped 808 Wing to improve their internet facilities and have trained the cadets in amateur radio. We have established a terrific club station for VE7NA with includes remote operation and a beam antenna for the HF bands.

None of this would have been achieved without all those who have been on the executive committee over the years and of course our dedicated members. NARA is fortunate to have so many members who clearly have a passion for this hobby/service; the Amateur Radio Service which is so special.

NARA so much depends on members who are prepared to give their voluntary time to make the Association a better organization. I especially want to thank everyone who has worked with me as president to move NARA forward over the past years.

Thank you all again for the honor of being able to serve as NARA's president. It has certainly been a very significant chapter in my life.

As I pass the president's gavel over to a new president, I am full of confidence that NARA will continue to be an excellent radio organization. I am not vanishing; I want to continue to serve NARA and I will continue to be a proud supporter and member of the Association.

Island Events	Date	By
NARA AGM (808 Wing)	Nov. 12 (7pm)	NARA
808 Wing - Pancake Breakfast	Nov. 16 (9-11:30am)	*808*
NARA's Christmas Dinner at 808	Dec. 5 (6:30 for 7pm)	NARA
808 Wing - Pancake Breakfast	Dec. 21 (11:30am)	*808*
NARA NVIS tests on 60m	Dec. 21 (11:30-start}	NARA
Canada Winter Contest	Dec. 28	NARA

BC Law Requirements for Societies

As a member of NARA, it is a requirement that NARA obtain your consent to its Privacy Policy. NARA also needs to make sure that the information you provide to NARA is correct in its Register of Members. To make things easy for members to consent, please go to https://ve7na.ca/join-now/ and complete the 'Renewal Membership' form and then email it to secretary@ve7na.ca, the NARA Secretary.

Organizations in British Columbia, such as NARA, are required by law to have a Privacy Policy. Any organization which collects, uses or discloses your personal information is required to have a Privacy Policy under the 'Personal Information Protection Act' (PIPA).

NARA's Privacy Policy was adopted in 2024 and is there to protect any personal information which you provide to NARA as part of your membership. The NARA Privacy Policy can be viewed on the NARA website at https://ve7na.ca/documents/. It explains how your personal information is handled and your rights with respect to the privacy of the information you provide to NARA.

If you have not already given your consent to the NARA Privacy Policy (NPP) please see the first paragraph above and complete the required form. If you have any difficulties, please contact secretary@ve7na.ca. NARA can also email you the consent form if required.

NARA's Annual General Meeting

NARA's Annual General Meeting (AGM) takes place on Wednesday Nov. 12. The meetings, general and AGM, start at 7pm. The venue will be the 808 (Thunderbird) Wing building at 719 Nanaimo Lakes Road, Nanaimo, BC, V9R 5K4. At the annual general meeting there will be elections to fill the vacancies on the NARA board for president and treasurer plus three directors, as per the NARA Bylaws.

NARA's Christmas Dinner

Following the on-line survey of NARA members, this year's NARA Christmas dinner will be a pot luck meal at 808 (Thunderbird) Wing. The date is Dec. 5 at 6:30 for 7pm. Further information follows via email.

Membership $ubscriptions for 2025/26

There is still time to renew your membership subscription since there is a grace period until Nov. 30.

To renew your NARA subscription for 2025/26 there are several ways to pay:

By **e-Transfer** to payments@ve7na.ca
PayPal, see details on the NARA website
Cash or cheque to the treasurer at NARA's registered address

As a reminder fees are:

Full Member: $30 – Over 19 and with accreditation/ callsign
Full Member (family rate): $15 – Over 19 with accreditation/callsign, living at the same address as a full member
Junior: $12 – under 19 with accreditation/callsign
Associate: $12 - Without accreditation or callsign

Please make sure that you provide your name and callsign (if appropriate) with your payment

NARA Membership Lapel Badges
22x71mm with magnetic pin $18 each
e-Transfer to:
va7dxx@gmail.com

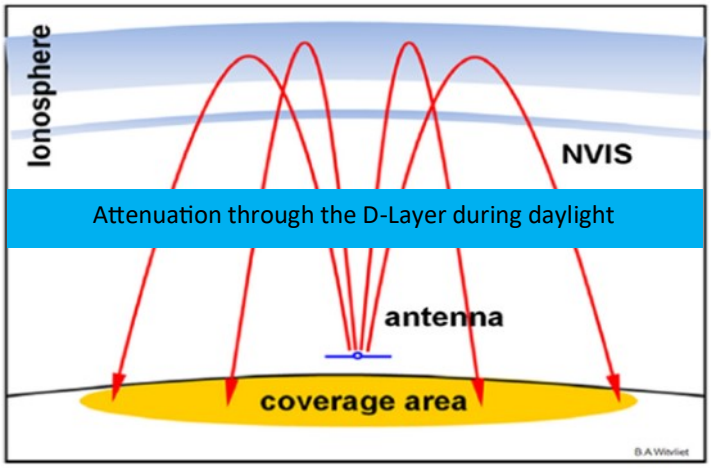
To reduce costs, delivery of the badges will be at a NARA meeting

AREDN Update

The Nanaimo AREDN Network is now connected into the VA3IQ-YOW-SUPERNODE. In this instance Nanaimo is the server and VA3IQ is the client. This adds additional connectivity to the Nanaimo AREDN system. Thanks Mason VE7PMD for this update.

NARA NVIS Tests – Oct. 18

NARA's 60m band SSB NVIS tests on Oct. 18 were very well supported. The idea was to see what practical ranges could be achieved in daylight when the D-layer was present. The D-layer forms during the day and attenuates signals, more so on the lower HF bands. This attenuation by the D-layer thus prevents longer distance communication during the day. Of course, once the D-layer collapses at night time, with the absence of the sun, the 60m band is capable of excellent long distance communication.



The point of these 60m tests is to see what ranges might be practical when the D-layer is present during daylight. The scenario is how far could an emergency operations centre communicate on 60m during daylight hours. In all, VE7NA, operating from VA7DXX's cabin near Ladysmith, had a total of 72 contacts of which 43 were unique callsigns. A number of stations made several check-ins during the four hour test period to check on propagation. The main operator at VE7NA was Jack VE7GDE with David VA7DXX logging.

It should be noted that during the tests the K index peaked at K6. The higher K index should correlate to higher attenuation though the D-layer. The VE7NA station was using a Yaesu FT891 running 100 watts to a 60m dipole which was 1/4 of a wavelength above ground; in other words at around 14m above ground. Many NVIS experts recommend that the sweet spot for a NVIS antenna is between a 1/4 wavelength to 1/8 wavelength above ground. Reducing the height of any antenna will tend to increase ground losses.

Of the 43 unique callsigns which took part in the NVIS tests, some 25% were 100 km or more in distance. These included:

- **VA7EWG** – Royston (100 km)
- **VA7UQ** – Powell River (101 km)
- **VE7XF/VA7TA/VA7KZ/VA7YAH** - Courtney/ Comox (108 km)
- **VA7CVE** - Campbell River (147 km)
- **K7XSN** – Mill Creek, WA (185 km)
- **VE7IVN** – Malcolm Is. (288 km)
- **VE7REN** – Okanagan Falls (312 km)

One missed contact should be noted:

VE7CUP – Houston, BC (618 km from VE7NA) was not heard by VE7NA but reported by Ivan VE7IVN. Ivan was getting a signal from VE7CUP during the test period, but it was not strong. The distance between VE7CUP and VE7IVN is some 424 km.

A number of stations, over 100 km, including VE7XF (Comox) and VE7IVN (Malcolm Is.), were consistently strong during the test period. In addition, NARA received logs and reports from: VA7TA, VE7BSM, VE7YAH, VA7GMB, K7SXN and VE7LSE, some of which we also worked. NARA club member, Richard VE7AA, was listening from Mexico via a number of remote sites. His main listening site was in Merritt, BC, some 250 km away from VE7NA. Richard reported that "the VE7NA signal stood out well above all others."

The VE7NA NVIS station ran a Yaesu FT891 at 100 watts to a dipole at 14m above ground.

Based on what is a relatively small sample of stations and some previous experience, it seems that a practical range on the 60m band for SSB during daylight might be in the order of 300-400 km. The best recorded distance during these NVIS tests was actually between VE7IVN (Malcolm Is.) and VE7CUP (Houston, BC) at 424 km but the readability was not

good during the tests, likely because of the geomagnetic storm (higher K index).

NARA wishes to thank everyone who took part in these propagation tests. It is NARA's intent to run these NVIS tests again on the shortest day of the year on Sunday Dec. 21, 2025.

Thanks to all of the stations that took part in NARA's NVIS Tests:

K7SXN, VA7BC, VA7VCE, VA7EWG, VA7FB, VA7KWZ, VA7LSP, VA7RJQ, VA7RLW, VA7SRD, VA7TA, VA7UQ, VA7XLA, VE7BEF, VE7BGP, VE7CPR, VE7CUP, VE7CYP, VE7DPZ, VE7DYS, VE7EOC, VE7FW, VE7GCC, VE7IAD, VE7IVN, VE7KW, VE7KZ, VE7LF, VE7LHM, VE7LSE, VE7MHI, VE7NZ, VE7PG, VE7REN, VE7TBN, VE7TBP, VE7WAE, VE7XBP, VE7XFA, VE7YAH, VE7YGS, VE7YPW & WT1HM/VE7.

Woss ITS Update

There is further progress at the new Island Trunk System repeater site at Woss, though the new site is not yet operational. As can be seen from the picture below of the new Woss ITS site, the platform and new building is on site. The new building needs to be guyed to the platform. Next spring it is expected that the radio equipment will be transferred to the new site. Once again, the North Island Amateur Radio Society wishes to thank North Island Communications for their unwavering support.

NIARS is still looking for donations towards the cost of moving to the new Woss site. Donations can be made via e-Transfer to **niars8594@gmail.com**

The crew at the new Woss ITS site. The platform & comshell are up. The equipment will be moved to this new site next spring.

Air Quality Monitoring in BC

NARA's Vice President, Jack VE7GDE, has always been keen on the idea of amateur radio giving back to the community. Air quality monitoring could provide valuable community information and be one way of getting more exposure for amateur radio. The recent introduction of Meshtastic low power nodes which do not require a licence may provide an answer. Thanks to some research by NARA members it seems possible to fit Meshtastic nodes with weather monitoring modules. More research and experimentation is needed as well as some software development to display Meshtastic weather information on a map. However, this does have potential as maybe a project for schools with this being an interesting mix of electronics, radio, weather monitoring and as a service to the community.

NARA's in-person Meetings at 808 Wing

- **Nov. 12** - NARA's AGM
- **Dec. 5** - Christmas Dinner

Meshtastic grows

Below is a recent map showing 915 MHz Meshtastic activity along the east coast of Vancouver Island and on the mainland. NARA has now switched to the modem preset Medium Slow (Slot 52) on Mt. Benson because of congestion from the mainland. Also the MQTT coming from across Canada. NARA still has a Long Fast modem preset on Mt. Benson (Slot 20).

Local Repeater News

+ The VA7DXH repeater on 145.410 MHz has an improved antenna and should provide better signals for the local coverage area.

+ A reminder that the VE7VDX Allstar repeater is located in N Nanaimo. It has a full time connection to the BC and Canada hubs and can be heard on 440.1750 MHz. More on VE7VDX next month.

808 (Thunderbird) Wing Events

- A great turnout for the 808 Wing lunch on Saturday Oct. 10 with some 40 people attending. The 808 Wing president commented that this was one of the highest turnouts for the lunch, likely helped by the ten NARA members who were present. The dinner was organized on behalf of 808 Wing by Linda VE7JLO who was assisted by Rosemary G0NDB. In the true spirit of co-operation, there will be future occasions when NARA members will again organize a lunch for 808 Wing. Volunteers please contact Linda VE7JLO at ve7jlo@gmail.com.
- On Sep. 28, 808 Wing organized a special presentation on the Battle of Britain held in one of the UBC lecture theatres. The attendance was around 80 including a number of NARA members.
- The monthly 808 Wing pancake breakfast on Oct. 19 also achieved a turnout of around 35 people including eight NARA members. Both Jack VE7GDE and Linda VE7JLO assisted with the food preparation.
- Remembrance Day is on Nov. 11 and the 808 Wing will be open from 10:30am to watch the ceremonies. There will be a hot lunch and beverages available until 2:30pm.
- Pancake Breakfast on Nov. 21 at 11:30am.

The well attended Battle of Britain presentation organized by 808 Wing on Sep. 28.

CECA

COAST EMERGENCY COMMUNICATIONS ASSOCIATION

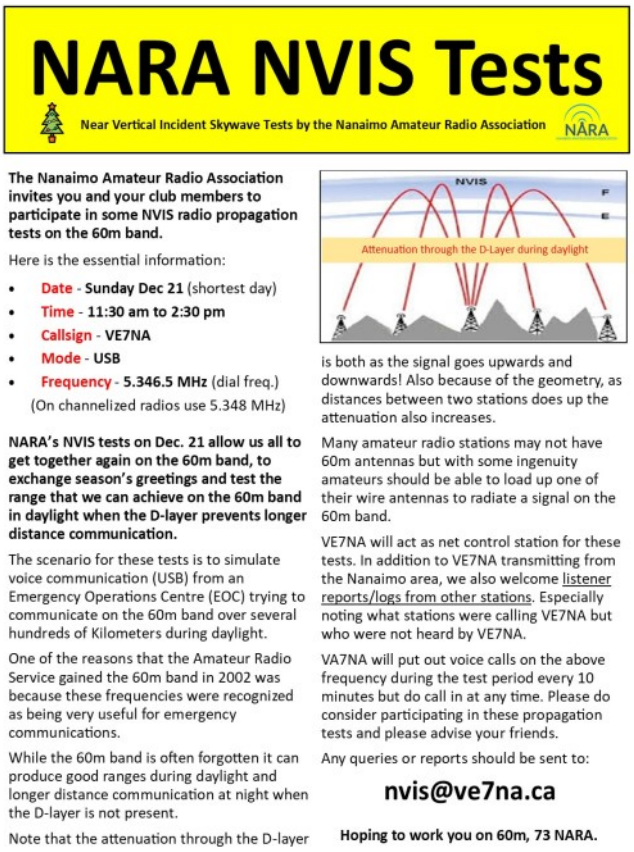
The Coast Emergency Communications Association has re-elected Paul Giffin VA7MPG as President at its Oct. 2025 AGM. Diane VE7VYZ has also agreed to stay on for a further year as secretary. However, both Paul and Diane have indicated that they will most likely not put their names forward in the fall of 2026. Paul has been the president of CECA since it's formation in 1997. The new treasurer of CECA is Burnie VE7IAD and a new director is Chris VE7TOP. CECA is always looking for new members.

VE7NA NVIS Tests in December

Inspired by successful 60m NVIS tests during October 2025, as reported in this newsletter, NARA wants to carry out one further NVIS test on the shortest day of the year which in the Northern hemisphere will be Sunday Dec. 21. The flyer which NARA will be sending out to Clubs and individual stations which have taken part in earlier tests is reproduced below.

So, essential information:

Date: Dec. 21, 2025
Time Period: 11:30am to 2:30pm (Pacific)
Callsign: VE7NA (NCS)
Mode: USB (by convention on 60m)
Frequency: 5.345.5 MHz (dial frequency)



NARA NVIS Tests

Near Vertical Incident Skywave Tests by the Nanaimo Amateur Radio Association

NARA

The Nanaimo Amateur Radio Association invites you and your club members to participate in some NVIS radio propagation tests on the 60m band.

Here is the essential information:

- Date - **Sunday Dec 21** (shortest day)
- Time - **11:30 am to 2:30 pm**
- Callsign - **VE7NA**
- Mode - **USB**
- Frequency - **5.346.5 MHz** (dial freq.)

(On channelized radios use 5.348 MHz)

NARA's NVIS tests on Dec. 21 allow us all to get together again on the 60m band, to exchange season's greetings and test the range that we can achieve on the 60m band in daylight when the D-layer prevents longer distance communication.

The scenario for these tests is to simulate voice communication (USB) from an Emergency Operations Centre (EOC) trying to communicate on the 60m band over several hundreds of Kilometers during daylight.

One of the reasons that the Amateur Radio Service gained the 60m band in 2002 was because these frequencies were recognized as being very useful for emergency communications.

While the 60m band is often forgotten it can produce good ranges during daylight and longer distance communication at night when the D-layer is not present.

Note that the attenuation through the D-layer

NVIS

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Attenuation through the D-Layer during daylight

is both as the signal goes upwards and downwards! Also because of the geometry, as distances between two stations does up the attenuation also increases.

Many amateur radio stations may not have 60m antennas but with some ingenuity amateurs should be able to load up one of their wire antennas to radiate a signal on the 60m band.

VE7NA will act as net control station for these tests. In addition to VE7NA transmitting from the Nanaimo area, we also welcome listener reports/logs from other stations. Especially noting what stations were calling VE7NA but who were not heard by VE7NA.

VA7NA will put out voice calls on the above frequency during the test period every 10 minutes but do call in at any time. Please do consider participating in these propagation tests and please advise your friends.

Any queries or reports should be sent to:

nvis@ve7na.ca

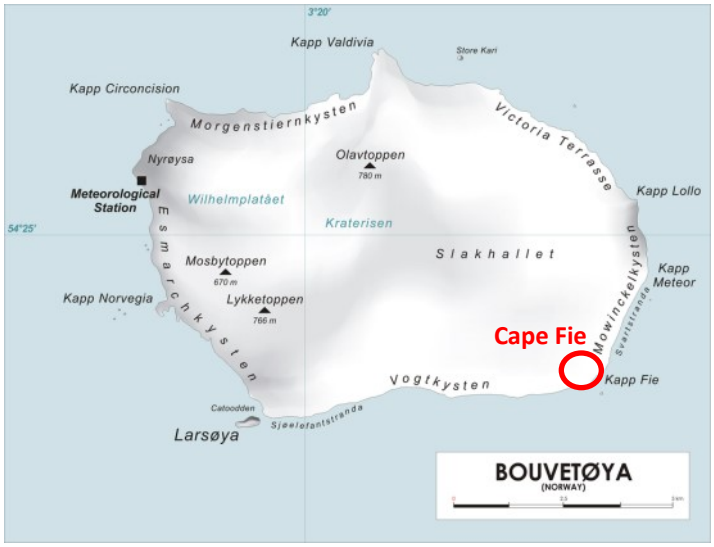
Hoping to work you on 60m, 73 NARA.

The flyer, above, will be sent out to clubs and interested persons in early November.

How is DX – David VA7DXX

If you live on Vancouver Island, then I believe that you stand a good chance of working the island of Bouvet. As noted previously, Bouvet is an uninhabited, hostile island at the bottom of the world. It is cold, mostly covered in snow and ice, can be really windy, and, as demonstrated in the past, it can be difficult to get onto the island.

The most recent attempt to activate Bouvet, a Norwegian dependency, was by the 3Y0J team in Feb. 2023. This team chose to land on Bouvet island by boat, and this proved to be only partially successful. As reported at the time in the *NARA Newsletter*, the 3Y0J team had real difficulties getting any heavy equipment onto the island and ended up with only a small team, in one tent, running 100 Watts with limited vertical antennas. Also, the site used by the 3Y0J team in 2023, at Cape Fie (see map), was screened towards North America by a 780m mountain, called Ovaltoppen, which certainly did not help.



Bouvet Island showing the location of the 2023 team at Cape Fie. In February 2026 the 3Y0K team will have two camps, one at Cape Fie and a second, further to the west to provide better signals to North America.

The next DXpedition to Bouvet will also be led by Ken LA7GIA but will take an entirely different approach. The 2026 Bouvet DXpedition is planned to take place in February, which is only some 12 weeks away. The 3Y0K team plan to land on Bouvet by helicopter. They plan to be at Bouvet for three weeks, and this time will have two sites. The second site (quote) "*will be dedicated to give better conditions for North America*." "*The exact location of this camp will be decided after the first reconnaissance flight over Bouvet, after our arrival on the island*." By the way. Ken LA7GIA will be arriving in Cape Town, South Africa on Jan. 24 for a Bouvet sailing date of Feb. 1, 2026. Meanwhile their equipment container is presently en route to Cape Town. The team has interviewed four doctors and one will be chosen for the DXpedition. The total investment for this DXpedition will likely exceed $(US) 1.7 million.

The equipment container was packed in Norway and is presently on its way to Cape Town, South Africa, the departure point for the 3Y0K DXpedition.

As can be seen from this map, Bouvet Island is located in the middle of nowhere. The 2026 Bouvet DXpedition will depart from Cape Town, South Africa on Feb. 1, 2026.

Those of us who would like to work Bouvet (again in my case) certainly hope that the planned second camp will indeed prove better for North America. But Bouvet and its weather are unpredictable. If the boat is swaying violently from side to side in the rough waters off Bouvet Island, then the helicopter won't be able to take off, or land! The high winds may just prevent the helicopter from flying at all! Bouvet and its local environment are known to be quite hostile so an element of luck with the weather is required. While the group plan three weeks at Bouvet, there is, of course, a possibility that on-air time might well be shorter. Again, let's hope that the weather and the sea state cooperates with the 3Y0K plans.

So, what is involved with working Bouvet from Vancouver island? If you are running 100W then your best bet will certainly be by running FT8. This digital mode with its very narrow bandwidth (narrower than CW) digs deep into the noise and has a real advantage. Don't like FT8 or not set up for it, well CW is your next best bet. If CW is not an option, then SSB is your answer. The Bouvet 3Y0K team will be running some power so you will hear them on one band or another. Maybe we have to wait for some good conditions but with 100W and a suitable wire antenna or beam, then certainly a contact is possible. The Bouvet team will publish their preferred frequencies in advance so you will know where to listen. The DXpedition will operate split frequency which means that on no account should you call 3Y0K on their transmitting frequency, they won't be listening there.

In the February 2026 edition of the NARA Newsletter, I will give some details of the forecasted propagation from Nanaimo to Bouvet, the best bands and the best times of day. If the Bouvet DXpedition were happening now, then certainly our evenings on bands 17m and below would provide the best opportunities. Take this as a challenge and make a point of trying to work this very rare island.

Speaking of DXpeditions which don't always go to plan. The recent and very active DXpedition to the North Cook islands signing E51MWA suddenly went off the air. I was especially interested to work this DXpedition as one of the operators there is the goddaughter of a very good friend of mine. Violetta KN2P, is 21 years of age, an up-and-coming SSB contester, a pilot and flight instructor.

E51MWA operators, with Violetta KN2P on the left.

Manihiki, where the DXpedition was located is a large atoll of some 60 inlets which make up the perimeter. This atoll has a population of about 500, most of which are involved with pearl farming. Unfortunately, a fire at the building which houses the power generator put E51MWA off the air. Luckily, I managed eight contacts with the team on seven bands, including 80m, before they were forced off the air.

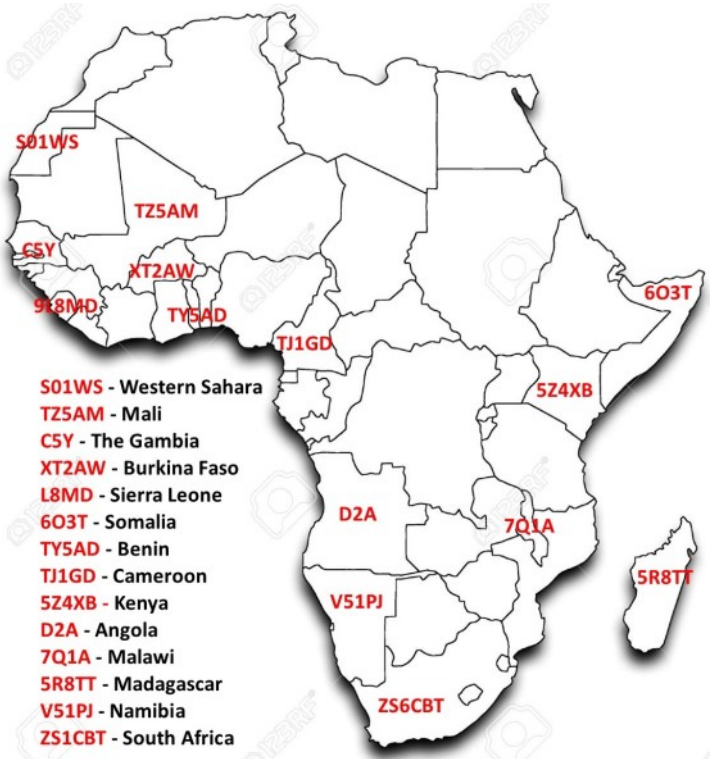
The fire at the power generator on Manihiki, North Cook Is., which essentially put the E51MWA DXpedition off the air.

Other notable and very active DXpeditions included V6D (Micronesia), FW5K (Wallis & Futuna Is.), PJ6Y (Saba & Sint Eustatius), and 6O3T (Somalia). The Italian group activating Somalia were plagued by high noise levels and so largely stuck to the FT8 Mode. I did hear them at around S4 on 20m CW working Europeans but could not break the pile up.

The PJ6Y DXpedition was also notable because nine of the operators were teenagers and on their first DXpedition.

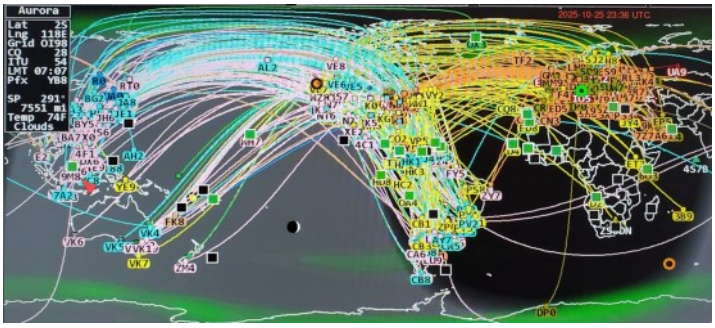
Some of the very active Dxpeditions on the air in October.

From Nanaimo we always have a good shot to any DXpedition in the Pacific and there are DXpeditions to Pacific islands most months. During October, however, I did work several stations in Africa and these are shown on the map below. The higher bands are still performing well and I am tending to concentrate on the higher bands while they remain productive.



My Africa contacts during October.

The CW section of the CQ WW DX Contest takes place over the weekend of Nov. 29-30. Jack VE7GDE reports having made over 200 contacts in the SSB portion of the CQ WW Contest over the weekend of Oct 25-26 and working many new countries in Asia, Africa, South America and Europe.



A graphical representation of the huge amount of SSB activity during the CQWW Contest over the weekend of Oct 25-26.

Finally, DXpeditions to look for in November include: Maldives (8Q7HT), Guatemala (TG), Palau (T88AC), Bangladesh (S21DX), Surinam (PZ5OZ), Mariana Island (KH0) and Monaco (3A).

NARA DMR Repeater move

NARA's DMR repeater located at Lost Lake has been closed down and the repeater moved to Ladysmith. As part of the move, the callsign has been changed from VE7NHR to VA7DXH since the repeater is now located at David's VA7DXX cabin on his property. The frequencies have remained unchanged (repeater Tx on 440.825 MHz and repeater Rx on 445.825 MHz) and the BC-TRBO links (the talk-groups) remain the same. The repeater id number has been changed to DMR ID 302445.

As part of the move of location a number of things needed to be changed. All of the new software/ networking changes were carried out by Mason VE7PMD. The repeater's duplexer was faulty and that was changed out. David provided a new duplexer which was tuned by Island Comms. At present the antenna is a 5-element beam pointing into Nanaimo but at some point the antenna will be improved to a high gain vertical antenna with increased height.

NARA's DMR repeater has never been exactly over-used, but it does provide an opportunity for local amateurs to communicate all over BC and Canada through the use of DMR talk-groups. Anyone

with a DMR radio can program their radio for either local use or for longer distance communication. Programming DMR radios has often been described as a black art, but it is far easier than you might imagine.

More information will be provided in a future *NARA Newsletter* and at a future meeting of NARA perhaps DMR could be explained and discussed. Enquiries and DMR radio programming help can be obtained at dmr@ve7na.ca.

NIARS AGM

The North Island Amateur Radio Society held its AGM on Oct. 29. The meeting was held via Google Meet. The new executive consists of president (Randy VE7FAA), VP (Mason VE7PMD), secretary (Devan VE7LSE), treasurer (Chris VE7TOP) and directors (Jordan VE7HBI, Stuart VE7HDR and Darryl VA7DDU).

United Nations - 4U1UN

In a recent press release, the amateur radio station at the United Nations building in New York, call sign 4U1UN, celebrates 77 years of operation. *The United Nations Amateur Radio Club (UNARC), operating as 4U1UN, proudly marks 77 years of worldwide radio communication from the United Nations Headquarters in New York City. Founded in 1948 as K2UN, the club received its current callsign 4U1UN in 1978 with approval from the UN Secretary-General. That same year, 4U1UN made the first-ever contact after the station became an independent DXCC entity.*

The Satellite Downlink: Hosting a SatNOGS Ground Station – Part 1
Bruce VE7PTN

This month I will start another series of articles. This series will be about my experience with hosting a receive-only SatNOGS (Satellite Networked Open Ground Station) satellite telemetry ground station. As explained on the SatNOGS website (https://satnogs.org), "it's a network of satellite ground stations focused on observing and receiving the signal of satellites, particularly low earth orbit (LEO) cubesats." I have decided to contribute to the network by hosting a station to autonomously receive satellite data and forward it to the network.

I have been planning my station and collecting the equipment components for over a year. Now it is time to get it setup and start contributing to the network.

The SatNOGS network map from their website (https://network.satnogs.org). There are only a handful of Canadian stations indicated; the only Vancouver Island stations are in the Victoria area, one of which is operated by the University of Victoria. Surprisingly, the station planned by Bruce VE7PTN would be the most northerly and westerly station in Canada according to the map.

Many of the amateur radio satellites that we use for QSOs, not only include a voice repeater but also a telemetry downlink transmitter. The telemetry (the process of recording and transmitting the readings of an instrument) data transmitted from the satellite may be information about the satellite health such as internal temperature and battery voltage. It may also include data from scientific instruments that are part of the satellite. SatNOGS provides an affordable crowd-sourced network for satellite operators to receive telemetry data more broadly than they could if they were to rely on just their own station. Many amateur radio satellites are built and operated by universities or research organizations primarily for a science project and with limited funding. Amateur radio organizations like AMSAT (https://www.amsat.org) often partner with the research team to provide the radio equipment and communication expertise for the satellite. The arrangement typically includes an agreement that the satellite radios will be available to the amateur radio community at some point during the mission. A good example of this was the GreenCube satellite, operated by a research team at Sapienza University of Rome. Its primary mission was to study plant growth in microgravity and a high radiation environment; its secondary mission was a thruster experiment. The

highly successful amateur radio digipeater was a tertiary payload. When the primary and secondary missions were concluding, about six months after launch, the digipeater was turned on for radio amateur use and functioned for about 20 months before it failed.

For my SatNOGS station, I have decided to start with a basic setup that will use a discone antenna that I have already and have not been using for a while. The discone is probably not the best omnidirectional antenna for satellites due to optimization for signals on the horizontal plane; the overhead reception null zone might limit my station's satellite reception. But I see other network contributors using such an antenna so it should be an OK starting point. On the SatNOGS website there is a guide to setting up a basic station: https://wiki.satnogs.org/Omnidirectional_Station_How_To. It is called an "omnidirectional" station because it uses an omnidirectional antenna and not a Yagi with a rotator. I could setup the station to use my M^2 LEO Pack antenna and elevation/azimuth rotator instead. But I don't like the idea of having that system in constant use due to the wear and tear on the expensive components. The basic station includes a Raspberry Pi computer, a USB dongle SDR (software-defined radio), an antenna and optionally, a pre-amplifier. My plan is to start without a preamp and see how I do. I will install the SDR close to the antenna to keep the line losses to a minimum and far enough away to minimize RF noise. The first part of my project is to get the components setup and functioning in a bench test configuration. After that I will move on to the operational setup.

That's all for this month. Next month I will report on how the station setup is going. 73.

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

The deadline for the December 2025 issue of the NARA Newsletter is noon on Friday Nov. 28 with an intended publication date of Sunday Nov. 30.

News items, comments or articles for publication should be mailed to:

news@ve7na.ca

The components for the SatNOGS basic omnidirectional station being set up by Bruce VE7PTN. The computer is a Raspberry Pi 4 Model B in a kit from CanaKit (https://www.canakit.com) and the SDR is a Nooelec NESDR SMArt v5 SDR (https://www.nooelec.com/store/sdr/sdr-receivers/nesdr/nesdr-smart-sdr.html).

The Diamond Antenna D130J discone antenna that Bruce VE7PTN will initially use for the SatNOGS station.

Very Large Array - New Mexico

Six years ago, in October, David VA7DXX and Rosemary G0NDB visited the Very Large Array radio telescope in New Mexico. The VLA consists of 28 dish antennas, each 25m in diameter. These dishes operate between 10-50 GHz and can be moved along railway tracks. David's quote for this picture is "I need a bigger antenna."