The February 2026

NARA Newsletter

President's Message - Mason VE7PMD

In Nanaimo we have had some remarkably warm weather during January. However, right on cue and just a few days before Winter Field Day, we started to get some sub-zero temperatures. Conditions exactly right for Winter Field Day! The temperature on Saturday morning started off at -6C measured at Nanaimo Airport. Maybe our temperatures could be considered balmy compared to Edmonton at -17C and Winnipeg at -26C; still it was cold. Looking further afield for Winter Field Day participants, the coldest place in the USA was in Minnesota with wind chills exceeding -50C. Of course radio amateurs could be called upon to set up emergency stations at any time of the year, so these temperatures are a good test of our resilience and capabilities!

On the day, Winter Field Day was cold. However, with help from members, our tents remained warm thanks to some special propane heaters. A very special thank you to NARA Director Greg VE7GGH for organizing this first successful NARA event of 2026. We all had fun just chatting and operating.

I also want to report some additional administrative tasks which NARA has recently undertaken. We have now improved our membership application forms, we have also added a 'welcome document' for new members which is sent out by the secretary, and added a by-email membership card and certificate for all paid up members. Also, the NARA executive has started a review of the Bylaws, primarily with a view to clarifying a few items to further aid members in the future.

Finally, NARA's VP, Jack VE7GDE, has led the way with regard to proposing a safety document. This will be used at all future events at which NARA members will be present. This safety document has been introduced to assist NARA to record any instances where attendees become ill or are injured. It will help us all to stay safe by doing the right thing if any type of medical intervention is required. From a band aid to a hospital visit. A big thank you to everyone involved in maintaining safety standards and in helping to improve the administration of NARA.

Island Events for 2026	Date	By
808 Wing Saturday Luncheon	Feb. 7 at 11 am	808 Wing
NARA General Meeting	Feb. 12 (on-line)	NARA
808 Wing Pancake Breakfast	Feb. 15 at 9 am	808 Wing
NARA NVIS Tests on 60m	Mar. 22	NARA
Comox Flea Market	Apr. 12	CVARC
Bike Race (MIVA)	June	*MIVA*
Field Day (ARRL)	Jun. 27-28	NARA
Canada Day Event/Contest	Jul. 1	NARA
Nanaimo Bathtub Race	Jul. 26	*RNBS*
NIARS Campout	Aug. 16-23	*NIARS*
Ham Happenings (Nanaimo)	Sep. 12	*NARA*
Canada Winter Contest	December	NARA

Nanaimo Ranked for Quality of Life

A new list by Numbeo says Nanaimo has the second best quality of life of all Canadian cities, just behind Ottawa, with Victoria landing in fourth place.

The Numbeo list scores cities based on eight factors: purchasing power, pollution index, house price to income ratio, cost of living, safety, healthcare, traffic commute time, and climate.

Ottawa landed the top spot not only for Canadian cities, but for all of North America. Full information at https://share.google/lXj1ah098DGtDAayr.

Meshtastic and Meshcore

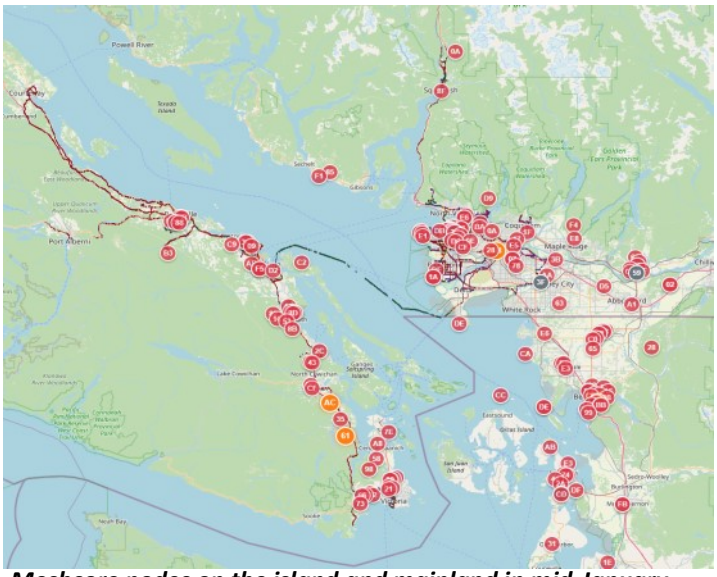
MeshCore and Meshtastic are systems that let small low-power 1 GHz radios communicate with each other without relying on the internet or cell service. Using long-range, low-power radios, each device can pass messages along to the next station, forming a reliable mesh network. Meshtastic is commonly used for simple text messaging and location sharing, while MeshCore is often used to support and monitor larger, fixed networks with repeaters and infrastructure nodes. In the last few months, many amateurs in the Nanaimo area have focused more on the Meshcore system which appears to have better messaging software than Meshtastic.

Thanks to Mason VE7PMD for the following Meshtastic and Meshcore news:

NARA lost the VE7NA Mt. Benson Meshtastic node around Dec. 25, 2025. As a result, we noticed that the network was not working as well with Mt. Benson out of action. The Mt. Benson node has proven a vital backbone for the Meshtastic Community. In late January, Devin VA7DVZ braved the cold weather and hiked up to the summit of Mt. Benson. He hit the Meshtastic node reset button and the node started working again. Thanks to Kevin VE7KGV and Jesse VE7KOD for devoting equipment and time to assemble the equipment for the Mt. Benson project.

Long-term, the plan is to incorporate the Mt Benson Meshtastic node into the ARDEN system for a remote reset/shutdown system. Kevin VE7KGV, Mason VE7PMD, Devan VE7LSE & Jesse VE7KOD are currently working on this system. It is truly amazing that all of the equipment required for many of these nodes was donated by members of the amateur community. NARA cannot thank them enough for the Mt. Benson Meshtastic & the MeshCore Version #2 node. We also greatly appreciate Island Communications for hosting our nodes at their Mt. Benson site!

With MeshCore being relatively new, we are now working towards improving communication to the south. We have exchanged Meshcore text messages across the east of Vancouver Island and some of our signals have been relayed to MeshCore nodes down to Seattle. Even some of our packets on Winter Field Day from 808 Wing were being received in Portland, Oregon (see the last page of this Newsletter). While NARA has somewhat reliable communications locally with our nodes, we do need to build some more. If anyone has a great area to host a MeshCore node, please let us know (email address below).



Meshcore nodes on the island and mainland in mid-January.

This map shows the Meshcore network in mid-January.

A few members have been very active working on helping to beta test the MeshMapper.net website and software to map out the mesh. You can view this from going to swbc.meshmapper.net. Meshmapper is very interactive and you can view repeaters and actual coverage data with the ability to see information such as transmit/receiver, bidirectional, dead (an offline node) plus signal to noise ratios.

Finally, two new Meshcore nodes were installed on Mt. Benson (north and south nodes) on Saturday Feb. 31 by Mason VE7PMD and Devan VE7LSE. They both braved the heavy rain to get these nodes in place at a height of around 775m on the mountain.

If you are interested in anything Meshtastic and or MeshCore, Please reach out to the team at lora@ve7na.ca.

BC QSO Party

British Columbia's QSO party takes place over the weekend of Feb 7-8. The party is in two sections. On Saturday, Feb. 7, the session starts at 1600Z (8 am Pacific) and runs to 03:59 Z (7:59 pm Pacific). On the Sunday the session runs from 16:00 Z (8 am Pacific) to 23:59 Z (3:59 pm Pacific).

For stations in BC, the idea is to make as many contacts as possible. Both the popular N1MM and N3FJP software supports this QSO party. Here are some other essentials:

Bands: 160m to 10m (no WARC Bands)
Modes: Phone and CW
Suggested Frequencies (+/- 5 kHz or so):

CW - 1815, 3535, 7035, 14035, 21035, 28035 kHz.
Phone - 1845, 3850, 7230, 14250, 21300 and 28490 kHz. (check for US General)

Exchange: British Columbia stations send: RS(T) and District (three letter abbreviation). The three letter abbreviation is your electoral district. For Nanaimo/ Ladysmith the abbreviation is 'NAL.'

If you are planning to make a serious entry in the BC QSO Party then you will find the full rules at https://www.orcadxcc.org/bcqp_rules.html.

ISED Remote Station Operation update

The Radio Amateurs of Canada, our national radio organization, has recently reported a likely delay to the publication of ISED's RIC-3 Information Circular. This delay appears to be largely because ISED lacks the staff resources available to process several amateur radio issues. Apparently ISED are still working on updating the question bank for the Advanced exam. So far ISED has not been able to employ qualified technical personnel to complete this task. As soon as this work has been completed, the next version of RIC-3 will be published. The updated RIC-3 should include the NARA inspired changes to the remote station operating rules.

Amateur Radio and Canada's PM

Over the weekend of Jan. 10-11, Canadian PM, Mark Carney and his family visited the Diefenbunker Amateur Radio station VE3CWM. Cleary the PM is well aware of the Amateur Radio Service; a big plus!

Canada's Prime Minister, Mark Carney, pictured at the VE3CWM club station along with Chuck VE3PFF.

NARA Clothing

Lanaya VE7NAY is the person to go to if you require any NARA clothing. This includes hats, T-shirts, etc. Lanaya's next order will be going to the manufacturer in early March. So please get you order to Lanaya at ve7nay@outlook.com no later than Feb. 28, which is the deadline. For prices and clothing items go to https://ve7na.ca/member-purchases/.

NARA Coffee Klatches

Day	Frequency	Time	Locations in Nanaimo
Tuesday	Weekly	10:30 am	South End Smitty's - 50, 10 Street
Thursday	3rd Thursday of each month	7:00 pm	Tim Horton's - 2320 Northfield Road
Saturday	Weekly	9:00 am	North End Smitty's - 2980 North Island Highway, Rock City Centre

NARA's Winter Field Day

NARA set up two stations, at 808 Wing, for this year's Winter Field Day (WFD) in chilly conditions. Around 20 members and visitors braved the weather which had turned cooler just a few days before the event. NARA was running some low antennas and this did limit the ranges that we were able to work. However, many SSB and CW contacts were made.

It was good to see Rowan VA7RVB gaining some on-air experience at WFD. Rowan took the NARA Fall Basic course in 2025 and passed his exam last December. Thanks to Burnie VE7IAD for mentoring Rowan and to Greg VE7GGH for organizing the event.

NARA's warm tents at Winter Field Day on Jan. 24.

Burnie VE7IAD mentoring newly certified Rowan VA7RVB.

NARA NVIS Tests

Analysis of over 100 contacts made during NARA's Dec. 21 NVIS tests continues. Every contact distance is being measured and this takes time. The report is held over until the analysis work has been completed.

The next series of NVIS tests using the 60m band are scheduled for Sunday Mar. 22. If you have not yet experienced the 60m amateur band, do consider some operation. You may not have an antenna for 60m but with some ingenuity you should be able to load up a wire antenna to radiate a signal on this band. While daylight ranges are typically up to about 400 km, nighttime ranges can literally be worldwide. Check out the band plan provided in the January NARA Newsletter .

808 Wing Pancake Breakfast

If you have not yet experienced an 808 (Thunderbird) Wing pancake breakfast then you are definitely missing out! The next breakfast is on Sunday Feb. 22. If you attend then you will be joining many NARA members who regularly support this event.

The 808 Wing pancake breakfast in January.

Over ten NARA members were present at the January 808 Wing pancake breakfast with four NARA members actually cooking and taking breakfast orders. A total of 72 breakfasts were served at the January event.

Nanaimo Science Expo 2026

NARA has attended the Nanaimo Science Expo. in the Country Club Mall for the past two years . Unfortunately, this year's Science Expo has been cancelled. In the meantime, there could be other opportunities to show off Amateur radio to younger audiences.

How is DX – David VA7DXX

BREAKING NEWS – the departure of the 3Y0K Bouvet team has been delayed by two weeks. The team was to have departed from Cape Town, South Africa, on Feb. 1, but now the departure is expected to be around Feb. 14. The reason given by the team is as follows; '*Due to unforeseen circumstances, our vessel* (the Argus*) requires additional maintenance to ensure it is fully prepared for the demanding voyage to one of the most remote and challenging locations on Earth.'* It was not totally clear, but it is assumed that the entire trip is delayed for two weeks and that the proposed maximum operational time around Bouvet, of some three weeks, is not being curtailed.

So, on Feb. 14, or thereabouts, the 3Y0K DXpedition team now plan to leave Cape Town, South Africa, headed for Bouvet Island. If all goes well, we should see them on the air, maybe, a few days after Feb. 21. Without doubt this is a major and one of the most costly DXpeditions ever mounted at some $1.7M (US). I really am hoping that some NARA members will try to work this DXpedition. If this DXpedition is successful then it could well be many years, perhaps a decade or more, until Bouvet is activated again. This DXpedition is well equipped; the 18 operators plan to run excellent antennas and high power from a very quiet location. No noisy wall warts, thermostats, motors or power lines!

The 18 operators include team leader Ken LA7GIA and co-leader Cezar VE3LYC. Both have been to Bouvet before and know what to expect and both are excellent operators. The team consists of amateurs from the USA (6 operators), Norway (2), and one each from Canada, Italy, Ukraine, Iceland, Hungary, Switzerland, Czech Republic, France, Germany and Greenland.

The 3Y0K leader, Ken LA7GIA (left) and co-leader Cezar VE3LYC, both pictures taken on their previous visit to Bouvet Island.

The very latest information suggests that both of the planned camps on Bouvet will be at the SE corner of Bouvet Island. This likely means that the path to North America will be somewhat screened by a 780m mountain called Olavtoppen (see map and the picture below). In 2023 this mountain proved to be a hinderance to stations in North America. However, the 2023 DXpedition was only running 100W to vertical antennas. Beams and higher power, this time, really should help. In 2023 I only managed to make contact on the 30m band, but this time I hope to add some additional bands subject to radio conditions of course.

Map of Bouvet Island showing the likely location of the planned two camps for 3Y0K on the SE side of the island.

The location of the campsite for the Bouvet 2023 DXpedition showing the terrain challenges towards North America.

So what modes might be the best to work 3Y0K? As I have indicated previously, in order of potential success the modes most likely to succeed are FT8 (best) followed by CW and then SSB. It's all about the bandwidth; the lower the bandwidth the best chance you have to make a contact. With SSB, in particular, the competition will be from North American stations running high power and big antenna systems. That does not mean to say that SSB won't work, especially if there are some good conditions.

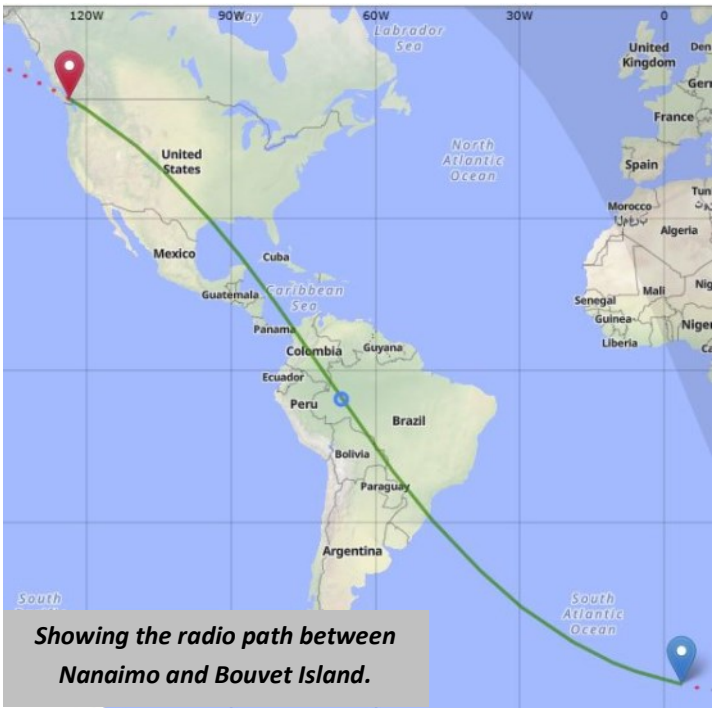
Bandwise, from Nanaimo the following table indicates the forecast best times to listen by band:

Band	Best Times (GMT)
80m	04:00 Z +/- 1 hour
60m	01:00 to 06:00 Z
40m	00:00 to 06:00 Z
30m	23:00 to 04:00 Z
20m	23:00 to 03:00 Z
17m	23:00 to 01:00 Z
15m	23:00 to 01:00 Z
12m	Poor propagation
10m	Poor Propagation

These times are for the short path between Nanaimo and Bouvet Island, beaming (if you have a beam) around 118 degrees true. On the long path the 40 to 15m bands all peak at around 1900Z. Overall from Nanaimo, the best short path bands seem to be the 30/20/17m bands in that order. On the other hand, competition from other North American stations is likely to be higher on the 20m band.

From the Nanaimo area most of the propagation to Bouvet is in our late afternoons and evenings. This is certainly convenient for those who work. Other times of day don't look too promising, but propagation can be fickle and radio conditions, at times, can be unpredictable, so you never know. Will the 3Y0K DXpedition be operation on the right bands, beaming at North America at the right time of day? Well that's what it is all about, and so the trick is to be listening during the peak times. Another factor, of course, is that other areas of the world also peak at these times, so expect some competition. The operators at Bouvet know about propagation conditions so fingers crossed that they will be looking for North America specifically during the times in the table above. If you are able to log onto a DX Cluster you will know the exact frequencies to listen on and what bands 3Y0K are currently using. Good luck and please let me know if you make a contact.

Finally, have a look at the short path to Bouvet at 118 degrees true, pictured below.



Showing the radio path between Nanaimo and Bouvet Island.

While the Bouvet DXpedition could well dominate activity during late February, there are other DXpeditions to listen for. These include: St Kitts & Nevis (V4), Sao Tome & Principe (S9BV), Cape Verde Is (D4VR), Falkland Is. (VP8TDX and VP8TM), Greenland (OX7AKT) and Barbados (8P9XB).

The AU7RS DXpedition to the Lakshadweep Islands was delayed because of equipment shipment issues over the holiday period. At the time of writing, the DXpedition now plans to be operational from Feb. 8-14.

The island of Desecheo has not been on the air since 2009, at least that's the last time I worked the island. So the KP5/NP3VI DXpedition, which started mid February, was a chance for me to work the island on some new bands and modes. The island of Desecheo is a small uninhabited island to the west of Puerto Rico in the Caribbean. The first European to visit the island was Christopher Columbus. In 1976 the island was given to the US Fish & Wildlife Service. So, as a separately administered area under the DXCC rules, Desecheo is a DXCC entity. The KP5/NP3VI is thus very popular at number 14 on the worldwide most wanted list. Since the US F&W Service has given permission for this operation, the team needs to reduce its environmental footprint on the island.

The low power solar powered Desecheo Island DXpedition, KP5/NP3VI has activated this DXCC entity for the first time in nine years giving many new bands to DXers.

I'll end this month's 'How is DX' by recording the passing of friend and amateur radio colleague Julian Gannaway G3YGF at the age of 72. Julian was very active in the RSGB when I was in the UK and is a past President of the Society. He was a talented engineer and dedicated radio amateur specializing in the bands above 1 GHz and EME propagation.

New Q codes?

In the February QST Magazine column "Correspondence Letters from Members," member Rol Anders, K3RA, suggests a new set of Q-codes, specifically the QP series, to describe radio propagation modes. His suggestions are:

QPA - Aurora
QPB - Backscatter
QPD - Tropospheric ducting
QPE - Sporadic E propagation
QLP - Long path
QPM - Meteor scatter
QPP – What's the propagation mode?
QPQ - Skewed path
QPR - Rain scatter
QPS - Short path
QPT - Tropospheric scatter
QPU - Unknown propagation mode

Woss ITS Update

There is a temporary repeater at the new Woss site which is operational over the winter months, complete with temporary wiring. In addition, two 450 watt solar panels have been installed. As soon as the weather in the spring permits, the team will return and make the station permanent. Thanks to Gord VE7UY, Jordan VE7HBI and Kevin VE7KGV.

The temporary, over the winter months, equipment at the new Woss ITS site.

The two 450 watt solar panels at the new Woss ITS site.

New 60-Meter USA Frequencies

Last Month's NARA Newsletter featured a diagram of the frequencies/channels permitted for use by Canadian radio amateurs. This and other similar diagrams could well be a handy shack aid. Something to keep for reference when using the 60m band.

For amateurs in the USA, new 60-meter frequencies approved by the FCC in December will become available as of Feb. 13, 2026, along with new power restrictions on those frequencies. In the USA different rules apply to different segments of the band. Again, just to emphasize, in the US General Class or higher licenses may operate on a secondary basis anywhere within their new 15 KHz wide band from 5.351.5 MHz

to 5.366.5 MHz, subject to a maximum bandwidth of 2.8 kHz. The maximum power in this US 15 KHz sub-band is 9.15 watts ERP (Effective Radiated Power).

Safety at NARA Events

For some time NARA has placed greater emphasis on the safety of NARA members attending events. Particularly events such as the annual bike race, Bathtub race, Field Day, etc. Added emphasis on general and personal safety has been a recurring theme of the written advice provided to NARA members in recent years.

During January, NARA introduced a safety form to be used in conjunction with any event at which NARA members are present. The form is both a checklist of essential safety items that should be available at NARA events and a reminder that if some medical intervention is required, notes need to be taken. Also that the person ill or injured should receive proper attention. Further, if any event requires a change in any NARA safety procedure, it should be noted. Every NARA member should be aware of safety issues; the new form is reproduced below for reference.

NARA **Event Safety Form**

Event Name	Date
Event Location	Nearest Hospital/ Medical Facility Address
On site: First Aid Kit ☐ Fire Extinguisher ☐ First Aider ☐	
Incident Information	
Name of ill/injured person?	Time
How did the illness/injury happen and where?	Describe the illness/injury?
Who discovered the ill/injured person?	
What was the immediate response?	Was 911 called?
Was an emergency contact notified?	
If appropriate, who accompanied the ill/injured person to a medical facility and which medical facility?	
Follow up action? (Inc any changes to NARA safety procedures) Who was the person left with?	
Name & Signature	Date and Time

NARA's new Event Safety Form.

New APRS Node

NARA member Alex VE7IRU will be hosting a new APRS node from his station location in Nanoose. The 2m transceiver and TNC has been provided by Mason VE7PMD and was delivered to Alex in late January by David VA7DXX. The Nanoose section of Highway 19 should soon have really good APRS coverage. Thank you Mason, and to Alex for hosting this new node.

ITS at Lost Lake

The IRLP node at Lost Lake (IRLP 1755) needs to be reconfigured so that it can be re-established. Randy VE7FAA is working on this project so that users, primarily on the Sunshine coast, can reconnect.

Back to the Moon

Four NASA astronauts will soon be bound for the Moon. NASA says the first launch opportunity will be on Feb. 8. Three of the astronauts are licensed radio amateurs. The crew is:

Reid Wiseman KF5LKT (Commander)
Victor Glover KI5BKC (Pilot)
Jeremy Hansen KF5LKU (Canadian Mission Specialist)
Christina Koch (Mission Specialist)

The ARTIMUS II flight, using an Orion spacecraft, is a planned 10-day mission passing by the Moon at some 7400 Km. This will be the furthest that humans have ever travelled into space and the first time in over 50 years for a moon mission. If successful this mission will pave the way for the ARTIMUS III mission which will be a moon landing planned for 2027.

Left to right - Pilot Victor Glover KI5BKC, Commander Reid Wiseman KF5LKT, Canadian Mission Specialist Jeremy Hansen KF5LKU and Mission Specialist Christina Koch.

NARA's Register of members

Over the past weeks, NARA has been going through its Register of Members as part of a clean up exercise. This was one of the main reasons why NARA has asked all members who recently renewed their membership to complete the appropriate form. Making sure that NARA's membership records really are up to date is important. And based on the information provided, all members who have renewed their membership have received, by email, a membership certificate and membership card which members can print and retain.

Another Massive Aurora

A CME (Coronal Mass Ejection) released by the sun hit the earth on Feb. 19 causing another massive aurora. This was the largest solar radiation storm for over 20 years; ranked as severe (S4). The aurora activated again the following day.

TELUS Tower

The new tower near Hammond Bay Road is now operational with several members reporting improved cellular coverage on their TELUS phones.

Show me a Sign

The sign pictured below used to be displayed on the Nanaimo highway. Unfortunately, the sign no longer meets the appropriate display requirements and is no longer in position. The sign has recently been acquired by NARA and will be on display at the Club's VE7NA station.

The old amateur radio repeater sign which was located on the main highway near Ware Road (southbound Lanes)

The background to this story is provided by NARA's President Mason VE7PMD:

The ministry had started to remove the highway signs but fortunately NARA was able to obtain one of the amateur radio signs in question. The sign was located on the southbound lanes when entering Nanaimo by the Ware road intersection.

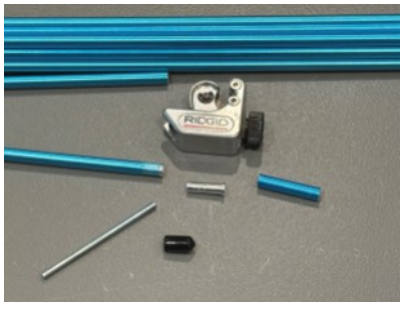
Initially NARA was trying to find out if some new signs could be created. David VA7DXX had a near neighbor who worked for Mainroad and his contact was then able to provide me with an excellent link within the Ministry of Transport. Having made contact with the ministry, I discovered that the amateur radio frequency signs were, unfortunately, being removed. Then, just before Christmas, the ministry reached out to Mainroad at Parksville and I was able to arrange to pick up the old amateur radio sign.

A thank you to the Ministry of Transport and Mainroad for enabling NARA to take possession of this historic sign. You can view this sign at the Club's VE7NA station.

The Satellite Downlink: Hosting a SatNOGS Ground Station Part 4 - Bruce VE7PTN

Welcome to part four of a series 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." My plan for January was to add a VHF turnstile antenna and diplexer to my station so that I could receive both UHF and VHF satellites.

The VHF turnstile antenna build went well. As I did for the UHF antenna, I followed a design by Alicja Musiał, a Polish engineer and satellite fan: https://alicja.space/blog/how-to-build-turnstile-antenna. For the longer VHF elements, I decided to use aluminum arrow shafts as a cheap source of tubing. The satellite antennas made by Arrow Antennas use these as elements (that's even where the company name comes from). The most challenging part was adding the threaded aluminum inserts to the inside end of the antenna. The connection needs to be mechanically and electrically sound, but the only inserts I could find were smaller than the inside diameter of the arrow shafts by about 0.5 mm. (Arrow Antennas use a narrower shaft than the ones I could find on Amazon.) To compensate for the poor fit, I wrapped the inserts in some fine copper wire and glued then into the shafts. This technique provided a decent mechanical and electrical connection, if a bit fiddly to accomplish. Another technique I discovered was to crimp the shaft onto the insert with my coax connector crimping tool. This made for a quick and sound connection but with some damage to the painted finish of the shaft. I decided to use the wrapped and glued inserts for this build.



The VHF turnstile antenna element components used by Bruce VE7PTN. In the picture are the aluminum arrow shafts, tube cutter, threaded aluminum insert, a section of 8-32 threaded rod and rubber end cap. One arrow shaft near the center shows the aluminum insert installed with a crimp connection.

An arrow shaft element connection point on the VHF turnstile antenna built by Bruce VE7PTN. The connection is loose and shows the threaded rod and split washer used to secure the element to the antenna body.

The SMA to N-Connector adapter that I had ordered last month arrived in January. This allowed me to connect the antennas to my antenna analyzer to check performance. The UHF antenna was good as-is with nice SWR across the band of interest (400 to 470 MHz). The VHF antenna however showed an SWR above 2.0 at the top end of the band of interest (135 to 148 MHz). I removed about 2 cm of length from the elements and the performance improved nicely. I tested each antenna connected to the SDR (Software-Defined Radio)/Raspberry Pi system one at a time (i.e., no diplexer). I confirmed that they were working by monitoring terrestrial repeaters and found good reception, even with the polarization mismatch. I did notice some low frequency hum on the signals and thought maybe the power supply for the Low-Noise Amplifiers (LNA) was the culprit. Adding some chokes to the power supply output had no effect. Then I noticed that the hum was a slightly different pitch on each repeater. It was then I realized that I was hearing the CTCSS (Continuous Tone-Coded Squelch System) tones which the repeaters transmit. With some googling I learned that although they are called "sub-audible tones" they are within human hearing range and quite audible. It is the low fidelity speakers on typical radios which filter out the tones since they are below the frequency response of the speakers. I was listening to the SDR on a laptop with good speakers and the tones came through nicely!

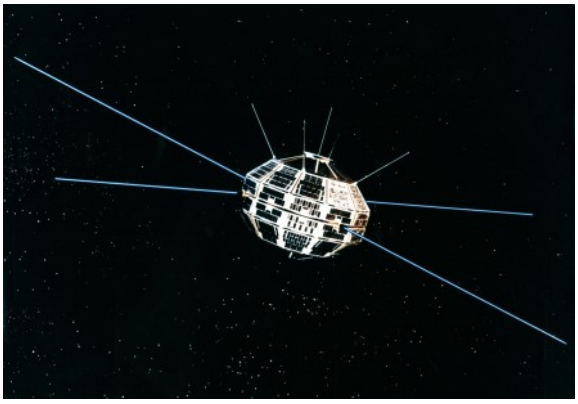
Indeed, when I monitored some simplex traffic, the tone noise was absent.

The UHF (top) and VHF (bottom) turnstile antennas in a temporary location on the deck at Bruce VE7PTN's QTH for testing.

Having confirmed that the VHF antenna was performing OK on terrestrial signals, I tried it on a few satellite passes. There are not many VHF downlink satellites; most are weather satellites that downlink Earth images. So far, I have not been successful with receiving a VHF satellite signal. It may be poor antenna performance, but it may also be that I have not selected a satellite which was transmitting during the pass. I have only tried a handful of passes, so more testing is needed.

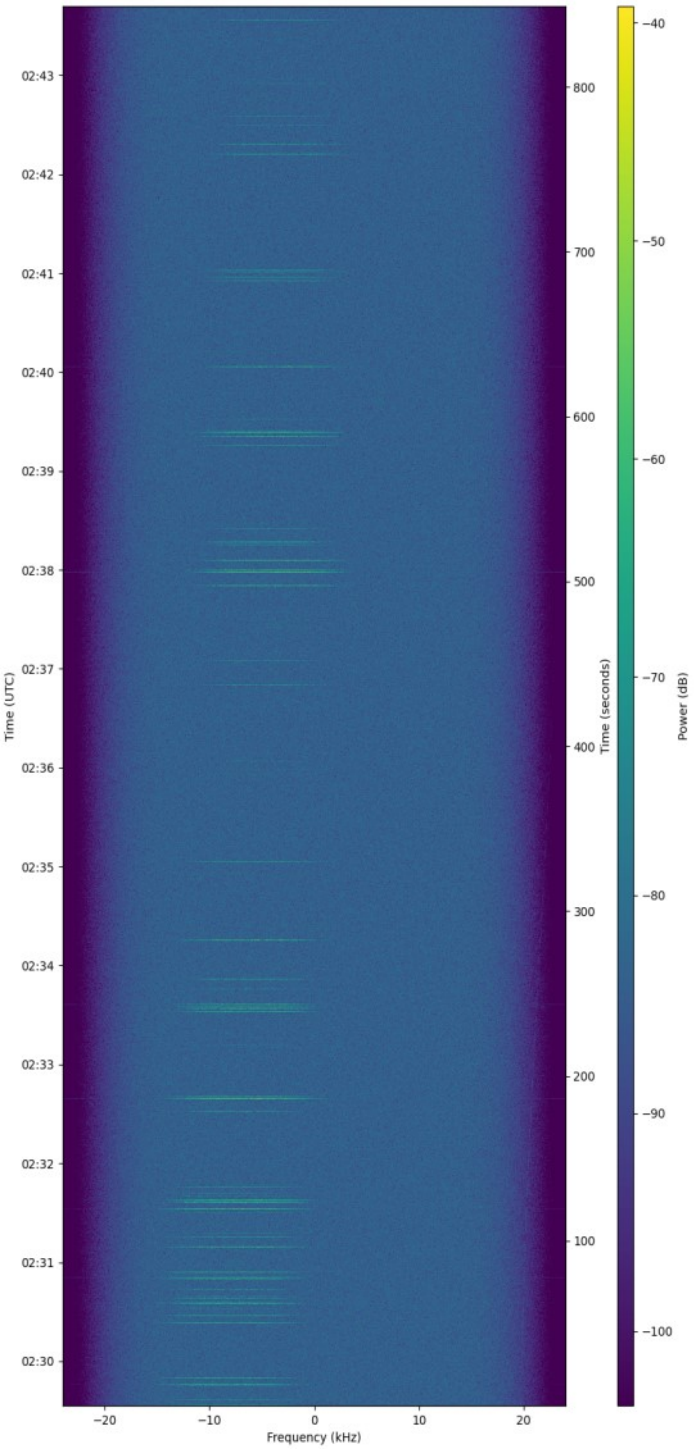
Another goal for January was to start working on the permanent configuration instead of just bench testing. My first step here was to get the Raspberry Pi and SDR mounted in a water-resistant enclosure along with a diplexer and bias tee LNA power injectors allowing both antennas to be connected. I now have this setup completed and in an accessible test location. The antennas are temporarily mounted on our deck and the SDR system is mounted under the deck, just outside my shack/den. Again, I tested the system by listening to terrestrial repeaters and all was good. The next step was to schedule some satellite passes. I selected about a dozen passes with VHF or UHF downlinks. Sadly, my station did not detect signals on any of the passes, even though some of the UHF satellites selected had previously been good performers. This led me to suspect that the 2m/70 cm diplexer was not performing as expected. It was a pretty cheap unit from Amazon ($20) and did not come with any performance statistics. So, I decided to remove the diplexer and connect the SDR directly to a single antenna then re-test. First, I tested the UHF antenna, a proven performer, and had good signal results as before on most of the passes I tested. Next, I tested the as-yet unproven VHF antenna. I selected seven VHF satellites with decent passes. Unfortunately, the APRS downlink on the ISS is currently offline; that would have made a great strong signal to test. One of the satellites I included was the Canadian satellite Alouette II, launched in November 1965. This satellite ceased operation in 1975, but it is still transmitting an erratic carrier wave. Most of my VHF observations were without signal. But Aloutte-2 came through for me with a weak but visible signal on the waterfall.

The water-resistant enclosure with Raspberry Pi, SDR, diplexer and bias tee LNA power injectors in a temporary location under the deck at Bruce VE7PTN's QTH for testing.



An artist's rendering of the Canadian Alouette II satellite.

Satellite Downlink (cont.)



The SatNOGS downlink waterfall for the Canadian Alouette II observation made by Bruce VE7PTN's station.

For February I plan to get the permanent mounting configuration in place with a UHF antenna only. So please stay tuned for next month's article to see how I am progressing. That's all for this month. 73.

New NARA Mesh Nodes

NARA members had a busy day at the 808 Wing during the Winter Field Day on Jan. 24. Mason VE7PMD built a Raspberry Pi system that will observe the MeshCore network and inject the MQTT (Message Queuing Telemetry Transport) data onto the internet. Kevin VE7KGV installed the MeshCore and Meshtastic Nodes on the hydro pole which also supports the VE7NA HF antennas. These new nodes are now helping users at the south end of Nanaimo to get connected.

Kevin VE7KGV adjusting the final position of the solar powered Meshtastic and Meshcore nodes on the VE7NA hydro pole. Four NARA members provide encouragement!

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 March 2026 issue of the NARA Newsletter is noon on Wednesday Feb. 25, with an intended publication date of Saturday Feb. 28

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

news@ve7na.ca