

2026-01-06 Hamlet Net - Weather Information

Announcements:

- Test Session Info
 - Next VE session is January 24 in the Clover Building at the Boulder County Fairgrounds, and starts at 9 am. ~~It is an ARRL session, so there is a \$15 fee to test.~~ It is a PVET session, so there is no fee to test. For more info, and to pre-register, see the Licensing/Testing page on the club web site, <https://w0eno.org/>, under the Education menu.
- NCARC's Winter Hamfest is coming up Saturday, January 17th at the Larimer County Fairgrounds and Special Events Center from 8am to 1pm. Admission is \$7. They've got some good raffle prizes this year - a Yaesu FTM3100DR 2m/70cm C4FM and FM mobile radio, as well as a Yaesu FT-891 HF plus 6m 100 watt mobile radio and two Yaesu HTs. There is a free licensing exam starting at 9:30 as well as three tracks of technical forums.

For more information, see the NCARC web site at: <https://ncarc.co/hamfest-2026/>

- LARC is running a new fundraiser in 2026 - challenge coins. Two challenge coin designs are available at a price of \$15 each. Proceeds support the Club directly.

To see images of the coins and make your purchase, see the Club website at: <https://w0eno.org/2026-larc-fundraiser/>

- I came across a feature on the QRZ.com web site that I was not aware of. Sometimes you'll hear a callsign over the air and not be able to understand one (or more) characters. When performing a callsign search on QRZ, you can enter question marks for any missing characters, and the site will display a list of all matching callsigns.

I tried putting in four question marks, and that appears to have worked, although it returned 1780 pages of matches representing 712,000 callsigns.

- I also saw a post about a new web site that is meant to help SOTA (summits on the air) activators see where their signal is likely to reach. You can check it out at: <https://dxlook.com/>

There is a button on the left that looks like a sheet of paper with a pencil - click on that to be taken to their blog which has information on how to use the site.

- I also came across a couple of online ham radio magazines. The first is SWR Magazine which has their first issue up at: <https://swrmagazine.org/>

The second is The Communicator which advertises "a diverse mix of content, including technical projects, the latest operating news, and engaging historical perspectives relevant to the amateur radio community." It can be viewed at:

<https://ve7sar.blogspot.com/2025/12/the-communicator-january-february-2026.html>

- Upcoming Club Volunteer Opportunities:
 - On January 10th (and 17th), the Northern Colorado Amateur Radio Club will be participating in the Scout Merit Badge University in Fort Collins. As part of this training, Scouts are required to make on-the-air contacts with other amateur radio operators. This activity will take place this Saturday around 11am on NCARC's Horsetooth (447.275 MHz, 145,115 NMHz) and Buckhorn (146,625MHz and 447.700 Mhz) repeaters.

If you're available and would like to add some excitement to what may be a young Scout's first experience with ham radio, monitor the repeaters and jump in!

I can personally say from teaching this class a few times in the past that this activity is one of the highlights for the kids!

- Winter Field Day (Jan 24-25, 2026):

The club usually runs a station from the Clover Building at the Boulder County fairgrounds, but I haven't seen the specifics of the event for this year yet.
 - In March, we will be setting up, testing and potentially repairing the Club's spiderbeam antenna. This is a three-band directional HF antenna consisting of the antenna, a mast, a triplexer and band filters. This antenna is available to Club members to borrow.
 - LARCFest (April 5, 2026):

Save the date for our 2026 LARCFest ham fest! As always we need members to step up and volunteer to help organize and run the event. Please contact Chuck at: k0itp@w0eno.org and let him know you're available to help.
- If you are an ARRL member, remember that you have digital access to four magazines - QST, On the Air, QEX, and National Contest Journal.

This month, QST has some interesting-sounding articles on recommendations for finding power line interference sources, plans to build a small high-selectivity CW filter, and on understanding the FCC exposure rules for handheld radios. QEX has an article detailing a voice keyer system with synthesized voices, while On the Air has articles about first steps on the POTA path, building a bifilar helix antenna for satellite contacts, and tips for programming your handheld radio.

- Something I was unaware of is that ARRL offers free student memberships to full-time students under the age of 21. "Free" and "ARRL" are not often heard in the same sentence, and while this membership does not include voting rights, it does give you access to all the ARRL's digital publications. You do not even need a license for the free level.

They also have a full student membership that's \$30/year which is open to licensed full-time students up to the age of 26 and does include voting privileges.

For more information, see: <https://www.arrl.org/student>

- The reason I found this is that the ARRL is running a coding competition to promote student participation in the future of amateur radio. The contest runs from January 1st through March 31st.

Participants must be an ARRL member aged 21 or younger and be licensed. The ARRL Board has authorized the CEO to select a committee to judge the entries, select one or more winners, and award winners with an award, the total of which will not exceed \$25,000.

The entries must be iOS apps that provide users the ability to study for and take practice exams. The apps must be free, and the entrants transfer all rights to the ARRL.

For more information, including rules and requirements, see:
<https://www.arrl.org/student-coding-competition>

- The ARRL Colorado Section Net occurs on the second Monday of the month from 7 to 8pm. The net is run by Amanda Alden, K1DDN, our Colorado ARRL section manager, and is open to hams and non-hams alike. This net is a place where Colorado hams can ask questions of ARRL leadership and request help, guidance, club support, and technical support. This net meets on the second Monday of each month at 7:00 pm Mountain time. The net is on the Colorado Connection, Rocky Mountain Ham Radio DMR Talk Group 700, The Fun Machine, WE0FUN, and the NCARC Buckhorn Repeater 447.700 – with 100 Hz tone.
- We have some volunteer opportunities available where you can help out LARC:
 - Photographer / videographer - record team activities and upload to web site / YouTube
 - Newsletter Editor - put together the monthly Splatter newsletter
 - Event Coordinator

- Time's up for this year, but you can earn your 2026 membership or future renewal by acting as NCS for at least 5 nets next year. You can run either this Tuesday night net or the Thursday night net (or both). We have scripts available for both, so all you need is a good connection into the repeater, and somewhere to keep track of names and call signs as people check in. If you're going to be on the net anyway, why not save some dough at the same time!
- Chuck has set a goal for the Club of running at least one activity a month. This can be a hands-on construction activity, an operating activity like Field Day, a fox hunt, or a special event station. The goal is to get people together to have fun with amateur radio! We have multiple locations at our disposal, as well as lots of Club equipment, so if you have an idea for something you think others hams would like to do, please let us know, and if you're willing to run it, even better!
- The Club is also looking for presentation topics for 2025. If you have any ideas, or better yet, would like to present, please let Chuck know and we'll get you on the schedule! We would like to get some presentations from club members on stuff they've been doing, projects they're working on, or just things that interest them.
- All club activities are open to anyone - members and non-members. If you have questions, ask them on a net or **send email to elmer@w0eno.org**

Presenter: Bryan, AF0W

Topic: Weather Information

- With the approaching temperature drops, I thought weather information would make a good topic for this week's net
- This can range from a simple conversation starter in a QSO up to vital information in the case of operations during adverse weather events like hurricanes or tornadoes
- There are many ways to gather (and provide) weather information via radio, ranging from simple to complex

Voice

- The simplest, most straightforward method is to simply use voice
- There are a set of seven "Voice of NOAA's National Weather Service" frequencies that include more than 1000 FM transmitters and which covers all 50 states
 - a. The frequencies are in the VHF public service band and range from 162.400 to 162.550 MHz
 - b. Many amateur radios come with these frequencies pre-programmed

- c. Many radios (amateur and consumer weather radios) have the ability to receive weather alerts for their local area using SAME, or Specific Area Message Encoding, which restricts notifications to a zip code or county.
- d. If you want to practice your foxhunting skills, and have a radio capable of receiving these transmissions, there are transmitters located near Longmont, Fort Collins, Greeley and Fort Morgan
 - The Mead / Longmont transmitter is on 162.475 MHz
- You can also use voice on simplex or repeater communications - even those via satellite!
- During hurricane season, the Hurricane Watch Net activates for major storms that are approaching populated land masses
 - a. Its purpose is to provide information to island communities in the Caribbean, Central America, and the US Atlantic seaboard
 - b. This net is on HF on 40 and 20 meters
- There may also be local repeater-based SKYWARN nets
 - a. The purpose of SKYWARN is to provide critical weather observations to the National Weather Service or NWS
 - b. SKYWARN spotters are trained to accurately identify and describe severe local storms
 - c. This information is used along with weather predictions and Doppler weather radar to help the NWS issue timely and accurate warnings for tornadoes, severe thunderstorms, and flash floods
 - d. Radio nets in our area are run by Colorado ARES groups
- While not voice mode, you can also query other hams for weather information using a "keyboard-to-keyboard" digital mode such as RTTY, PSK31, or JS8Call
- If you really want to go old-school, of course there's always CW!

APRS

- Another way to view accurate local weather information is via APRS
- Most of this information is provided by weather stations owned and operated by radio amateurs

- This information is transmitted via RF in APRS packets or via the Internet, and eventually finds its way to the APRS-IS servers
- The information can be viewed on the aprs.fi web site (that's alpha-papa-romeo-sierra-dot-foxtrot-india)
 - a. Weather stations are indicated by blue circles with the letters Whiskey Xray inside.
 - b. Click on one to bring up current weather details, and click on the "show weather charts" link for more detailed and historical information.
- There is also a NWS organization called the Citizen Weather Observer Program, or CWOP, which allows members to share information from their personal weather stations with the world
 - a. In addition to simply sharing weather information, the site also maintains a set of quality checks that members can use to check and improve their weather stations
 - b. More information can be found on their web site at wxqa.com - that's whiskey-xray-quebec-alpha-dot-com
- If you have an APRS-capable radio, you can use it to directly receive local APRS transmissions
- You can also use a non-APRS radio with a soundcard interface to decode APRS packets on a computer
- There is also a bot that will reply to APRS messages with weather information called WxBot
 - a. It can respond with weather forecasts or with the latest CWOP information
 - b. Locations can be specified by your APRS position, city names, zip codes, call signs, grid squares, latitude/longitude, and airport designators (such as "DEN" for Denver International)
 - c. You can specify a "when," such as "tonight," "tomorrow night," or "Saturday night"
 - d. You can also request brief or full information - full information will be split into multiple APRS messages
 - e. Any active weather hazards, such as winter weather warnings, will be included in the reports

Winlink

- APRS is not the only digital mode where you can request automated weather reports
- In Winlink Express, there are two entries under the Settings menu where you can request weather information
 - a. Winlink Catalog Requests includes requests for METAR airport weather, satellite imaging, propagation and solar forecasts and numerous sets of weather locations in the categories starting with "WX_" (whiskey-xray-underscore)
 - b. Note that you will need to initiate at least two sessions to retrieve the information - the first to send the request, and then at least one more to receive the results
 - c. I tried a query for Colorado weather, and it took two minutes for a reply to appear in my inbox
- One thing to keep in mind if you are using RF to make your connections to Winlink is that it can take a lot of time to send large files (such as weather maps)
 - a. The Colorado weather query resulted in a text reply of 1300 bytes, while the GRIB weather map request returned an 8300 byte message - over 8 times the size
 - b. Also, don't do as I did the first time I saw this functionality and request a whole bunch of stuff, or you will tie up the RF channel and prevent others from using it
 - c. Remember that you can use the telnet Internet connection mode to check out all the Winlink functionality without clogging up the airwaves

Weather Satellites

- Yet another way to receive current weather information is directly from weather satellites
- These satellites generally fall into two categories based on their orbits
- The first is geostationary - these satellites orbit above the equator and move at the same speed as the rotation of the Earth, so they appear to be suspended over the same location at all times
 - a. This allows them to monitor weather in a given area over time
- The second category is low Earth orbit or LEO - these satellites behave similar to the amateur radio satellites in that they orbit around the Earth, so they cannot monitor a specific area continuously
 - a. They orbit closer to the Earth's surface, so they can obtain sharper images than the geostationary satellites

- NOAA used to have polar-orbiting satellites that transmitted weather information in the VHF air band and the L-band around 1.7 GHz, but these have all been decommissioned.
- These satellites have been replaced by GOES-R satellites (Geostationary Operational Environmental Satellite-R) devices which transmit high-resolution weather imagery and atmospheric data
- The system downloads the high-resolution data for processing at ground stations, then uploads a processed, reduced resolution version of the imagery which can then be accessed by users on the ground. This is in contrast to the older satellites where you could directly receive the data from the satellite itself.
- Unfortunately, as they operate in the L band at 1694.1 MHz, it is more difficult to receive and decode the transmissions as compared to the older NOAA satellites
- Reception will require an SDR (the inexpensive RTL-SDRs will work), a low noise amplifier, and an antenna, ranging from an inexpensive patch antenna, a helical antenna (which can be DIY), or a 24" dish antenna.
- I'm including links to a web pages that described a DIY satellite ground station for receiving weather, one on using an RTL-SDR to receive satellite images (it may be a bit out of date), and the NOAA's web page on their currently-operating satellites

Summary

- Weather conditions can be much more than just a conversation filler - they can potentially become a matter of life or death to those involved in severe weather events
- Radio provides a number of methods for monitoring current weather conditions and hazards, but as with many things, there are different levels of equipment and procedures needed, depending on what methods you use
- Much like LARC's weekly radio nets provide you with an opportunity to test and use your radio equipment, you should be sure to explore the various methods of retrieving weather information and test them out before you need them in a crisis

Questions:

- **The question for the week is:** Where do you get your weather information, and have you ever used amateur radio for weather-related activities?
- **In my case,** I get most of my weather info from my wife, who uses her cell phone to access weather sites.

I've used the APRS WxBot and Winlink services as well as NOAA weather radio. One thing I noticed when using weather radio alert monitoring on my ham radios is that there is sometimes a short "glitch" as the radio quickly switches to the NOAA weather

frequency to check for alerts. Depending on the radio, it may or may not be noticeable, but is something you should be aware of.

I found a couple of dedicated weather radios that I'm now using instead of the NOAA functions on a ham radio.

More Info:

- Using WXBOT and WXYO: <https://www.youtube.com/watch?v=F02kUxAEct4>
- National Weather Service NOAA Radio: <https://www.weather.gov/nwr/>
- National Weather Radio receivers: https://www.weather.gov/nwr/nwr_receivers
- Colorado NWR Transmitters: https://www.weather.gov/nwr/states_dyn?state=CO (click on pin to see frequency)
NOAA Weather Reports over Email:
<https://kb9orn.org/2022/08/17/noaa-weather-reports-over-email-winlink/>
- Hurricane Watch Net: <https://www.hwn.org/>
- SKYWARN Colorado: <https://www.weather.gov/skywarn/co-skywarn>
- SKYWARN Boulder County: <https://www.weather.gov/bou/Spotternews>
- Citizen Weather Observer Program (CWOP): <http://wxqa.com/index.html>
- WxBot: <https://sites.google.com/site/ki6wjp/wxbot?pli=1>
- HRIT/EMWIN & GRB (weather satellite operational info):
<https://usradioguy.com/hrit-emwin-grb/>
- Easy HRPT Guide: <https://www.a-centauri.com/articoli/easy-hrpt-guide>
- Emergency Managers Weather Information Network (EMWIN):
<https://www.weather.gov/emwin/>
- Group for Earth Observation: Griddownpowerup.com
- NOAA Currently-Flying Satellites:
<https://www.nesdis.noaa.gov/current-satellite-missions/currently-flying>

Notes:

- If you have ideas for net topics or general meeting topics / presenters, please let us know! Tell us on a net, or send email to k0itp@w0eno.org

Email to elmer@w0eno.org

1. AFØW - Bryan - Longmont -

2. AEØDO - John - N of Longmont
3. AFØXS - John - Thornton
4. ADØUF - David - Loveland
5. WØMYK - Mike - Longmont
6. KEØNFP - Thomas - Broomfield
7. KBØPCW - John - Longmont
8. N3MDC - Mike - Winston-Salem, North Carolina via Echolink
9. KDØFDJ - Mike - Boulder

End: 8:00pm