2025-04-22 Hamlet Net - Wilderness Protocol

Announcements:

- Test Session Info
 - Next VE session is Saturday, May 24th in the Clover Building at the Boulder County Fairgrounds, and starts at 9 am. -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, <u>https://w0eno.org/</u>, under the Education menu.
- Had a small test session this weekend only three candidates, but they all passed what they came for. One gentleman passed all three exams, one obtained his Tech license, and the other upgraded from Tech to General.
- If you haven't done so already, please take a moment to fill out the survey on the club web page at w0eno.org click on the "LARC Survey" link on the right-hand side of the grey menu bar.

The Board has been discussing what can be done to raise attendance and participation at club meetings and events, and we need to get your input. Whether you go to meetings, watch them live via Zoom or recorded on Youtube, or don't attend at all, we'd really like to know if there's anything we can do to make the club better.

- Upcoming Club Volunteer Opportunities:
 - Summer Field Day is our next large Club event and is June 28-29 this year. As with other events, the more help we get, the easier it is on everyone. We will need help with things like setup, teardown, food, running the GOTA station, completing activities needed for bonus points, etc., so please help out in any way you can.

You are invited to join members of the ARRL Public Relations Committee as we host a live, interactive, workshop to help your club get ready for 2025 ARRL Field Day.

The event will be live on Zoom Wednesday, April 23, 2025, at 8:30 PM EDT.

Our first Summer Field Day planning meeting is next Monday, April 21st from 7 to 8 pm on Zoom. If you can help out with any activities, or would like to get in on the planning, please plan to attend. Get in touch with Chuck or myself and we can forward you the meeting info.

Had first planning meeting last night. Going to continue every Monday night from 7 to 8pm. Going to do some ICS forms, pre-planning, figure out setup, and put

people in specific positions to sign up.

Sign up sheets are available online.

- May 10th is the satellite GoBox build. Will be at the Clover Building at the Boulder County Fairgrounds from 9 to 1. Run by Chuck Lucas. Will have an Arrow antenna and a Kenwood D72a HT.
- HAMCON Colorado 2025 for Rocky Mountain Division is October 23-26, 2025 in Grand Junction. For more information and to register, see their web site at: <u>hamconcolorado.com</u> They are also looking for presenters.
- I checked out the RMHAM web site they don't have last weekend's grounding and lightning protection presentation up yet, but they do have the presentations up from their antenna workshop. You can see them on the RMHAM web site at: <u>https://www.rmham.org/</u>
- Breakfast Saturday at 7:30 8:00a at the Hidden Cafe.
- Mark RMHAM is taking over the summer swapfest this year from the Denver Radio Club, Sunday August 24th. Sunday, August 24th at the Adams County Fairgrounds from 9am to 1pm. Admission is just \$6, so plan on dropping by! Tables are also available for \$13 in advance, and \$20 at the door.
- If you are an ARRL member, remember that you have digital access to four magazines QST, On the Air, QEX, and National Contest Journal.
- We have a new net on the LARC repeaters. It's run by Timothy Moss, KFØLAR, on the 22nd of every month at 6pm. The 22nd was chosen to highlight the average of 22 vets who commit suicide each day. While the purpose of the net is to connect veterans, non-vets are welcome to participate as most all of us have friends or family who are or have served.
- 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** <u>elmer@w0eno.org</u>

Presenter: Bryan, AF0W

Topic: The Wilderness Protocol

- One service provided by the Longmont Amateur Radio Club is an email address to which you can send questions that is staffed by experienced hams in the club. They can help you out with issues such as questions on how to use your gear, what equipment to purchase, and help troubleshoot any issues you may be having.
 - Just send an email to "<u>elmer@w0eno.org</u>" doesn't matter if you're a club member or not - we're here to help
- The topic for this week's presentation was the subject of one such question something called the Wilderness Protocol
- I had heard of this before, but did some additional research into the history of this procedure

Wilderness Protocol

- Many of us got into this hobby either to have a means for communicating in an emergency, or for helping others during such an event
- Say you're on a hike in the mountains, and someone in your party falls and injures themselves seriously enough to need outside help
- You are in an area without cell phone service, but have you have your HT with you what do you do?
- If you happen to be within range of any repeaters, you can attempt to make contact there, but what if there aren't any that you can reach or you neglected to program them into your radio, or no one responds to your calls?
- Well, there is always simplex, but how do you know where anyone will be listening?
 - a. The CCARC's 2 meter band plan specifies over 180 "channels" where will you have the best chance of someone listening?
- A solution to this problem was proposed by William Alsup, N6XMW, in the February 1994 ARRL QST in his article titled "A Wilderness VHF FM Protocol"
- In it, he states that "The Wilderness Protocol is simply a recommendation that those outside of repeater range monitor standard simplex channels at specific times in case others have priority or emergency calls."
- The protocol utilizes the calling frequencies of multiple amateur bands
- The primary frequency is the 2m calling frequency at 146.52 MHz
 - a. Secondary frequencies are 446.0 MHz in the 70cm band, 223.5 in the 1.25 cm band, 52.525 for 6 meters, and 1294.5 MHz in the 23 cm band.
- Back in the CB days, many police and other organizations monitored channel 9 as a traveler emergency channel, but these groups do not monitor amateur calling frequencies
- The hope is that if enough amateurs add these frequencies to their memory channels when scanning, there will be a higher chance of reaching someone on these frequencies as opposed to any others
- If you are out and about enjoying the outdoors yourself, you should monitor these frequencies during the protocol times if you can you might become the link between an injured hiker and emergency services

Implementation

- There is more to the Wilderness Protocol than just the frequencies how do you use them for maximum effectiveness?
- One concern for a lost hiker is that battery capacity is limited, and that transmitting uses a lot more battery power than receiving
- The Protocol specifies that communication attempts should be made every 3 hours starting at 7am local time, and continuing for 5 minutes.
 - a. After the 10pm attempt, stations should wait until the next morning to make further communication attempts
- This means that stations should listen to (or scan over) these calling frequencies at these same times
 - a. The Protocol also mentions listening every hour, if you have the power available
- Priority calls can use something called LiTZ, which I'll get into later
- It also specifies that amateurs looking to make a QSO or having other routine traffic should wait until at least 4 minutes after the hour to transmit to give the high priority stations a chance to get assistance

LiTZ

- So what is LiTZ?
 - a. It stands for "Long Tone Zero" and is a signal sent by transmitting the DTMF tone for the digit 0 for three to ten seconds
 - b. This is accomplished on most radios by holding down the 0 key on the numeric keypad while at the same time holding down the push-to-talk button to transmit
- This signal means that the sending station has an immediate need to communicate with someone regarding a priority or emergency situation
 - a. It should not be used for routine traffic
 - b. You should first attempt to make voice contact, but if no one responds (or responders are unable to help), you can try the LiTZ signal
- To facilitate responding to such calls, there were various articles in QST regarding construction of alerting or squelch systems that would monitor received signals for the LiTZ signal and either disable squelch so the voice message following the signal could be received, or sounding a bell or other alert

- This system was developed by the Hualapai Amateur Radio Club for a repeater in Kingman, Arizona and is the subject of a November 1991 QST article
- The ARRL Board of Directors later adopted LiTZ as the national alerting system for repeaters, and to indicate LiTZ support in the ARRL's repeater book listings
 - a. I don't have my copy with me, so I'm not sure if this capability is still indicated in the book or app
- The need for such a system arose as the local repeater became extremely busy with both local and "drive by" traffic from travelers
- Many local hams would leave their radios turned off unless they wanted to make a contact, so there was not always someone available to respond to emergencies
- Many repeaters will simply pass the audio signal through, so anyone listening to the repeater will hear it
- That group also implemented 3 and 4 digit "personal codes" so that club members could set up devices to alert them when their "personal code" was received
- There was some discussion in QST regarding a potential issue using DTMF tones for amateur radio signaling
 - a. DTMF stands for "Dual-Tone Multi Frequency" and is a system where two tones are generated for each keypress one representing the column and the other the row containing the pressed key
 - b. Due to the way audio is handled, a situation may occur where one of these tones is louder than the other, which can confuse some decoders
 - c. There didn't appear to be any articles discussing LiTZ after 1996, so I don't know if it turned out to be a big issue or not
- Even if you do not have a decoder or other notification device, hearing a long DTMF tone on a repeater will stand out from the usual traffic and alert listeners to listen for an emergency message to follow

Colorado Emergency Reporting Network

- Here in Colorado, we have another option the Colorado Emergency Reporting Network, or CERN
- They are a group of volunteer amateur radio operators whose goal is monitoring the Colorado Connection's statewide repeater system 24 hours a day, 7 days a week in order to report any type of an emergency that is called into the net

- The organization was conceived and organized by Sydney Cleveland, KE0GNS (SK, 2018)
- Some situations do not require professional assistance they're just as happy to provide a radio check in a non-emergency
- They do this via policies and procedures they have developed, standardized report forms, a weekly schedule and resources to help monitors locate the county the caller is in, as well as a phone list for the Colorado 911 Public Safety Access Points
- The CERN volunteer answers the radio call and writes down the caller's location and all important information.
- If necessary, the monitor will then relay the information to the 9-1-1 operator in the county where the caller is located. The 9-1-1 operator then activates the appropriate emergency responders such as police, fire, medical, or Search and Rescue.
- They also run a daily net at 6:30 PM and it is a great introduction for new Hams wanting to get on the air and practice. After checking in, Net Control will repeat your information, give you a readability report and ask if they copied your information correctly.
- I don't see any mention of the Wilderness Protocol in their "Policies and Procedures Training Document," but they do have a "CERN Wilderness Protocol" document
 - a. In it, they encourage their monitors to monitor the frequencies from 5 minutes before to 5 minutes after the hour, to account for any differences in how people have their watches set
 - b. They do state that this is not a requirement for CERN monitoring, but they see it as a way to expand on the services they provide to the amateur community
- The Colorado Connection is a system of linked 2-meter repeaters that is built and maintained by volunteers and is open to all licensed amateur radio operators.
- The system covers about 60% of the area of Colorado and a large part of the I-25 and I-70 Interstate highways
- Their repeater covering the Denver/Boulder area is on 145.310 MHz with a negative offset and 88.5 Hz CTCSS tone they have a receiver for this repeater on Lee Hill
- If you'd like to participate as a volunteer with CERN, check out their web site at: <u>https://co-cern.org/</u>
- Their online schedule shows that they do need volunteer monitors for a number of time periods throughout the week, so if you'd like to help, give it a try!

- a. They have multiple training and reporting documents available on their web site
- When using the Colorado Connection repeaters, wait two seconds after pressing your push-to-talk to give all the repeaters time to link up. Also, wait until you hear the courtesy tone before responding to someone else's transmission so that everything has time to unlink properly (and also so that others may break in, if needed).

Summary

- There is no guarantee that someone is listening, but learning about the Wilderness Protocol should give you better chances if you are ever in a situation where you need to rely on your radio for help
- Even if you're not in need of assistance yourself, turning on your radio at these times and monitoring the calling frequencies gives you an opportunity to help out another ham in need
- It would be a good idea to program in any Colorado Connection repeaters around the areas you frequent (or just program them all in) as well as the simplex calling frequencies for any bands your radios support
- If you have an Apple device, the compass app will show your latitude and longitude (which could be helpful for getting rescuers to your location). For Android, you should download an appropriate app before you go out of cell or WiFi range.
- While we all want to think that amateur radio will save the day, if you know you are going to be out in an area with no cell coverage and little or no repeater coverage, you should look into some sort of personal locator device as your "last line of defense" should an emergency occur
- If you are an ARRL member, I'm including a list of references to past QST articles on the Wilderness Protocol and LiTZ in the net notes for tonight.

Questions:

- The question for the week is: Have you ever heard of the Wilderness Protocol or Long Tone Zero systems? What preparations have you made, if any, for getting support in an emergency outside of cell coverage areas?
- In my case, I had heard of both of these systems before, but did not remember the specifics of the Wilderness Protocol off the top of my head. I do have the 2m and 70cm calling frequencies programmed into my HTs, but I've only used them occasionally to monitor for traffic while on vacation (I think I only heard someone on them once). Of course, I did not call CQ, so perhaps there were people listening.

At this time, I don't really have any big emergency preparations regarding radios. I do

have an Ed Fong roll up J pole antenna and coax feedline to give my HT a boost, spare battery packs, and where I could obtain them, battery packs that are run off of standard AA batteries.

I am lacking in having very many repeaters programmed into my radio, as I primarily "hang out" on the LARC repeaters. As the repeater trustee, I frequently have a radio in the house monitoring one of the LARC repeaters, but I don't necessarily respond to any "monitoring" requests unless I'm not otherwise engaged.

More Info:

- The Wilderness Protocol: <u>https://tcares.net/the-wilderness-protocol/</u>
- Colorado Emergency Reporting Network (CERN): <u>https://co-cern.org/</u>
- Colorado Connection (ColCon): <u>https://colcon.org/</u>
- A Wilderness VHF FM Protocol, ARRL QST, Feb 1994, pg. 99
- Wilderness VHF Protocol Reminder, ARRL QST, Aug 1995, pg. 101
- Mutual Assistance Protocols for VHF and UHF, ARRL QST, Jun 1996, pg. 85
- Wilderness Emergency Communications Protocols, ARRL QST, Mar 2021, pg. 70 71
- LiTZ Alert: One Solution that Works, ARRL QST, Nov 1991, pg. 91
- ZERO: An Alerting Device for Repeater Users, ARRL QST, Nov 1992, pg. 108 110
- Long Tone Zero for the ACC RC-85 Repeater Controller, ARRL QST, Dec 1992, pg. 82
- LiTZ Debate: Will ZERO WOrk on Your Repeater?, ARRL QST, Mar 1993, pg. 98 99

Email to elmer@w0eno.org

 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 <u>k0itp@w0eno.org</u>

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- 7. KEØEE Don N Longmont

End: 8:00pm