



Our September General Meeting will be held Wednesday, September 15th, via Zoom, at 6:30 pm.

**Members: We also will be electing officers and voting on club bylaws at this meeting — please attend!**

Our guest speaker this month will be Ed Stearns (AA7A), from Scottsdale, AZ, who will speak about his experiences with his remote DXpeditions.

For more details about Ed and to learn more about this virtual meeting, please see page 2!

**September Meeting will be presented again via Zoom!**

**Wed, Sept. 15th, at 6:30 pm. Go to:**

<https://us06web.zoom.us/j/81928642821?pwd=WxNStjdEdHd5emZaaDRaaENQdnFWZz09>

See p. 2 for more info.



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## LARC's September Membership Meeting

**Our General Meeting will be on Wednesday, September 15th, at 6:30 pm.**

*We always meet the third Wednesday of each month, except in December, when we have our Christmas Party.*

The presenter for this meeting is Ed Stearns (AA7A). He will be presenting on his experiences with remote DXpeditions. His interests also include contesting, VHF weak signal, EME, home-brewing, and antenna design, and is also a member of the [Voodoo Contest Group](#).

Some requests for when you join our meetings:

- When you fill out your name, *please add your call sign after your first name*. (Example: Chuck (KØITP) Poch). If you don't have a call sign yet, just put "no call." *You can change your name with the 3 little dots at the top right corner of your screen.*
- You will be muted automatically. (If you need help getting in, call out on our club repeater via VHF, UHF, or on EchoLink.) Be sure to have your video going and your volume up, so we can see/hear you!

The Zoom meeting will start at 6:30 pm with social time, ask an Elmer, meet a Board member, and general questions. **The actual meeting begins at 7:00 pm, with intros, club business, 2022 elections, and then the presentation will begin at approximately 7:30 pm.**

**Going forward, this Zoom info will be the same for all Monthly General Meetings.**

To Join our September Zoom Meeting, click on this link:

[https://us06web.zoom.us/j/81928642821?  
pwd=WXNSTjdEdHd5emZaaDRaaENQdnFWZz09](https://us06web.zoom.us/j/81928642821?pwd=WXNSTjdEdHd5emZaaDRaaENQdnFWZz09)

**Meeting ID: 819 2864 2821**

**Passcode: 787437**

One tap mobile:

[+12532158782](tel:+12532158782),,81928642821#,,,,\*787437# US (Tacoma)

[+13462487799](tel:+13462487799),,81928642821#,,,,\*787437# US (Houston)

Find your local number: [https://us06web.zoom.us/j/81928642821?  
pwd=WXNSTjdEdHd5emZaaDRaaENQdnFWZz09](https://us06web.zoom.us/j/81928642821?pwd=WXNSTjdEdHd5emZaaDRaaENQdnFWZz09)

If you have to miss this meeting, you can click on the MEETING PRESENTATIONS link on the left frame of our web page at [w0eno.org](http://w0eno.org).



## Ham Jargon

### Cabrillo

The text file format standard for logging ham radio contacts targeted for contesting submission or simple record keeping. Many loggers can convert to Cabrillo format.

## LARC's New YouTube Channel

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Check out videos of many of our previous meetings and activities at:

<https://www.youtube.com/channel/UC0bX61lXfLHEvix6msKzITg> or by going to the club web site at [w0eno.org](http://w0eno.org) and selecting Meeting Presentations. Subscribe to our channel so you don't miss out!

If you miss a meeting or don't drive after dark, you will still be able to watch them here!



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## Help Support your Club with your Online Shopping!

Did you know your purchases can make a difference? *When you shop for anything at [smile.amazon.com/ch/84-1056239](https://smile.amazon.com/ch/84-1056239), Amazon Smile donates to the Longmont Amateur Radio Club — at no cost to you! You can also just click on the picture below to log into your account to shop and to help your Club at the same time.*



When you go to this link, you enter your own username and password, just like you normally do. You can also go to [smile.amazon.com](https://smile.amazon.com) and select Longmont Amateur Radio Club. *Shopping with this Amazon link doesn't cost you anything – Amazon provides this donation, and every little bit helps our club!*

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## Useful Ham Radio Web Site

<http://www.icomamerica.com/en/amateur/amateurtools/default.aspx>

An iCom site that has tools for ham radio operators, including Band Plan, New Rules for 60 Meter (5 MHz) band, U.S. Grid Square Map, Ham Radio Terms, and CQ DX Zones of the World.

"September is the month of maturity; the heaped basket and the garnered sheaf. It is the month of climax and completion. September! I never tire of turning it over in my mind. It has warmth, depth and colour. It glows like old amber." – Patience Strong (1951). "The Glory of the Garden"

LARC is keeping up with what is going on with COVID-19. I ask all members to be safe & take care of yourselves. Vaccines are here and opportunities to get them are in every town. Lots of changes are happening. Recently, Covid cases are starting to climb again with the Delta variant. Mask requirements have been reinstated for indoor activities in Boulder County. So, with that said, we are virtual for all LARC meetings until further notice.

We have several upcoming events:

NCARC Picnic — We have been invited to join the Northern Colorado ARC for some social interaction in the great outdoors on Saturday, September 18th, from 12 noon to 3:00 pm at Fossil Creek Park. The address is [5821 S. Lemay Ave., Fort Collins](#). NCARC will be providing drinks and grilled meats. Please bring a side dish to share.

LARC has a new website on the way! Our [w0eno.org](#) is getting a facelift. Keep an eye out for more announcements about this exciting event.

Join the Tuesday night and Thursday night nets for fun and educational talk! Want to learn how to be a net control station (NCS)? Contact Jerry (NØOUW) or me for details!

Do you have an idea for a presentation? Know someone who would like to present to your club? Contact a board member and let's get them in front of us. We are currently looking for presenters for our 2022 General Meetings.

I mentioned the appreciation award I was doing for the club. If you know someone in the club that deserves an extra "Thank you" or "Above and Beyond, please let me know! I'm looking for recipients for our 2021 awards!

Congratulations to the 2021 Above and Beyond recipients so far this year:

- January "Above & Beyond" recipient Kat Gonderinger (WØUM) for producing the LARC monthly Splatter — Volunteer hours to make it the best Ham Radio Newsletter out there.
- June "Above & Beyond" recipient Doug Altman (KEØSI) for a successful 2021 Field Day after an uncertain 2020!

I have always said that this is your club. How can you help? Looking for help on our LARCFest 2022 Committee, our upcoming Christmas Party, and other club events. If you can help or want to be more involved with your Club, please contact a member of the board.

As always, please contact me with any questions, comments, suggestions, or concerns.

Thank you and 73,  
Charles Poch - KØITP

[KØITP@WØENO.ORG](mailto:KØITP@WØENO.ORG)



### Take our Poll!

Please take LARC's quick and fun [September Poll](#) by answering this poll question. Feel free to add any comments you would like. After you have finished and submitted it, you will be given the option to see a summary of all the responses so far. Your answers and identity are completely anonymous if you wish. Please select the answers that apply! If clicking on the polls below doesn't take you to the poll, please go to: <https://vote.pollcode.com/75166663>

#### How do you log your contacts?

- Paper logs
- QRZ.com
- LOTW
- N3FJP (AC Log)
- HamRadioDeluxe
- N1MM
- Log4OM
- Spreadsheet
- DXLab
- MacLoggerDX
- CQRLOG
- Others - leave in comments

pollcode.com [free polls](#)

Click on poll pic or on link to vote in poll!

## Net — Tuesday Night Hamlet Net, 7:00 pm

The Club sponsors an informal net for newer ham radio operators on Tuesday evenings at 7:00 pm. Learn how to use nets, ask questions, discuss ham radio topics, get familiar with your radio & make new friends on the club's linked repeaters on 147.270 and 448.800 MHz, Tuesday nights at 7:00 pm. *For more information about this net, click on the title above.*

You can also reach our nets on the internet via [EchoLink!](#)

## Net — Thursday Night Club Net, 8:00 pm

The Club also sponsors an informal net each week on Thursday evenings at 8:00 pm to chat about whatever is on your mind and to announce upcoming Amateur Radio Club activities. You will find the net on 147.270 and 440.800 MHz on Thursday nights at 8:00 pm. *Click on the title above for more information about this net.*

**STAY CONNECTED TO YOUR FELLOW HAMS! GET ON OUR NETS!**



**August Poll Results — Thanks for voting!**

**Take our Poll Now! It will only take about 2 minutes!**



## TAKE OUR SEPTEMBER POLL!

Either click on the poll on the left, or go to:

<https://vote.pollcode.com/75166663>

We want to know your thoughts! Please also add your comments!

## Upcoming QSO Parties and Special Events

As found on ARRL.org and other web sites, here are some selected upcoming QSO Parties and Special Events that you could get on to pass the time while stuck in your house over the next 30 days. See the links below for more information, rules, logs, and QSL card information. Some just provide an email address to get more info other than what's on the ARRL web site. They all present a great opportunity to get on the air and have some fun! Plan your calendar!

Start Date	End Date	More Info
09/11	09/13	ARRL VHF Contest <a href="http://www.arrl.org/september-vhf">http://www.arrl.org/september-vhf</a>
09/14	09/14	Worldwide Sideband Activity Contest <a href="https://wsac.com/rules.html">https://wsac.com/rules.html</a>
09/18	09/19	Iowa QSO Party <a href="http://www.w0yl.com/IAQP">http://www.w0yl.com/IAQP</a>
09/18	09/19	Texas QSO Party <a href="http://www.txqp.net/">http://www.txqp.net/</a>
09/18	09/19	Washington Salmon Run <a href="http://salmonrun.wwdxc.org/">http://salmonrun.wwdxc.org/</a>
09/18	09/19	New Jersey QSO Party <a href="http://www.k2td-bcrc.org/njqp/njqp_rules.html">http://www.k2td-bcrc.org/njqp/njqp_rules.html</a>
09/18	09/19	New Hampshire QSO Party <a href="http://www.w1wqm.org/nhqso/">http://www.w1wqm.org/nhqso/</a>
09/20	09/20	144 MHz Fall Sprint <a href="http://svhfs.org/2021FallSprintRulesR0.pdf">http://svhfs.org/2021FallSprintRulesR0.pdf</a>
09/25	09/26	Maine QSO Party <a href="http://www.ws1sm.com/MEQP.html">http://www.ws1sm.com/MEQP.html</a>
10/02	10/03	Oceana DX Contest, Phone <a href="http://www.oceaniadxcontest.com/">http://www.oceaniadxcontest.com/</a>
10/02	10/03	California QSO Party <a href="http://www.cqp.org/Rules.html">http://www.cqp.org/Rules.html</a>
10/09	10/10	Nevada QSO Party <a href="http://nvqso.com/contest-rules/">http://nvqso.com/contest-rules/</a>
10/09	10/10	Arizona QSO Party <a href="https://www.azqp.org/">https://www.azqp.org/</a>
10/09	10/10	Pennsylvania QSO Party <a href="http://paqso.org/pa-qso-party-rules.html">http://paqso.org/pa-qso-party-rules.html</a>
10/09	10/10	South Dakota QSO Party <a href="http://www.sdqsoparty.com">http://www.sdqsoparty.com</a>
10/16	10/17	New York QSO Party <a href="http://www.nyqp.org/">http://www.nyqp.org/</a>
10/17	10/18	Illinois QSO Party <a href="http://www.w9awe.org/ILQP%202020%20Rules.pdf">http://www.w9awe.org/ILQP%202020%20Rules.pdf</a>

- Check out <http://www.arrl.org/news/state-qso-party-challenge-announced> for an ARRL QSO Party Reward YOU can get!
- See tons of QSO Parties at <https://qsoparty.eqth.net/index.html>
- See these and also more Special Event Stations at [http://www.arrl.org/special\\_events/search/page:1/model:Event](http://www.arrl.org/special_events/search/page:1/model:Event)
- You can see much more QSO Party and Contest Information at: <https://www.contestcalendar.com/contestcal.html>
- To learn more about having fun with QSO Parties, take a look at this link: <http://www.arrl.org/files/file/QST/This%20Month%20in%20QST/April2019/KENNEDY.pdf>

## 2021 BOARD OF DIRECTORS

President: Charles Poch, K0ITP  
Vice President: Michael Ritchie, W0KKI  
Secretary: Pat Engstrom, W1PGE  
Treasurer: Don Lewis, KE0EE

### ADDITIONAL VOLUNTEERS:

Membership: Steve Shearer, K0STE  
Technical: Mark Skelton, N7CTM and  
Bryan Gonderinger, AF0W  
Publicity: Steve Haverstick, KF0AGY  
Splatter Editor: Kat Gonderinger, W0UM  
Planning/Special Events: Doug Altman,  
KE0SI & Mark Mollenauer, KD0GOC  
BCARES Representative: Jerry Schmidt,  
N0OUW  
Repeater Trustee: Bryan, AF0W  
Education: Kat, W0UM & Bryan, AF0W  
LARCfest Chair: Dick Paige, KE0VT  
VE Team Leads: Aaron, AJ7R & Kat, W0UM

### Contact Us:

Email to: [board@w0eno.org](mailto:board@w0eno.org) will reach all members of the Board.

Board meetings are held on the first Wednesday of each month at 6:30 pm.  
General Club meetings are held on the third Wed. of each month at 6:30 pm.

Current Club meetings are held online using Zoom and are open to all. Join us!

If you have a suggestion for a topic or for a guest speaker, or would like to present a topic yourself, please send email to [Chuck, K0ITP](mailto:Chuck.K0ITP).

If you have a general interest article about ham radio that you would like to see in a future issue of Splatter, please email it to [Kat, the Splatter Editor](mailto:Kat,theSplatterEditor).

Articles received by the 25<sup>th</sup> of the previous month will be considered for publication in the issue for that month.

Longmont Amateur Radio Club  
P.O. Box 86  
Longmont, CO 80502

LARC is a non-profit organization organized exclusively for one or more of the purposes as specified in Section 501 (c)(3) of the Internal Revenue Code Vol. 17. No.6.

### Repeaters:

#### VHF:

147.270 MHz (+) 600 kHz, 100 Hz CTCSS

#### UHF:

448.800 MHz (-) 5 MHz, 88.5 Hz CTCSS

#### Echolink::

W0ENO-R, Station #8305

## Visit & Post on our Facebook Page!

Our club has a Facebook page — did you know that? Feel free to share your ham-related posts, projects, activities, and news at:

<https://www.facebook.com/LongmontAmateurRadioClub/>.

We'd love to have our members active on both our LARC web site at [w0eno.org](http://w0eno.org) AND on our Facebook page, so check it out, share, and post today!  
Tell all your ham operator friends!

Find us on 

## Thank You!

**Many thanks to our special contributing authors for this month's Splatter:**

- Doug Altman, KE0SI
- Bryan Gonderinger, AF0W
- Chuck Poch, K0ITP
- Steve Shearer, K0STE
- Raman Sinha, AE0RS



## Call for Articles!

I am constantly looking for articles to publish in the Splatter monthly newsletter. Topics should apply to Amateur Radio, or other closely-related topics of interest to most ham operators. Tell us about your ham radio activities and projects. Articles (250-500 words) of things you have done and/or built (with pictures!) are always of interest.

Submissions may be edited for spelling, grammar, content, or length if necessary. The deadline for submissions is the 25th of each month; however, submissions received after the deadline will be considered if they fit into the newsletter. If a late entry doesn't make it into the current month's news, it may be used in one of the following months.

[Kat, W0UM, Splatter Editor](mailto:Kat,W0UM,SplatterEditor)

## LARC VE Exam Session Information

LARC sponsors a VE Exam Session every month. Upgrade your license before FCC fees start!

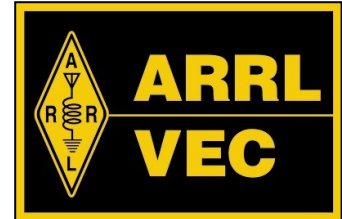
Our regular LARC (ARRL VEC) Exam Sessions are given on the *fourth Saturday of the even-numbered months* — (but on the 2nd Saturday for December), and our LARC/Patriot VE Exam Sessions (Laurel VEC) are given on the *third Sunday of the odd months*. Plan ahead!

### August VE Exam Session Results

Our LARC ARRL VE Team held an Exam Session on Saturday, August 28th, led by Aaron (AJ7R). Also working this Exam Session were Bryan (AF0W), Kat (W0UM), Jeanne (AC0XA), David (AD0UF), Dick (KE0VT), Rob (WC0R), and Daniel (WS0W). Thank you to our volunteer examiners for your service! We couldn't have done it without you!

At this session, 13 candidates were tested, which resulted in 11 new Technicians, 1 new General who passed Technician also, 1 new Amateur Extra, and 1 who passed Technician, General, and Extra all in this session. There were a total of 16 passed exams.

Congratulations to everyone who passed their exams!



License	#
Technician	10
General	1
Extra	2
<b>Total</b>	<b>13</b>

### NEXT Exam Session on SUNDAY, September 19th @ 9 am

Our next VE Exam will be with the LARC Patriot VE Team led by Bryan (AF0W) and Kat (W0UM) on Sunday, September 19th, at the Terry Street Professional Building at 350 Terry St., Longmont, 80501, *upstairs in the Onyx Room*. If the 9 am session fills up, another will be added at 10:30 am.

This exam session is *FREE*, but you must pre-register for the session at:

[Hamstudy.org/sessions/w0pct](https://hamstudy.org/sessions/w0pct)



This is an in-person, online exam that you can take with your laptop or tablet. Paper exams are available as well.

### Upcoming VE Exams

Date	Day	Time	Exam Session Info	Exam Options
Sep. 19	Sun	9:00 am	LARC/PVET VE Team	In person on laptop or tablet, or on paper
Oct. 23	Sat	10:00 am	LARC ARRL VE Team	In person on paper
Nov. 21	Sun	9:00 am	LARC/PVET VE Team	In person on laptop or tablet, or on paper
Dec. 11	Sat	10:00 am	LARC ARRL VE Team	In person on paper



## Ham Enthusiast Breakfasts Every Saturday Morning

Want some social time with other ham radio operators in a small group? Join us for breakfast!

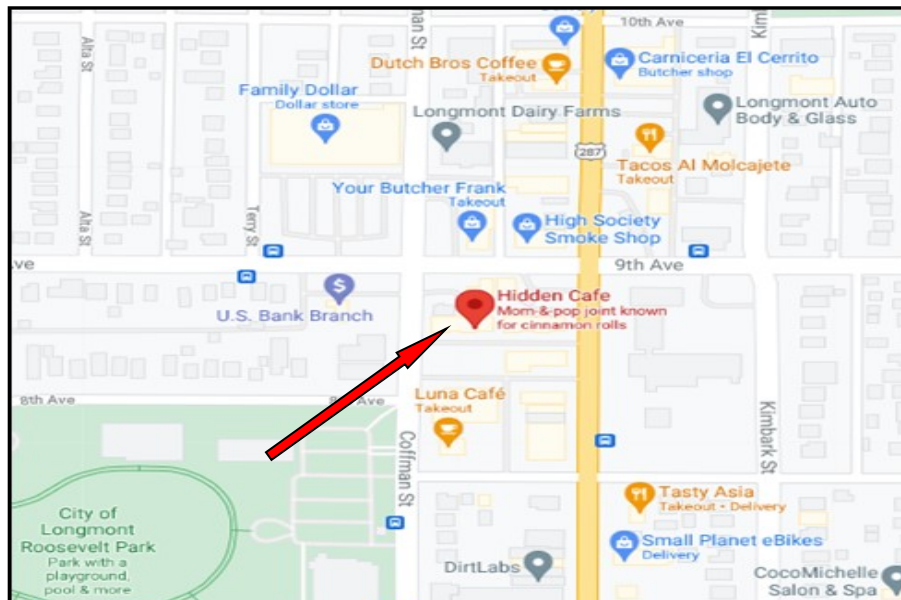
**Saturday morning breakfasts meet at 8:00 am every Saturday.**

Join us on Saturday mornings at the **Hidden Café in the Towne Square Shops, at 829 Main Street, #5 in Longmont.** It's easiest to enter the parking lot from Coffman Street just south of 9th Avenue.



These are hosted by Don Lewis, KE0EE.

We hope you will join us on a regular basis for breakfast. If the group gets much larger, we will relocate to a larger restaurant. Get on the 8 pm Thursday Night Net to confirm the location, and/or check our website to see if the location has changed.



# PICNIC



We have been invited to the NCARC annual club picnic on Saturday, September 18th from 12 noon to 3 pm at Fossil Creek Park.

The address is [5821 S Lemay Ave, Fort Collins.](https://www.google.com/maps/place/5821+S+Lemay+Ave,+Fort+Collins,+CO)

The club will be providing drinks and grilled meats. Please bring a side dish to share. This event will replace their normal club meeting for that day. This is a fun social event, so if you've got something radio related to show off, you're welcome to bring it. We're looking for a handful of volunteers to help man the

grill. If you'd like to help out, or need more information, contact Chuck (K0ITP) at [k0itp@w0eno.org](mailto:k0itp@w0eno.org) or Dave (W0DDZ) at [pao@ncarc.net](mailto:pao@ncarc.net).

I'd like to welcome our new club members who joined us in June! When you meet them or hear them on the air, please say hello!

LARC Newest Members — August		
Call	First Name	Last Name
AEØ0G	John	Koski
K04BGS	Stan	Peterson

The August General Meeting was held on Wednesday, Aug. 16th, 2021, via Zoom with a total of 29 attendees.

Attendees were told about a few upcoming events and activities at the beginning of the meeting.

Jeremiah Bagula (NØKMO) gave the evening presentation on using APRS along with Parks on the Air and other radio activities. He went through a number of opportunities when using APRS on an APRS-capable radio. There is always a lot of opportunity to use your radios in many different activities. Jeremiah has additional ham radio information and preparedness discussions you can see on his site at [Colorado Ready – Preparedness through Education](#).

Did you miss out on the General meeting? You can go to the Meeting Presentations link on our web site at <http://w0eno.org/node/89> to watch the recording of this and previous meetings.

We hope you continue to attend the General meetings for the presentations, comradery, and for questions/answers that come up before, during, and after the meetings. Plans are being made to have some well-known ham-involved people as presenters for the 2021-2022 club meetings.

A door prize was drawn based on the attendance after the meeting was over. Ted (NØRQV) was drawn as the winner but donated the choices back since he already receives the QST magazines and is not a coffee drinker. They will be used for a future door prize drawing

The club is always looking for additional donations of door prizes to give away at the meetings. If you have something you can donate for our drawing(s), you can contact me at the email or cell number below. It doesn't have to be radio-related — just anything a ham operator will enjoy.

Stay safe, and hope to see and/or hear you at the next General Meeting on September 15th. Any questions or issues, feel free to contact me.

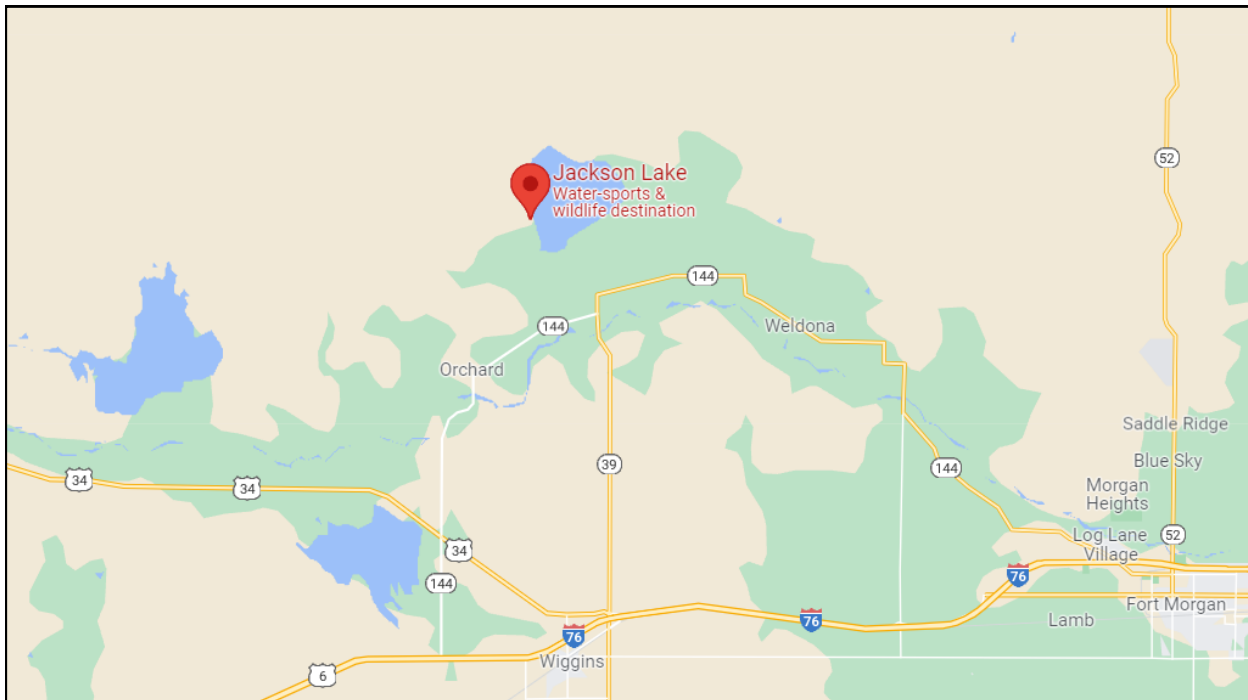
Steve Shearer (KØSTE)  
[KØSTE@WØENO.ORG](mailto:KØSTE@WØENO.ORG)  
Membership Chairman

[membership@w0eno.org](mailto:membership@w0eno.org)  
(303) 915-9942



August 20th, 2021

Jackson Lake State Park Orchard, Colorado



**There’s no better way to spend some time outdoors than to do POTA...**

The club did not sponsor a POTA event this month so I did my own. With the clubs “Go-Box” and an additional 16 ft mast and 20M dipole I made contacts. 15 to be exact. 13 data (FT-8) and 2 voice. Also did 2 park-to-park contacts. This type of just getting out and enjoying nature is fun. I would recommend everyone sign up and be either a hunter or activate a park to hone your Ham Radio Skills.

See [parksontheair.com](http://parksontheair.com) for more info.

73,  
[Chuck Poch - KØITP](http://Chuck Poch - KØITP)



© CanStockPhoto.com - cap5384581

We have many events and activities coming up for you to get on the air, have fun, and help your community.

If you would like to join us for any of these activities, please let us know, so if any dates or locations are changed, you can be notified. You can also just show up — but check our website first to ensure there haven't been any changes.

Date	Day	What	Where	Contact
09/18	Sat	NCARC Picnic, Fossil Creek Park - We're invited!	5821 S. Lemay, Fort Collins	Chuck, KØITP
10/30 *	Sat	Halloween Parade	Downtown Longmont	Doug, KE0SI
11/13 *	Sat	Turkey Trot Foot Race	Altona School, Longmont	Doug, KE0SI
12/08 or 15th	Wed	LARC Christmas Dinner Party	Niwot Grange	Doug, KE0SI
12/11 *	Sat	Parade of Lights	Downtown Longmont	Doug, KE0SI

- Dates with an asterisk (\*) are community service events, when our club members provide radio support. Please help us with these! Send Doug email with your intent to volunteer.
- To contact Doug, our Event Coordinator, send email to [KE0SI@w0eno.org](mailto:KE0SI@w0eno.org)
- Also keep an eye on our LARC website ([w0eno.org](http://w0eno.org)) for all of our upcoming events.



The upcoming SHY-WY HamFest in Cheyenne that was scheduled for October 9 HAS BEEN CANCELLED due to the ongoing Covid pandemic.



Ever since I participated in Winter Field Day and seeing the limitations of pretty much every SSB frequency being taken-up by people with more power than I have, and having some success with JS8Call, while others used WinLink, I am started to get more interested in packet radio.

So here's a 30,000 foot overview about packet radio...

Let's say you have some piece of information that you want to send to someone. Maybe something like "KF0BBY this is AE0RS. Meet met at Whitetail Park for some ham radio fun next Tuesday at 10 AM."



- How do you relay this to someone in another room? You talk to them.
- How about if across the street? You'd yell it to your neighbor loud enough for them to hear.
- How about in the next town? You might use your phone to call them, and then say it to them when they pick up their phone.
- How about to someone in another time zone 5000 miles away? You might write it on a piece of paper, put it in an envelope, write their address on it, put a stamp on the envelope and mail it, and assume they got the message (especially if they showed up to the park when you said to).
- What if you were to send it via email over the internet? That's using radio waves and wires, just like a phone.
- What if you were to use your HF radio? Ahhh -- then you're taking your voice, turning it into electromagnetic waves, sending it around the earth, bouncing them off the atmosphere, maybe, until finally it reaches their HF radio which turns the electromagnetic wave (well, electric part) into sound waves that the operator understands as spoken word.

In each case, you're relaying the exact same message, but using several different mediums: A voice, a loud voice, then over radio frequency and/or wires (depending on if you were using a cellphone or wired landline), on a piece of paper, radio/wires, radio/wires again.

In a few of the cases, you took the message, turning it into something that looked absolutely nothing like the message to do the work of transporting your message to somewhere else.

We could think of each of those other non-yelling methods as communicating via Packets. Think of a packet as the envelope. It contains the message and some information on how and where to deliver it to. This way anyone between you and the recipient can look at the envelope and pass it along until it gets closer and closer to its destination.

Why would you want to use a packet? Because you want to take advantage

>> *continued* >>

of the medium the packet can travel in. You can only yell so loud. But if you had a powerful flashlight, you can do Morse code (CW) at a greater distance than you can yell. We all know that you can use a few watts on SSB and talk to someone a thousand miles away. You just used EM waves to your advantage to send packets of your voice. In all cases, the same message is being sent, just in a different, more advantageous medium.

HF radios operate on the basis of sound and sound only. When you say a word in English, someone that speaks English can understand what you said on SSB or FM.

What if you were a bird and could chirp the same word? And a bird was on the other end that understood your chirps? Humans in between that communication tuned into the frequency but couldn't understand it (unless they got a bird to translate for them). This is similar to CW. If you know CW then you can speak this easy-to-encode-and-decode method of radio to sort-of talk to someone else that knows CW and can decode it fast enough to have a back and forth conversation in real-time.

Now let's make it more complicated than CW. Let's send CW really REALLY fast. Faster than any human can decode it while they're listening to it. While we're at it, we can send more information really fast, instead of just having a single tone, let's introduce a bunch of different pitches of tones. Like a whole piano's worth of tones! Whew! Before, it was easy dits and dahs in a nice slow tempo -- but now it's a classical piano symphony that sounds like it's in crescendo all the time! We're going to need a microprocessor or a computer or software to decode this stuff in real time, otherwise it's going to take us weeks to decode the message, and we're going to miss the fun at the park.

What about RTTY? You can hear the familiar tones while you're tuning around, but you can't decode it while you're hearing it. Some HF radios can because they have little microprocessors to accomplish this task.

Let's kick it up a notch and code and decode even more information than CW or RTTY. And we all know that bands go up and down and a host of other environmental things happen in real-time that can prevent you from hearing a dit or a dah and you're left wondering did he mean A or U because A doesn't make sense in this word so I might have missed the first dit. Well, most packet radio has a feature that can help itself correct small errors. Cool!

Both CW and RTTY are considered digital modes.

That's packet radio. Information (text, usually) turned into a format that enables us to send a lot of it and pretty high speed. The downside is that it's no longer human-readable in real time -- like spoken words or CW.

Packet radio is just a medium for transferring messages over radio waves. We all use the internet. The internet does the exact same thing except usually a little bit of RF (Wifi), then cables, and then maybe WiFi out the other end.

*>> continued >>*

**Protocols**

A *protocol* is a fancy word that means that you and I have agreed to communicate with each other using a certain language.

International Morse code can be thought of as a protocol. If I tell you that I'm going to use Morse code over CW, then you'll be able to understand what I'm saying because you'll know that dit dit dah can only mean 1 thing – the letter "U."

There are many protocols. Why? Because people have figured out that some ways of communicating work better when there's a lot of noise. Or some ways work better when there's a good, strong signal and you have 1,200 Hz of bandwidth to work with. Others have optimized for 3,000 Hz. You know from your ham radio exams that you need more bandwidth to send more data at a faster rate.

You also know that all protocols must be made public because you can't have secret conversations over US ham radio.

Winlink is an application suite (and a "standard") that is used to help you send and receive message over packet radio.

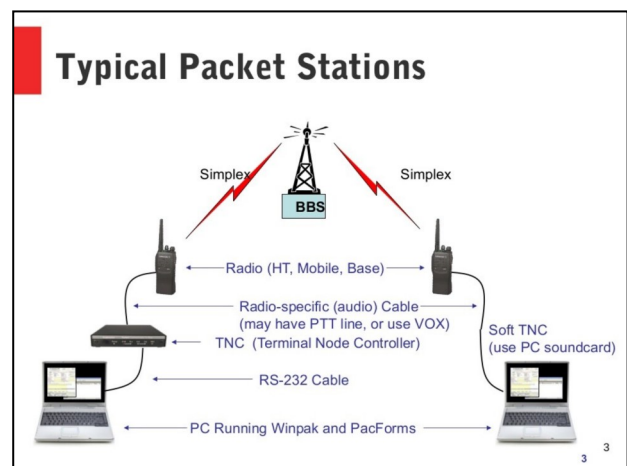
ARDOP is an example of protocol that is used to talk over ham radio frequencies. You don't have to know anything other than the name of the protocol because that tells you what software you need to code/decode those packets.

AX.25 is another example of a suite of protocols.

You'll hear the word Frame used when talking about Packets. That's because, for example, you have a book to send over HF Packet radio. You can't send all of it at once. You have to split it up into small pieces and send those pieces individually. Each piece is a Frame.

Other words used in packet radio:

1. Terminal – a computer of some sort that has a keyboard attached. It could be a phone with a virtual keyboard, too.
2. TNC (Terminal Node Controller) – Something that takes the text sent in from the Terminal, turns it into packets. It also does the opposite for packets coming in.
3. Radio – your HF (or VHF radio). Takes the musical notes from the TNC and sends it over the air waves.



Note that each of the 3 things above does 1 thing and one thing only:

1. Your radio is only good at pumping watts out. It doesn't care if you're talking or your cat is meowing into the mic, or your TNC is giving it tones to play over HF. >> continued >>

2. The terminal is only good at taking in and displaying text.
3. The TNC is only good at translating words to tones (and vice versa). It's kind of like a sound card.

Your older ham radio can convert RTTY to text in real time. Newer ham radios are literally turning into computers. This means that the 3 “parts” above might be in 1 box with a dial or buttons on it soon, rather than being 3 separate small boxes. Some radios can send APRS packets all by themselves. This means they're doing the job of 1) grabbing a GPS coordinate, 2) turning that into text, 3) taking the TNC and converting it into tones, and 4) using their VHF radio and tuning to 144.xxx FM and transmitting coordinates to a repeater. All in 1 tiny handheld Yaesu FT3D or something.

There are different types of TNCs. A full-featured one can do more of the work than a “dumb” one – often called KISS (keep it simple) TNC. KISS TNCs harness a modern computer's CPU to do a lot of the thinking.

Some TNCs are entirely implemented in software. DIREWOLF, Signal Link boxes, etc., need a computer to do their TNC-ing.

The flow of information is something like this:

Computer => ASCII => TNC => AFSK => HF/VHF radio

1. You type some letters into your computer-like device
2. The letters get turned into ASCII – which is a digital way to represent your letters
3. The TNC or Terminal Node Controller turns the ASCII into sounds, maybe using AFSK Audio Frequency Shift Keying – kind of like you whistling a different tone for a different letter.
4. Those tones (sounds) get pushed into your ham radio.
5. A radio that receives this can do the same thing in reverse to get to the letters you typed!

Here's a PDF from a website – [Not Black Magic:AFSK](#) – that explains AFSK, including information on how computers can act as TNCs via software, making it so you don't need an extra piece of hardware.

I have experimented with APRS and connected my Baofeng HT directly to my Android phone. My Android device converted my coordinates (text) into tones that could be transmitted by my HT to a repeater that understands APRS tones. Then my location was available on the <https://aprs.fi> website as well as in the app that I was using (which I believe uses data from the same website).





You've probably heard the expression "when pigs fly!" – but what about cows?

AT&T is flying drones to provide cell phone service to Louisiana in the wake of hurricane Ida. Historically, these temporary cell towers (called "COWs" for "cell on wheels") were actual towers (not unlike amateur radio towers) mounted on trailers that could be towed in to provide emergency cell service.



AT&T has redefined the term COWs to refer to "cell on wings," where the antenna and radio equipment are held aloft by a multi-rotor drone.

Battery life typically limits any drone operation, but AT&T is using a tether which provides both data and power to allow for unlimited flight time.

Some amateurs have used drones to run lines over trees to use to raise wire antennas, and have used tethered balloons to hold up long-wire antennas.

Perhaps this AT&T solution can give hams some new areas for communication experimentation!

More Info:

- [https://about.att.com/innovationblog/cows\\_fly](https://about.att.com/innovationblog/cows_fly)
- [https://en.wikipedia.org/wiki/Mobile\\_cell\\_sites](https://en.wikipedia.org/wiki/Mobile_cell_sites)
- <https://blog.doubleradius.com/what-is-cell-on-wheels>

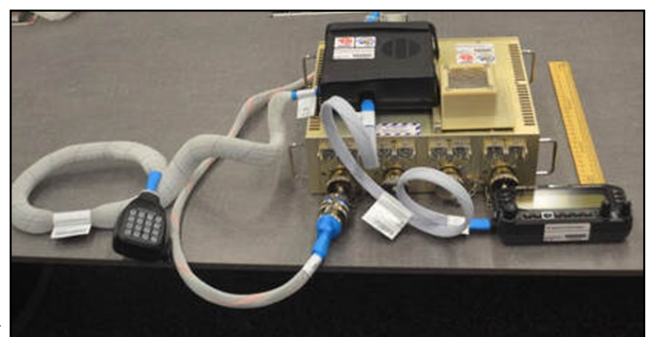
## ISS Voice Repeater is Now Active

According to <https://www.ariss.org/current-status-of-iss-stations.html>, the IORS radio system on the ISS is currently in voice repeater mode. It is scheduled to be switched to packet mode sometime in late September.

The cross-band repeater is on 145.990 MHz uplink (with a tone of 67.0 Hz), and 437.800 MHz downlink. On a good pass of the station, you can likely hear it using just a handheld with a rubber-duck antenna.

More info:

- <https://forums.qrz.com/index.php?threads/news-info-on-the-iss-cross-band-fm-repeater.754221/>
- [https://www.youtube.com/watch?v=r\\_pkPGiU3R4](https://www.youtube.com/watch?v=r_pkPGiU3R4)



Here are some exam questions from the current exam pools. Go ahead and answer them, and then check your answers on page 21. Let's see how you do! We recommend [hamstudy.org](http://hamstudy.org) to study with flashcards and also to take your practice tests. It keeps track of your weak areas for you!



## Technician Exam Review -- Question T1A06

What is the FCC Part 97 definition of a beacon?

- A. A government transmitter marking the amateur radio band edges
- B. A bulletin sent by the FCC to announce a national emergency
- C. An amateur station transmitting communications for the purposes of observing propagation or related experimental activities
- D. A continuous transmission of weather information authorized in the amateur bands by the National Weather Service

## General Exam Review -- Question G1A06

Which of the following frequencies is within the General class portion of the 75-meter phone band?

- A. 1875 kHz
- B. 3750 kHz
- C. 3900 kHz
- D. 4005 kHz

## Extra Exam Review -- Question EA12

What special operating frequency restrictions are imposed on slow scan TV transmissions?

- A. None; they are allowed on all amateur frequencies
- B. They are restricted to 7.245 MHz, 14.245 MHz, 21.345 MHz and 28.945 MHz
- C. They are restricted to phone band segments
- D. They are not permitted above 54 MHz

## Upcoming Hamfests and Conventions

You can use this to plan some of your upcoming late summer and fall travel.

Some conventions and hamfests may have been canceled or postponed due to the coronavirus pandemic. Check the [calendar of canceled events](#) on the ARRL website calendar.

Date(s)	Description	Location
Sep. 18	SARA Hamfest (Sooland ARA) <a href="mailto:Leesa.McNeil@gmail.com">Leesa.McNeil@gmail.com</a>	Soux City, IA
Sep. 18	<a href="#">N7YRC Swap Meet</a> (N7YRC Group)	Union Gap, WA
Sep. 18	<a href="#">14<sup>th</sup> Annual Sacramento Valley Hamfest</a> (Western Placer ARC)	Lincoln, CA
Sep. 25	<a href="#">Radio Society of Tucson Hamfest</a>	Tucson, AZ
Sep. 25	ARRL Dakota Division Convention ( <a href="#">RRRA Hamfest</a> )	West Fargo, ND
Oct. 2	<a href="#">HamEXPO Fall 2021</a> (Temple ARC)	Belton, TX
Oct. 2	<a href="#">TARA Swapfest</a> (Tonto ARA)	Payson, AZ
Oct. 2	Ark-Bark Hamfest <a href="http://www.bellevuearc.org">www.bellevuearc.org</a> , <a href="http://www.aksarbenarc.org/">www.aksarbenarc.org/</a>	Bellevue, NE
Oct. 2	<a href="#">Wichita Area Hamfest</a> (Valley Center ARC)	Wichita, KS
Oct. 2	<a href="#">Valley of the Moon Hamfest</a>	Sonoma, CA
<del>Oct. 8-9</del>	<del><a href="#">WY HamCon 2021</a> (Shy-Wy ARC)</del> <b>CANCELLED DUE TO COVID</b>	<del>Cheyenne, WY</del>
Oct. 15-17	<a href="#">Pacificon, ARRL Pacific Div. Convention</a> (Mt. Diablo ARC)	San Ramon, CA
Oct. 16	<a href="#">Socorro ARA Hamfest</a> (Socorro ARA)	Socorro, NM
Oct. 22-23	<a href="#">Hamarama Holiday 2021</a> Central OK Radio Amateurs (CORA)	Ardmore, OK
Oct. 30	<a href="#">3900 Club Hamboree</a>	Boone, IA

### PPRAA Amateur Radio Car Show

*Bryan, AF0W*

On August 14<sup>th</sup>, the Pikes Peak Radio Amateur Association put on their first ever Amateur Radio Car Show, where hams got together to show off their mobile radio installs and get ideas for their own setups.

I came across a Facebook posting with some photos of the event: <https://www.facebook.com/groups/coloradoarrl/permalink/5143843702308809/>

If this sort of event is something that would interest LARC members, please provide feedback and maybe we can put something together!

## 9-11 20-Year Anniversary Activities

An assembly of articles, stories, and messages from the November 2001 issue of QST magazine is available at [tinyurl.com/ARRL-QST-9-11](http://tinyurl.com/ARRL-QST-9-11).

Several special events will commemorate the attacks of September 11, 2001, and honor the victims.

- Through September 13, 1600 - 0200 UTC, members of the American Legion Post 10 Amateur Radio Club, Albany, Oregon, will be active as N7F. QSL with SASE to American Legion Post 10, 1215 Pacific Blvd. SE, Albany, OR 97321. [Email](#) for more information.
- Through September 13, 0000 - 0003 UTC, the Wireless Association of New York City, Staten Island, will activate WA2NYC. Frequencies: 28.450, 21.350, 14.340, and 7.238 MHz. D-STAR Reflector XLX020B will be monitored at the top of the hour QSL to Wireless Association of New York City, 233 Wolverine St., Staten Island, NY 10306. [Email](#) for more information.
- Through September 14, N3U will be on the air from Pennsylvania to remember all victims of 9/11. QSL via W3PN. Operation will be mostly on SSB and CW, with some digital activity.

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## American Legion Winlink Net

The Nelson County Post 42 of the American Legion in Bardstown, Kentucky, runs a net with a twist – it's conducted over Winlink!

The net is open to all licensed amateurs (you do not need to be a member of the Legion). It runs Tuesday through Sunday and all you have to do to check in is to send a Winlink message using the appropriate form via any mode, including HF, VHF/UHF, telnet or SMTP. You even get additional points for checking in using multiple modes of communication.

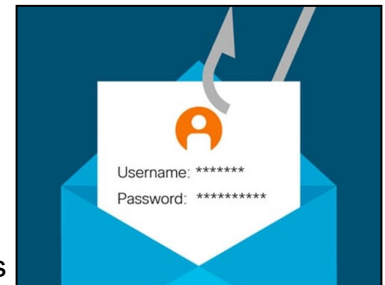
This is a good excuse for getting your station set up with Winlink, and practicing skills such as sending messages using forms and using different modes. If you don't have your radio connected to your computer, you can still participate by using telnet or SMTP (email).

Here is an example report from one of their nets: <https://legion.org/documents/legion/pdf/winlink073021.pdf>.

- For more information, see: <https://drive.google.com/file/d/1S6YB1Xf05h5oHa9QRk6Tpe5JLxwIY62J/view> and their discussion group at: <https://groups.io/g/AMLEGPst42WinlinkNet>.
- For information on Winlink, see: <https://www.winlink.org/>
- For more information on other Legion nets (including those over D-Star, DMR, and Wires-X, and EchoLink), see: <https://www.legion.org/hamradio/monthly-net-schedule>



Dan Miller (KØDND) forwarded me a link to an article titled “Microsoft explains unusual phishing campaign that uses Morse code” (<https://www.windowscentral.com/microsoft-discovered-phishing-campaign-uses-morse-code>), which talks about the use of Morse code to obfuscate (or hide) links to malware code so that anti-virus scanners would not identify a fake Excel email attachment as a threat. Phishing attacks are the practice of sending fraudulent communications that appear to come from a reputable source.



The series of periods and dashes was then decoded by the malware to access additional files over the Internet. The attackers changed their obfuscation and encryption methods over time in an attempt to avoid detection.

While this use of Morse code has nothing to do with amateur radio, it does show that Morse code is not dead yet! It would be interesting to know whether any of the people involved in authoring this malware were licensed amateurs.

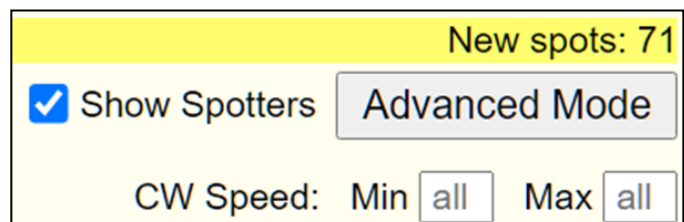
For a more detailed analysis of the attack, see: <https://www.microsoft.com/security/blog/2021/08/12/attackers-use-morse-code-other-encryption-methods-in-evasive-phishing-campaign/>

This just serves to remind us that you should never click on / open an unexpected attachment from an unknown source – no matter how “official” it sounds. Go the site yourself and type in your known address in the address bar, not the one you may get in an email or text message.

For more information on phishing and how to avoid it, see: <https://www.cisco.com/c/en/us/products/security/email-security/what-is-phishing.html>.

## New CW Feature on RBN

The Reverse Beacon Network has just added a feature to its beta website that new CW ops may find helpful - you can select spots by their CW speed, either minimum or maximum. Just enter a speed in either box and hit Enter to pass it to the website. The URL is <http://beta.reversebeacon.net/main.php>.



## Answers to The Fifth Degree — What Do YOU Know — Questions from p. 18

Exam Level	Question	Answer
Technician	TA1Ø6	C
General	G1AØ6	C
Extra	E1A12	C

## September is National Preparedness Month

September is National Preparedness Month (NPM) -- an observance to raise awareness about the importance of preparing for disasters and emergencies that could happen at any time. The 2021 theme is **“Prepare to Protect. Preparing for disasters is protecting everyone you love.”**

Emergencies and Disasters, as we all know, can happen anywhere, at any time. Here in northern Colorado, a couple of last year’s forest fires came way too close for many of our local residents. The smoke from those fires last year, and the current fires this year, is heavily affecting the quality of our air. If you were here for these events, were you prepared?

On September 13 in 2013, our area had severe flooding and many of us had to evacuate our homes and get to higher ground several times over the course of 10 days. If you were here for this event, were you prepared?

Even though we live in a relatively stable part of the nation environmentally, we still get fires, floods, tornados, and blizzards! Are you prepared for all of these events?

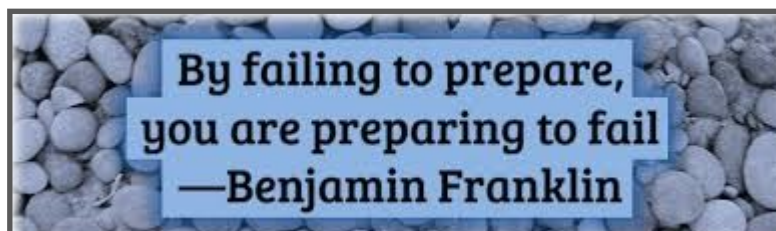
**The US, state, and local governments all have preparedness information that we can follow to get more prepared for these and other untimely events.**

The [Be Ready Longmont](#), [READYColorado](#), and [Ready.Gov](#) web sites include information that can help you prepare for future disasters and other unseen events.

**2021** National Preparedness Month  
Prepare to Protect

WEEK	Activity	Dates
<b>1</b>	<b>Make a Plan</b>	Sep 1-4
<b>2</b>	<b>Build a Kit</b>	Sep 5-11
<b>3</b>	<b>Low-Cost, No-Cost Preparedness</b>	Sep 12-18
<b>4</b>	<b>Teach Youth About Preparedness</b>	Sep 19-25

See page 33 for more information and steps for Getting Prepared.



## Solar Flares and Storms!

With the first X-class solar flare of Solar Cycle 25 occurring in July, this new solar cycle is heating up pretty quickly! As you know, solar weather can either enhance or disturb radio wave propagation

Strong flares can disrupt radio and aviation communications. The geomagnetic storms generated by coronal mass ejections can damage power grids, confuse GPS systems and damage or disrupt communication with spacecraft, including weather satellites. They can also affect emergency communications during global disasters if they occur at the same time.

The worst solar storm in history is the Carrington Event of September 1-2, 1859. The sky turned red, and the Northern Lights were seen at the equator. The Carrington Event brought down telegraph systems and caused serious disruption to the technology of the decade. If this were to happen today, it would be completely disastrous.

Read more about the Carrington Event at the following links:

[https://en.wikipedia.org/wiki/Carrington\\_Event](https://en.wikipedia.org/wiki/Carrington_Event)

<https://www.history.com/news/a-perfect-solar-superstorm-the-1859-carrington-event>

Get information about live-happening solar activity with the following link:

<https://www.spaceweatherlive.com/en/solar-activity/solar-flares.html>

See Tamitha Skov's Space Weather forecasts at:

<https://www.spaceweatherwoman.com/forecasts/>

Read about the two coronal mass ejections that headed towards Earth last month through early this month:

<https://earthsky.org/space/aurora-alert-pair-of-cmes-to-jolt-earth/>

Read space weather predictions for flares, geomagnetic storms, and auroras:

<https://www.swpc.noaa.gov/communities/space-weather-enthusiasts>

Read about how solar storms and flares could affect our world's internet:

<https://arstechnica.com/science/2021/08/a-bad-solar-storm-could-cause-an-internet-apocalypse/?comments=1>

Read about how space weather affects HF radio transmissions:

<https://www.swpc.noaa.gov/impacts/hf-radio-communications>

Read about the worst solar storms and flares in history:

<https://www.space.com/12584-worst-solar-storms-sun-flares-history.html>

Read about how the solar cycle affects different people:

<https://www.nasa.gov/feature/goddard/2020/everyday-effects-of-the-solar-cycle>

Read about how scientists are working to predict the next Carrington Event:

<https://earthsky.org/earth/predicting-solar-storms-earth/>

Also see last month's (July 2021) Splatter for more info on solar & geomagnetic info levels.

Determining the location of a transmitter has many uses – some serious, and some trivial. On the lighter side, amateurs hold hidden transmitter hunts called “fox hunts,” but similar techniques are used to locate sources of interference (RFI), tracking wildlife, navigation, and locating emergency beacons on aircraft and ships.

Al Williams posted a brief history of direction finding on Hackaday at: <https://hackaday.com/2021/08/19/wheres-that-radio-a-brief-history-of-direction-finding>.

More information on amateur radio direction finding can be found at: <http://www.homingin.com/> and <http://www.arrl.org/direction-finding>.

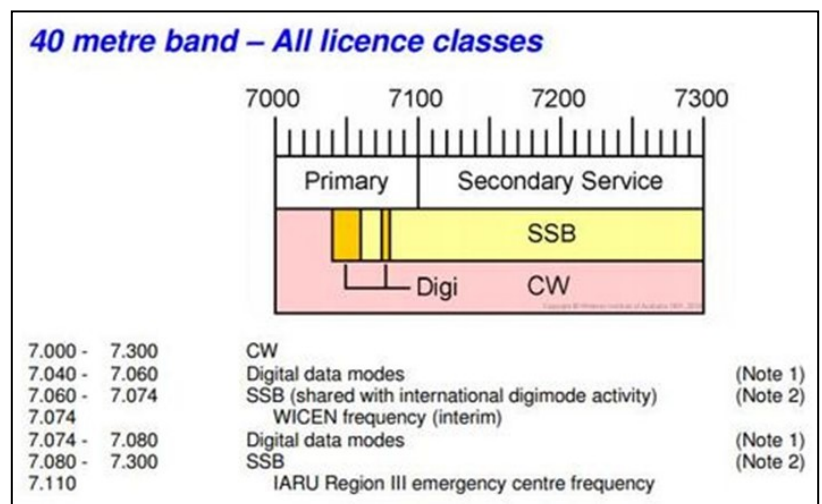
More Info:

- [https://en.wikipedia.org/wiki/Direction\\_finding](https://en.wikipedia.org/wiki/Direction_finding)
- [https://en.wikipedia.org/wiki/Radio\\_direction\\_finder](https://en.wikipedia.org/wiki/Radio_direction_finder)
- [https://en.wikipedia.org/wiki/Amateur\\_radio\\_direction\\_finding](https://en.wikipedia.org/wiki/Amateur_radio_direction_finding)



## Contacting Australia on 40m

If you are trying to contact Australia on 40m from roughly 9am until 9pm UTC, you would do well to avoid frequencies between 7.200 MHz and 7.300 MHz. Even though this frequency range is allowed for US amateurs, in Australia, it is almost fully occupied by commercial broadcast stations. Also note that hams have secondary allocation in 7.100 MHz to 7.300 MHz – see the Australian band plan.





## Upcoming RMHAM University Classes

Rocky Mountain Ham (RMHAM) is offering free classes for the rest of the year.

If you are interested in taking one (or more), you can register at: <https://www.rmham.org/cgi-bin/rmham-u/signup>.



Date & Time	Presenter(s)	Topic
Oct. 9, 8:30 am	Doug K2AD and Wayne N0POH	<b>VHF/UHF DX</b> Weak signal operations, over-the horizon communications, meteor scatter, moon bounce and other fun things you can do with a technician license. <b>Zoom</b> <a href="#">Meeting ID: 831 5399 2039</a> Passcode: 190220
Oct. 20, 7:30pm-8:30pm	Chris K0SWE	<b>Radio Programming with CHIRP</b> CHIRP is an open source program for programming radios from most manufacturers. The talk will cover setting channels as well as other radio properties using Baofeng, Kenwood and Yaesu radios as examples. <b>Zoom</b> <a href="#">Meeting ID: 851 2165 4218</a> Passcode: 022487
Nov. 13, 8:30am	Willem AC0KQ and John W0VG	<b>RouterOS 101</b> This class is an introduction to configuring Mikrotik devices assuming no prior knowledge of RouterOS used by these devices, but does assume basic IP knowledge. The class is in the form of a lab and will cover initial configuration of routers as well as microwave radios. <b>Zoom</b> <a href="#">Meeting ID: 868 1909 1200</a> Passcode: 271144
Dec. 11, 8:30 am	Mike K0NGA	<b>DMR Programming Lab</b> This class will be a hands-on lab about programming DMR Radios. Bring your DMR radio and a laptop. <b>Zoom</b> <a href="#">Meeting ID: 895 9898 7685</a> Passcode: 102015

## Forest Fire Information

The following link provides forest fire information for Colorado as well as for the rest of the nation. It tells what kind, how big, start date, and status of control for each fire, as well as a description of each one. Also see the table below the map at <https://data.coloradoan.com/fires/>. Also see the following link: <https://www.fireweatheravalanche.org/fire/state/colorado> -- the legend on this one is fantastic.

## HackaDay Remoticon

HackaDay is holding its annual Remoticon (remote virtual conference) this coming November. They are looking for proposals from presenters who could speak and/or present their technical information of all kinds. Go to <https://hackaday.com/2021/09/09/2021-hackaday-remoticon-call-for-proposals/> for more information about this conference.

The Navy has developed a non-lethal weapon aimed at stopping someone from speaking by playing their own voice back at them after delaying it by a few microseconds (<https://interestingengineering.com/a-new-navy-weapon-actually-stops-you-from-talking>). This can disorient an individual and make them unable to verbally communicate effectively.

I have personally experienced this effect myself – not at the hands of the US Navy, but our own club repeaters.

We have two repeaters, one VHF and one UHF, which are linked together. When running nets, I thought it would be helpful to hear the output of each so I could tell if I timed them out.

I have a Kenwood TM-D710A mobile radio, which I connected to an audio mixer to send the output of each “side” of the radio to a stereo Heil headset. The left side of the radio was on my left ear, and the right side on my right.

Since I use this radio for transmitting, I would only hear the opposite repeater in one ear, but this was fine for hearing when my audio would be cut off due to timeouts.

Unfortunately, it didn’t work out quite as well as I expected due to the delay introduced in our repeater system. I would hear myself talking, but it was delayed enough that it made it very difficult to keep talking!

I think I’ve started getting used to the effect and can talk through it as long as I keep the audio level low, but it is still jarring.

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## Order Your New LARC LOGO Items Today!

These are great clothes to wear for all our club-related activities, and to show your pride in our club at other ham events! They also make great gifts for our favorite hams!

Order your items today at <https://forms.gle/AgZQSMhrRtR1tLEG8>

					
Short-sleeve shirt	Long-sleeve shirt	Fleece Jacket	Soft-shell Jacket	Baseball Cap	Patches
\$55	\$60	\$65	\$70	\$25	2.5” \$4 3.5” \$6

## Are Your LARC Dues Current?

Did you know that your dues and/or annual renewals can be paid online at the club website ([w0eno.org](http://w0eno.org)) using PayPal? You don't have to have a PayPal account; you can pay with a credit card (Visa, MC, Discover, AmEx), or select 'bill me later.' You can also join or renew by mailing a check to the club (LARC, P.O. Box 86, Longmont, CO, 80502), or by giving payment to Steve Shearer (K0STE) at a club meeting when we start having them in person again. *If you aren't current on your dues, you are moved to a different mailing list and may not get club info.*

Yearly dues are only \$20 per year for an individual or for a family at the same address. You can find membership information by clicking on the Membership link on the left side of our club web page. Contact Steve at [membership@w0eno.org](mailto:membership@w0eno.org) if you need to know your current dues status.

## Calling All Business Owners, Restaurants, Services, and Retail Shops!

### Advertise with LARC in 2021!

The Splatter newsletter is published once a month. You can advertise your business with us at very reasonable prices!

Your ad will run for a one-year period (12 months) from when your first ad runs.

Get more business by offering a special promotion code for our readers, or by offering a deal on certain products — or just advertise your business!

### Donate to LARC for Monthly Drawings

When you donate products or gift cards to our club for the drawings at our monthly meetings, we will run a business-card sized ad for you or for your business in our next monthly Splatter for free!

You also will be mentioned in the next month's Splatter newsletter and in the final issue of the year as a donor to our Club for the year, as well as on our [w0eno.org](http://w0eno.org) web site. You will also get a donation receipt from our Treasurer.

If you can make a donation, please send your information to Steve Shearer at [k0ste@w0eno.org](mailto:k0ste@w0eno.org).

### PROMOTE YOUR BUSINESS WITH SPLATTER ADVERTISING

Ad size and cost – *per year.*

Business Card	2"h x 3.5"w	\$ 100
Quarter Page	4.2"h x 3.25"w	\$200
Half Page	4.25"h x 7"w	\$300
Full Page	8.5"h x 7"w	\$500

The above prices are per year – not per month. (12 months of ads)

Your advertisement will be seen by amateurs throughout Colorado, the Rocky Mountain States, and even the rest of the United States. Splatter circulation is approx. 1,500.

Send Ad and/or Contact us for more details at:

[Splatter@w0eno.org](mailto:Splatter@w0eno.org)

Checks are to be Made out to Longmont Amateur Radio Club. LARC is a 501(c)(3) corporation.

## Support Your Club!

Usually our annual April LARCFest (hamfest) is our biggest fundraiser each year for LARC. In 2020 and 2021, however, it have been cancelled due to the Covid-19 pandemic. We are trying to raise funds for the club in other ways to be able to support more activities and events for our members, support our community, and also to keep our repeaters up-to-date and add new technology.

1. Get a King Soopers or City Market card and link it to our club. Every time you shop, LARC earns a small portion donated by the grocery store! See the directions at: <https://www.kingsoopers.com/i/community/community-rewards>. Select Longmont Amateur Radio Club as your charity (organization # VW736).
2. Do all your Amazon Ordering on Amazon Smile. Doesn't cost you a cent extra! For every order you submit, Amazon sends LARC a small percentage of your sales amount. Go to [https://smile.amazon.com/gp/chpf/homepage/ref=smi\\_chpf\\_redirect?ie=UTF8&ein=84-1056239&ref=smi\\_ext\\_ch\\_84-1056239\\_cl](https://smile.amazon.com/gp/chpf/homepage/ref=smi_chpf_redirect?ie=UTF8&ein=84-1056239&ref=smi_ext_ch_84-1056239_cl)
3. Donate directly to our club on our LARC website at [https://www.paypal.com/donate/?hosted\\_button\\_id=3Y4UZGXSVC9W](https://www.paypal.com/donate/?hosted_button_id=3Y4UZGXSVC9W). You can use PayPal or a debit or credit card, and you will be sent a receipt from our club treasurer.
4. Volunteer to participate in or to lead ham-related activities for the club members. Your specific skills and knowledge will be a big help to enrich our club! You'll have a lot of fun, too!
5. Advertise your biz or skills with the Splatter. See page 27 for more details. We want your business!
6. Purchase or gift our LARC Logo Wear and LARC receives a small percentage of your sale! So far, we have a cap and shirt — more items coming soon! These are a great fundraiser for our club! Be proud to wear to ham radio events everywhere! These are purchased, embroidered, and patched by a local business owner who is also a LARC member! These make great Father's Day Gifts!  
*See them all on page 26!*



Click here to shop at AmazonSmile  
and Amazon will donate to LARC

**amazon**smile  
You shop. Amazon gives.

- Short-sleeve Shirts (\$55) embroidered with your call sign, name if desired, and our LARC Logo patch.
- Long-sleeve Shirts (\$60) embroidered with your call sign, name if desired, and our LARC Logo patch.
- Fleece Jackets (\$65) embroidered with your call sign, name if desired, and our LARC Logo patch.
- Soft-shell Jackets (\$70) embroidered with your call sign, name if desired, and our LARC Logo patch.
- Caps (\$25) emblazoned with our LARC Logo patch on the front with your call sign embroidered on the back.
- Individual Patches \$4 (2.5") and \$6 (3.5")
- See the pictures of these new items on page 26 of this Splatter.
- To order any of our LARC Logo Items, go to <https://forms.gle/AgZQSMhrRtR1tLEG8>

### Editor's Note

I welcome and thank you for any news items you submit for publication in the LARC Splatter.

Please note that all articles submitted may be edited for spelling, grammar, and length. Files in the form of DOC, DOCX, RTF, PDF, and TXT are all accepted.

If you would like a picture included, please send them in separate files, in JPG or PNG format. If you would like a caption under the picture, please specify what you would like your caption to say.

### Longmont Amateur Radio Club

LARC is organized for educational and scientific purposes and to provide public communication services to the local community and adjacent areas through the operation of Amateur Radio. The Club holds regular meetings for the business of the Club, for the presentation of papers, amateur radio topics and their discussion.

***Our September Meeting will be on Wednesday, 9/15, at 6:30 pm via Zoom. Click on:***

<https://us06web.zoom.us/j/81928642821?pwd=WXNSTjdEdHd5emZaaDRaaENQdnFWZz09>

**See p. 2 for more info.**

## Longmont Amateur Radio Club 2021 Leadership Team & Committee Chairs

Position	Name	Call Sign
President	<a href="#">Charles Poch</a>	KØITP
Vice President	<a href="#">Michael Ritchie</a>	WØKKI
Secretary	<a href="#">Pat Engstrom</a>	W1PGE
Treasurer	<a href="#">Don Lewis</a>	KEØEE
Technical Committee	<a href="#">Mark Skelton</a>	N7CTM
Membership Committee	<a href="#">Steve Shearer</a>	KØSTE
Past President	<a href="#">Jerry Schmidt</a>	NØOUW
Publicity Committee	<a href="#">Steve Haverstick</a>	KFØAGY
Planning Committee	<a href="#">Doug Altman</a>	KEØSI
Repeater Trustee	<a href="#">Bryan Gonderinger</a>	AFØW
LARCFest Committee	<a href="#">Dick Paige</a>	KEØVT
Special Events Coordinator	<a href="#">Mark Mollenauer</a>	KDØGOC
License Exam Coordinator	<a href="#">Aaron Rees</a>	AJ7R
Education Coordinator/Instructor	<a href="#">Kat Gonderinger</a>	WØUM
Education Coordinator/Instructor	<a href="#">Bryan Gonderinger</a>	AFØW
Splatter Newsletter Editor	<a href="#">Kat Gonderinger</a>	WØUM

## Please Visit LARC's Sponsors & Supporters

*(there's always room for more!)*

Spaces for entrepreneurs to set up an office, as well as meeting and conference rooms available.



**COWORKING**  
WORKING MORE SOCIALLY

350 Terry St.  
Longmont, CO. 80503

Contact us at [support@cosolve.co](mailto:support@cosolve.co) for more information



**Support  
Longmont Amateur  
Radio Club Inc.**

When you shop at [smile.amazon.com](https://smile.amazon.com),  
Amazon donates.

[Go to smile.amazon.com](https://smile.amazon.com)

**amazonsmile**

**Jim Andrews, KH6HTV**

Get your FREE ATV Handbook at

[https://  
kh6htv.files.wordpress.c  
om/2021/02/an-55a-atv-  
handbook-1.pdf](https://kh6htv.files.wordpress.com/2021/02/an-55a-atv-handbook-1.pdf)

Get the FREE newsletter at  
<https://kh6htv.com/>

**α ALPHA<sup>®</sup>  
ANTENNA**





# September Puzzle

## Fall Word Search

C U W V B F K S Q S W H A R V E S T H G  
O Y S M A N T A T O U U O G K R P M L E  
A C F D F O O T B A L L W B T Q W O Z B  
S E E Z Z A G E R Y N T U E N I B E X R  
W J P N X T B U W A A P P L E C I D E R  
E A U O A H U D C N U T U U U N C T A Q  
A P R V S A U U R K K P P Z M H R B C T  
T P L E A N N O J Y S R P C U P A G I C  
E L E M J K C A D B E F W K E U K Y M K  
R E A B U S K F Y O P L I O H Z E I Y B  
P S V E L G P H L N T Z H P S J S Q N O  
Q Q E R S I Q A W F E Y E M U W E Q J O  
J N S O M V V C N I M C O Q N R M W K T  
T B M E K I F Z B R B R Y C F K N L J S  
V Y A P N N Q K G E E A V G L U T A A O  
V N R R D G H N A B R U Q T O O N I G V  
C Y A O O P I Q O N H T X F W J Z Y P E  
L C X F E A L T K O E U W Z E S U P P B  
R D E F I D C W K O Q M Z Q R B F Z U S  
D R Q R J O V Z O Y W N C J G R K N E U



CORN  
AUTUMN  
BONFIRE  
BOOTS  
OCTOBER  
RAKE

THANKSGIVING  
HARVEST  
LEAVES  
CARNIVAL  
APPLES  
APPLE CIDER

PUMPKIN  
FOOTBALL  
SWEATER  
NOVEMBER  
SEPTEMBER  
SUNFLOWER



Copyright © Wondermom Wannabe



## Emergency and Survival Preparedness Steps to Follow

### **Week 1, Sept. 1-4: Make a Plan**

#PrepareToProtect means preparing to protect everyone you love. Start by making a plan before disasters and emergencies strike. [www.ready.gov/plan](http://www.ready.gov/plan)

- Discuss with your household or family how you will communicate if there is an emergency.
- Decide and practice your emergency plan with members of your household.

Houses, mobile homes, apartments, and high-rise buildings have different evacuation considerations. Make a plan for each: [www.ready.gov/plan-for-locations](http://www.ready.gov/plan-for-locations)

**Involve your entire family, including your children, in planning for disasters and emergencies so they are prepared, not rushed and afraid:** [www.ready.gov/plan](http://www.ready.gov/plan)

### **Week 2, Sept. 5-11: Build a Kit**

Create or update your emergency supplies with this list: [www.ready.gov/kit](http://www.ready.gov/kit)

- Make sure your emergency kit is ready to go in case you need evacuate. Include:
  - Enough food and water to last several days.
  - Medication, face masks and disinfectant for everyone in your household.
  - Pet supplies.

When building a kit, people with disabilities should consider the items they use daily, as well as life-sustaining items. [www.ready.gov/disability](http://www.ready.gov/disability)

- Have medication for at least three days in your emergency supplies.
- Check the expiration date on your emergency supplies, and replace any old items.

Get the kids involved in building their own emergency kit: [www.ready.gov/kids/build-a-kit](http://www.ready.gov/kids/build-a-kit)

Kids bored? We can help. Check out our online Ready Kids Build A Kit game: [www.ready.gov/kids/games](http://www.ready.gov/kids/games).

**Include your child's favorite stuffed animals, board games, books or music in their emergency kit to comfort them in a disaster.** >> *continued* >>

## Emergency and Survival Preparedness *(continued)*

### **Week 3, Sept. 12-18: Low-Cost, No-Cost Preparedness**

Download or order your free preparedness products to help your family plan and prepare for the next emergency. [www.ready.gov/publications](http://www.ready.gov/publications)

- Drills aren't just for your toolbox. Practice emergency drills with your family regularly.

Emergencies can happen anytime, and less than half of American families have a communication plan. Plan ahead: [www.ready.gov/kids/make-a-plan](http://www.ready.gov/kids/make-a-plan)

Make preparing fun for kids! Go on a scavenger hunt around your house for items you already have to add to your disaster supply kit. Follow this list: [www.ready.gov/kit](http://www.ready.gov/kit) and see how many items you can check off!

**Know what disasters and hazards could affect your area, how to get emergency alerts, and where you would go if you and your family need to evacuate. Visit: [www.ready.gov/be-informed](http://www.ready.gov/be-informed).**

### **Week 4, Sept. 19-25: Teach Youth about Preparedness**

- Review your family emergency communications plan with kids at your next household meeting.

Need tips for talking to your kids about natural disasters? Visit [www.ready.gov/kids/parents](http://www.ready.gov/kids/parents)

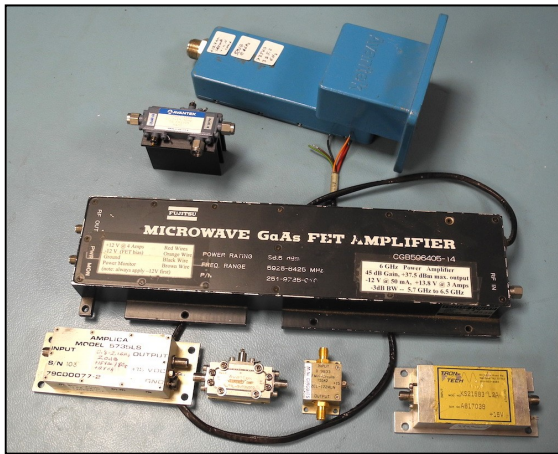
- Many Americans aren't familiar with their child's school evacuation & reunification plans. Are you?

Kids can become Disaster Masters with this @Readygov preparedness game: [www.ready.gov/kids/games](http://www.ready.gov/kids/games)

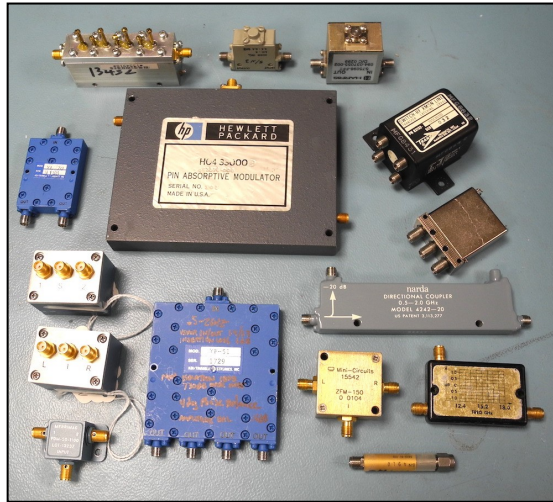
Get involved in Teen CERT. Find opportunities by learning about Teen CERT online: [www.ready.gov/kids/teen-cert](http://www.ready.gov/kids/teen-cert)

Your community needs YOU! Find opportunities to help your community here: [www.ready.gov/youth-preparedness](http://www.ready.gov/youth-preparedness)

You can get worksheets for free when you order from FEMA at <https://orders.gpo.gov/icpd/ICPD.aspx>.



Amplifiers: 1 to 18GHz- up to 5 Watts



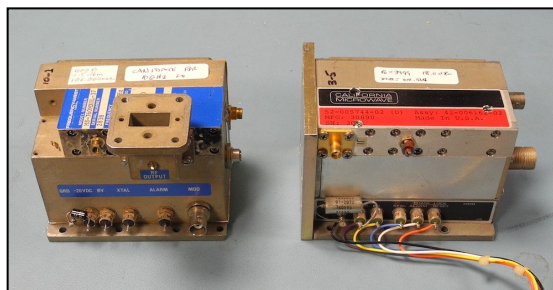
SMA microwave parts: all types

**FREE MICROWAVE GEAR:** Are you a Boulder County, Colorado area ham ? Have you thought about getting into microwave amateur radio ? Would you like some microwave gear to get you started ? If so, then we have an offer you can't afford to ignore. A local microwave ham has donated a whole lot of microwave goodies to be distributed FREE to local area hams interested in microwaves. The equipment includes lots of SMA microwave components, antennas, plus waveguide components in the following sizes: WR-62, WR-75, WR-90, WR-112, WR-137, WR-159, WR-187, & WR-229. WR-229 is for 3.3 - 4.9GHz, while WR-62 is for 12.4 - 18GHz. Also included are some wired equipment, such as Frequency-West brick local oscillators, amplifiers, down-converters, etc. Complete inventory lists have been prepared to itemize all of the multitude of stuff available.

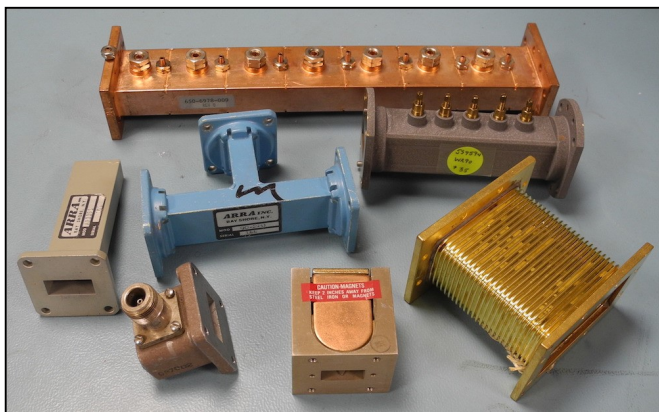
If interested, contact Jim at [kh6htv@arri.net](mailto:kh6htv@arri.net). Jim will then e-mail you copies of the inventory lists and give you details on where to pick it up. No shipping. You must pick up the items you want in person.



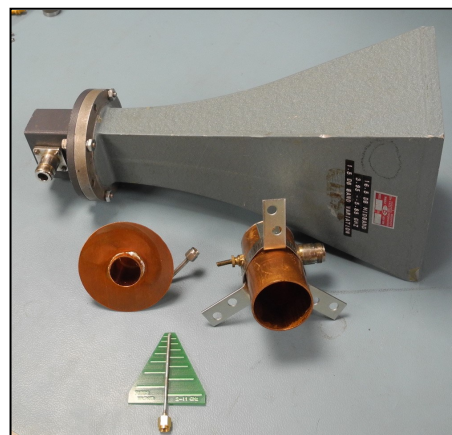
10 Watt X & S band Amplifiers



Microwave Local Oscillators: 1 - 18 GHz



Waveguide Components: 3 to 47 GHz



Microwave Antennas

**Longmont Amateur Radio Club**

P.O. Box 86

Longmont, CO 80502-0086

w0eno.org

**Membership Application**

Tax Deductible Donation to LARC: \$20 per year [ ] New Member: [ ] Renewing Member Payable via PayPal with [sent application](#).

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_ Birth Year: \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_

State: \_\_\_\_\_ Zip: \_\_\_\_\_ - \_\_\_\_\_ Call Sign: \_\_\_\_\_ Class: \_\_\_\_\_

E-mail: \_\_\_\_\_ (needed for correspondence)

H-Phone \_\_\_\_\_ C-Phone: \_\_\_\_\_ B-Phone: \_\_\_\_\_

I am a member of: [ ] ARRL [ ] BCARES [ ] VE

**DISCLAIMER AND WAIVER:** I apply for membership in LARC. I understand that some LARC activities are potentially hazardous. If I am injured or killed while participating in a LARC activity, I and my heirs agree to hold harmless LARC and its officers, directors, and members.

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

**OTHER LICENSED FAMILY MEMBERS (Same Address) (No extra cost)**

Name: \_\_\_\_\_ Call: \_\_\_\_\_ Signature: \_\_\_\_\_

Name: \_\_\_\_\_ Call: \_\_\_\_\_ Signature: \_\_\_\_\_

Name: \_\_\_\_\_ Call: \_\_\_\_\_ Signature: \_\_\_\_\_

Note: A tax deductible receipt will be provided.

**THE CHECKED MEETING TOPICS ARE OF INTEREST TO ME**

Training Class for [ ] Technician [ ] General [ ] Extra [ ] Volunteer Examiner

Band: [ ] HF [ ] VHF [ ] 222 [ ] UHF [ ] 900MHz [ ] Other \_\_\_\_\_

Mode: [ ] CW [ ] SSB [ ] AM [ ] FM [ ] ATV [ ] Other \_\_\_\_\_

Digital: [ ] SSTV [ ] PSK31 [ ] MFSK [ ] PACKET [ ] FT8 [ ] APRS [ ] Other \_\_\_\_\_

Electronics: [ ] Components [ ] Circuit Analysis [ ] Amplifiers [ ] Other \_\_\_\_\_

Other Topics: [ ] Antennas [ ] Propagation [ ] Satellites [ ] Kit Building [ ] Fox Hunts [ ] Soldering

[ ] DSP [ ] DX [ ] ARES [ ] Contests [ ] QRP [ ] HamFests [ ] Emergency Preparedness

[ ] Community Service Events [ ] Other \_\_\_\_\_

[ ] Other \_\_\_\_\_ [ ] Other \_\_\_\_\_



**ARRL** The national association for  
**AMATEUR RADIO®**

# Membership Application

Application for use by ARRL Affiliated Clubs

## Contact Information

- I am a brand new member or my membership has been lapsed for 2 or more years. My club will keep \$15 of my dues.  
 I am renewing (includes lapsed members of less than 2 years). My club will keep \$2.00 of my dues.

Name \_\_\_\_\_ Call Sign \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

Email \_\_\_\_\_ Phone \_\_\_\_\_

Date of Birth \_\_\_\_/\_\_\_\_/\_\_\_\_ **Get an annual birthday coupon (US only)**

My Family Member is Joining or Renewing: (\$10 per member)

Name \_\_\_\_\_ Call Sign \_\_\_\_\_

Name \_\_\_\_\_ Call Sign \_\_\_\_\_

## Your Annual Membership Dues – Circle Your Choice/s.

	1 Year	2 Years	3 Years	
US	\$49	\$95	\$140	Monthly QST or On the Air via standard mail for US members
Youth	\$25			Must be 21 years old or younger AND the oldest licensed Radio Amateur in the household
Canada	\$62	\$120	\$177	Monthly QST via standard mail for Canadian members
International	\$76	\$147	\$217	Monthly QST via standard mail for International members
International/Canada – no print magazine	\$49	\$95	\$140	Digital magazines
Family	\$10	\$20	\$30	Must reside with primary member and have corresponding membership dates; no extra copies of magazine
Blind	\$10	\$20	\$30	No delivery; all other member benefits apply. Requires a one time signed and dated statement of Legal Blindness

Additional membership options available online at [www.arrl.org/join](http://www.arrl.org/join). US Memberships include \$21 per year for magazine subscriptions. Dues are subject to change without notice and are non-refundable. Memberships may not be combined with any other promotion or special offer.

- I do not want my name and address made available for non-ARRL related mailings.

## Choose your print magazine:

- QST**, ARRL's membership journal for active radio amateurs (12 monthly issues)  
 **On the Air – New!** Beginner-to-intermediate-level help and advice (6 bimonthly issues)

All members can access the digital edition of both magazines

## Payment Information

Please charge my ARRL dues less my club's commission. I have paid the commission directly to my club.

\$ \_\_\_\_\_ Total Charge to:  Visa  MasterCard  Amex  Discover  Check Enclosed

Card Number \_\_\_\_\_ Expiration Date \_\_\_\_\_

Card Holder's Signature \_\_\_\_\_

ARRL ■ 225 Main Street ■ Newington, CT 06111-1400 ■ USA  
Toll free (US) 1-888-277-5289 or 860-594-0200 ■ [www.arrl.org/join](http://www.arrl.org/join)