



Our October General Meeting will be held this Wednesday, October 20th, via Zoom, at 6:30 pm.

**Members: We will be electing officers and voting on club bylaws at the beginning of this meeting at 7pm; please attend so we have a quorum!**

Our guest speaker this month will be Jim Andrews, KH6HTV, who will speak about his experience with amateur radio television (ATV).

For more meeting info, please see page 2!

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

**Wed, Oct. 20th, 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 October General Membership Meeting

**Our General Meeting is this Wednesday, October 20th, at 6:30 pm.**

*We always meet the third Wednesday of each month, except in December*

The presenter for this meeting is Jim Andrews (KH6HTV). He will be presenting on his experiences with amateur television. You can check out his web site at <http://www.kh6htv.com>.

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 October Zoom Meeting, click on this link:

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

**Meeting ID: 819 2864 2821**

**Passcode: 787437**

Find your local number: <https://us06web.zoom.us/j/kcsybGuZpe>.

If you have to miss this meeting, you can see our meetings at <https://w0eno.org/meeting-presentations/>.



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## Ham Jargon

### Charge Controller

Electrical device that controls or limits the rate of electric current through a battery, to prevent overcharging, and can protect against overvoltage, which can reduce battery performance and lifespan; meant primarily for solar applications with amateur radio.

## LARC's 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 Presentations. Subscribe to our channel so you don't miss out!

If you miss a meeting or you 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!* Last quarter, they sent LARC \$38 as their donation from our members' shopping. Every last dollar helps! *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

[www.reversebeacon.net](http://www.reversebeacon.net)

The amateur radio Reverse Beacon Network (RBN) offers the opportunity to see where in the world your signal is being heard. The RBN listens for CQs on CW, RTTY, and PSK-31, and will tell you which reverse beacon listener heard your signal.

This is a fascinating way to see how your station works.

"The scariest thing about October is that Christmas decorations are already starting to appear in stores. Merry Halloween and Happy Howl-days!"  
– *Anonymous*

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. So, with that said, we are virtual for all LARC meetings until further notice.

We have several upcoming events:

Parades and Turkey Trot — Volunteers are needed. Contact Doug Altman (KEØSI) for details.

LARC has a new website! Our [w0eno.org](http://w0eno.org) has gotten a facelift. We are still working on it, so please be patient! Keep an eye on our website and emails for current information.

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! We want You!

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!

Who else do you know that deserves recognition? Let me know who you recommend!

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

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

Thank you and 73,  
Charles Poch - KØITP  
LARC President





### Take our Poll!

Please take LARC's quick and fun **October 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/25833317>

#### About LARC Logo Apparel, I: (select all that apply)

- Have the patch(es)
- Have the baseball cap
- Have the shirt
- Have the fleece jacket
- Have the rain-resistant jacket
- Plan to purchase items
- Think the price is right
- Think the price too low
- Think the price is too high
- Will buy (or bought) for myself
- Will buy (or bought) as gift(s)
- Received as gift(s)
- Like them personalized with my name / callsign
- Don't care if they have my name / callsign
- Will wear to ham radio events
- Want to see the actual items before I order
- Didn't know that LARC has logo items
- Want other items to order as well (put in comments)
- Have other suggestions (leave in comments)

Vote View

## 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.*

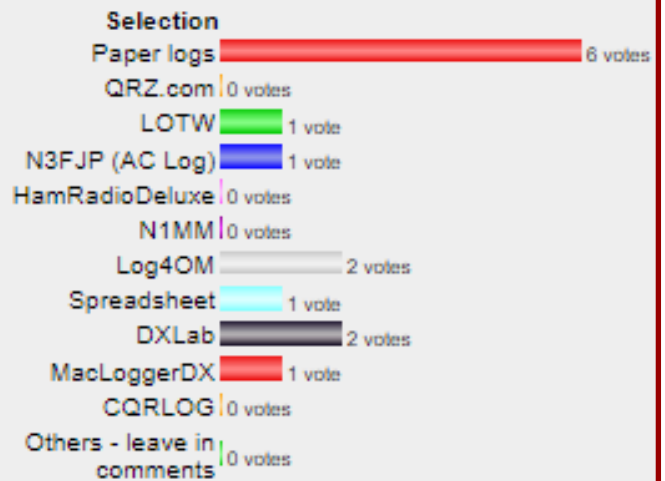
**STAY CONNECTED TO YOUR FELLOW HAMS!  
GET ON OUR NETS!**



**Sept. Poll Results — Thanks for voting!**

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

#### How do you log your contacts?



10 voters

## TAKE OUR OCTOBER POLL!

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

<https://vote.pollcode.com/25833317>

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
10/17	10/23	Shenandoah National Park Special Event <a href="https://www.albemarleradio.org">https://www.albemarleradio.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>
10/21	10/31	Pensacola Interstate Fair <a href="http://www.rrpahq.org">www.rrpahq.org</a>
10/22	10/24	100th Anniversary of the 1921 Hurricane to hit Tampa Bay <a href="http://w8rd.net/hurricane">w8rd.net/hurricane</a>
10/22	10/24	Mickey Mantle Day <a href="http://www.qrz.com/db/wx5mc">www.qrz.com/db/wx5mc</a>
10/24	10/26	Telephone Pioneers QSO Party <a href="http://www.tpqso.com">http://www.tpqso.com</a>
10/29	10/29	Zombie Shuffle <a href="http://www.zianet.com/grp/">http://www.zianet.com/grp/</a>
10/30	10/31	Remembering the Edmund Fitzgerald <a href="http://radioham.org">radioham.org</a>
10/30	10/31	CQ Worldwide DXCC Contest, SSB <a href="http://www.cqww.com/rules.htm">http://www.cqww.com/rules.htm</a>
11/01	11/15	46th Anniv. Sinking of the SS Edmund Fitzgerald <a href="http://livoniaarc.com">livoniaarc.com</a>
11/01	11/15	Veterans Day 2021 <a href="http://www.qrz.com/db/n5vet">www.qrz.com/db/n5vet</a>
11/05	11/06	Special Event 13th Annual Veteran Honor Guard Vigil <a href="http://www.ottawaalpost33.com">www.ottawaalpost33.com</a>
11/06	11/06	Veterans Day Salute to the USO <a href="https://www.qrz.com/db/K5U">https://www.qrz.com/db/K5U</a>
11/10	11/20	158th Anniv. Of Lincoln's Gettysburg Address <a href="https://www.qrz.com/db/w1g">https://www.qrz.com/db/w1g</a>
11/12	11/13	USS Cobia WWII Submarine Celebrating Veterans Day <a href="http://www.qrz.com/db/NB9QV">www.qrz.com/db/NB9QV</a>
11/13	11/13	102nd Anniversary of Armistice <a href="https://www.theworldwar.org/amateurradio">https://www.theworldwar.org/amateurradio</a>
11/13	11/13	USS Midway Museum Ship Special Event <a href="http://www.qrz.com/db/ni6iw">www.qrz.com/db/ni6iw</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, KØITP  
Vice President: Michael Ritchie, WØKKI  
Secretary: Pat Engstrom, W1PGE  
Treasurer: Don Lewis, KEØEE

### ADDITIONAL VOLUNTEERS:

Membership: Steve Shearer, KØSTE  
Technical: Mark Skelton, N7CTM and  
Bryan Gonderinger, AFØW  
Publicity: Steve Haverstick, KFØAGY  
Splatter Editor: Kat Gonderinger, WØUM  
Planning/Special Events: Doug Altman,  
KEØSI & Mark Mollenauer, KDØGOC  
BCARES Representative: Jerry Schmidt,  
NØOUW  
Repeater Trustee: Bryan, AFØW  
Education: Kat, WØUM & Bryan, AFØW  
LARCfest Chair: Dick Paige, KEØVT  
VE Team Leads: Aaron, AJ7R & Kat, WØUM

### 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, KØITP](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::

WØENO-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, KEØSI
- Bryan Gonderinger, AFØW
- Ed Mohrman, WA7EM
- Chuck Poch, KØITP
- Steve Shearer, KØSTE



## 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, WØUM, 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 up! 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 Exams* are given on the third Sunday of the odd-numbered months.

### September VE Exam Session Results

Our LARC Patriot VE Team held an Exam Session on Sunday, September 19th, led by Kat (W0UM) and Bryan (AF0W) Gonderinger. Also assisting with this Exam Session were Charles Poch (K0ITP), Mike Stember (AE0MS), David Casem (AD0UF), and Steve O'Loughlin (WB0LT). Thank you to our volunteer examiners for your service! We couldn't have done it without you!

At this session, 11 candidates were tested, which resulted in 6 new Technicians, 2 new Generals who passed Technician also, and 1 new Amateur Extra. There were a total of 12 passed exams. Congratulations to everyone who passed their exams!



License	#
Technician	6
General	3
Extra	1
<b>Total</b>	<b>10</b>

### NEXT Exam Session this SATURDAY, October 23rd @ 10 am

Our next VE Exam will be with the LARC ARRL VE Team led by Aaron Rees (AJ7R) on Saturday, October 23rd, at the Terry Street Professional Building at 350 Terry St., Longmont, 80501, *upstairs in the Onyx Room*. This exam session fee is \$15, to be made out to the ARRL. This is an in-person exam.



Please use the Contact Form mentioned on the LARC Licensing / Testing page of our web site to let us know you're coming! Walk-ins are also allowed, and will be seated as seats become available.

### Upcoming VE Exam Schedule

Date	Day	Time	Exam Session Info	Exam Options
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!

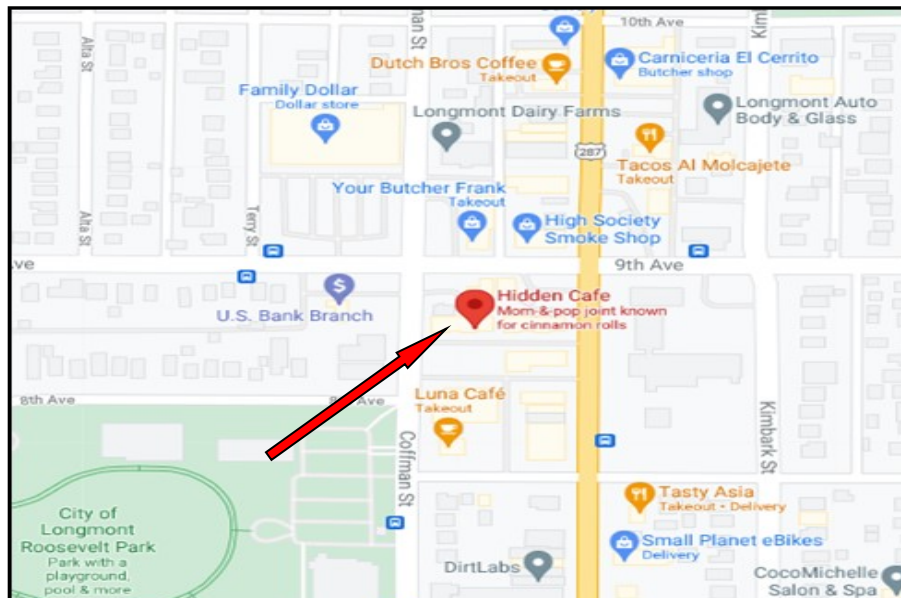
**Saturday morning breakfasts meet at 8:00 am every Saturday.**

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.



## ARRL Foundation Scholarship Program Open November 1

The ARRL Foundation Scholarship Program plans to provide more than 100 scholarships ranging from \$500 to \$25,000 in 2022.



Applicants must be active, FCC-licensed amateur radio operators (a quick check shows that ARRL membership is typically not required for eligibility), and must submit a completed electronic online application. There are many individual scholarships, including the ARRL Rocky Mountain Division Scholarship, and the ARRL General Fund Scholarships.

For more information, including specific scholarships and eligibility requirements, go to <http://www.arrl.org/scholarship-program>.

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

LARC Newest Members — September		
Call	First Name	Last Name
K1BCD	Bryan	Dickinson
KFØGSA	Jason	Ornstein
	Ken	Gottfried
KFØGRY	Rich	Harman
KFØGSB	Dominic	Ortega

The September General Meeting was held on Wednesday, Sept. 15th, 2021, via Zoom with a total of 40 attendees.

The September General meeting is normally when the membership votes on accepting any changes to the LARC Bylaws and to elect officers. Per the bylaws, we must have 20% of members in attendance to be able to have this voting take place. This quorum wasn't met, so the voting couldn't take place, and will hopefully take place at our October meeting on Wednesday, 10/20. Members and non-members alike came and went during the meeting.

Ned Stearns (AA7A) gave the evening presentation on a DXpedition on which he participated in 2016. The expedition began in Port Stanley, Falkland Island, where they got on the boat to sail to the Sandwich Islands, where they set up their radios for 8 days. They then went to South Georgia Island for another 8 days. It was an inspiring presentation — the logistics, hazards, and weather on these remote islands was amazing. His presentation was enjoyed by all.

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 upcoming club meetings, and to start hybrid in-person/Zoom meetings. Watch for an email and check our website for updates.

Did you miss out on the General meeting? You can go to the Meeting Presentations link on our web site at <https://w0eno.org/meeting-presentations/> to watch previous meetings.

A door prize was drawn based on the attendance after the meeting was over. Ed (WA7EM) was drawn as the winner and selected the \$10 Starbucks gift card as his prize.

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 the 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 October 20th. Any questions or issues, feel free to contact me.

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

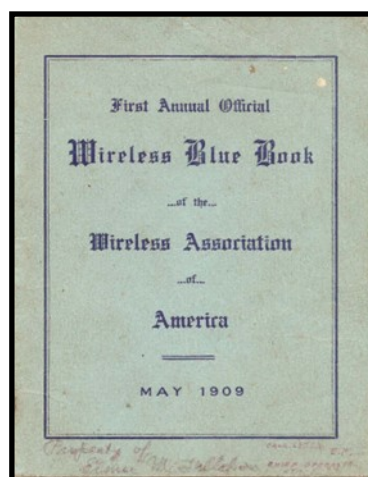
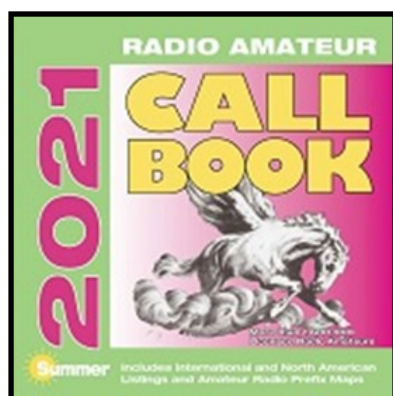


[membership@w0eno.org](mailto:membership@w0eno.org)  
 (303) 915-9942

## How to Look Up Old Call Signs

If you have ever wanted to know some old Amateur Radio history, including looking up old call signs, you can go to <http://leehite.org/callbooks/>, for information that begins in 1906 through 1996. You can also find information for post-1996 at <https://archive.org/details/callbook?&sort=-week&page=2>. The most-recent callbook published is the 2021 Summer Call Book (on CD), which you can purchase at <https://www.arrl.org/shop/Radio-Amateur-Callbook-CD-ROM-Summer-2021>. If you are searching for an old call sign, you can also go to <http://w0is.com/oldcallsigns/oldcalls.html> for more information on how to conduct your search.

You can click on the pictures below to see information about each one.



## Ham Radio Basics

HamRadioSchool.com has put together a page of links to various articles on their site that provide information about operations, equipment, and other fundamentals of ham radio. Articles include "Five Common Mistakes New Hams Make," "Ten Uses for a Multimeter," and "Practical Signal Reports."

Check them all out at: [https://hamradioschool.com/category/current\\_articles/the\\_basics/](https://hamradioschool.com/category/current_articles/the_basics/).



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 and help with 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
10/30 *	Sat	Halloween Parade	Downtown Longmont (volunteers needed!)	Doug, KE0SI
11/13 *	Sat	Turkey Trot Foot Race	Altona School, Longmont (volunteers needed!)	Doug, KE0SI
12/11 *	Sat	Parade of Lights	Downtown Longmont (volunteers needed!)	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.

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## CQ World Wide DX Contest

The CQ World Wide DX Contest is the largest Amateur Radio competition in the world. Over 35,000 participants will be on the airwaves on the last weekend of October for SSB and November for CW. Their goal is to make as many contacts as possible with as many DXCC entities and CQ Zones as they can.

The logs are to be submitted in Cabrillo format via an upload page. Everyone who participates can print up their own online certificate suitable for framing once your call is in the database (after uploading your log). You can also get your logs checked with an email link being sent to you.

### CQ WW Contest Dates

SSB: October 30 - 31, 2021

CW: November 27 - 28, 2021

Starts: 0000 UTC Saturday  
Ends: 2359 UTC Sunday

Everyone is encouraged to participate! For more information and to see all the categories in which you can enter, go to [cqww.com](http://cqww.com).



One question many new amateurs have is what type of coax they should purchase. Coax can be used in many different locations in your amateur station, from short runs between pieces of equipment to longer runs out to antennas. As with many things, there are a number of variables to consider, such as use, location, loss, and cost.

Signal loss (also called attenuation) in coaxial cable is dependent on the frequency of the signal. In general, as the frequency rises, so does the loss for a given cable.

Harold Melton, KV5R, has a rather extensive web site at <https://kv5r.com/> that covers a wide variety of topics, including amateur radio, microscopy, web development, and soap making, but for this topic, see his Coax Loss Calculator at: <https://kv5r.com/ham-radio/coax-loss-calculator/>.

The page starts off with some background and a list of different coax types and their uses. At the bottom are two forms where you can enter characteristics of your system and it will calculate various loss factors.

Note that the loss per 100 feet must be accurate for the frequency you are using. For example, a common 50 ohm coax type is *Belden* 9258 RG-8X. Plugging this cable type into the first form and using 100 feet and various frequencies results in the following:

Frequency	Loss per 100 ft.	Power Loss
7 MHz (HF: 40 meters)	0.752 dB	16%
144.6 MHz (VHF: 2m)	4.062 dB	61%
435 MHz (UHF: 70cm)	8.099 dB	85%

Using the second form, the effective radiated power (ERP) of a coax feedline and antenna can be calculated. For an example, a 50 foot run of RG-8X driven by a 100 watt transmitter to a quarter-wave ground plane antenna (-3 dBd gain) was used to generate the following:

Frequency	Loss	Power Out	Power Lost	ERP
7 MHz (HF: 40 meters)	0.4 dB	91.7 W	8%	46 W
144.6 MHz (VHF: 2m)	2 dB	62.6 W	37%	31.4 W
435 MHz (UHF: 70cm)	4 dB	39.4 W	61%	19.7 W

This shows that RG-8X would not be an ideal choice for a 50-foot run at UHF frequencies!

>> *continued* >>

What if *Times* LMR-600 was used instead for the 50-foot run at UHF frequencies?

Frequency	Loss per 100 ft.	Power Loss
435 MHz (UHF: 70cm)	1.69 dB	32%

Frequency	Loss	Power Out	Power Lost	ERP
435 MHz (UHF: 70cm)	0.8 dB	82.3 W	18%	41.3 W

Much better, so why doesn't everyone just use LMR-600 everywhere? For starters, it is relatively large and stiff, making it difficult to use for short runs in the shack, but the biggest reason is probably cost.

A quick web search found *Belden* 9258 priced at \$1.11/ft, while *Times* LMR-600 was \$1.99/ft, resulting in a total 50-foot feedline cost of \$55.50 for RG-8X and \$99.50 for LMR-600. Connectors are also more expensive for LMR-600.

I've heard it mentioned somewhere that you should spend something like 20% of your amateur radio budget on your radio, and the other 80% on your antenna system (which includes the coax). This was likely in the context of a large contesting station which would have a variety of big antennas on tall towers, but it does point out that you can lose a lot of your radiated power by bad feedline and bad antenna selection.

For most of us, funds are not unlimited, nor is space for huge antennas, so compromises must be made. Hopefully, the above tools will help you figure out how your selection of coax will impact the power output of your station.

There are, of course, other factors involved in selecting coax, such as flexibility, UV protection, weight, and the ability to be buried, to name a few. This article focuses solely on the loss experienced in the coax.

**Line Loss Calculator:**

Note: Set Line Length 100 here to use the ERP Calc. Put actual line length in the ERP Calc.

Parameters:			Results:		
Line Type:	Times LMR-600	Matched Loss:	1.69	dB	
Line Length:	100	SWR Loss:	0	dB	
Frequency:	435 MHz	Total Loss:	1.69	dB	
Load SWR:	1 :1	Power Out:	67.757	Watts	
Power In:	100 Watts	Power Loss:	32	%	
<input type="button" value="Calculate"/> before using ERP Calc.					

**Effective Radiated Power Calculator:**

Parameters:			Results:		
Loss Per 100' at Op Freq:	1.69	dB	Calculated Loss:	0.8	dB
Actual Line Length:	50	Feet	Power Out:	82.3	Watts
Power In:	100	Watts	Power Loss:	18	%
Antenna Gain:	-3	dBd (λ/2 dipole=0dB)	ERP:	41.3	Watts
<input type="button" value="Calculate"/>					

If you'd like a change from FT8/FT4, give JS8Call a try! It allows you to send keyboard-to-keyboard messages as well as providing additional messaging and network services.

In addition to simply chatting with other operators, you can use this functionality to play games such as chess. I came across a post on Reddit that talks about this at: [https://www.reddit.com/r/amateurradio/comments/q0jbal/playing\\_some\\_chess\\_over\\_js8call/](https://www.reddit.com/r/amateurradio/comments/q0jbal/playing_some_chess_over_js8call/)

There are many game options that would work over this medium such as checkers, Battleship, or good old Tic-Tac-Toe. Obviously, you're not going to be able to play a first-person shooter or other fast action game, but something that could be handled via short messages like Bingo would be great (although you'd have to have some way of distributing the cards beforehand).

You wouldn't even have to use JS8Call – APRS messaging or even packet radio would work, and you could certainly game over voice on SSB, simplex FM, EchoLink, or even over Morse code. If you want some time to think between moves, you could even conduct such a game via NTS radiograms or Winlink messages.

Many repeaters (including our own!) are sitting idle most of the time – games such as these are one way we could get some use out of them, and have fun in the process!

So what ideas can you come up with?

More Info:

- JS8Call: <http://js8call.com/>
- Checkers and Chess over packet radio: <http://uz7.ho.ua/packetradio.htm>
- Chess over CW: <https://www.kb6nu.com/play-chess-cw/>
- How to Play the Battleship Board Game: <https://www.thesprucecrafts.com/the-basic-rules-of-battleship-411069>
- Richfield Amateur Radio Club Radio Fun page (Battleship and Bingo): <http://richfieldradio.com/radio-fun/>
- Battleship over CW: <https://www.sarcnet.org/morse-code-battleships-game.html>



Chess in the Radio Club OM3VSZ

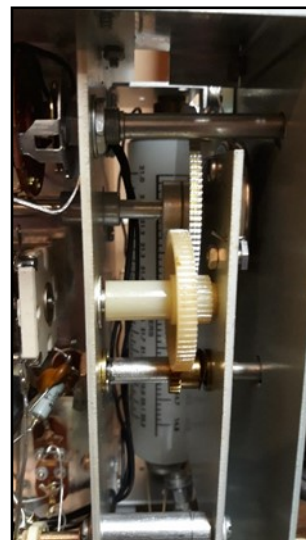
## Bringing My “New” 1965 Era Transceiver Back To Life

*Ed, WA7EM*

A ham posted on the NCARC Facebook Group that he had to do some very serious shack downsizing and would give away some equipment “to a good home.” One of those pieces of equipment was a Heathkit HW16. I had nothing to lose, so I drove to Ft Collins and picked it up.

Heathkit was in business into the 1980s selling kits of parts for ham radio, audio equipment and a few other things. This was the era of big discrete resistors, capacitors, vacuum tubes (“hollow state” contrasted to today’s “solid state”), power transformers, and big heavy steel cabinets. Heathkit went out of business as sub-miniature integrated circuit products dominated the market. Working on old Heathkit gear is easier than most because you have a detailed assembly manual with lots of drawings and there is a “cult following” of this equipment and many experts on groups .io and other internet sites that may be able to help.

The HW16 was an early transceiver. In the early days, most hams had a receiver and a transmitter and a coax switch that moved the antenna from one to the other as you went from tx to rx. Modern transceivers share a lot of the filter networks and audio stages between tx and rx. The HW16 didn’t – it was pretty much a transmitter and a receiver in one chassis. For more info see <https://wd8rif.com/hw16.htm>. So, here is my new “shack warmer.”



*>> continued >>*



So, what jumps out at you when you take the skins off includes 1) mechanically complex ways to move dial indicators as you change frequency; 2) big multi-ganged wafer switches to switch in and out 4 sets of band specific filters into 3 stages of the transmitter and 1 of the receiver; 3) big power supply (with lethal voltages – 700 volts on the final tube plate and 130 volts on the CW key contacts!)

Almost all modern equipment has a microprocessor that drives the frequency display (and lots of other display stuff), switches in and out various filters by turning on and off transistors with everything running off of low voltage. Transistors are cheap and small and they use a lot of them to turn things on and off.

When I was in college, the professors wanted to equip us for the future instead of the past. So, the “1 minute lecture” on vacuum tubes was “it works the same as a FET (Field Effect Transistor). That’s generally true – FETs are used in the final amplifier of most higher power radios. FET and tube amplification is controlled by the voltage of the grid (tube) or gate (FET) as compared to conventional transistor that is controlled by the current flow from the base to emitter.

So far, I have cleaned up some dust, reviewed all assembly per the assembly manual. Slowly powered it up with a “Dim Bulb” tester <https://antiqueradio.org/dimbulb.htm> and traced many of the signals thru the transmitter. It is basically working, but there is more to be done. Then, 1st QSO. More in next month’s article...



## Heathkit: A Guide to Amateur Radio Products

The new third edition of Chuck Penson’s *Heathkit: A Guide to the Amateur Radio Products* has been published. This edition is deemed to be the best of the series by David Ellison, W7UUU. According to him, “this book contains photos, circuit details, assembly notes, full specs, and everything you ever wanted to know about the Heathkit radio products.”

You can purchase this book at the author’s website at <https://wa7zze.com/>.

<https://forums.qrz.com/index.php?threads/chuck-pensons-third-edition-of-heathkit-a-guide-to-the-amateur-radio-products-is-out.780212/>. Also look up the QRZ biography site of David Ellison, W7UUU – he has a fantastic story and ham shack!

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 T5A01

Electrical current is measured in which of the following units?

- A. Volts
- B. Watts
- C. Ohms
- D. Amperes

### General Exam Review -- Question G5A01

What is impedance?

- A. The electric charge stored by a capacitor
- B. The inverse of resistance
- C. The opposition to the flow of current in an AC circuit
- D. The force of repulsion between two similar electric fields

### Extra Exam Review -- Question E5A01

What can cause the voltage across in a series RLC circuit to be higher than the voltage applied to the entire circuit?

- A. Resonance
- B. Capacitance
- C. Conductance
- D. Resistance

## Upcoming Hamfests and Conventions

You can use this to plan some of your fall travel.

Some conventions and hamfests may have been canceled or postponed due to the Covid pandemic. Check the event calendar on the ARRL website calendar to be sure it's still on.

Date(s)	Description	Location
Oct. 30	3900 Club Hamboree <a href="http://www.3900club.com">http://www.3900club.com</a>	Boone, IA
Nov. 05-06	Enid ARC Hamfest <a href="https://enidarc.org/enidhamfest">https://enidarc.org/enidhamfest</a>	Enid, OK
Nov. 06	Hark Hamfest 2021 <a href="http://harkaz.org">http://harkaz.org</a>	Congress, AZ
Nov. 13	Wisconsin ARES/RACES Online Conf. <a href="http://www.wi-aresraces.org">www.wi-aresraces.org</a>	Online



## History of Ham Radio Licensing Fees

Relax - the FCC has yet to announce the date for implementation of the \$35 licensing fee. James Miccolis, N2EY, authored a post on QRZ.com titled "A Short History of US Amateur Radio Licenses" at: <https://forums.qrz.com/index.php?threads/a-short-history-of-us-amateur-radio-license-fees.722442/>.

His summary goes all the way back to fee proposals from 1933. He states that in all cases, the ARRL strongly opposed the fees, but was not always successful in preventing them from being enacted.

Note that this fee is in addition to any testing fees required by the various VECs (Volunteer Exam Coordinators). For example, the ARRL charges \$15, while Laurel provides exams for free. In both cases, candidates will also have to pay \$35 to the FCC.

The FCC has stated that the license fee will likely be added sometime in 2022, so there's still time to get your upgrade or vanity call sign for free!



Want to take your FT8 operating to the next level? Take a look at the FT8 Operating Guide by Gary Hinson, ZL2IFB, from New Zealand. There are over 80 pages of FT8 tips, tricks, and suggestions to make FT8 better on the HF bands.

It can be found at: [https://www.g4ifb.com/FT8\\_Hinson\\_tips\\_for\\_HF\\_DXers.pdf](https://www.g4ifb.com/FT8_Hinson_tips_for_HF_DXers.pdf).

He also has links to a guide to his Morse code proficiency and a new user guide to ARRL's Logbook of the World (LoTW). Both can be found on his QRZ page at: <https://www.qrz.com/db/zl2ifb>.



## ARRL Magazines

One major benefit of ARRL membership is digital access to all of their journals and magazines. Following is a sampling of current articles:

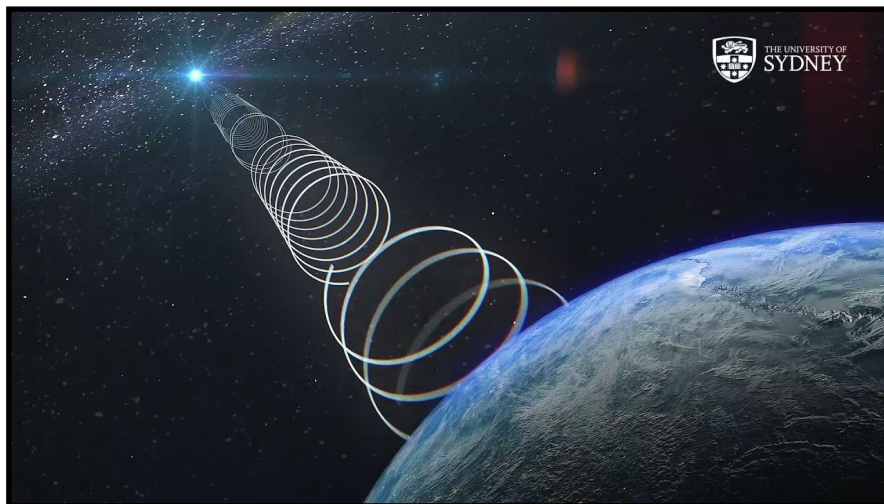
- November 2021 *QST*: The CW Game (learning and practicing Morse code), An Optimized Inverted L for 160 and 80 Meters, and reviews of the QRP Labs QCX-mini CW transceiver kit and the Digirig mobile digital mode interface (<https://digirig.net/>).
- September/October 2021 *On the Air*: A New Ham's Guide to The ARRL Handbook, A Portable Vertical Antenna for HF, and Analyzing your Antenna System.
- September/October 2021 *QEX*: Miniature SMA RF Step Attenuator, CTR2 – An HMI (human-machine-interface) for All of Your Radios, and Designing an Impedance Matching Network with a Drafting Ruler and Triangle.
- September/October 2021 *NCJ (National Contest Journal)*: The "Portable Operations Challenge" – an Experiment with Handicapped Scoring, The Big Switch (16 antennas and 8 radios), Adapt or Perish: Station Ergonomics, and ARRL November Sweepstakes as a Gateway to Contesting.



## Unusual Waves Coming from Outer Space

Some unusual radio waves have been detected coming from outer space. These waves have high polarization, and seem to be coming from one point, although the direction seems to be changing and rotates with time.

This extraordinary behavior was originally discovered by a team from Australia, Germany, the United States, Canada, South Africa, Spain and France, who made this discovery in west Australia. For more information, see <https://www.usatoday.com/story/news/world/2021/10/12/strange-radio-wave-milky-way-center-space-experts/8425047002/>. Click on image to view video.



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

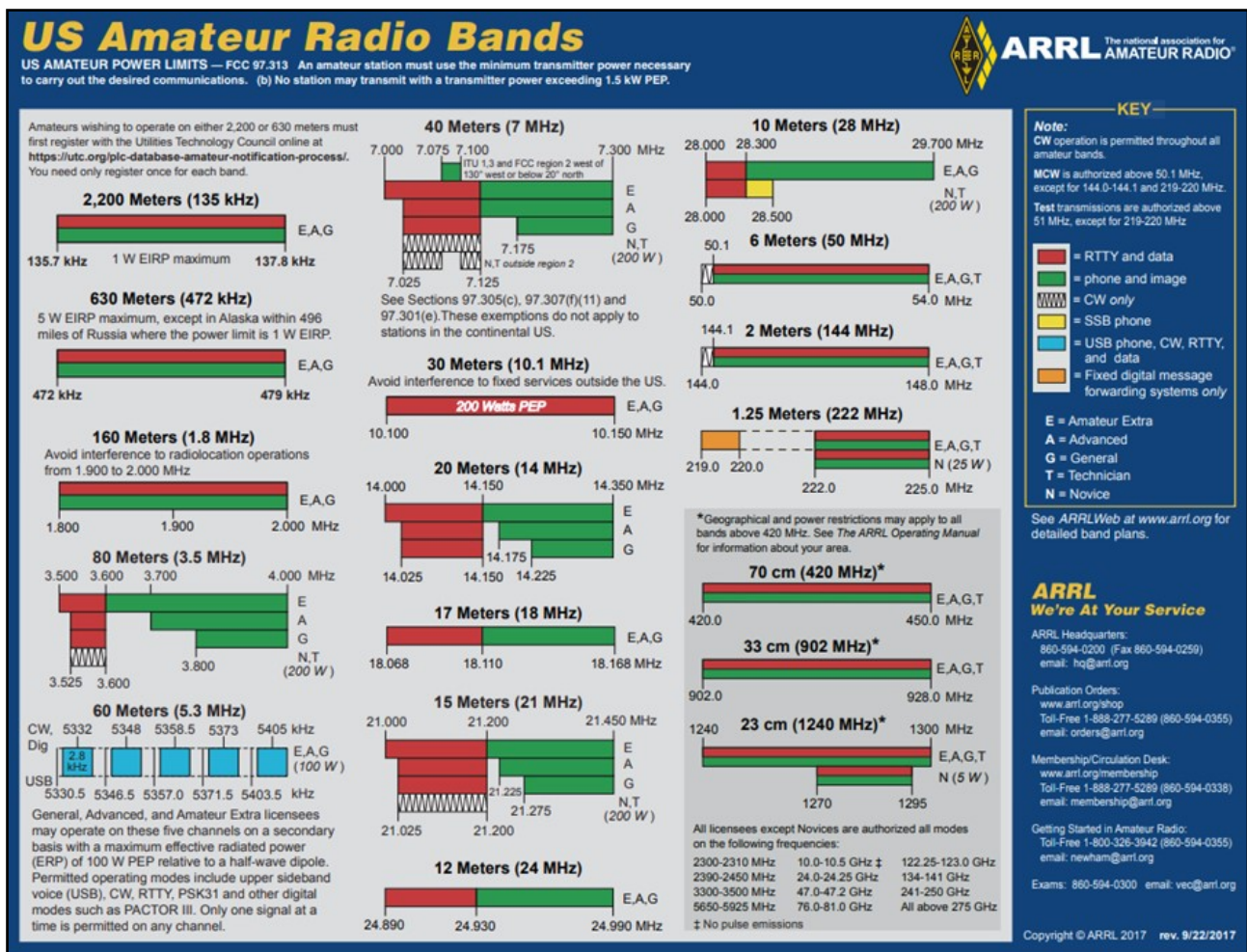
Exam Level	Question	Answer
Technician	T5A01	D
General	G5A01	C
Extra	E5A01	A

The September 2021 Volunteer Monitor Program Report (<http://arrrl.org/news/september-2021-volunteer-monitor-program-report>) again includes operators who were transmitting outside of the range of frequencies allowed by their license class.

Make sure that you remember to check your transmit frequency so you don't become one of them! In the "heat of the moment," you may want to try to contact a DX station calling CQ, but just because you can hear them doesn't mean you can talk to them. In addition to license class restrictions, other regions don't necessarily have the same amateur radio frequency ranges as we do here in the US.

The ARRL produces a handy chart showing frequencies across all the amateur bands, and indicating which license class is needed to transmit on them at: <http://www.arrrl.org/graphical-frequency-allocations>. Keep a copy at your station for quick reference.

A textual description is also available at: <http://www.arrrl.org/graphical-frequency-allocations>.



There was a QSO on the LARC repeaters this afternoon where the frequency to use for APRS (Automatic Packet Reporting System) was discussed. According to <http://www.aprs.org/>, the APRS system "was designed to support rapid, reliable exchange of information for local, tactical real-time information, events, or nets."

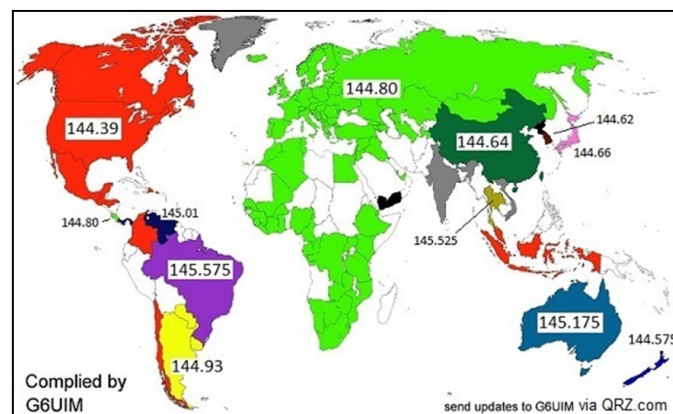
For this to work, all participants must be operating on the proper frequencies. These frequencies vary by band and location – in North America, the 2 meter FM frequency is 144.390 MHz. Europe uses 144.80 MHz, and Australia uses 145.175 MHz. There is even some APRS traffic on HF on the 30 meter band. If you have your radio tuned to a different frequency, you will not receive APRS traffic from other stations, nor will they receive yours.

That being said, there is absolutely nothing wrong with using a different frequency to keep your packets off the main APRS network. The primary reason for this would be to lessen the load on the primary network as the RF frequency will become saturated at some point as APRS traffic increases. By moving your traffic to a different frequency, you free up bandwidth for all users. Of course, you would lose the benefit of the nationwide APRS infrastructure of digipeaters and igates, but this may not be an issue for you.

This setup is actually being used for many APRS-capable satellites – including the ISS, which operates on 145.825 MHz. The reasoning behind the frequency change is that the ISS (and satellites) have a huge "footprint." That is, when they transmit, their signal covers a large amount of area on the ground. Since APRS is primarily built around providing local information, it does not make sense to have a single transmission from a satellite get received and processed by hundreds of ground-based APRS stations.

If you've heard that APRS is "just for tracking vehicles," take a look at <http://www.aprs.org/> and see what else it can be used for! For more information, see:

- [https://en.wikipedia.org/wiki/Automatic\\_Packet\\_Reporting\\_System](https://en.wikipedia.org/wiki/Automatic_Packet_Reporting_System)
- HF APRS Using PSK63: [http://wa8lmf.net/APRS\\_PSK63/index.htm](http://wa8lmf.net/APRS_PSK63/index.htm)
- [http://wa8lmf.net/aprs/HF\\_APRS\\_Notes.htm](http://wa8lmf.net/aprs/HF_APRS_Notes.htm)
- Current ISS radio status: <https://www.ariss.org/current-status-of-iss-stations.html>
- <https://issfanclub.eu/2019/04/29/aprs-via-iss-tips-for-successful-operation/>



## Star Trek — for Real!

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William Shatner, star of the old Star Trek movies, just made history by being the oldest person to go into space at age 90. He and 3 crewmates flew in Blue Origin's New Shepard on its second manned flight on October 13th.

Many of us grew up with Star Trek, and this is the height of what we'd like to accomplish and is on our dream "bucket list." Of course, it took millions to do this (which I'd imagine most of us don't have to spare). You can view the video and read the article at <https://abcnews.go.com/US/live-updates/blue-origin-space-launch/?id=80536694>.



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## HackaDay Remoticon

HackaDay is holding its annual Remoticon (remote virtual conference) this coming November 19th and 20th. They are looking for proposals from presenters who could speak and/or present 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. You can also see the presentations from the 2020 conference at <https://hackaday.com/tag/2020-hackaday-remoticon/>.

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## Near-Earth Objects Coming Near Us

Several asteroids larger than the largest Giza Pyramid are coming near Earth during this month of October. At its closest point, the first asteroid came within 3.6 million miles of us here on Earth last week. This seems very far away, but in comparison, the nearest planet of Venus is over 74.8 million miles away, depending on the planets' orbits. See <https://www.usatoday.com/story/news/world/2021/10/12/big-asteroids-passing-earth-october-november/6095905001/> for the full story.





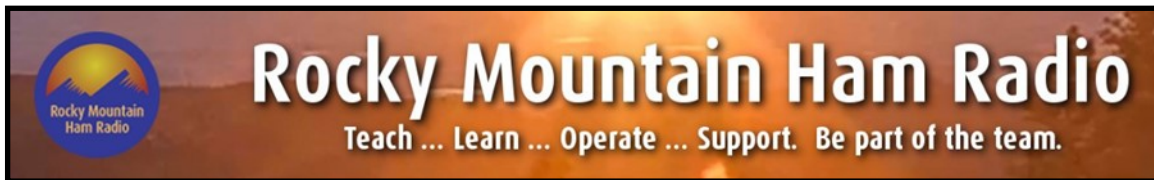
## Upcoming RMHAM University Classes

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
Nov. 13, 8:30 am	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 Meeting ID: 868 1909 1200</b> 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 Meeting ID: 895 9898 7685</b> Passcode: 102015



## RMHAM VHF DX Presentation Videos Available

Rocky Mountain Ham Radio has made two presentations on VHF DX from Doug Sharp and Wayne Heinen available on their RMHAM University video page at: <https://www.rmham.org/course-syllabus/> This page also includes other past videos and presentations.

Upcoming 2021-2022 RMHAM University classes and Tech Talks are listed at: <https://www.rmham.org/rocky-mountain-ham-university/>

Presentations are free, and classes (not Tech Talks) have the option of in-person attendance. Sign up links for classes and talks are shown on the above links.



Norbert Sichterman, KF0X0, recently posted the following on Facebook: "If you think ham radio has gotten more expensive here is a little comparison. The Swan 350 cost in today's dollars [just over] \$3,200 but the ICOM IC-7300 only cost \$1199 and will do much more than the old Swan 350 ever could. Not only is ham radio growing, it is getting less expensive and the equipment is exponentially better!"



LARC Logo Apparel — See the bottom of page 28 for ordering information.

					
Short-sleeve shirt	Long-sleeve shirt	Fleece Jacket	Soft-shell Jacket	Baseball Cap	Patches
\$55	\$60	\$65	\$70	\$25	

## 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, emails & this Splatter newsletter. Get them paid up, send email, and you're back on list!*

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 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 the Splatter!

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, 10/20, 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
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# September Puzzle Solution


## Fall Word Search

C	U	W	V	B	F	K	S	Q	S	W	H	A	R	V	E	S	T	H	G
Q	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	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	R
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	B	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	A	D	G	H	N	A	B	B	U	Q	T	O	O	N	I	G	Y
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

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## October Puzzle

### Clues:

1. Vegetable you can carve.
2. Month of Halloween.
3. A "mean" woman.
4. Opposite of light.
5. A color of Halloween.
6. The soul of a dead person.
7. The handle of a broom.
8. A large kettle.
9. It is made by a spider.
10. An animal related to Halloween.
11. The skeleton of the head.
12. A box to hold a dead body.
13. A spoken word believed to have magic power.
14. A hole dug to bury a dead body in.
15. Opposite of day.
- 16.



17. Opposite of alive.
18. To pull with effort.
19. Trick or .....



### Why did the ghost cross the road?

Answer to riddle:

---

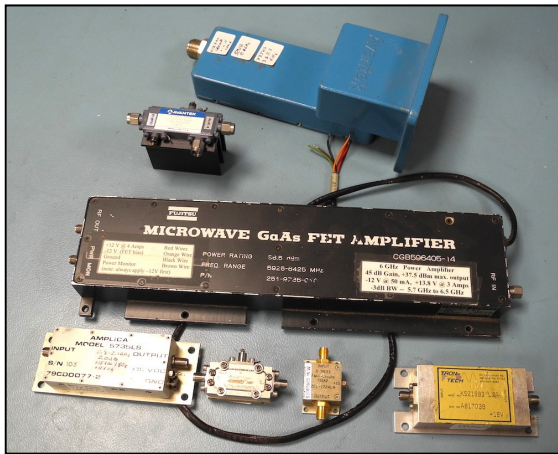


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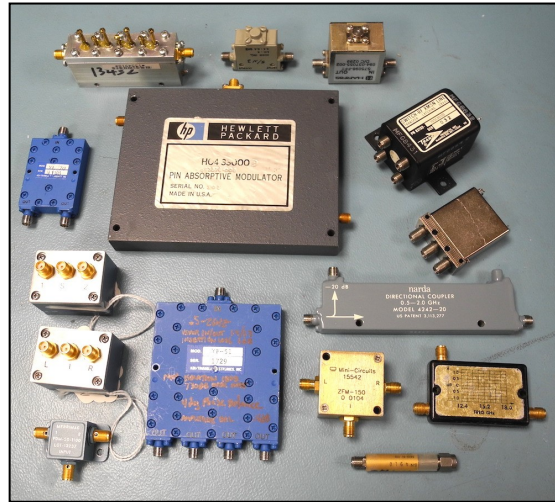


ISLCollective.com





Amplifiers: 1 to 18GHz- up to 5 Watts



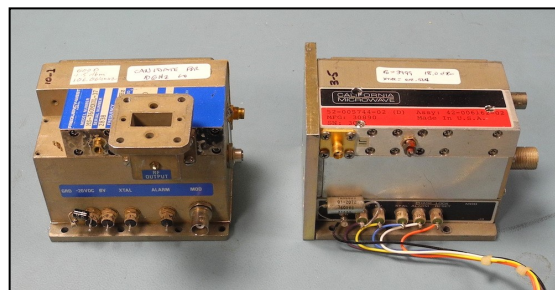
SMA microwave parts: all types

**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.

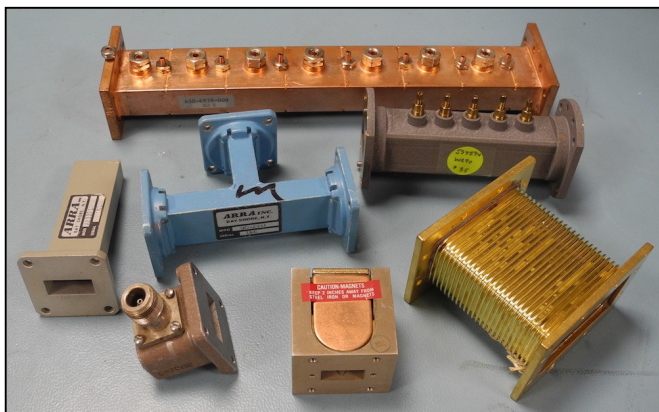
If interested, contact Jim at [kh6htv@arrl.net](mailto:kh6htv@arrl.net). Jim will then e-mail you copies of the inventory lists and give you details on where to pick it up. No shipping. You must pick up the items you want in person.



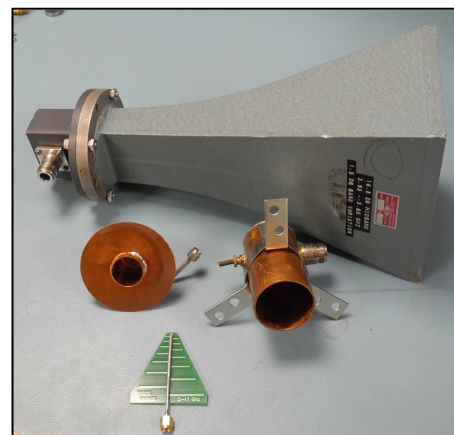
10 Watt X & S band Amplifiers



Microwave Local Oscillators: 1 - 18 GHz



Waveguide Components: 3 to 47 GHz



Microwave Antennas

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**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: \_\_\_\_\_

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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 \_\_\_\_\_



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# 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 \_\_\_\_\_

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