



RCA Amateur Radio Club

Indianapolis, IN

ARRL Affiliated Club

www.w9rca.org



NOVEMBER 2023

MONTHLY NEWSLETTER

THE NEXT MEETING OF THE RCA AMATEUR RADIO CLUB WILL BE TUESDAY, NOVEMBER 14th,
6:30 PM AT NORTH SIDE EVENTS, FORMERLY THE KNIGHTS OF COLUMBUS,
2100 EAST 71st, INDIANAPOLIS, IN

RCA ARC NEWS

OCTOBER MEETING SUMMARY – Thanks to everyone who attended the October meeting. Greg, K0GAH, gave the Treasurer's report. Jim, AF9A, reported the '88 repeater was operating normally. Field Day results will be in the December issue of QST. John Shouse, W9JS, discussed ARES, RACES, and the ARRL Simulated Emergency Test (SET). It was noted there is now a new FCC Chairman (Chairwoman). The upcoming eclipse(s) were discussed. Greg, K0GAH, discussed a home brew power supply he is building for a high power amplifier. Also, for those who may not be familiar with it, the FT8 DXpedition mode, Fox and Hound, was discussed. Remember, DX stations using F&H likely will not be on the common FT8 frequencies. You have to search for them, usually, but not always, 10 or 20 kHz above or below the normal FT8 frequencies. They should be easy to spot on your receiver waterfall. Odd time slots. One interesting thing about F&H, if you call a DX station and exceed the number of calls and your "Enable TX" switches OFF, if the DX station then calls you, the program switches "TX Enable" to ON and completes your QSO.

AMATEUR RADIO LICENSE TEST SESSION

Date: Saturday, November 11, 2023
Time: Starting at Noon **by appointment only.**
Location: Salvation Army EDS Training Facility, 4020 Georgetown Rd
Indianapolis, IN 46254-2407
Contact: Jim Rinehart Ph: (317) 721-1458
Email: testing@indyradioclub.org
Required: FCC FRN and a completed NVEC 605 license application form.

Laurel VEC test sessions: <https://www.laurelvec.com/?pg=exams>

HAMFESTS, OPERATING EVENTS, VOLUNTEER OPPORTUNITIES

Salvation Army Open Net, Thursday, 7PM, W9RCA repeater, 146.88 MHz, tone 88.5 Hz
Nov 11 IRC POTA, Fort Harrison St. Park, 4 pm, Ken Bandy 317 446-3312
Nov 16 ARRL FMT <https://fmt.arrl.org/docs/FMT-202311-Notice.pdf>
Nov 18 -19 Ft Wayne Hamfest <http://www.acarts.com/hfmain.htm>
Nov 25-26 CQ Worldwide DX Contest, CW
Dec 1-3 ARRL 160 Meter, CW Contest <http://www.arrl.org/160-meter>
Dec 9-10 ARRL 10 Meter Contest <http://www.arrl.org/10-meter>

WA7BNM expanded contest calendar, <https://www.contestcalendar.com/contestcal.htm>

Visit the **ARRL Special Event Stations database** at www.arrl.org/special-event-station to find other on-the-air events and commemorations.

Hamfest or Convention: www.arrl.org/hamfests

Find a license exam in your area: www.arrl.org/exam

ARRL Home: www.arrl.org

THE 2023 ARRL FIELD DAY RESULTS ARE IN, AND IT LOOKS LIKE WE FINISHED 3RD OVERALL !

Indy United ARC, W9SU (W9RCA GOTA) can lay claim to a 1st place in the 4A class and 3rd place overall - barring any surprise scores in the Class D, E and F results – which aren't available from the ARRL yet.

Official results, at least for Class A through C, can be found in this Field Day story from the December issue of QST (thanks to Dale, K9NN, for finding the link):

<https://contests.arrl.org/ContestResults/2023/Field-Day-2023-FinalQSTResults.pdf>

The only clubs that outscored us had three times as many transmitters! Perennial powerhouse W3AO (Potomac Valley Radio Club), from Class 12A, led the way with 35,633 points, while another longtime heavyweight, K6EI (West Valley Amateur Radio Association), placed second with 27,570 points in Class 12A-Battery.

Competing in Class 4A (four main transmitters) for the first time, we scored 21,066 points and besting nearly 4,500 other teams. We roasted the defending 4A champion, the Huntsville ARC from Alabama - **K4 Big Fat Turkey**. They hadn't lost a head-to-head 4A battle since 2012, but this time they wound up more than 3,000 points behind us, mainly because of our stellar GOTA effort!

So, after ending up 5th overall in 2022 – still a highly respectable finish – we appear to have nailed down 3rd place in 2023 ... which gives us a four-year record of 1st (2020), 2nd (2021), 5th (2022) and now 3rd.

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Here's the 2023 ARRL Field Day Top 10:

(Call) (Class, 12A is 12 transmitters) (Score, total with bonus Points)

1st W3AO 12A 35,633
2nd K6EI 12A-Battery 27,570
3rd W9SU 4A 21,066
4th KK5W 10A 20,638
5th W1NVT 2A 19,053
6th K7LED 6A 18,706
7th K7BFT 4A 17,740
8th K5M 6A 16,863
9th W1SYE 2A 16,727

Big thanks and congratulations to everyone who had a part in our 2023 success, no Top 3 Field Day team gets it done without many hands and much support! -- Brian, W9IND, Field Day Chairman, Indy United ARC

DEADLINE EXTENDED UNTIL NOVEMBER 28 FOR 60-METER-BAND COMMENTS

The Federal Communications Commission (FCC) has extended the deadline to file comments on the 60-meter band proposal to November 28, 2023. Replies to comments will be due December 28, 2023. The public comment period was originally scheduled to close October 30, 2023.

[ARRL](#) strongly encourages all amateurs to submit comments expressing support to the FCC for the current 100 W ERP power limit (instead of reducing the power limit to 15 W EIRP) and continuing secondary access to the current channels.

ARRL has assembled a web page with instructions on how to submit your comments, as well as background information on the issue: www.arrl.org/60-meter-band.

VETERANS DAY 2023 SPECIAL EVENTS

Special event stations will offer many opportunities for amateur radio operators to honor Veterans and make contacts for Veterans Day.

The [K1USN Radio Club](#) will be on the air on Saturday, November 11, 2023, to show their appreciation for those who have served in the military. The club station is located at 85 Quincy Avenue in Braintree, Massachusetts. K1USN will be on the HF bands on SSB, CW, and FT8, and they will begin operating at 1300 UTC and run until 2100 UTC. K1USN QSL cards will be available for all who contact the station.

The American Legion Post 111 Amateur Radio Club, KA4TAL, in South Carolina will also operate on November 11 from 10 AM to 3 PM ET on 14.255, 7.264, 14.275, and 7.185 MHz. Email talarc.ka4tal@gmail.com for electronic contact certificates.

On the same day, the Liberty ship S.S. John W. Brown, [K8JWB](#), will hold National Liberty Ship Day. The event honors those who served in the military and operated, protected, and built all 2,710 World War II Liberty ships, including the Merchant Marines, the Navy Armed Guard, and the female shipyard workers recruited during the war. Operations will be on 14.250, 7.225, and 21.300 MHz, from 0200Z - 0800Z. QSL cards will be available by mail from Project Liberty Ship PO Box 25846 in Baltimore, Maryland.

In Ohio, the [Central Ohio Radio Club](#) will hold their third annual Veterans Day Check-in Net on November 11, beginning at 11 AM ET. They will use their main VHF repeater, W8AIC, on 146.76 MHz (PL tone 123.0 MHz). All amateurs can check in and share stories about their own military experience, or information about family and friends who have served. A special QSL card will be mailed to each ham who contacts the station.

The [Charles County Amateur Radio Club](#) in Maryland will host their special event, The Ghost Fleet at Mallows Bay, on November 11 from 1400Z - 2100Z. Mallows Bay is the site of more than 100 shipwrecks and is now the Mallows Bay-Potomac River National Marine Sanctuary, the first national marine sanctuary in the state of Maryland. K3SMD will operate on 40 (7.270 Mhz), 20, and 15 meters on phone and FT8. QSL cards will be mailed to those who contact the station by Michelle Sack, N3YRZ, at PO Box 1182 in Waldorf, Maryland.

Also on November 11, the United States Marine Corps will celebrate its 248th anniversary (it was officially formed on 11/10/1775) and Veterans Day. The USS Midway CV-41 COMEDTRA amateur radio station, NI6IW, will be on the air from 1700Z - 2359Z on 14.320, 7.250, and 14.070 MHz. The station will use PSK31, D-STAR, the PAPA System repeaters, and a wide-area amateur radio network of 57 additional repeaters on 19 hilltops. These will provide extensive coverage of the Southern California region and beyond. A [QSL card](#) will be available for every operator who contacts NI6IW.

A complete list of special event stations, including Veterans Day stations, is available at www.arrl.org/special-event-stations. Type "Veterans" in the keyword search bar to find the stations.

--ARRL

FCC TO VOTE ON REMOVING SYMBOL RATE RESTRICTIONS

[ARRL](#) welcomes news of a scheduled vote by the Federal Communications Commission (FCC) to [consider removing symbol rate restrictions](#) that restrict digital modes, foster inefficient spectrum use, and dampen incentives for innovation. In the draft Commission decision, the FCC would replace the current HF restrictions with a 2.8 kHz bandwidth limit. The Commission also announced that it will consider a Further Notice in which it will propose eliminating similar restrictions where they apply in other bands and consider relying on signal bandwidth limits. If both actions are adopted by the Commission, there will be a period for public comment on the Further Notice issues.

In announcing the proposed Commission actions, FCC Chairwoman Jessica Rosenworcel said that "We're bolstering amateur radio. We will vote on a proposal to incentivize innovation and experimentation in the amateur radio bands by removing outdated restrictions and providing licensees with the flexibility to use modern digital emissions."

ARRL requested and strongly supports replacing the symbol rate limits on the HF bands with a 2.8 kHz bandwidth limit. ARRL also supports eliminating the symbol rate limits in favor of the already-existing bandwidth limits where they apply on the VHF and UHF bands and eliminating the similar limits 2200 and 630-meter bands.

ARRL Director of Emergency Management Josh Johnston, KE5MHV, said the changes will result in a tremendous time savings during disasters, when every second counts. "We will be very pleased to have the FCC remove the restrictions on symbol rate for the amateur bands. This will eliminate the need for temporary waivers during an event and provide the ability to train and exercise using the higher symbol rate, allowing increased data capability to our served agencies and partners."

[Congresswoman Debbie Lesko \(AZ-08\) introduced *The Amateur Radio Communications Improvement Act \(H.R. 3241\) on May 11, 2023*](#), to require that the FCC eliminate the obsolete HF digital symbol rate limit with a 2.8 kHz bandwidth limit.

The Congresswoman subsequently addressed the issue with Chairwoman Rosenworcel in a Congressional oversight hearing. The changes are supported by many state emergency management officials.

ARRL will continue to engage on this matter. --ARRL Letter

CHANGES FOR THE 2023 ARRL SWEEPSTAKES

The 2023 [ARRL Sweepstakes](#) has a new overlay. The ARRL web page states, "Any Single Operator or Single Operator Unlimited entrant can enter using the Limited Antennas Overlay. Operation is limited to the use of single-element antennas such as a single vertical, end-fed wire, or a single dipole antenna no more than 50 feet above ground at its highest point. The antenna(s) may cover multiple bands, as in the case of multiband verticals and dipoles with fan or trap constructions."

The ARRL web page also mentions the update to RAC's Sections for the 2023 Sweepstakes: "Radio Amateurs of Canada (RAC) updated a couple of their Sections, replacing Maritime (MAR) by making New Brunswick (NB) and Nova Scotia (NS) individual Sections; Greater Toronto Area (GTA) was renamed to be 'Golden Horseshoe' (GH); and Northern Territories has been renamed just 'Territories' (TER) -- this impacts the Sections Lists for RAC events, as well as ARRL Field Day and ARRL Sweepstakes."

Starting this year, after you contact all of the Sections for a Clean Sweep, you'll be able to get your mugs and CW and phone pins fulfilled via the ARRL Store (including the ability to buy online with a credit card).

AMATEUR RADIO ON THE INTERNATIONAL SPACE STATION (ARISS) 40TH ANNIVERSARY

The Positive Impact of Amateur Radio on Human Spaceflight: 40th Anniversary Conference will be held at the Center for Space Education: Astronauts Memorial Foundation, located adjacent to the NASA Kennedy Space Center Visitors Center in Florida. Organizers hope to gather volunteer teams, astronauts, space agency officials, educators, and space and amateur radio enthusiasts to attend the event. For registration information and special event pricing at local hotels, visit the event website at <https://www.ariss.org/>, and choose the drop-down menu tab labeled 40th Anniversary. ARISS is a cooperative venture of international amateur radio societies and the space agencies that support the ISS. In the US, participating organizations include NASA's Space Communications and Navigation program (SCaN), the ISS National Laboratory -- Space Station Explorers, [ARRL](#), and AMSAT.

AMI JAMBOREE SCHEDULED FOR NOVEMBER

The 2023 [Amplitude Modulation International \(AMI\) Jamboree](#) will be held over the Thanksgiving weekend, starting at dusk on November 24 and ending at dawn on November 27.

AMI Executive Director John C. McGrath, N9AMI, said the jamboree is not a contest but rather an AM-only operating event. "Everyone is welcome to participate, and there is a certificate available for those who contact 25 stations and submit a log," said McGrath. "Each class winner will receive a certificate, and a short biography will be posted on the AMI website. While the age of the equipment doesn't matter, there must be an AM mode selection on the radio," he added.

The preferred AM bands for operation are:

- 160 meters: 1.885, 1.900, 1.945, 1.985
- 80 meters: 3.870 to 3.890
- 40 meters: 7.175, 7.290, 7.293, 7.295
- 20 meters: 14.286 and the upper end of 20 meters

According to the club's history, AMI was formed in 1993. The name was taken from a west coast amateur radio club that was no longer in operation. AMI is now dedicated to the enjoyment, promotion, and preservation of AM. Club memberships include numbered membership certificates, an organization of 10 regions with directors, annual operating events, local club support, and the monitoring of activities that affect AM operations. While the FCC reduced the peak-envelope power measurement for AM, they also issued a statement in support of continuing the mode's important place in amateur radio.

More information is available on the [AMI](#) website.

THE ARRL FOUNDATION IS ACCEPTING APPLICATIONS FOR SCHOLARSHIPS THROUGH JANUARY 10, 2024.

The ARRL Foundation Scholarship Program supports eligible amateur radio operators pursuing higher education. The ARRL Foundation manages more than 100 scholarships established by generous donors ranging from \$500 to \$25,000. Scholarships will be awarded for the academic year that will begin no earlier than June 2024 following the application deadline. The scholarships vary in eligibility requirements.

ARRL Director of Development Kevin Beal, K8EAL, said the scholarships pave the way for amateur radio being a hands-on pathway to STEM careers. "We are so thankful to donors who give to ARRL education programs because they are investing the future of amateur radio. The ARRL Foundation Scholarship Program provides financial support at a critical time for students pursuing a college degree and keeps these young radio amateurs active in the hobby."

Additional information and a link to the application can be found at www.arrl.org/scholarship-program.

The [ARRL Foundation](#), celebrating its 50th year, administers programs to support the amateur radio community, and was established in 1973 by [ARRL](#).

Here is a direct link to the application: <http://www.arrl.org/scholarship-application>

THE MORE PROJECT <[N2RE.ORG/M-O-R-E-PROJECT](#)>, AN AR/DC FUNDED INITIATIVE, HAS A GOAL OF LICENSING YOUTH AND NON-MALES

While all ages and genders can take our MORE Courses, the intention is that at least 50% of licensees will be age 12-18 and/or non-male. Currently our outreach has been drawing the desired percentages of applicants, so we do not turn anyone away. But this is largely because we focus on identifying groups where we will be able to FIND the demographics we need for our percentages. We've been especially successful with Civil Air Patrol, which has a good mix of age and gender demographics (plus they also rely heavily on radio communications in their efforts), and are increasingly hearing from Scouting organizations that want to augment their Radio Merit Badge training with an additional licensing component. Another success has been with University Professors of Engineering, who are encouraging Ham licensing with their students, especially those who want to add a radio component to their Senior Projects. While EE departments are still predominantly male, BioEngineering has a significant and growing female population in that major with some Universities requiring an RF course, as radio connectivity is so important in medical devices these days.

I am mentioning all of this in this discussion on creating community, because welcoming environments do not create themselves. The reason there are so many different ways of communicating online is because one type does not fit all. Therefore, we should not rule out ANY type of online community. I personally think that Discord is great, especially for side conversations in Discord channels that occur during amateur radio meetings and engineering conferences. It's quite easy to drop the MORE Project URL into a Discord (and encourage others to do so), which has netted us new applicants. The MORE Project also attracts candidates (typically older ones) through MeetUp postings, because people there are seeking things to do and learn. We've used Twitter and LinkedIn as well. And we have also had physical booths at HamFests where we hand out paper flyers (often the festival will give us the booth for free because we're non-profit).

Rather than decide which ONE medium we should be using, I'd like folks here to consider using THEM ALL! You don't have to be active on all of them constantly. Just an occasional message with a link or a photo from time to time will attract interest.

If we build it, they (the people we want to attract) will come -- but they have to hear about us first! Even for our own communications in this group, we shouldn't just choose one platform or community and ignore all of the others. Let's consider ALL of the suggestions proposed here, use the ones we feel comfortable with, but not nix any of them. -- Rebecca Mercuri, K3RPM, MORE Project Director

ADVENTURE RADIO PROTOCOL ON 146.58 MHZ FOR HIKING, BACKPACKING, POTA/SOTA, AND OTHER OUTDOORS ACTIVITIES

The Adventure Radio Protocol provides a common radio frequency and signaling standard to make it easier for radio operators in the field to find and communicate with each other. The signaling protocol that uses CTCSS sub audible tones allows operators to signal the type of traffic on the adventure radio frequency and enable 24/7 monitoring without the need to listen to all traffic on the channel.

ADVENTURE RADIO FREQUENCY – 146.580 MHz

We propose to use 146.580 MHz FM for the nationwide US adventure radio frequency. This frequency is chosen because it is already in use in various regions of the US. We also want to avoid using 146.520 to remove outdoor activity traffic from the national calling frequency.

CTCSS TONES

CTCSS sub-audible tones are used to signal the type of traffic on the adventure radio frequency. The following CTCSS tones are assigned for various types of traffic. The Adventure Radio Protocol reserves all CTCSS tones between 67.0 Hz and 151.4 Hz to be assigned over time for various purposes. Radio operators can use any CTCSS frequency above 151.4 Hz for any purpose and are not governed by the AR protocol.

- 67.0 Hz Emergency calling.
- 77.0 Hz Ping – Keying up will cause any automated monitoring station to respond to let you know there is a system on the air.
- 88.5 Hz SOTA/POTA and other operating events.
- 100.0 HZ General backcountry conversations.
- 123.0 Hz Trigger automated messaging from local repeaters.

[Click here to gather all of the details on AdventureRadio.info.](#)

I highly encourage you to check out the Adventure Radio Protocol and make your local club aware that it's coming down the pipeline as this functionality will need to be added to repeater controllers to broaden the reach. -- George Zafirooulos KJ6VU

THE INTREPID-DX GROUP HAS ANNOUNCED THEIR 4TH ANNUAL YOUTH DREAM RIG ESSAY CONTEST

The [Intrepid-DX Group](#) is a US-based nonprofit organization that promotes amateur radio activities around the world. The Youth Dream Rig Essay Contest is designed to gather the views and ideas of young people involved in amateur radio. Contestants must be USA or Canadian amateur radio license holders who are 19 years old or younger; must reside in the US, US territories, or Canada, and they must submit a two-page essay explaining what attracted them to amateur radio. All entries must be a plain text document, PDF, or Microsoft *Word* document and be either emailed to intrepidgroup@gmail.com or mailed to The Intrepid-DX Group, 3052 Wetmore Dr., San Jose, California 95148, USA by November 30, 2023. Those who have previously submitted an essay may compete in this year's contest, as long as all criteria are met. The contest winner will be announced on the group's website and Facebook page on December 15, 2023. The winner must agree to provide a photo with their prize. For a complete list of the rules and prizes, visit <https://intrepid-dx.com/news/>.

TECHNICAL

What Radio should I buy next: <https://www.youtube.com/watch?v=gGQ8TxUllv8>

Balloon-Eye View Via Ham Radio I Hackaday <https://hackaday.com/2023/09/11/balloon-eye-view-via-ham-radio/> Interested in making and launching a balloon? You'll find many Youtube videos on the subject. <https://www.youtube.com/watch?v=QfDDezwZ8QM>

Many of the presentations from the June 2023 Software Defined Radio Academy, held in conjunction with The HAM RADIO in Friedrichshafen, Germany, are available on YouTube. One that may be of particular interest to HF contesters is called [SDRA'23 - 04 - G3ZIL & G4HZX: Propagation path analysis on HF, using SDR and FST4W](#). In addition to the more common modes of propagation via the F2 layer, they identify some characteristics of "less commonly known modes including two-hop side scatter that can dominate at frequencies above the maximum usable frequency for a band and time of day."

HamClock: Many of us have seen **Geochron**, <https://www.geochron.com/ham-radio-4k/>, at Dayton or ads in ham magazines. Very nice, but unfortunately it's a little, or a lot, pricey for most of us. **HamClock**, <https://www.clearskyinstitute.com/ham/HamClock/>, is an open source program which was first introduced in a 2017 QST article (<https://www.clearskyinstitute.com/ham/HamClock/QST-HamClock.pdf>) has been through many updates and may be a good addition to your shack. There are plenty of YouTube videos showing the setup.

SHORTS

NEW WEB SITE FOR WSJT-X – Make a note of it, there is a new web address for everything WSJT-X, downloads, user manuals, etc. The new URL is: <https://wsjt.sourceforge.io/> The old URL, <https://www.physics.princeton.edu/pulsar.....> will not work.

ARRL Frequency Measuring Test – FMT, Nov. 17, 0230 UTC (Thursday night in North America.) <https://fmt.arrl.org/docs/FMT-202311-Notice.pdf>

More good news from ARC@ISU - You've probably read my comments in the past about the Amateur Radio Club at Indiana State University (ARC@ISU). Well, now they have nationwide recognition. Take a look at the extensive write-up about ARC@ISU's efforts in the recent ARRL Collegiate QSO Party in the ARRL Letter: <http://www.arrl.org/arrlletter?issue=2023-10-12#toc02> Bob Burns AK9R ARRL Indiana Section Manager – ARRL Indiana Section Newsletter

The National Oceanic and Atmospheric Administration (NOAA) and the National Weather Service (NWS) are finalizing plans for 2023 SKYWARN™ Recognition Day. The event is held annually on the first Friday and Saturday of December, so this year it will be on Friday, December 1, and Saturday, December 2. SKYWARN Recognition Day was developed in 1999 by the NWS and ARRL. It celebrates the contributions that volunteer SKYWARN amateur radio operators make to the NWS. During the event, SKYWARN operators visit NWS offices and contact other radio operators across the world. More details about the event will be posted on the [SKYWARN™ Recognition Day](#) and [ARRL](#) websites.

The ARRL Foundation is now accepting grant applications from amateur radio organizations for eligible amateur radio-related projects and initiatives, particularly those focused on educating, licensing, and supporting amateur radio activities. To grow amateur radio's future, youth-based projects and initiatives are especially encouraged. The ARRL Foundation grants program accepts proposals on a cyclical basis three times a year: in February, June, and October. Proposals for the June grant period are accepted through October 31. Awardees will be notified approximately 1 month after the closing of each cycle. The ARRL Foundation is also celebrating its 50th anniversary. The Foundation carefully manages a portfolio of endowments where donors have provided specific goals for their gifts, and that portfolio is invested and managed so that it can continue to support those goals for many years to come.

Researchers have recently [found evidence of an even larger solar storm that occurred 14,300 years ago](#) by analyzing near-fossil tree rings. They found spikes in radiocarbon levels in particular rings, thought to be correlated with cosmic radiation events. They estimate that the severity of the storm was 10 times that of the Carrington Event. The Carrington Event in 1859 was a very large solar storm. Aurora lit the night sky to near-daylight levels. Telegraph wires melted.

ON-LINE GENERAL CLASSES STARTING SOON A free, weekly, live, Amateur Radio General Class Licensing course on Zoom will begin on Thursday, Nov 2, and will run through Thursday, January 11. The three-hour sessions will start at 6:30 PM Eastern Time. These are the classes that have been held for years sponsored by the National Electronics Museum. Prerequisite is to have or be studying for the Technician Class License. Please publicize this with anyone you know that you think would be interested. Those wishing to sign up should email Roland Anders, K3RA, at: roland.anders@comcast.net

The Nashua Area Radio Society (NARS) will host their Ham Bootcamp program on November 11, 2023, from 10 AM to 6 PM ET. This program includes a series of online demonstrations and tutorials designed to help newly licensed Technician-, General-, and Extra-class license holders get on the air. It's available to all licensed and prospective amateur radio operators. Visit NARS's [Ham Bootcamp](#) program web page to register and for additional information

THANKS FOR READING

THE RCA ARC MONTHLY NEWSLETTER IS COMPILED AND EDITED BY JIM RINEHART, K9RU AND JIM KEETH, AF9A. ALL MATERIAL CONTAINED HEREIN IS OBTAINED FROM THE SOURCES CREDITED AND EDITED FOR THIS NEWSLETTER.
