

August, 2020

LARC NEWS & VIEWS

N4LNR



Lenoir Amateur Radio Club Newsletter

Events

Next LARC Meeting

Thu. Sep. 10, 7:00 pm

Webex Online Meeting

Speaker: Brian Harrison KN4R

Radio Intelligence Division during World War II

ARRL / TAPR Digital Communications Conference

Fri. Sep. 11-12

<https://tapr.org/conferences/>

Blue Ridge Amateur Radio Society (BRARS) Hamfest

Sat. Sep. 12

<https://brars.cc/upstate-hamfest/hamfest-ticket-landing/>

Clingman Hamfest

Sat. Sep. 19

<http://www.clingmanhamfest.com/>

Sevier County Hamfest

Sat. Sep. 19

Sevier County Fairgrounds

Sevierville, TN

<https://seviercountyars.com/club-%26-hamfest-news>

JOTA-JOTI

Scouting Jamboree

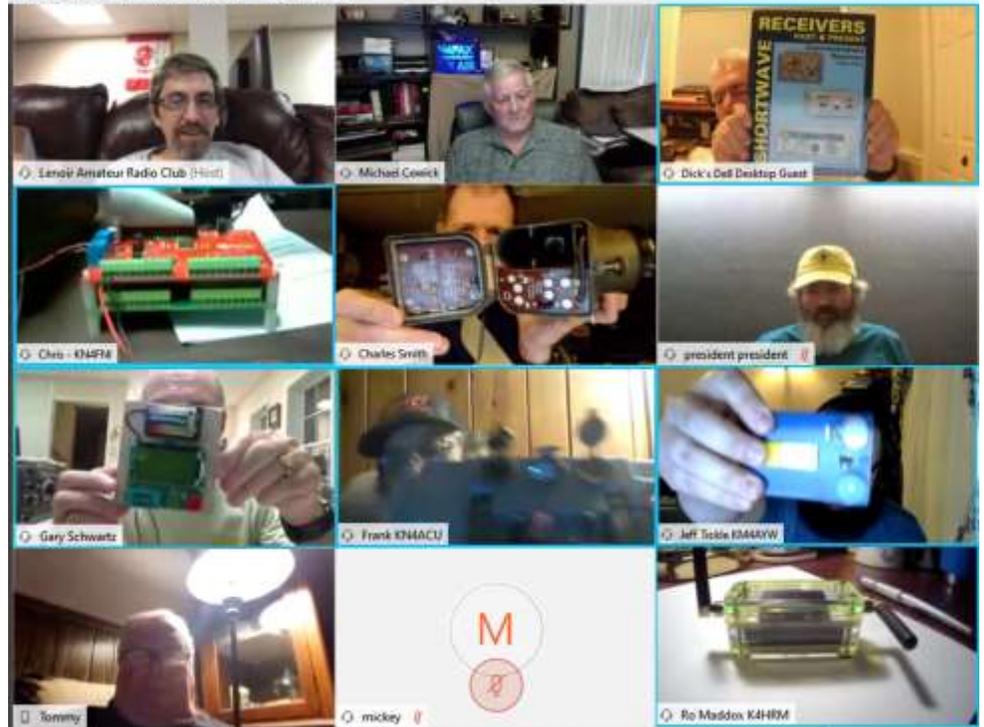
Fri. Oct. 16- 18

<https://www.jotajoti.info/>



Show & Tell

At their last club meeting, the Lenoir Amateur Radio Club had a Show & Tell hour. Many of the members displayed interesting items they have in possession and showed off projects they have in progress or have done.



Scott (K4SEH) had set up DMR talk groups for LARC, ARES AUXCOMM and CCSWN on the TGIF Network. For more information on the TGIF network, go to <https://prime.tgif.network/>.

Call sign	Name	DMR ID (Repeater ID)	Talkgroup	Timestamp	RSSI
K4SEH	Scott	3133977 (3133977)	156 Lenoir Amateur Radio Group	19:18:37	-47 dbm
K4SEH	Scott	3133977 (3133977)	156 Lenoir Amateur Radio Group	19:19:33	-47 dbm
K4SEH	Scott	3134116 (313408102)	31348 (CNCNM)	19:19:58	
K4ACN	SECN	3183087 (313408601)	440 NC440	19:08:27	
K4ACN	SECN	3183087 (313408601)	440 NC440	19:08:27	
K4ACN	SECN	3183087 (313408601)	440 NC440	19:07:43	
K4ACN	SECN	3183087 (313408601)	440 NC440	19:07:43	
K4ACN	SECN	3183087 (313408601)	440 NC440	19:07:36	

Show & Tell (cont.)

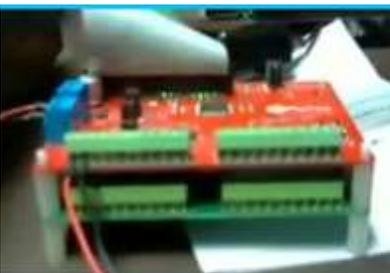
Ro (K4HRM) had a *ZUMspot* Duplex Kit and a housing case to set up a hotspot to increase DMR access. The *ZUMspot* is basically a 1.5" x 1.5" x 3" Raspberry Pi unit with antennas. A duplex could access a second talk group while the current talk group is in use. Ro is in the process of configuring it to the DMR talk groups Scott had set up. The hotspot will allow access to DMR anywhere there is an internet connection. The hotspot feature on her cellphone will provide Wi-Fi access to the *ZUMspot* so it's almost limitless.



Mike (N4FAX) shared about the *Hear It* speaker which reduce background noises. The *Gap Hear It* is a compact speaker with digital signal processing to reduce or eliminate noise. This speaker greatly improves signal to noise ratio and speech clarity. Here is a video link - https://www.youtube.com/watch?v=_228RF5o7NQ - about the *Hear It* speaker.

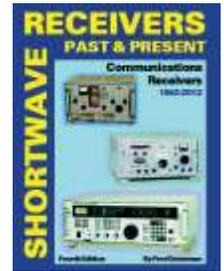


Jeff (KM4AYW) shared a Morse code oscillator he built while in LARC's CW class. It is a code practice key and sounder kit which can be purchased at <https://www.qrpkits.com/cpo.html>.



Chris (KN4FNI) is working on a Raspberry Pi project and will keep us posted on his progress.

Dick (K0CAT) shared a book called *Shortwave Receivers Past and Present* which features communication receivers from 1942 to 2013. It is a comprehensive guide to over 1700 shortwave, amateur and commercial communications receivers (plus 1200 variants) manufactured produced in the last 70 years.



Gary (K3OS) shared a very useful inexpensive component tester. It is a *Digital All-in-1 Component Tester Transistor Diode Capacitor Inductor ESR Meter*.



He also had a National HRO-60 receiver that he used to operate in the 1970's. Guess who's in the foreground of this black and white photo. (K3OS).



The HRO-60 receiver utilizes plug-in band coils.

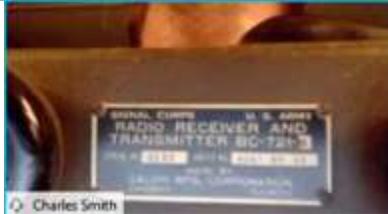


Frank (KN4ACU) built a handy portable battery box with parts he had purchased. It has all the plug-in ports one may need to power a radio and other equipment.



Show & Tell (cont.)

Charles (KN4SGN) showed several radios that were passed down to him from his *Uncle (W4JCB)* a radio operator who served in the military. The LARC members who are former military personnel expressed their familiarity with some of these communication equipment.



Didn't attend the meeting? Did you miss your opportunity to Show & Tell? You don't have to wait until the next Show & Tell. We can feature your story on our next issue of the LARC Newsletter.

Tell us about yourself. How did you learn about Amateur Radio? Who lead you to the hobby? When did you become a Ham? Show us your rig, ham shack, home station, mobile station, your antenna setup and equipment. Share your knowledge, problems, and solutions. What have you learned or want to learn? Tell us about an interesting contact or event. What is your favorite mode? What part of radio communication do you like and enjoy? Email your submissions to newsletter@n4lnr.com and feel free to include lots of photos along with your story.



Jamboree On The Air (JOTA-JOTI)



Doesn't Show & Tell remind you of your youth and the times you stood in class to share what you did during the summer break? Well today's Scouting youths are getting ready for a grand event where they will showcase their communication abilities over the air and the internet.

Jamboree on the Air is the largest Scouting event in the world. This year 2020, JOTA-JOTI (Jamboree-on-the-Air-Jamboree-on-the-Internet) will take place from 16 to 18 October. The event connects millions of young people around the world for a full weekend of online activities that promote friendship and global citizenship. JOTA-JOTI enables young people and volunteers to participate in fun and engaging group activities over the Internet and Amateur Radio focusing on developing 21st century skills through Scouting. For more information about the event go to <https://www.jotajoti.info/>

In a typical year, more than 1 million Scouts participate in JOTA, with over 11,000 stations operated by 20,000+ young radio amateurs from 150+ countries around the world. The K2BSA Amateur Radio Association operates to support Radio Scouting activities and is considered the amateur radio station for the Boy Scouts of America's National Council. The K2BSA website <https://k2bsa.net/jota/> provides information about *Radio Scouting*, the intersection of Scouting and Amateur Radio. The site offer resources for scouts to get on the air and earn their radio merit badge.

The Lenoir Amateur Radio Club is in support of anyone who wish to learn about Amateur Radio and especially support those youths wishing to participate in radio communication. LARC would like the opportunity to support our youths of scouting and non-scouting alike in their interest in Amateur Radio. The Club aspires to become one of the many locations offering radio merit badge classes in the future.

Remote Amateur License Testing

By Ro Maddox (K4HRM)

The Federal Communications Commission (FCC) authorized remote license testing in 2014, however, it was not broadly welcomed by the amateur community and was used only by the Anchorage Volunteer Examiner Coordinator (VEC) in the remote areas of Alaska, where a “trusted person” monitored the exam participants on site and the Volunteer Examiners (VEs) watched via video conference. The ARRL VEC tried a remote session in Antarctica and a couple in Hawaii, again using an on-site “trusted person” to monitor on site and VEs watching via video conference. Remote testing was not well received mainly due to the fellowship, comfort and credibility of in-person testing that had been the standard for many years.



Traditional license testing involved having at least 3 VEs present to check the identification of the candidate, collect their money, and proctor the exam. Each of the 3 VEs had to grade each exam and each sign the paperwork. The lead VE would make sure everything was in order and the submit the paperwork to the VEC where it was manually reviewed and entered into the VEC database, and results forwarded to the FCC. While a candidate upgrading could immediately use their new license privileges, a new ham had to wait 3 weeks or more to get a call sign and get on the air.

While computer-based testing had been widely used in education, professional certifications, and business applications for more than 10 years, it too was slow to be accepted in the radio community. An early version of Exam Tools began to be used by several VECs for in-person testing where the VEC provided “sanitized” laptops and tablets to counter the argument of credibility. This new computer-based testing could streamline the paperwork involved in license testing.



In March 2020, COVID-19 changed everything! The Greater Los Angeles Radio Group Volunteer Examiner Coordinator (GLAARG) joined with the developer of Exam Tools to develop a fully remote testing platform that could be scaled from small to large exam sessions and include all the “whistles and bells” to satisfy the credibility issues. In late March 2020, GLAARG held its first fully remote test session with FCC monitors. The FCC was satisfied that the credibility concerns of the radio community had been successfully addressed. Following that

first test session, Exam Tools was modified to further streamline its tasks, adding an online portal for candidate signup, completely randomized exams for each candidate, integrating everything needed for transmit to the VEC and FCC into one document, and auditability of the entire process.

The remote license testing included pre-registration, pre-check of the candidate and their environment, the exam, instant grade results, autofill of all paperwork, candidate and VE signatures, instant transmit to the VEC and to the FCC with same day or next day posting in the FCC database website. The remote license testing had turned a 3-week plus task into 15-30 minutes for each candidate!

How does it work from the candidate’s side? The candidate needs a computer with a camera and a Chrome browser, a stable Internet connection, a hands-free speaker and microphone, a quiet space with a clear desk or table and no distractions. Many of the candidates use their bathroom space since it is small, easy to clear, and quiet. The candidate goes thru a pre-check which involves, a 360 degree



look at their environment where the VEs see possible places cheat sheets can be located (walls, ceiling, floors, desk, etc.), ID is checked. The candidate then shares their computer desktop via Zoom and the VEs

check the open programs, asking the candidate to close any concerning programs, no headsets allowed, calculators have memories cleared, and candidate is reminded to “keep your eyes on the computer”, no looking around during the test. As soon as the candidate completes the exam, it is instantly graded and the score flashes on the screen. The VE and the candidate sees that score at the same time! Signatures are done and the candidate can stop sharing their screen and log out. The whole process takes about 15-30 minutes.



A big concern in the process is being sure the VEs are comfortable and confident with their tasks -- Training, Training, Training! The VE must learn to use ZOOM, Exam Tools, Google Forms, and Discord. They must also know what to look for in the candidate’s environment, i.e., cell phones, smartwatches, what programs are open on Windows, Mac, Linux computers, candidate behavior, and must have adequate personal computer monitors and internet connection.

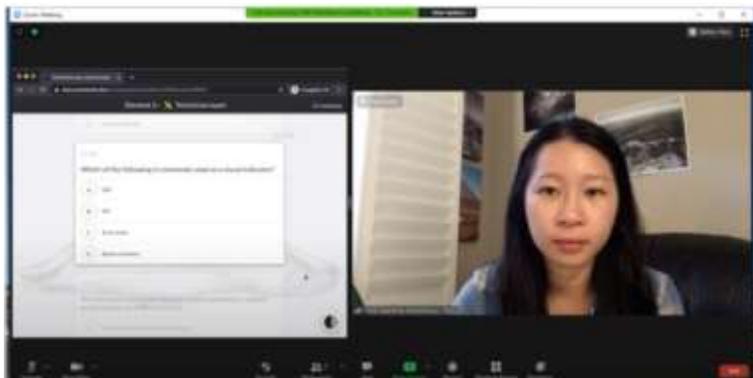
Generally, a VE watches a series of videos and reads several documents to learn the basics, then participates in several real test sessions under the care and feeding of a trained remote test VE.

What's the future of remote license testing? Computer-based testing is here to stay whether its in-person or remote sessions. Remote testing is easily accessible with sessions being held daily/weekly – no more waiting for weeks/months or driving long distances to get a license. Many more home-bound and handicapped persons are getting licensed because they can test from their home. Many clubs have begun to focus on training and letting VECs like GLAARG handle the testing.

On a personal note, in July 2020, I became an accredited VE with GLAARG and have participated in 5 real remote test sessions. Earlier in May, Scott (K4SEH) became a VE with GLAARG. We both have advanced to Room Leads, which means we can lead a remote test session. As a result of getting involved in remote license testing, I upgraded to Amateur Extra on August 14, 2020. I took my test via remote license testing just a little different than most candidates. I was asked by GLAARG if I would be their test subject for one of their new software programs. So, I was their only candidate for the test session and there were 7 VEs and 2 computer techs "watching" me take the exam. Talk about pressure, all the head honchos of GLAARG VEC. But I made it – 49/50!

The weekend of September 5-6, I participated in the largest remote session ever held – 108 candidates! The first session was 30 candidates in Puerto Rico, where we had interpreters if needed, and the second session were 78 candidates from all over the world. In my sessions, every candidate expressed great appreciation for remote testing accessibility and the ease of taking the test and knowing they had passed or needed to study more. After having participated in 5 remote session of over 60 candidates each, I cannot imagine ever going back to the in-person, time consuming, paperwork shuffle.

Here's what a VE is seeing when the candidate is taking the exam.



A screenshot of a recent ZOOM training session that I participated in. The other two are pictures of a couple of VE setups used to participate in a remote test exam. I personally run Discord on my iPad, and the other software on my MacBook Pro.



Congratulations!

The following Lenoir Amateur Radio Club members passed their exams and have upgraded their licenses:

- Chris Aiken (KN4FNI) to Extra
- Josh Edwards (N4JDE) to General
- Ro Maddox (K4HRM) to Extra
- Mitch Mast (KN4AYD) to General
- Charles Smith (KN4SGN) to General



They took their exams via remote testing. Way To Go!

Here are some helpful websites for online study and testing.

Ham Test Online
<https://www.hamradiolicenseexam.com/>

Ham Study Online
<https://hamstudy.org/>

GLAARG VEC (Greater Los Angeles Amateur Radio Group VEC)
<https://glaarg.org/>



FCC Proposes Amateur Radio Fees



The FCC proposes application fees in a Notice of Proposed Rulemaking (NPRM) in MD Docket 20-270, which was adopted to implement portions of the “Repack Airwaves

Yielding Better Access for Users of Modern Services Act” of 2018 — the so-called “Ray Baum’s Act.” The Act require application fees for all services that use the FCC’s Universal Licensing System (ULS), including the Amateur Radio Service which was excluded in an earlier statute.

This means that if you are seeking to upgrade or to get your first Amateur Radio license there will be a charge of \$50 application fee. It is for new, renewed, or vanity call Amateur Radio licenses. There is one application fee if you pass one exam and decide to take the next exam as long as you upgrade at the same time. If FCC adopts this rule, the fee would be in addition to the VEC fee charged by an organization offering the exams.

The FCC is not proposing to charge for administrative updates, such as mailing address changes, and amateur radio will remain exempt from annual regulatory fees. Administrative updates and modifications are highly automated, therefore licensees are encourage to update their own information without charge.

There are a lot of concerns among the Amateur Radio community since this proposal became public.

The American Radio Relay League (ARRL) is planning to file comments in opposition. You may file your comments about the proposal on-line at FCC’s Electronic Comment Filing System (ECFS) website at <https://www.fcc.gov/ecfs/filings> posting in reference to MD Docket No. 20-270.

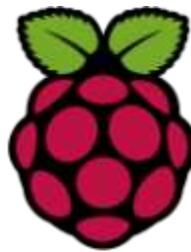
More information can be found at:

<http://www.arrl.org/news/fcc-proposes-to-reinstate-amateur-radio-service-fees>

Raspberry Pi, Ham, YUM

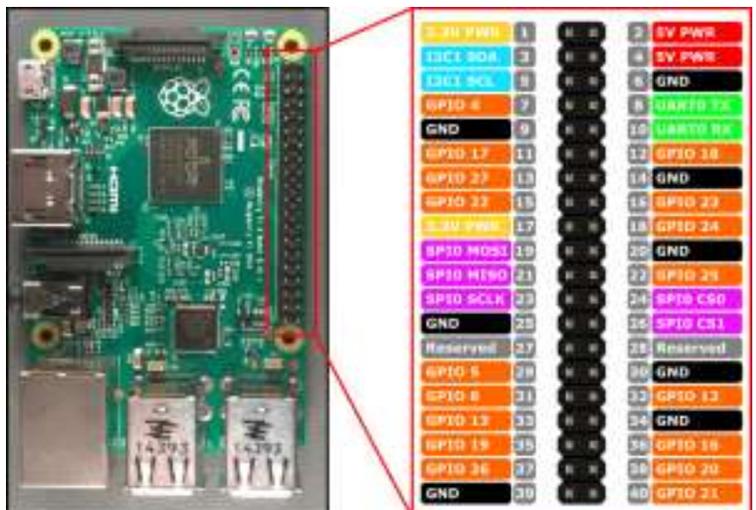
Raspberry Pi and Ham goes together oh so sweet! We are talking about a tiny little computer that could make your Ham Radio life so much more delicious. Since its invention in 2012, the Raspberry Pi is a small computer about the size of a

credit card, fairly cheap, and its software is free. It is very popular and versatile in the Makers, DIYers and Hobbyists communities. Radio Amateurs also saw the potential of this little computer.



The Raspberry Pi does not operate on the Windows Operating System. This mini computer’s OS is a version of Linux called “Raspberry Pi OS” which use to be called “Raspbian” when it first came out. It does not use a traditional hard drive, but instead uses microSD cards to store software. This mini circuit board has General

Purpose Input Output Pins (GPIO pins). These pins gives us the physical interface between the Pi and the outside world by allowing us to connect a wide variety of sensors, devices and breakout boards which collect information and can be controlled by software. Pi HATs (Hardware Attached on Top) are little pieces of pre-assembled hardware components that can be plugged onto the board. They are made to fit within the footprint of the Pi.



Some Amateur Radio uses for the Raspberry Pi are:

- **Decoding Data Modes**

The Pi can use the audio input from an external USB sound card to decode digital modes such as RTTY, PSK, and CW.

- **Remote Software Defined Radio (SDR)**

Attach an antenna to a RTL-SDR Dongle and plug the dongle to a Pi connected to your home network and you can remotely access it with a desktop, laptop, or tablet.

- **WSPR (Weak Signal Propagation Reporting) Transmitter**

Make a “Whisper” beacon using the GPIO pins to output RF between 0-250MHz.

- **Amateur Satellite Tracking**

Install the GPredict software and tracks satellites in real time.

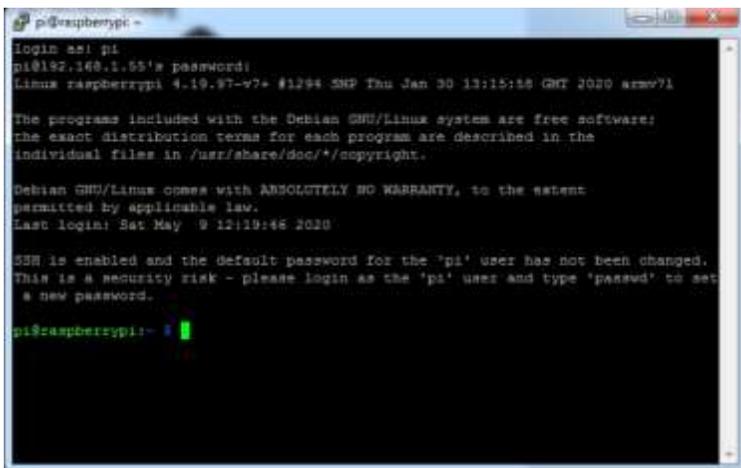
- **Digital Voice (DV) Hotspot**

Connect a USB dongle and an antenna dongle to the Pi and you have an access point into the D-STAR, Fusion and DMR networks. The Pi bridges the gap from RF to the internet, without requiring any local repeaters that support DV.

- **Rotator Controller**

Use the Raspberry Pi to control antenna rotators.

Are you ready to try a piece of the Pi?

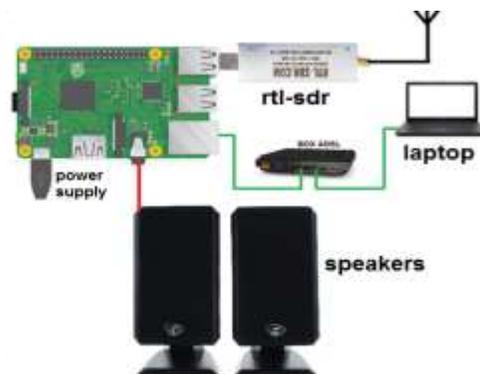


If the thought of using command line programming makes you feel queasy, or you think it's just too complicated, don't be discouraged. There are many websites and videos on the internet that can help you become familiar with Pi software. Some software even come in a USB drive you can just plug in. And they do come with a Windows-like Graphic Interface.

So, dig in!

Here are some helpful websites:

- <https://www.raspberrypi.org/downloads/raspberry-pi-os/>
- <https://hamprojects.wordpress.com/2020/09/06/raspberry-pi-for-ham-radio/>
- <http://www.hamblog.co.uk/top-10-amateur-radio-uses-for-raspberry-pi/>
- <https://orari.or.id/index.php/2019/09/02/setup-raspberry-pi-for-ham-radio/>
- <http://www.g0hwc.com/raspberry-pi-ham-radio.html>
- <http://www.stargazing.net/david/RPi/hrrpi.html>
- <https://www.youtube.com/watch?v=ZhnCvi54zwU>
- <https://www.youtube.com/watch?v=Bwo782dvQng>
- https://www.youtube.com/watch?v=kYwh3kn_Glc



Frequencies

146.625- 94.8
Club Repeater (N4LNR)

147.330+ 141.3
Hibriten Mountain Repeater
(KG4BCC)

145.535
Simplex

29.6
Simplex FM

28.374
Simplex USB

Nets

LARC Weekly Net
Tuesday, 7:00 PM
146.625 Minus PL 94.8
Alt. 147.330 Plus PL 141.3

Caldwell ARES Net
Sunday, 9:00 PM
147.330 Plus PL 141.3

DMR Digital Net
Tuesday, 8:00 PM
Lenoir Local DMR

Lenoir Amateur Radio Club, Inc

P O Box 3276

Lenoir, NC 28645

N4LNR.org

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