

May, 2020

LARC NEWS & VIEWS

N4LNR



Lenoir Amateur Radio Club Newsletter

Events

LARC Morse Code Class

Mondays, 7:30 pm
Webex Online Meeting

LARC General Exam Prep

Thursdays, 7:30 pm
Webex Online Meeting

Next LARC Meeting

Thu. Jun 11, 7:00 pm
Webex Online Meeting

License Exam

Sat. Aug 15, 9:30 am
Foothills Community Workshop
141 N. Main Street
Granite Falls, NC 28630
By Appointment Only
Please register ahead
(K3OS@ARRL.NET or 828-270-8173)

ARRL Field Day 2020

Jun 27-28
New Rule Waivers
www.ARRL.org



Meet, Learn, Test

Making Sense of Dits and Dahs

Our Morse code class is well on our way to learning all the letters of the alphabet, the numbers, and punctuations. If you are interested, join us online Mondays. We will soon learn to make and assemble our own practice oscillator.

Need a License Upgrade? Join our General Exam Prep Class

We will explore in depth the sections and theory that are covered in the General License Exam. It will benefit those new to Amateur Radio as well. Join us online Thursdays.

Exam Session Saturday August 15, 2020

This exam session is for all License classes. LARC members that are Volunteer Examiners will administer the exam. Due to the Corona Virus situation, the procedures are as follows:

Persons wishing to take an exam must complete a NCVEC 605 form. Download the form at <http://www.arrl.org/files/file/VEs/NCVEC%20Form%20605%202017%20Sept%20Interactive.pdf>.

The form must contain your email address or text message capable phone number. The test fee is \$15 payable by check to ARRL VEC or by PayPal to garysch69@gmail.com. Email or fax of the form will not be accepted. Mail completed and signed NCVEC 605 form with your check to:

Gary Schwartz K3OS
65 King Arthurs Ct
Hickory, NC 28601

Once the form and fee have been received, a confirmation will be sent to you with an appointment time to arrive at the testing site Foothills Community Workshop. Applicants will be scheduled in 10 minute increments starting at 9:30AM. This will allow us to provide adequate physical separation between applicants and time to sanitize each workspace. It will also expedite the correcting of your exam. In deference to some of the VEs, everyone will be required to wear a facial mask.

All monies will be returned if you cancel for whatever reason. Questions to Gary Schwartz K3OS@ARRL.NET Call or text 828-270-8173.

Morse Code To Mars

NASA's new rover, built at the Jet Propulsion Laboratory in California, is being readied for a July launch to Mars. The rover is named Perseverance by a seventh-grader who won the naming and essay contest open to K-12 students. Perseverance will take the names of more than 10.9 million contest participants as well as essays from the top 155 finalists inscribed in minuscule type on three metal microchips on its rear license plate. And the rover's carrying capacity for messages of significance doesn't stop there.



There is a hidden message concealed in the diagram of Earth, Mars, and the sun etched inconspicuously on the license plate. The dots and dashes of the image is a Morse code message that reads "Explore As One." The illustration and message is meant to convey a sense of connection between the planets while emphasizing our shared link of the sun.



It's not the first time NASA—known for cutting-edge communication, science, and technology—has applied the old -school mode of communication to make its mark in outer space. Engineers at the Jet Propulsion Lab that built Perseverance's predecessor Curiosity added something special to its wheels. The tires made imprints in the Martian soil with the lab's initials JPL in Morse code dots and dashes.



No stranger to Amateur Radio communication methods, NASA has encouraged programs like SAREX that provide communication between astronauts in low-earth orbit. Ham operators across the globe use ARISS for communication between students and astronauts, and there is a long history of Hams in space, including Bouvet Island DXpeditioner, the late Chuck Brady (N4BQW).



Charles Eldon Brady Jr.

ARRL Field Day 2020



ARRL Field Day is the single most popular on-the-air event held annually in the US and Canada. On the fourth weekend of June of each year, more than 40,000 radio amateurs gather with their clubs, groups or friends to set up temporary transmitting stations in public places to demonstrate ham radio's science, skill and service to our communities and our nation. It combines public service, emergency preparedness, community outreach, and technical skills all in a single event. Field Day has been an annual event since 1933, and remains the most popular event in ham radio. The contest part is simply to contact as many other stations as possible and to learn to operate our radio gear in abnormal situations and less than optimal conditions.

This year 2020, due to the Covid-19 pandemic and public health recommendations and requirements, many radio clubs have made decisions to cancel their group participation or to significantly modify their participation for safe social distancing practices. On May 27, 2020 temporary rule waivers have been adopted allowing greater flexibility in recognizing the value of individual and club participation regardless of entry class.

For Field Day 2020 only, Class D stations may work all other Field Day stations, including other Class D stations, for points. Class D stations ordinarily may only count contacts made with Class A, B, C, E, and

F Field Day stations, but the temporary rule waiver for 2020 allows Class D stations to count contacts with other Class D stations for QSO credit.

The waiver also allow participants from any Class to optionally include a single club name with their submitted results following Field Day. For example, if two members of the same Radio Club — one operating from their Class D home station, and another from their Class C mobile station — both can include the radio club's name when reporting their individual results. The published results listing will include individual scores for each operator, plus a combined score for all entries identified as the Radio Club.

For additional information on Field Day go to www.ARRL.org where the above information can be found.



The Ham and the World of SUN *By Ian Poole G3YWX*

After you've been around ham radio for a while, invariably you will hear about solar activity, K indexes, A indices, numbers, solar flux, cycles, and other terminology. So, here's a very basic introduction to the world of the SUN. Pretend this entire article is in "quotes" from the ARRL publication, *Radio Propagation: Principles and Practice*, by Ian Poole G3YWX.

The sun is a noisy neighbor, regularly or not so regularly sending out bursts of RF energy known as solar flux. Flux is a measure of solar activity that indicates the level of radiation that is emitted by the sun.

The sun has "sunspots" periodically. These are the darker parts of the sun that are significantly cooler than the rest of the sun. You know, 3700 degrees Celsius, rather than 5000 degrees Celsius – like being in the NC high country during the summer. Sunspots have been officially counted since the 1600's. Each sunspot has a number, they go in cycles, and currently we are at the beginning of Cycle 25. Today, as I write this article, the sunspot number is "0". The sunspot number is important to hams because the higher the number the better the HF propagation. When the cycle is at its peak, HF and even VHF frequencies experience some remarkable band conditions – 20 meters is wide open 24 hours and 6 meters has long skips. But when the sunspot numbers are at their minimums, 80 meters shuts down early and you can forget about any DX in the 14 MHz frequencies and above. Bummer!

There are other numbers besides sunspot numbers. Wait for it! The K Index measures the variation of the earth's magnetic field compared to what are "quiet day" conditions. Poole opines that the higher the K number the worst the band conditions. The K Index ranges from 0 to 9 and values between 2 and 4 indicate unsettled magnetic conditions and the possibility of some degradation on the HF bands. Values on up to K-9 indicate steadily worsening conditions with K-9 a major storm that is likely to result in a blackout of HF conditions. The National Weather Service translates the K indices to predict band conditions. See www.swpc.noaa.gov/noaa-scales-explanation.

The A Index is a linear measure of the earth's magnetic field and has a much larger range than the K Index –

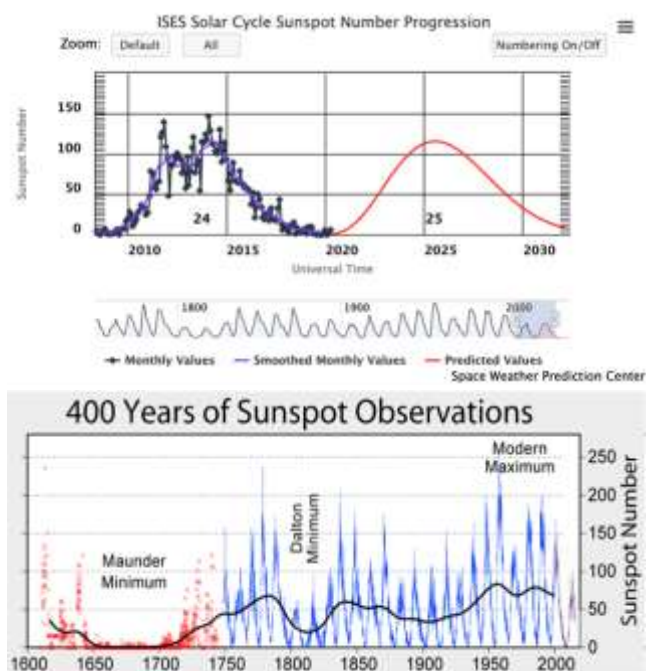
from 0 to 100 and even to 400 in a severe geomagnetic storm. While a geomagnetic storm is a disturbance of the earth's magnetic field, an ionospheric storm is a disturbance of the ionosphere. You guessed it – a geomagnetic storm usually, but not always, leads to an ionospheric storm.

Then there's that "solar flux" mentioned in the first paragraph. Flux numbers range from around 50 at sunspot lows to about 300 for short periods when the sunspots are at their maxima.

In summing up all these indices and numbers, Poole concludes by saying "For 'good' propagation conditions it should be remembered that there should be several consecutive days of sustained high solar radiation with the absence of solar disturbances." Okay...

If you are a "bottom line" sort of ham and don't want to worry about what all these indices and numbers mean, there are software programs that will plot the best frequencies to use for the time of day, distances between stations, and other variables. Take a look at www.greg-hand.com/hf.html or <http://www.voacap.com>. And, you just might want to put one of those little gadgets with solar data on your desktop from www.hamqsl.com.

The SUN is complex and some even worship it. We won't go that far, but it's a significant factor in radio communications and worthy of our consideration!



The Mystery of Ed's Radio

Ed (KB4KHR) was having trouble with his Yaesu FT2900R/E radio that he had in his car. When he keyed up the mic the radio would shut down. He decided to talk to some of the members of the Lenoir Amateur Radio Club to see if anyone had an answer to the problem. Someone said the car battery maybe low. The transmitter doesn't really draw much power until you start to speak, so that would explain it. The display on the radio may be set to show the battery voltage. The FT2900R/E have four output power settings 75 watt, 30 watt, 10 watt, and 5 watt. Ed was using the 75 watt and was suggested to try setting the power level lower and see if it still keeps shutting down. He attempted to set it at medium power and it still didn't solve the problem. Ed said the car battery have been replaced recently.



It could be the power connector and cord. Any voltage drop in the power line will cause the radio to go into shut-down. Some cables are not made with heavy enough wire to handle the current. Therefore replacing the power line was an option.

Someone else guess that it might be a problem with the fuse holder. Corrosion can happen over time. So when the club was having a work party where the communication trailer is stored, Ed went over to have the radio looked at. It was then that the source of the problem was discovered. They found out the fuse housing and the fuses were corroded. They checked the fuses by unplugging and plugging them. They used a meter to check the voltage at the back of the radio. The result was 0.08 volts after the first unplug and plug. Then with the car was running they got 14.4 volts which was from the alternator. Then turned off the car and the reading was 12.2 volts. It was too tight of a spot to get into with a brush to clean the contacts. For a quick test they replace the negative

line fuse with a new 25 amp but it didn't fix the problem.



Someone found out that carburetor cleaner would clean the corrosion. So they disconnected all the effected parts and sprayed carburetor cleaner on the corroded fuse contacts and the fuse housing contacts. Then they let it sit for two days to dry.



Then Ed reconnected everything in the car. The FT2900R/E was reconnected to power and antenna, then tested. The radio now transmit without shutting down. The Lenoir Amateur Radio Club have very knowledgeable members. And Ed appreciate all the help from everyone.



A Vintage Find

Look what Joshua (KO4JDH) found!



He was at a garage sale and found this SR-C146A. It was produced in 1972.



It is a 5 channel crystal controlled hand-held transceiver.



The AA battery pack is cracked and broken.



Joshua is going to try to epoxy it back together. He plugged in a 9V and the radio turned on.



According to www.radiomuseum.org, it was considered "World Smallest Handie Rig" at the time. Its dimensions are 3 x 8.3 x 1.6 inch. The Manufacturer / Brand was Standard Radio Corp. (SR), Tokyo.



A Ham's Life

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?

Scott (K4SEH) made contact with the International Space Station.



Paul (WA2ZCM) Humming A Few Bars.



Mike (N4FAX) shares how he mounted his mobile radio in his truck. The radio is an Alinco DR 635 dual band 2 meter 440. He placed it on the passenger side because he is usually the only occupant in the truck. He used a 22 inch Comet LM-300 gooseneck with a faceplate. The mount is secured under the seat bolt with 2 racquet balls on the shaft to dampen out the vibrations. The flexible neck makes several mounting locations possible with no holes drilled in the vehicle.



Mitch (KN4AYD) and his portable / mobile / home rig.



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

Serving Amateur Radio In Caldwell County Since 1986

Become a member or renew your membership

Pay your dues in person to the Treasurer or by mail

Full Member \$15/year

Family Member \$25/year

Ask about our Life Time memberships

Send comments concerning the LARC NEWSLETTER to

newsletter@n4lnr.com

Suggestions and your articles are appreciated. Tell us about yourself so we can feature you in our newsletter.

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