

November, 2020

LARC NEWS & VIEWS

N4LNR



Lenoir Amateur Radio Club Newsletter

Events

Dec. LARC Meeting

Thu. Dec. 10, 7:00 pm

Webex Online Meeting

Speakers: John Crowe AG4ZL &

Tom Land KA4HKK

Skywarn / Auxcomm / ARES

YOTA Month

Dec. 01– 31

<https://www.ham-yota.com/>

<https://youthontheair.org/>

Solar Eclipse

Mon. Dec. 14

AMSAT Launch

Sat. Dec. 19

<https://www.amsat.org/launch-window-for-amsats-radfxsat-2-fox-1e-opens-december-19th/>

Next LARC Meeting

Thu. Jan. 14, 7:00 pm

Webex Online Meeting



ARISS - Talk With An Astronaut

Amateur Radio on the **International Space Station (ARISS)** is an international program that lets students use Amateur Radio to talk directly with crew members living and working on the International Space Station.

At our last month's club meeting online, **Gary (K3OS)** showed us a video about how an Amateur Radio Club and their local schools, along with their community participated in the ARISS program .



Getting the opportunity to participate in such event is quite special and difficult to obtain. First, a proposal must be submitted which can only be done at spring or fall of the year. If the proposal gets accepted then the weeks and months of preparations begin. The program involves a whole community: the schools, the students, the parents, the teachers, the volunteers, the local news media, and of course the Amateur Radio Operators, NASA staff, and the Astronauts.

Teachers encourage students to learn everything about space, and STEM (Science, Technology, Engineering, and Mathematics). The video showed students 5th through 8th grades who wrote an essay and were chosen to represent each school. Each student gets to ask one question to the astronauts. An 8th grader who was a licensed Amateur Radio Operator was given the opportunity to make the first call to the International Space Station. Having students and teachers who are licensed radio operators to participate is awesome because it provide great publicity for the hobby. And of course being chosen to participate makes every Ham proud.

The Lenoir Amateur Radio Club hopes to be involved in such event with the local schools and the community in the future.

FCC Require Your E-mail Address



Amateur radio licensees and candidates will have to provide the FCC - Federal Communications Commission with an email address on applications, effective sometime in mid-2021. If no email address is included, the FCC may dismiss the application as defective. The FCC is fully transitioning to electronic correspondence and will no longer print or provide wireless licensees with hard-copy authorizations or registrations by mail.

When an email address is provided, licensees will receive an official electronic copy of their licenses when the application is granted.

Under Section 97.21 of the new rules, a person holding a valid amateur station license "must apply to the FCC for a modification of the license grant as necessary to show the correct mailing and email address, licensee name, club name, license trustee name, or license custodian name." For a club or military recreation station license, the application must be presented in document form to a club station call sign administrator who must submit the information to the FCC in an electronic batch file.

Under new Section 97.23, each license will have to show the grantee's correct name, mailing address, and email address. "The email address must be an address where the grantee can receive electronic correspondence," the amended rule will state. "Revocation of the station license or suspension of the operator license may result when correspondence from the FCC is returned as undeliverable because the grantee failed to provide the correct email address."

So what does that mean to those of us who already have their licenses? You should go to your FRN account on the FCC.gov website and update your personal info and include your email address.

For more information go to:

<http://www.arrl.org/news/fcc-to-require-email-addresses-on-applications>

YOTA—Youngsters on the Air

Last month we talked about **POTA**, **SOTA**, **COTA**, **IOTA**, and **BOTA**. This time we will talk about **YOTA** *Youngsters On The Air* or *Youth On The Air*.



December is YOTA month. The annual initiative sponsored by Youngsters on the Air (YOTA) initially focused on International Amateur Radio Union (IARU) Region 1 (Europe, the Mideast, and Africa), with young radio amateurs taking to the air with YOTA-suffix call signs.

YOTA (Youth on the Air) in Region 2 (the Americas) is following step, and K8Y, K8O, K8T, and K8A will be on the air from the US.

The idea is to demonstrate amateur radio to youth, and to encourage them to get licensed and get active on the ham bands.

All radio amateurs can support this effort by contacting participating stations. An awards program is available.

During YOTA month 2019, 47 participating YOTA stations racked up nearly 130,000 contacts. Follow YOTA via Twitter: [@hamyota](https://twitter.com/hamyota) and [@hamyota_official](https://twitter.com/hamyota_official). All young radio amateurs (up to age 26) are encouraged to participate. Direct questions via email to info@ham-yota.com.

The Youth is strong!



AMSAT's RadFxSat-2 / Fox-1E Launch

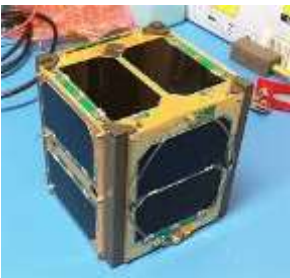


AMSAT, The Radio Amateur Satellite Corporation is sending its new RadFxSat-2 / Fox-1E CubeSat into orbit.

RadFxSat-2 is the fifth and final Fox-1 satellite built by AMSAT in partnership

with Vanderbilt University which will carry a radiation effects experiment, studying new FinFET technology.

Virgin Orbit, a service that provides launch solutions for small satellites has announced that the launch window for their LauncherOne rocket system Launch Demo 2 mission opens on December 19th. This launch will carry the RadFxSat-2 / Fox-1E to orbit.



The RadFxSat-2 spacecraft bus is built on the Fox-1 series but features a linear transponder "upgrade" to replace the standard FM transponder in Fox-1A through D. In addition, the uplink and downlink bands are reversed from the previous Fox satellites in a

Mode V/u (J) configuration using a 2 meter uplink and 70 cm downlink. The downlink features a 1200 bps BPSK telemetry channel to carry the Vanderbilt science data in addition to a 30 kHz wide transponder for amateur radio use. Telemetry and experiment data can be decoded using FoxTelem version 1.09 or later. FoxTelem is available at <https://www.amsat.org/foxtelem-software-for-windows-mac-linux/>.

Participation in telemetry collection by as many stations in as many parts of the world as possible is essential as AMSAT Engineering looks for successful startup and indications of the general health and function of the satellite as it begins to acclimate to space. AMSAT will send a commemorative 3D printed QSL card to the first station capturing telemetry from RadFxSat-2.

Uplink LSB: 145.860 MHz through 145.890 MHz

Downlink USB: 435.760 MHz through 435.790 MHz

Launches on ELaNa XX – Virgin Orbit LauncherOne Launch Demo 2. 1.2kbps BPSK telemetry 435.750 MHz

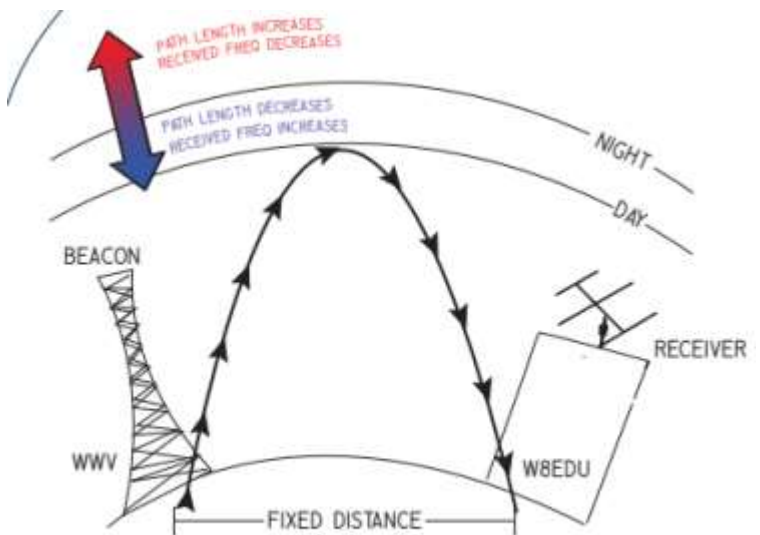
For More Information go to: <https://www.amsat.org/launch-window-for-amsats-radfxsat-2-fox-1e-opens-december-19th/>

Propagation During Solar Eclipse

A solar eclipse will occur December 14th, 2020. There is an opportunity for Ham Radio Operators to help further the understanding of propagation during a solar eclipse. The project is called *The December 2020 Eclipse Festival of Frequency Measurement*

For more information about the project you can go to <https://hamsci.org/december-2020-eclipse-festival-frequency-measurement>

The website will provide information on how to sign up, prepare your receiver, and prepare your computer and software. Then they will show you how to perform the survey and upload the collected Data.



My Mobile Radio DC Wiring

By Buck McDaniel (N4PGW)

For 40+ years of amateur radio, and CB before that, I wired mobile radios in my car according to the manufacturers' manuals.

At first, the instructions were to ground the radio mounting bracket and negative DC wire to the body or frame of the car where the radio was installed. Later the radios I bought came with wires long enough to reach the battery and instructions were to connect both wires to the battery posts/terminals with a fuse on the positive lead. Finally, radios started coming with long wires and fuses, not only on the positive wire, but also on the negative wire.

In timely fashion, I discovered a rather heated discussion about whether or not the fuse on the negative side of the battery was useful or essential. Three members of the group had occasion to use these negative fuses, and elsewhere, I found a fourth. Also in the discussion was a Ham who had a career of installing Motorola radios in government and commercial vehicles. He told me how he grounded the radio to the chassis and never connected a lead to the negative battery terminal, so I decided to research it further before continuing my installation.

The risk involved in running the negative lead to the battery is that if the connection to the vehicle chassis ground becomes loose or corroded, then, the current used by the car travels through the negative lead, through the coax ground, to the antenna ground

where it follows the chassis of the car. When you crank the car, hundreds of amps are pulled through the circuit.

If the negative lead is not fused, the current melts the plastic insulation on the wire and on the coax and can damage the radio, too. In one of the cases in the discussion above, the car computers and radio were destroyed, and in another, the radio was fine, but the plastic was melted all over the car.

In a third incident, the Ham had the negative fuse and did not suffer any damage.

But, then, I found a fourth Ham who also experienced a similar incident. In his case, the negative lead had a fuse, which blew. But because he also had a CW key attached, which also made contact with ground, the current blew the trace off his radio circuit board before blowing the 20 amp fuse.

After further research, I learned that the military, the government and any commercial business that uses Motorola, all use the Motorola installation methods.

Additionally, I analyzed all possibilities of problems that could be caused by the radio installed the Motorola way. What I concluded is that any electrical issues related to the vehicle, are kept past where any path of the radio follows. If the battery corrodes and causes a weak electrical connection, then the radio suffers from a weak connection, too. But cranking the car no longer goes through the radio equipment.

My Mobile Radio DC Wiring (cont.)

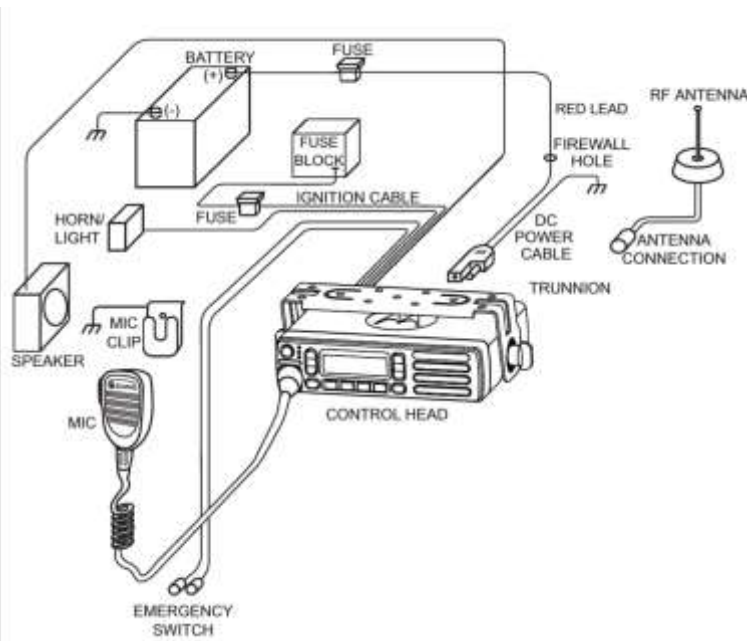
Here is are the Motorola mounting instructions, which I plan to follow from now on.

There instructions are simple.

1) Run the shortest possible negative power lead and ground it to the chassis of the car. Written instructions are clear that the negative wire is not to be connected to the battery or to where the battery connects to the chassis and that no fuse is to be put on the negative lead.

2) The positive lead is to be run directly to the positive terminal post of the battery. Near the battery post is to be a fuse in case the wire is shorted to the chassis between the radio and the battery.

Here is an image from a Motorola installation guide:



This image does not show it, but some of the instructions show the negative lead also going through the grommet, but connecting to the chassis away from the battery connection.

I hope you find this article useful in helping you make an informed decision on how to wire your own mobile radio.

I want to thank KN4AYD for his input concerning military vehicles and N8JI (N8JI.com) for his link to Motorola installation manual for the Radius CM200/CM300 radio.

Do you have a story to tell? Are you working on a project?

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.



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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