SEPTEMBER 2017

N4LNR

News & Views

P. O. Box 3276

Lenoir, NC 28645

30 Years

Serving Amateur Radio

In Caldwell County

Next LARC Meeting
Thursday, September 14
7:00 PM
Gamewell Fire Dept.
2806 Morganton Blvd SW
Lenoir

LARC Weekly Net
Friday, 9:00 PM
on Alt 147.330 Plus 141.3

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

DMR Digital Net
Tuesday 8:00 PM
Lenoir Local DMR

Ham Radio & Satellites!

LARC September Meeting

LARC member Phillip Jenkins N4HF will discuss tracking and communicating with satellites and the International Space Station at the September 14 club meeting. WARNING, the thrill of satellite operation can be addictive! You may find yourself trying unusual radio/antenna setups or investing in multimode gear. Join us and see if you get the fever!

A brief meeting will follow the program, including a discussion of the Catawba Valley Hamfest, the Grand Further Mountain Run, and Club projects.

Be weather smart! At this writing, all those forecast spaghetti lines are pointing at Western North Carolina. Have a plan!

President's Comments

John Crowe AG4ZL

Hello everyone! Phillip Jenkins N4HF will present our program this month. He is going to do a "how to" on tracking and communicating with Satellites. Philip is a life member of AMSAT and a member of AMSAT-France. The Radio Amateur Satellite Corporation (AMSAT) was formed in 1969 to foster amateur radio's participation in space research and communication. In addition to being a member of LARC, Phillip was the Secretary for Road Show Amateur Radio Club from March 2013 to September 2015, and is a Public Information Officer (PIO) for ARRL.

I must admit working those "birds" are fun and it doesn't' take much power either to make a contact.

Everyone stay weather aware as Hurricane Irma is making her way toward land. The track is still uncertain but the question is "will it effect our weather here?" Yes, in someway. But it's still too early to say for certain what type of or when. Stay tuned to local weather outlets. Sending thoughts and prayers to our friends in TEXAS and FLORIDA.

I hope to see you at this month's meeting on Thursday, September 14, at the Gamewell Fire Dept.

7 3 John AG4ZL

Hickory Daily Record Features LARC & Amateur Radio

Lenoir Amateur Radio Club serves its community in times of crisis

Radio

Lenoir Amateur Radio Club members provide emergency communications to support Caldwell County Emergency Management, including local fire departments, EMS and hospitals. This emergency exercise involved a truck carrying toxic chemicals that overturned near an elementary school, causing the fire units to control/ handle not only an accident, but evacuating the school due to a vapor cloud and transport of numerous victims to the local hospital.

On Sunday, August 27, the *Hickory Daily Record* ran an excellent full-length feature on the Lenoir Amateur Radio Club. The article resulted from an interview between Mary Canrobert, a local free-lance writer and Club member Ro Maddox K4HRM.

The article focused on amateur radio as a hobby and a public service. Due to a system glitch, the *HDR* could not provide an electronic link to the article.

LARC Digital Data Group Forms

I am forming a group to investigate the use of digital protocols via existing VHF and UHF repeaters. A recent QST editorial echoes my own thoughts that the ability to send data in addition to communicating by voice is very important for both EmComm and the community events we support. Just think of having the ability to send files, lists, spreadsheets and pictures. Further, I believe that all communications and relays, such as to Raleigh and SkyWarn, need to be done without use of the Internet. An infrastructure like this could also be used for routine club communications that would help train everyone. The basic core of this proposal is to use equipment, modes and software that already exists.

There are a number of parts already in place to support this concept. We all know that the 440mHz repeaters are vastly under utilized. The same could be said for some of the 2-meter repeaters. Free software is readily available for the digital modes. These require a simple computer to rig interface that can be either purchased or home built. Smartphone and tablet software also exists, though not as full featured as the desktop/laptop versions.

What is needed is a group of us to get our heads together to map out a plan, explore the options and test some of the methods. Surveying other successful city & state data communications setups should be done. A well-conceived plan will also help define the needs and equipment for our communications trailer.

If you are interested in participating, please contact me: Gary Schwartz K3OS, garysch69 [at] gmail [dot] com, 828-two seven zero-9573.

ASHEVILLE RADIO MUSEUM TOUR SET FOR SEPTEMBER 23

The special tour of the Asheville Radio Museum is set for September 23 at 1:00 PM. Prior to the tour, the group will meet for lunch at the Village Wayside, 30 Lodge St., Asheville at 11:30 am.

Members of LARC and other area clubs are invited. If you plan to attend the tour, please email hrmaddox@nettally.com NO LATER THAN SEPTEMBER 18 and indicate if you will be going on the Museum Tour and also plan to meet for lunch so that a count can be given to both the restaurant and the Museum.

CQ-CQ W4R ~ 20th Anniversary

Catawba Valley Hamfest ~ Morganton NC ~ Calling CQ

The Catawba Valley Hamfest was held on August 5 at the Burke County Fairgrounds in Morganton. LARC took the Communications and Antenna Trailer and setup a Special Events Station -- W4R -- commemorating the 20th Anniversary of the Hamfest. Frank Gordon KN4CU, Brian Hudson KM4KIS and Marty Bumgardner KM4IOU assisted in getting the trailers to/from the Fairgrounds as well as getting them in place and operational. Tom Land KA4HKK, Ro Maddox K4HRM and John Crowe AG4ZL operated W4R.

Over the Friday evening BBQ dinner, Ro talked with Tom Taylor KC4QPR, the founder and driving force behind the Hamfest, having never missed the CVHF in its 20 years. Tom said that attendance had declined over the years primarily due to buying ham gear on the Internet. He said younger hams are more technology oriented and a lot of what is at the Hamfest and Flea Market doesn't appeal to them. Also, many of the area hams, who frequented the Catawba Valley Hamfest religiously for many years, are now silent keys. Tom said that Hamfest would always be around though because one person's junk is another's treasure.



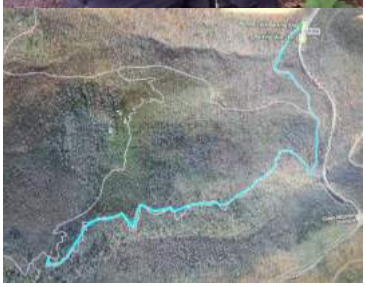
LARC/Watauga Picnic/Fox Hunt Set For October 28

A fun fox hunt and picnic has been set for October 28 for the members of both the Watauga and Lenoir Amateur Radio Clubs. The event will be held at the Yadkin Valley Community Park, 2450 NC – 268, Lenoir. Planning is under and volunteers are needed to help this event be a grand success.

Due to the Western Branch ARRL ARES meeting being scheduled for that morning, Tom KA4HKK is asking for volunteers to cover during his absence. Contact Tom thomasland@msn.com if you can help

REACT/LARC Support Grand-Further Mountain

REACT and LARC assisted with trail support and communications for the Grand-Further Mountain Run on Saturday, August 26. This Run is the premiere mountain race in North Carolina. The 25-kilometer course climbs Grandfather Mountain a total of two times from both sides of the mountain. The terrain is unforgiving, extremely technical, but most of all, astounding! Fixed ropes and ladders are even placed in certain sections of the trails to assist in climbing the tallest mountain in the Blue Ridge Mountain Range. This race is not for the faint of heart or the weak of knees.



Mark Barrera K9FWA as a member of REACT provided trail support, first aid, logging runners and communications for the Run so that the Race Director could generally know where all runners were on the trail. He was stationed at Flat Rock. To reach his station, Mark had to hike in from the Blowing Rock Parking Lot (Map at right shows his hike in/out beaconing on APRS.) One runner was injured on the trail run. As Mark describes "I was working with 2 members of Grandfather Mountain Forest Service. I was first to be notified of an injured runner by another runner and I communicated that to the Race Director. Forest Service heard the transmission and headed down from Briar Patch to find the runner and I headed up from Flat Rock. I met a Forest Service Member who was already with the injured runner and we waited for a Rescue Team to arrive coming from the Ladders at top of mountain. The Rescue Team provided the runner medical support and we walked her down the mountain together to the Blowing Rock Parking area.

LARC members Marty Bumgardner KM4IOU, Josh Edwards N4JDE, Ro Maddox K4HRM and Tom Land KA4HKK worked shifts beginning at 7 AM at the Caldwell County EOC providing communications via DMR and VIPER with emergency personnel and the Race Director. Operations were ended at 3 PM when the last runners finished the run.

CERT/REACT Activities

Shirley Kanode, Caldwell County CERT/REACT

On August 24 at the Caldwell County REACT meeting, we had a demonstration and practice drill to deploy traffic control signs and barriers on the new **Multiple Event Response Trailer (MERT)**. Kenneth Teague, Caldwell County Emergency Management Coordinator, demonstrated the correct way to mark lane closures using cones and arrow signs, block vehicular traffic, and control pedestrian traffic. Caldwell County REACT members may be called to assist with MERT deployment.

As part of Emergency Preparedness Month, plan to attend **"Build Your Emergency Bag,"** led by Mark Barerra. There is no charge, and everyone is invited! No registration required.

B.Y.E.B - Build Your Emergency Bag
Saturday, September 9, 2017 10:00am
Caldwell County Library - Lenoir Branch, Meeting Room #3, 120 Hospital Avenue, Lenoir, NC 28645

We will demonstrate and display family emergency kits, go bags, first aid kits, CERT kit, an emergency radio kit, and vehicle emergency kits. You will be provided with lists of items to include, sources for equipment, and 10 mistakes to avoid when preparing an emergency kit for your family. A basic, 3-day kit is a necessity for every family. Come to class and learn some money-saving tips.

This is a learning opportunity for people with little or no emergency preparedness experience and for those who have had their emergency kits for years who would like to compare and update their knowledge.

CERT Basic Training Class—October 9-16
Caldwell County Health and Human Services Building, 2345 Morganton Blvd SW, Lenoir, NC
Send an email to caldwellcountycert@gmail.com with **your name, address, phone number.** There is no charge.

Time - Date	Topic
6:00-9:00 PM Mon 10/9/17	Disaster Preparedness CERT Organization
6:00-9:00 PM Tues 10/10/17	Disaster Medical Operations - Part I Disaster Medical Operations - Part II
6:00-9:00 Thurs 10/12/17	Fire Safety and Utility Controls Group Exercise
10:00-1:00 PM Sat 10/14/17	Light Search and Rescue Operations
6:00-9:00 PM Mon 10/16/17	Disaster Psychology Terrorism and CERT

https://caldwellcountycert.com/ https://www.facebook.com/CaldwellCountyCert/ https://www.facebook.com/caldwellcountyreact/

Tower Building 101: Pouring the Tower Foundation & More

By Dick Blumenstein K0CAT

Last month we dug the hole for the tower foundation and lowered in and positioned the rebar cage along with the anchor bolt jig assembly and Ufer ground.

The "pour" day arrived and I needed to coordinate the concrete supplier as well as the concrete pumping guys and to make sure that the concrete was per specification.

They connected up about 150 feet of hose to the pumping truck and ran it across the front lawn, down the slope to the side and back of my house where the foundation hole had been dug.

The guy manning the loose hose end in the hole had a radio transmitter hanging off his back pocket that enabled him to remotely turn on and off the pump while the second pumping guy alternately went back and forth between the pumper and the foundation hole.

To the right is a view looking into the hole just after they started filling in the hole. Note that no dirt is allowed to come within a minimum of 3" (actually it was about 6") from the rebar on the sides.

A lot of calculations were made before the concrete truck ever arrived to estimate the amount of concrete that would be needed for the job. I had calculated about 8.3 cubic yards that would be needed, so I ordered 9 yards. When the pumping guys first got on the job, they estimated about 7.5 yards with a small fraction of a yard inside the piping, so I felt pretty good about my calculation

As we got within about 12" of the top of the concrete form, the concrete truck ran out of concrete! HOW COULD THAT BE?



Now we had a real issue!! I was pretty upset. It turns out that the concrete company measures by WEIGHT but charges per yard with an estimate of volume. I really felt not only short-changed, but also the clock was running on the pour. There could not be 2 different pours on 2 different days. A frantic call to the concrete company got another yard on its way (not without paying first for the additional yard). The concrete pumping guys started testing the plasticity of the concrete in their piping every 15 minutes or so to make sure it didn't harden in the pipes and at one point circulated the concrete from the first section of pipe that was sitting in the sun. It took a VERY LOOOONG hour for the extra yard of concrete to arrive and the pour continued.

Here we see the final yard of concrete being poured along with the use of a vibrator tool to make sure all entrained air has been removed and that the two pours separated by an hour's time would be well mixed.

When they topped off the form (which deliberated was NOT level to allow future water runoff), the main pumping guy went into action with his long magnesium trowel and kept screeding off the surface until it looked well formed and smooth.

Here's the grunt and QA guy/author just after the concrete pumping guys finished up and left to allow the final edging to be done by him about 2 to 3 hours later.

Later that evening after the edging was done and before the pad was dampened down and covered with a tarp to slow down evaporation, this is what it looked like.

Once or twice a day, the tarp was lifted off the pad and the concrete was hosed to keep it damp. An old 1940's concrete book I've got (about 4" thick) has this graph in it which shows the ultimate strength of concrete. Keeping the concrete wet and curing it for 30 days versus letting concrete air dry with no dampening, makes the concrete TWICE as strong.

After about 5 days, it was time to remove the anchor bolt jig.

Here's what I was left with. If you look closely, there is a not so smooth surface that got missed under the jig boards. Not real pretty.

It turns out that the jig worked perfectly and the tower base was slipped down over the anchor bolts and the 6 nuts below the plate were leveled off against each other.

I was able to tighten 4 of the 6 nuts from above the plate, but had to wait for the arrival of a 1-5/8" wrench to get to the other 2 nuts tightened on top. In the meantime, the tower base specification called for grout to be under the tower base. After inserting some nuts and bolts in the tower legs and rechecking the leveling of the plate, I coated the concrete with a bonding agent and started to mix up about 50 lbs of grout, thinking that I would make the consistency of the grout like a snowball and pack it in under the tower base. NOT TO BE. In order to properly mix the grout, it ended up like the consistency of molasses and my wife Jill and I had to keep shoving the grout under the plate.

It appeared to be a losing proposition, so we boarded up the edges the best we could with scrap lumber and let the gout harden way below the bottom of the tower plate.



PLAN B. Since the surface of the base didn't look 100% near the base plate anyway, I made a form for the grout over a larger area than just the base plate.

I then mixed up about 150 more lbs. of grout and poured it into the form.

I let this harden for a few days and then removed the grout forms. All I need to do at this point is clean up some grout edges where it meets the concrete.

Notice in the below picture that the foundation appears to be below the surface of the soil. Actually, in the lower left, the tower base is sticking up in the air a few inches. According to specifications, the tower edge could not be more than 6" above the undisturbed soil line, so three of the edges are below the undisturbed soil line. In the future, I will pull back some of the soil and landscape the edges with some concrete blocks or rocks. For now, though, I just need to keep the concrete damp and covered up for about a total of 4 weeks (which at this time of writing this column, is about done). In a few days from now, I can remove the concrete forms.


During the initial curing period, the landscape guys were still on the site doing some landscaping work that required a small excavator. They used it to pick up the tower and move it from its storage position on the lawn to the vicinity of the tower base.

It took us about 2 hours to not only gingerly move the tower, but to stretch it out to about 75% of its full extended length (height).

In this position, I can now work next month on doing some maintenance on this 20+ year old tower as well as repainting it with high zinc content galvanizing paint (But that's for a future column).

Finally, I've had to start running the 2AWG stranded copper ground wire from the house's power ground rod, under the back deck and down towards the tower base. If you recall last month's column, I was advised to put in some additional ground rods from the tower to the house ground, so I put in the first ground rod once the ground wire emerged from under the deck.

In the picture below is the first of 11 ground rods put in. I hammered it down until it was just below soil level and then got to play with neat pyro chemicals. Actually, I had a thermite welding kit I bought for each of the 11 ground rods. Here was the first. After the ground rod's top was ground smooth from the peened over steel edges, I slipped the ceramic form over the ground rod and inserted the two halves of the ground wire through two copper tubes.

Instructions were followed, and a thermite mixture of powdered iron and aluminum was poured in, and the rest of the ceramic pieces assembled.

The thermite mixture was lit and produced a joint as shown in the picture to the right after I smashed off the ceramic forms when it cooled down in about 15 minutes. (I have a neat video showing the "blast off"!)

NEXT MONTH – Removing the concrete forms, doing needed maintenance on the tower itself and painting it before the weather turns cold, as well as putting in more ground rods.

To be continued…

Emergency Frequencies/Nets

Hurricane season always begs the question, "what frequencies can I monitor for emergency information. Here are a few for starters:

- 3845.0 LSB Gulf Coast West Hurricane
- 3862.5 LSB Mississippi Section Traffic
- 3865.0 LSB Southern Baptist of Texas Convention
- 3873.0 LSB Central Gulf Coast Hurricane
- 3873.0 LSB Louisiana ARES Emergency (night)
- 3873.0 LSB Texas ARES Emergency (night)
- 3873.0 LSB Mississippi ARES Emergency
- 3910.0 LSB Mississippi ARES
- 3910.0 LSB Louisiana Traffic
- 3923.0 LSB Mississippi ARES
- 3925.0 LSB Central Gulf Coast Hurricane
- 3925.0 LSB Louisiana Emergency (altn)
- 3935.0 LSB Central Gulf Coast Hurricane
- 3935.0 LSB Louisiana ARES (health & welfare)
- 3935.0 LSB Texas ARES (health & welfare)
- 3935.0 LSB Mississippi ARES (health & welfare)
- 3935.0 LSB Alabama Emergency
- 3940.0 LSB Southern Florida Emergency
- 3950.0 LSB Northern Florida Emergency
- 3955.0 LSB South Texas Emergency
- 3965.0 LSB Alabama Emergency (altn)
- 3967.0 LSB Gulf Coast (outgoing traffic)
- 3975.0 LSB Texas RACES
- 3993.5 LSB Gulf Coast (health & welfare)
- 3995.0 LSB Gulf Coast Wx
- 7225.0 LSB Central Gulf Coast Hurricane
- 7235.0 LSB Louisiana Emergency
- 7235.0 LSB Central Gulf Coast Hurricane
- 7235.0 LSB Louisiana Emergency
- 7240.0 LSB American Red Cross US Gulf Coast Disaster
- 7240.0 LSB Texas Emergency
- 7243.0 LSB Alabama Emergency
- 7245.0 LSB Southern Louisiana
- 7248.0 LSB Texas RACES
- 7250.0 LSB Texas Emergency
- 7260.0 LSB Southern Baptist of Texas Convention
- 7260.0 LSB Gulf Coast West Hurricane
- 7264.0 LSB Gulf Coast (health & welfare)
- 7265.0 LSB Salvation Army Team Emergency Radio (SATERN) (altn)
- 7273.0 LSB Texas ARES (altn)
- 7280.0 LSB NTS Region 5
- 7280.0 LSB Louisiana Emergency (altn)
- 7283.0 LSB Gulf Coast (outgoing only)
- 7285.0 LSB West Gulf ARES Emergency (day)
- 7285.0 LSB Louisiana ARES Emergency (day)
- 7285.0 LSB Mississippi ARES Emergency
- 7285.0 LSB Texas ARES Emergency (day)
- 7290.0 LSB Central Gulf Coast Hurricane
- 7290.0 LSB Gulf Coast Wx
- 7290.0 LSB Texas ARES (health & welfare)
- 7290.0 LSB Louisiana ARES (health & welfare) (day)
- 7290.0 LSB Texas ARES (health & welfare)
- 7290.0 LSB Mississippi ARES (health & welfare)
- 14260.0 USB Southern Baptist of Texas Convention
- 14265.0 USB Southern Baptist of Texas Convention Shared with SATERN
- 14265.0 USB Salvation Army Team Emergency Radio (SATERN) (health & welfare)
- 14300.0 USB Intercontinental Traffic
- 14300.0 USB Maritime Mobile Service
- 14303.0 USB International Assistance & Traffic
- 14313.0 USB Intercontinental Traffic (altn)
- 14313.0 USB Maritime Mobile Service (altn)
- 14316.0 USB Health & Welfare
- 14320.0 USB Health & Welfare
- 14325.0 USB Hurricane Watch (Amateur-to-National Hurricane Center)
- 14340.0 USB Louisiana (1900)
- HERE ARE SOME BY STATE
- ARES/RACES HF Frequencies | AMRRON

Upcoming Hamfests: Mark Your Calendar

November 19, 2017 **JARSFest 2017**, Johnson Amateur Radio Society, Benson, NC, http://www.jars.net

March 31, 2018 **RARSfest/ARRL North Carolina State Convention**, Raleigh Amateur Radio Society, Raleigh, NC, http://www.rars.org/hamfest/

July 21, 2018 **Mid-Summer Swapfest**, Cary Amateur Radio Club, Cary, NC, http://www.qsl.net/n4nc/

Western Branch ARRL ARES Meeting

The ARRL ARES NC Western Branch will hold it's annual meeting on October 28, 8:00 AM until Noon, at the Caldwell County Public Library, 120 Hospital Ave NW, Lenoir. All ARES members are invited to attend.

LARC 2017 Officers

John Crowe

President

NC4JA

Josh Edwards

Vice President

N4JDE

Tom Land

Secretary

KA4HKK

Ro Maddox

Treasurer

K4HRM

Send comments concerning the Newsletter

to Ro Maddox K4HRM hrmaddox@nettally.com

Suggestions and articles are appreciated.