

S E P T E M B E R 2 0 1 4

N4LNR

News & Views

P. O. Box 3276
Lenoir, NC 28645
<http://lenoir-arc.org>



*Serving Amateur Radio
In Caldwell County*

Save the Date!

Next LARC Meeting
September 11, 2014
Thursday, 7:00 PM
Gamewell Fire Dept
2806 Morganton Blvd SW,
Lenoir

LARC Weekly Net
Thursdays 9:00 PM
146.625 MHz Minus PL 94.8
Alt 147.330 MHz Plus PL 141.3

Caldwell ARES Net
Sundays 9:00 PM
147.330 MHz Plus PL 141.3

Great Progress on Club Projects

Someone forgot to tell the “hammers” that August was too hot to work outside! However, three key projects – the repeater upgrade, the communications trailer build out, and the antenna trailer – saw great progress during the month. James N4NIN, Irv W4IWK, Tom KA4HKK and Adam Guilmet replaced the antenna and coax on the repeater. James N4NIN, Tanner KK4SZI, and Ted KF4FLY covered the walls of the communications trailer with carpet so that the cabnetwork can begin. Tanner KK4SZI, Ro K4HRM and Ted KF4FLY made progress on getting the trailer frame ready for the antenna support system. See the pictures of the progress on the following pages. A big “Thank You” for coming out in the heat and humidity to “get the job done!”



President's Message



“Grow or die!”

I probably first heard that phrase in an early business class and many times since then. It basically means (in a business perspective) that the continuously changing dynamics of competition, supply, legality, technology, etc., won't allow a company to just keep doing what initially made them successful, but instead they have to continually change and innovate to keep surviving, and hopefully grow.

Amateur radio is much the same. If no new avenue of communication were ever developed beyond Morse code, well, some other entity would have moved in and absorbed the available bandwidth left vacant.

Thankfully, amateur radio continues to grow, especially taking advantage of emerging technologies. I'm probably the least qualified to attempt to list those technologies now being pursued by the Amateur Radio community, but we each are readily aware that technology is a wave and those who don't stay at the crest will be washed underneath. Most recently we've had visitors/speakers to attend the last few club meetings who spoke on some “new” (well, to most of us it is) technology in the area of digital repeater communication. I admit that I was probably more confused after that first discussion than before. It's daunting and challenging to think about trying to understand something new, especially when we think “well, what's wrong with how I've been doing it for 20+ years?”

Nothing is wrong with older technology. In fact, I've written previously how it is often the most reliable. There is no reason to ever abandon what we've accomplished, but we should also accept and keep our minds challenged with the new technology that is continuously forming. We know that amateur radio is in unrelenting competition with commercial uses of the airwaves. Thankfully, our support of the ARRL helps to keep our efforts organized to protect those airwaves from being whittled away. By us exploring and accepting new technology we not only preserve what we have, but we help to ensure that those who come after us may enjoy this wonderful hobby as well.

So, step out of your comfort zone and explore the ever-changing aspects of Amateur Radio.

73 KF4FLY



Did You Know? QUA? is the international Q sign meaning, “Have you news of ____?” In the absence of a question mark, QUA means, “I have news of ____.”

Communications Trailer Gets Wall Covering

Finally, the search for an adhesive to affix the carpet to the trailer walls resulted in glue that “supposedly holds to 120 degrees.” The trailer “hammers” declared it to be as good as it gets and the work of cladding the walls was completed on a hot August Saturday.

With the heat and humidity, the work went fast with James N4NIN, Ted KF4FLY and Tanner KK4SZI spreading, sticking and bracing the carpet on the walls of the trailer. Wonder if sniffing all that glue helped?

Next steps for the communications trailer includes installing flooring and building cabinets and counters. A work group will be tasked with planning the operating stations (VHF/UHF, HF, FRS/GMRS, CW, digital, DMR) and support equipment (generator, batteries, monitoring & test equipment, computers, chairs).

The last phase will bring it all together with electrical, antenna wiring, connections, lighting and heaters.

Volunteers are needed. Join the “hammers” on the next workday and be a part of the progress!



Antenna Trailer Work Begins!

Prep work is underway on the trailer that will ultimately house the pneumatic antenna that supports the Club's Communications Trailer. Ted KF4FLY, Tanner KK4SZI, Tom KA4HKK, and Ro K4HRM removed the old wood and bolts; wire brushed the frame, replaced the wiring harness for lights and brakes, removed the wheels, welded the antenna base brace, and painted. Soon the decking will go on and the support system for the antenna installed. Great progress!





Repeater Upgrade Underway

It was a warm Saturday and the mosquitos were hungry when James N4NIN, Irv W4IWK and Adam Guilmet began the task of replacing the old repeater antenna, coax and connectors with new materials. Tom KA4HKK arrived just in time to help with the cleanup.



Over the next few weeks, adjustments will be needed to the antenna to complete the upgrade. However, early reports indicate that coverage is improved and the noise previously experienced has been eliminated. Members are asked to give the Repeater a good workout and report any issues to James N4NIN or Irv W4IWK.

Read the history of the Repeater in the following article!





N4LNR: A Public Service Repeater

By James Bradshaw N4NIN

Editor's Note: The Club voted recently to replace the coax, connectors and antenna of the Club's repeater. By the time you read this article, the tower work will be nearing completion. What follows is an insightful article of how the N4LNR repeater came into being and evidences the dedication of Club members, past and present, to provide a public service to amateur radio operators as well as Lenoir and surrounding Caldwell County.

Lenoir Amateur Radio Club was organized in 1986 and almost immediately efforts began to try and get a repeater coordinated and on the air. Getting a 2-meter repeater coordinated in those days was difficult because even back then frequencies for two-meter repeaters were already used up. Finding a frequency pair, which would not cause interference, was difficult. Computers and the software, which are used today to make coordination easier, were not available. We had to resort to a lot of manual checking of frequency pairs

in use and coverage areas of those frequencies as well as adjacent frequencies. The information required to be submitted to SERA with the coordination application was much more elaborate than today. I remember having to buy several large geographical quadrant maps and plotting our repeater coverage areas on the maps. This required lots of traveling around and checking signals, etc. Several hams that were club members at the time did this. I can remember Mike Cowick, N4FAX and Duane Ayers, N4AVU checking the signal out all the way up Wilson Creek Gorge while I would transmit to them with a 5 watt HT connected to the repeater antenna on the pole. These maps had to be submitted along with the application as well as several computations regarding signal strength, height above average terrain of the antenna, effective radiated power, etc.

We eventually were able to get a repeater on the air coordinated on the frequency pair of 147.195/147.795. It was decided to put the repeater on my property because there was sufficient elevation to allow significant coverage, the ridge top was easy to get to and I supplied electrical power for the equipment. Although there were more members in the Club back then, our available funds were not sufficient to go buy much in the way of equipment. We started out with a set of borrowed, homemade duplexers and a borrowed used repeater. We had no tower and instead put up a used power pole with an Isopole antenna on top. I liked that antenna and wished it were still made today. After several years, the radiating portion of the Isopole fell to the ground and we could not get another. The Isopole was replaced with a Ringo.

A few years after the original repeater went on the air, we installed a used Rohn 25 antenna tower. We obtained a portion of our tower by dismantling several sections at a business in Wilkesboro, NC. We also found other sections and we got the tower up to 110 feet above ground. The tip of the current antenna is about 130 feet above ground. The base of the tower is anchored in concrete and there are three concrete buttresses used to anchor the guy wires. I don't remember how many yards in total we used but all of it was hauled from my residence to the repeater site in a barrel in the back of my 4 X 4 pickup, with help from Dennis Bell KD4RYE. Several club members helped put the tower up -- I did the climbing. Dennis Bell, a maintenance supervisor in a local factory, built us a gin pole, which we used to install the tower sections. I would not attempt to climb this tower today. The expenditure of energy required climbing 110 feet straight up and going around guy wires as you go is a demanding task and even when I was much younger I would sometimes get muscle cramps in my arms by the time I got to the top. The last couple of times the tower was climbed, Jerry Gragg, AD4JG did the job. Under the best of circumstances, tower climbing is an extremely hazardous activity.



Our first repeater enclosure was a plywood box with a roof. It was 8 feet wide, 4 feet deep and 4 feet high with a roof. It was mounted on locust posts and to work on the equipment, you stood on the ground and reached inside. Mike Cowick N4FAX and others helped install this. Many years later, a wan 8x8 walk-in structure was built. This building is a wood frame structure covered on top and all sides with metal. Jerry Gragg AD4JG supplied the metal. Several club members erected the building, including Jerry Gragg AD4JG, Floyd Key AD4FK, Jim Rogers N4EUX SK, Scott Livingston KC4SWL, and Thomas Land KA4HKK. A couple of years after the repeater went on the air, we purchased a new set of Wacom duplexers (4 cavity) and returned the borrowed, homemade duplexers to the owner. We also replaced the borrowed repeater with a more powerful and durable Motorola Micor that



was not very hard to make into a 2-meter repeater since we were able to obtain one used on a public service frequency close to the 2-meter amateur band. We continued to use the Motorola Micor repeater for several years. Approximately six years ago, high winds blew our repeater building over. Our Wacom 4 cavity duplexer was damaged. We retuned it as best possible and used it for some time until we purchased a new 6-cavity duplexer. Jerry Gragg AD4JG, Floyd Key AD4FK and myself put the building back on its foundation and soon thereafter I anchored the building to the ground.

The biggest hazard to a repeater is lightning. Lightning can cause minor damage or it can totally destroy the repeater and any related equipment. We have experienced numerous episodes of lightning damage over the years. Approximately 4 years ago, we purchased a new Kenwood TKR-750K2 repeater. This machine has 50 watts output. Approximately 3 years ago, we purchased a new Arcom RC210 repeater controller. Many years ago, I had a



manual phone patch, and I would occasionally on request, patch a ham's radio signal into the phone system. At some point, we installed a phone patch on the repeater system, which could be accessed by the repeater user. The repeater shared my home phone line and this occasionally caused a problem because the repeater user sometimes accessed the phone line while I was on the phone. And of course I could not make a call while the repeater user was on the phone. We also had a problem with some users from out of town making long distance calls.

The biggest problem with the phone patch is lightning. The phone line was frequently the source of lightning getting into other parts of the repeater equipment. When cell phones came into widespread use, the need for the phone patch was not as great and we haven't used it in years, however the current repeater controller has the capability to operate the phone patch. The phone patch would still be useful because many times in areas where there is no cell service, the 2-meter signal would access the repeater and a call could be made. The problem though is the issue with lightning. We reduced our lightning damage significantly when we stopped using the phone patch.

The Club became dormant a few years ago and the repeater went down and was not repaired. The Club did get going again, repaired the repeater and everything seemed okay until we were notified by SERA that our frequency pair (147.195/147.795) was being taken and given to a group in Taylorsville, NC. The reason given was that the repeater had been off the air for a significant time and was currently off the air. It certainly was not off the air but no amount of convincing did any good. They had already given the frequency pair to Taylorsville before they notified us that anything had happened. I immediately started the process of trying to get another 2-meter frequency pair. SERA gave little hope that it would be possible and they denied every frequency pair I suggested. After several months SERA contacted me and stated that a repeater on the frequency pair (146.625/146.025) had gone dormant and the frequency pair was being revoked. I filed an application and the coordination process started. We had to get adjacent channel agreements signed by a couple of other repeater owners but eventually we got the repeater back on the air with the new frequency pair.



The Club repeater definitely does not have a coverage area as great as the 147.330 Hibriten repeater. Many people questioned why we even needed or wanted another repeater in the Lenoir area, especially if it didn't have a coverage area as large as the 147.330 machine. There are many areas where the 146.625 (Club repeater) has coverage where the 147.330 does not. This is especially true in many of the remote areas of the county such as Wilson Creek Gorge. Also, we wanted to be able to install features on the Club Repeater such as a phone patch, backup power, etc. that the owners of the 147.330 did not want. If there is only one repeater in the area and it goes down, many areas may be without any coverage for some time due to the need to order parts, etc.

The situation that remains in my mind involving use of the repeater during the years we have operated a repeater, happened many years ago during flooding conditions in Edgemont, NC. Three Boy Scouts attempted to cross a footbridge over the raging waters of Wilson



Creek. The water was almost up to the footbridge and they had been told by their Scoutmasters to stay off the bridge. When they attempted to cross the footbridge, their weight caused the bridge to sag just enough so that it touched the water. When the bridge touched the water, the current jerked the bridge resulting in the three boys being flipped into the water. They were washed downstream and disappeared. This happened on a Saturday. The water was so high that searching for them immediately was almost impossible. The water was so high that access into and out of the area was not possible. The next morning using 4 wheel drives up Stair Case Mountain (where landslides were blocking the road) some of our members including myself got into the area before any of the authorities. The road up Wilson Creek Gorge was not passable. As a matter of fact, on the way to Edgemont, I passed the staging area where the authorities were at Mulvale Church near Collettsville, NC. When I arrived at Edgemont, local

residents had already recovered one body. We did have communications via the Club repeater and were able to talk with the authorities at Mulvale Church because there was a ham there. Later in the day, the authorities and rescue personnel arrived but their communications gear was useless and still the only communications was via the Club repeater. The other two bodies were recovered before the day was over.

I have been the "trustee" of the Club repeater from the beginning. Being a repeater trustee isn't about knowing secret codes, or spending long hours in wasp infested buildings under towers. Being a repeater trustee is about service to others -- pure and simple. My goal as the Club's repeater trustee has always been to provide the best, most reliable repeater I can.

Views of the 2014 Shelby Hamfest

It's probably not possible to capture one picture that describes the Shelby Hamfest! Ummm hot, crowded, radio stuff and more radio stuff, old friends, new friends, good information and (let's face it) some junk. Josh N4JDE, Tom KA4HKK, Ro K4HRM, Phil KG4BCC, Tanner KK4SZI, Warren WU3Y, Lorenzo KE4NSW, and others I don't remember drove the 50 miles to Shelby for the sights and sounds of the "Grandfather" of hamfests.





Places To Be, People To See...

September 9-14. The Road Show Amateur Radio Club will operate a Special Event Station N4F to introduce amateur radio to the attendees of the **NC Mountain State Fair** at the Western North Carolina Agricultural Center in Fletcher, NC. For further information, see <http://www.mountainfair.org/mountain-state-fair.html>

September 17. Caldwell County Emergency management will hold the **FEMA ICS-400 Advanced Incident Command System Command and General Staff** class at the Emergency Services Building, 2351 Morganton Blvd. SW, Lenoir. This class is required for ARES members. For additional information and to register, contact Kenneth Teague at Caldwell County Emergency Services (828) 757-1419 or kteague@caldwellcountync.org

September 26-27. The **W4DXCC DX and Contest Convention** is at the MainStay Suites in Pigeon Forge Tennessee September 26-27th. For more details, see www.W4DXCC.com

October 12. Maysville Hamfest, Maysville Hamfest Association, Maysville, NC, email: bhighland@nc.rr.com

October 25. The **ARES Western Branch Meeting** will be held October 25, 10:00 AM until 1:30 PM in Morganton. Location TBA.

October 29. Googlefest NC 2014 at the Broyhill Civic Center, Lenoir, 8:00 AM – 2:00 PM, Session for Emergency Management – how to use online technology to quickly reach people in need and to efficiently run internal operations during crisis. To register, go to <https://sites.google.com/site/ncgoogfest/register>



Volunteers needed for the
2014 Fire & Life Safety Festival
September 27

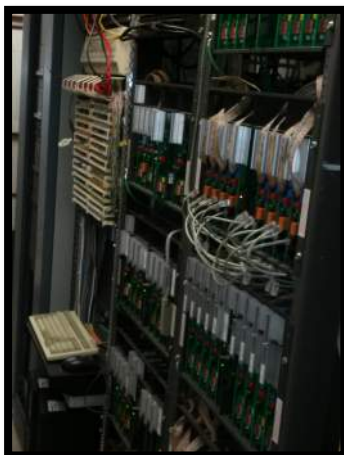
Contact Tom Land
ThomasLand@MSN.com

LARC Tours EOC & 911



Thanks to Kenneth Teague, Assistant Emergency Manager, for arranging for Club members to tour the new Emergency Operating Center and the Sheriff's 911 Center.

Everyone commented on how impressed they were with both facilities and, especially with the expertise of the personnel who conducted the tour and explained operations.





From The August Meeting...

Attendees. Ted KF4FLY, Tom KA4HKK, Irv W4IWK, Tanner KK4SZI, Michelle KD4YTU, Ro K4HRM, Phil KG4BCC, Gene K1AVE, Josh N4JDE, New Member: Satyajeeet "Jeet" Dass KK4CCA, Guests: Marv Hoffman WA4NC, Randy Combs KC4ZSM, Jack Bechtel KB4JEB, Adam Guilmet.

New Members. Approved membership applications for Blair Hanvey KM4DOQ and Satyajeeet Dass KK4CCA.

Communications Trailer. Workday set for Aug 23 to put carpet on walls. Accepted a donated trailer to be used to mount the pneumatic antenna. Workday set for Aug 18 for removing wood and wire brushing frame. Discussed possible storage of both trailers and other Club equipment and Michelle KD4YTU will follow up.

Repeater Upgrade/Professional tower climber. Adam Guilmet will do the tower work to replace the coax and antenna. He will arrange to visit the site and set a day to do the work. Volunteers to assist will be needed.

Website/Newsletter. Tanner KK4SZI commented that he is continuing to fine tune the website. Ro K4HRM reported that she had received positive feedback from the Section Manager and former Section Manager on Newsletter.

Public Service. Tom KA4HKK asked for volunteers for the Caldwell County Fire & Life Safety Festival set for September 27. Ro K4HRM is to draft a LARC brochure as a handout at public service events in addition to the generic amateur radio education materials. Tanner KK4SZI to get pricing for promotional note pads. Tom KA4HKK will pursue possible communications support for the Peak To Creek Marathon on October 25. Marv WA4NC extended offer to cooperate in providing communications support to events originating in Watagwa and passing into Caldwell County. See August Newsletter article on 3 races set for 2015.

Training. Michelle KD4YTU reported 2 new hams from Foothills Community Workshop license classes. FCW will hold another class series in October. ICS 300 will be offered Aug 20 and ICS 400 on Sept 17 at the Caldwell EOC. ICS 400 is a required ARES course. A CERT Fire/Utility training class will be held October 21. Tom KA4HKK reported that Western Piedmont Amateur Radio Club in Morganton holds license testing on the 2nd Monday of each month.

Club Information. Discussed organizing and scanning club files for future safekeeping and access. Tanner KK4ZSI will explore scanning and storing in password protected area on website.

Program. Marv WA4NC discussed DMR and area repeater coverage and advantages that a repeater located in Lenoir would have. He also discussed and demonstrated various DMR radios.

Tour. Prior to the meeting, members participated in a tour of the new Caldwell County EOC and 911 facility. See article in this Newsletter.

LARC 2014 Officers



Ted Manuel
President
KF4FLY

Tom Land
Vice President
KA4HKK

Irv Kanode
Secretary
W4IWK

Phil Crump
Treasurer
KG4BCC



Editor For A Final

I have always used a dipole antenna for HF, mainly because I had no desire to even consider building a radial system. Mind you, I lived on a farm and there were no space limitations but to string a “gazillion” wires all over and hope I never caught one in the lawnmower had no appeal. And it seemed like a whole lot of work, too.

Recently, after much research and talking to other amateurs, I purchased a multi-band vertical antenna. As I read through the installation instructions, I keep hoping I had not made a mistake! Before making my decision to go with a vertical, I committed to building a radial system with somewhere around 60-120 wires of varying lengths. Oh, I hope I remember to keep the lawnmower set high!

Over the next few weeks or months (the instructions say 3 days), I will plant the base, bury the coax, install the radials, connect and tune the antenna – and be on the air around the world. Through this whole ordeal, I will make lots of photos and mistakes and you can look forward to an article in the Newsletter when/if this project comes to fruition.

Wish me luck!

Send comments concerning the LARC NEWSLETTER
to harmaddox@nettally.com
Suggestions and your articles are appreciated.