



AUGUST 2016

News & Views

N4LNR



Serving Amateur Radio
In Caldwell County

P. O. Box 3276

Lenoir, NC 28645

Next LARC Meeting

Thursday, August 11
7:00 PM

Gamewell Fire Dept.
2806 Morganton Blvd SW
Lenoir

LARC Weekly Net

Friday, 9:00 PM
146.625 Minus 94.8
Alt 147.330

Caldwell ARES Net

Sunday, 9:00 PM
147.330 Plus 141.3

DMR Digital Net

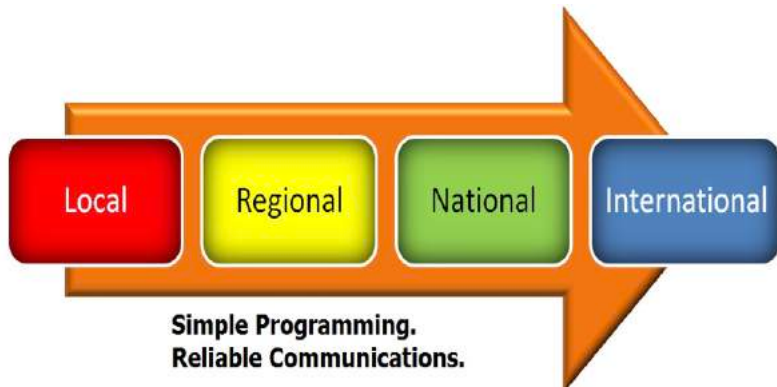
Tuesday 8:00 PM
Lenoir Local DMR

Where In The World Is DMR?

August LARC Meeting

The world of DMR is expanding rapidly and we at LARC want to be apart of this exciting technology. Marv Hoffman WA4NC will be our program presenter at the August meeting. Marv is one of the most knowledgeable hams in western Carolina on DMR, having been an advocate from its beginning.

A brief business meeting will follow.



President's Comments: Taking Your Next Step!



Remember when you first got your radio license? There was a sense of accomplishment that followed each of us everywhere we went and did not fade till many weeks later. What a feeling it was to spend time learning about a subject, studying for an exam, and following through with a passing score. I remember being nervous, even though I had been through the material many times. For me, this moment was August three years ago.

After getting my license in the mail, I began to tear up the airwaves. I talked to local guys on repeaters in the area and took in their knowledge as best as I could. I learned so much in the few weeks after being licensed a technician.

There was an itch however, to be able to use the HF bands. I wanted to be able to talk “around the world” so I waited for Foothills Community Workshop to have another class and I attended. Another round of studying ensued and I took and passed the General license test just a few months later in November.

Now I wish I could tell you that just a few months later I studied and passed the Extra test, but alas that moment has still not come. I am not sure whether it was other things requesting my time or just my contentment with the General license level but here we sit almost three years later and I still have not upgraded. I have been thinking about this very thing for a few months now and I have decided that I am going to start studying again. Hopefully, it will not take too long for me to grasp the material and find a location to test. Maybe I can even give an update in a future column. My challenge to you this month is to join me in the process.

For the Technicians in the group, I challenge you begin your journey into the HF bands. Some of the most fun moments of the radio hobby have some from long distance contacts with countries around the world. There is nothing like knowing that with just a radio, a power source and an antenna, one can make contact with another person somewhere else in the world with no infrastructure required.

For the General class operators like myself I ask, “Who doesn’t want more frequencies to talk to people on?” There is a whole section of the band that is sitting there waiting for you to upgrade and use it. Plus, taking the Extra exam will help expound your knowledge of the different components in your radio.

For those already at an Extra level, good work! You have reached the highest level of license in our hobby. Just because there is no higher level of license to attain does not mean I still do not have a challenge for you. Hopefully, there will be many that read this column that will take my challenge and begin learning the material. You can be an excellent resource for those trying to attain the higher levels. Help mentor those trying to improve. I also have an extra challenge for those Extras to learn a new skill. Expand your knowledge on a different aspect of the hobby.

Part of what makes this hobby great is the limitless options to learn new things. I hope that my challenge has awakened a fire to upgrade. If it has, please send me your results when you pass that next level.

Tanner KK4SZI

Looking Back: Thirty Years Ago ~ August 1986...

August being the “dog days of summer,” prompted the subject of “getting out of a rut.” The Newsletter discusses expanding interest in ham radio beyond your comfort zone and exploring emerging technologies or to trying out CW again. Does that sound familiar? Almost every LARC meeting explores a new area of amateur radio. Apparently, hams have always tried to push the edge of technology.

The Constitution and ByLaws were officially adopted and the committee that had labored to write rules for the Club was disbanded. A Club member rooster was prepared and distributed. (Unfortunately, a copy was not in the documents I am using to prepare this article. Guess that means that it was used so much it was no longer readable.)

Programs, such as Hamwatch, Skywarn and ARES, were being planned for future meetings to coincide with LARC’s working agreement with Caldwell County’s EMS-Sheriff’s Department to aid in times of emergencies. Also, a room at the EOC had been designated for their use and a radio and antenna were in the process.

The Breakfast Club, which was the gathering of local hams that grew into the Lenoir Amateur Radio Club, was no more!

LARC members began planning for attending the “granddaddy of hamfests” at Shelby the last weekend in August. And, members were disappointed when license classes planned for the fall did not register enough participants to make it.

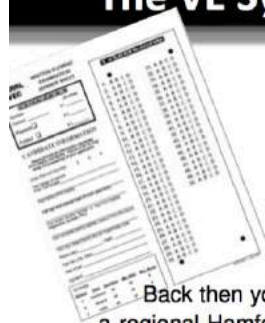
Note: You can read the complete August 1986 Newsletter at <http://n4lnr.org> under the heading Newsletters.



Did You Know? LARC got 2 hits in the July ARRL NC Section Manager’s Newsletter. One for the great Field Day pictures by Brian KM4KIS and one for the great space provided by the Caldwell Journal, both online and print versions, for the LARC Field Day event.

Interesting article that may complicate ham life: *IEEE Spectrum* [recently published what amounts to a history of RFI](#), but which also includes an overview of some new technologies and services such as 5G and Citizens Broadband Radio Service (CBRS).

The VE System – *Passing the Test* By Phil Ashler, N4IPH



One of the first questions we get from potential Amateurs is

“How do I study for, and pass the written exams?”

Things have changed a lot since many of us had to study for our first license exam. I can remember in the mid 1960's when I studied for my Novice license exam, you knew some of the materials to study, but not the questions on the exam.



Back then you had to go to an FCC sponsored Exam session to take the exams, or if you were lucky, you could take the exams at a regional Hamfest such as Orlando or Jacksonville. If you lived farther than 125 miles from one of the 23 FCC district offices, there was an option to take the exams by mail, but only for the Novice, Technician and General Class tickets. The exams were still graded by the FCC. If you passed the General exam by mail, you were issued a Conditional Class license.



Before the Volunteer Examiner (VE) system was developed, there were several groups that helped many applicants study for their Novice exams and upgrades to higher-class tickets. **Dick Bash, KL7IHP**, was probably one of the more well-known hams to assist Amateurs with his study books and Morse code courses. In 1979, a group of Amateurs in the San Francisco area were disappointed that the failure rate of Amateur exams were extremely high; about 69%. They began to publish **The Final Exam** and **The Final Code Course** to try to reverse this trend. The group began interviewing applicants as they left the FCC testing sessions, inquiring as to what questions they remembered from the written exams and the writ from the Morse code tests. It's not that those who did poorly on the exams didn't study for them, but that the material they were actually studying was often not on the test. There was not a single text that contained the material on the exams that the potential Amateurs could use to prepare for the tests. By 1980 the passing rate had grown from 31% to about 55%. Applicants that had consistently failed the Advance written exam before were handily passing after using the publication. Dick Bash said in his introduction to The Final Exam that ***“Upgrading should not be downgrading... From now on it won't be”***



In September 1982, **Public Law 97-259** was passed and allowed groups of private individuals and organizations to prepare and administer the Amateur licensing exams. Shortly after the law passed the ARRL petitioned the FCC to allow only non-profit organizations to prepare and administer the exams. At that time the **ARRL, W5YI** and the **Western Carolina VEC** were permitted to provide exams to the Amateur community. About 10 years later the NCVEC was established to help coordinate the exams and also be a unified voice to the FCC and other government organizations. The number of VE organizations permitted by the FCC to provide the exams quickly grew to 28, dropping to the current number of 14.

Today, potential Amateurs and those desiring to upgrade to a higher class license have an abundance of materials to aid in preparation for each of the VE exams along with the pool of potential questions and answers. Locally, the two leaders in the field of providing these study materials and the VE license sessions are the **ARRL** and the **W5YI** organizations.

I've asked a number of people over the years who attended our Technician License Preparation Classes and ARRL VE Testing sessions how they studied for the tests. Some thought the W5YI's Gordon West material was better, others relied on the ARRL for their study material, and a few just memorized the answers from the published question pool. I would suggest you consider the material from both of these organizations, especially for the Extra Class exam. I feel it's a good idea to get several explanations when dealing with technical subjects at that level. Then read through the question and answer pool a few times and you shouldn't have much difficulty on the exams, that is, for the Technician or General exams; studying for the Extra Class license involves a great deal more time and a good understanding of the material. [The Extra Class license is a signifier to some extent that a the licensee strives to be generally more knowledgeable and experienced in the associated subject matter] Not many people can memorize the **700** questions and answers found in the new Extra Class Question Pool!



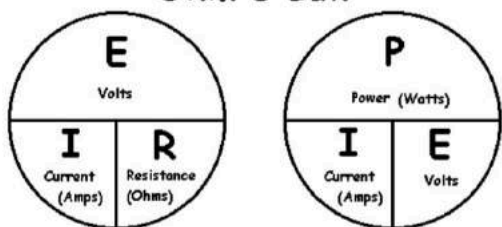
Today, in addition to written text and study guides, potential Amateurs have a number of powerful resources available on the internet to help in their study for the exams. There are a number of YouTube videos, both from the **ARRL** and **W5YI**, in addition to a variety of self-produced videos by individual Amateurs and other organizations. Some of these are admittedly a waste of time while others are professionally done and filled with valuable information for both new and experienced hams. There are also a number of videos that cover the numerous interests in Amateur Radio. One of the best series of videos is produced by **Randy, K7AGE** (138 videos.) Randy covers a variety of topics including Getting Started, Hamfests, Building Antennas and General Operating.

If you are working on your first license, which is now the Technician Class, the ARRL has a video course that contains 39 individual videos on specific areas that cover most of the material presented on the exam. Although it was produced several years ago, most of the material is still current. **W5YI** has a four-hour (audio-only) video on studying for the Tech exam. I guess it would be good idea to download or copy the audio for replay in your car on a long trip, but I like a little more action in a video, not just someone talking. A good introduction video to the Technician exam that lasts about an hour and a half is presented by **David, KB9OKB**. This one contains graphics and is also based on the Gordon West series by **W5YI**. **The Ham Whisperer** has a series of 35 videos, each containing a series of PowerPoint slides along with very good explanations of each topic. In the links below I've listed a few other good videos including several of recent license preparation courses presented by radio clubs. Reviewing these videos will give you a good background as you start going over the questions from the NC/VEC Question Pool for your initial license or upgrade.

I have never liked the idea of teaching or studying just to "pass the test." I think [to be a ham worthy of the license] you need to actually learn and remember the information required to pass the test and then review the questions (if available.) Don't just memorize the correct answers! You can read over the questions and correct answers in the different NC/VEC Pools four or five times and retain enough just enough information to pass the Technician exam. [You expect your physician or electrician to own up to their license, so go those extra steps further.] The theory is, **if you have seen the answer before... it must be correct.** This, of course, gets more difficult as you try to upgrade to the General and Extra Class.



Ohm's Law



You should know right off that you are going to have to make some calculations using **Ohm's Law** and the **Power Formula**, so it might be a good idea to understand the simple steps to solve those problems. Do you remember the steps from high school electronics? Write down the formulas or visual 'cheat' chart and substitute the values provided to perform the calculations to get your answers. Make sure you check the [power] units (like milli-, Kilo- and Mega-Ohms) before selecting your answer. You might have the same numbers, but check the placement of the decimal point! The Extra exam thrives on them. There are also many times when you'll need to memorize a definition or terminology to be selected from a list of options on the exam. This allows you to develop a "working vocabulary" to apply later on in your new hobby.

I have seen a number of people come through our VE testing sessions, earn their license and unfortunately have no idea later how to something rudimentary in the hobby such as put up an antenna or attach an end connector on a piece of coax. Every ham can and should learn these basic skills. As a club, we should consider offering workshops or seminars on these tasks for new Amateurs to get them started on the right foot. It may become obvious that much of the information you'll have to study to earn the license will probably never be used. Most Amateurs don't build or even repair their equipment anymore and only a few of us ever are inclined to make modifications to the various circuits in our transceiver. But new Amateurs do put up antennas, wire their mobile rigs to their vehicle's electrical system and program their rig's memories. TARS has an "Elmer" list on the club's website listing local Amateurs that would be willing to help a newly licensed (or even an ole timer) with specific topics. Need help putting up an antenna? Having problems entering data into your rigs memory or setting the PL Tone or repeater offsets? Trying to decide between a Baofeng, Wouxun, Kenwood or Icom as your first HT? Get in touch with one of the Elmers on the list (*especially for the last item!*)



73 de Phil, N4IPH philashler@comcast.net

Links:

History of NCVEC <http://www.ncvec.org/page.php?id=316>

ARRL's Technician Series (39 videos) https://www.youtube.com/watch?v=fEWmiMotimY&list=PLYH2CDtrmgX8yp3NdGx_yBPP12zbNSVt0

KB9OKB Technician Video https://www.youtube.com/watch?v=RGluTpM7_K8

The Ham Whisperer Technician Series (35 videos) https://www.youtube.com/watch?v=jomk_c9LLa4&list=PL7564E84F0A8082FD

Hurst Radio Club (Texas) <https://www.youtube.com/watch?v=VehtvfYAKsQ>

K7AGE Videos <https://www.youtube.com/c/k7age/videos> Intro <https://www.youtube.com/c/k7age/featured>

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Summer CERT Training

By Shirley Kanode

This July 16 participants completed the Basic CERT course in Caldwell County. Included were LARC members Richard Blumenstein K0CAT, Brian Hudson KM4KIS, Robert Benfield KM4UAC, and Rick Kroger. Assisting with the course was LARC member Mark Barrera K9FWA.

This class was fortunate to be able to attend the Emergency Communications and Radio class taught by LARC Secretary, Thomas Land, as part of their basic course. Several other CERT members for that class joined them.

Thanks to LARC member, Brian Hudson, and his employer, Google, our CERT class had fire extinguishers to use for practice in the fire suppression module. One lesson they learned from experience was before moving in to put out a fire, always check your extinguisher to insure it is charged and not empty.

Several members of this class as well as other Caldwell County CERT members are registered to attend a CERT Train-the-Trainer course, Saturday and Sunday, August 13-14, in Lenoir. This class is usually only offered in the Raleigh area. Anyone who has attended the Basic CERT Course is eligible to attend this free class. For more information, send an email to caldwellcountyCERT@gmail.com.



Get On The Air: The Adventures of Dick & Ro

By Ro Maddox K4HRM & Dick Blumenstein K0CAT

Dick K0CAT recently moved here from Florida and, having acquired a 73' tower, is ready to setup his radio shack. Last fall, Ro K4HRM decided to overhaul her radio equipment and antenna system – HF dipole, HF vertical, VHF/UHF j-pole.

Ro and Dick are neighbors in extreme eastern Caldwell County on Lake Hickory. However, they met for the first time at the LARC February 2016 meeting. After that meeting, Ro sent Dick a notice for a tower “for sale” by Vern W5VM in Boone. Dick purchased the tower and Dick’s wife told Ro that the one thing Dick wanted when they were searching for a place to live “til toes up” was a place where he could have an antenna tower. Ro’s interest was simply to get back on HF after taking down her dipole the prior fall. So as the story goes, Ro and Dick talk radio, radio, and radio and agreed to help each other “get on the air.” Over then next few issues of the Newsletter, we will follow the adventures of Dick and Ro! I hope we all learn something! So let’s get started.

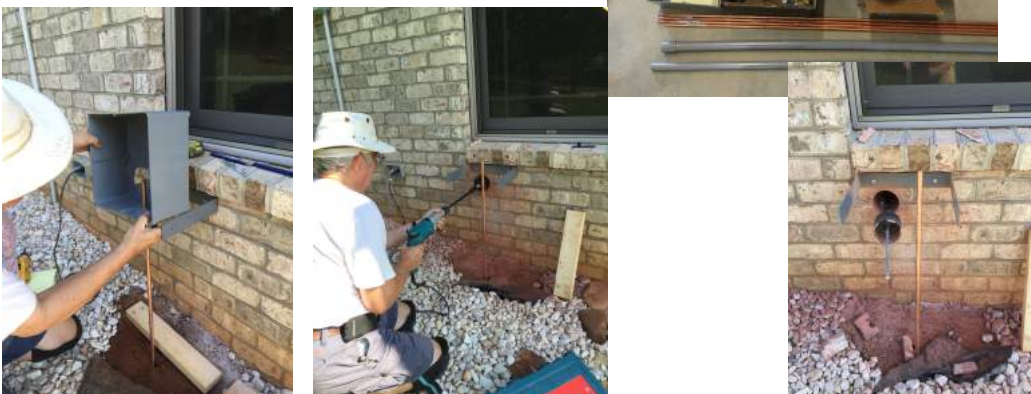
As an electrical engineer, Dick is concerned with RF grounding and lightning protection. Dick sends Ro tons of articles on the subject. As a business manager, Ro is concerned with “on time, in budget.” Ro sends Dick copious lists of materials. Ro reads the articles and learns lots of terms, like “goop” and “galvanic.” After much research, they agree that there is “no such thing as lightning protection” -- you just do the best you can and hope lightning strikes some place else. There also may not be any such animal as RF grounding -- more on that later.

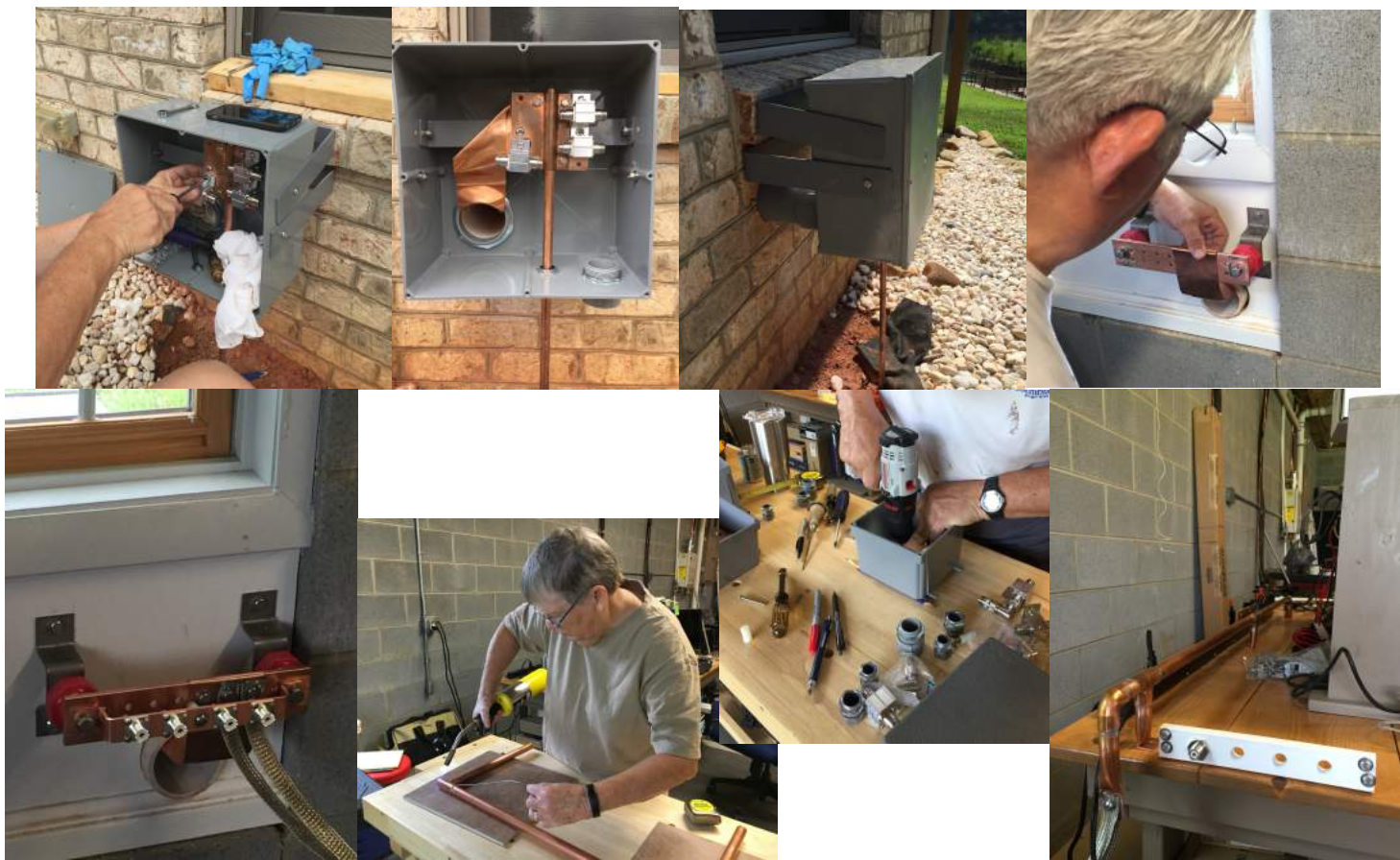
And so their project plans are developed. Each defines their overall objective and the steps along the way. Dick’s plan is very complex, Ro’s is simple.

Ro’s Plan:

- ~ Build 3 boxes for grounding/lightning protection – one at base of each antenna
- ~ Built 1 box for cable entry into house, including a 3.5” hole thru brick wall
- ~ Build station grounding
- ~ Trench and route direct bury coax
- ~ Mount 3 antennas

Here are some progress pictures:





The next phase of Ro's project is to trench and route coax, mount antennas and then complete all the connections from antennas to equipment. Many thanks to Dick K0CAT for his mentoring and good work in "all of the above."

Dick's Plan:

- ~ Analyze whether able to construct a ham tower on property. Done
- ~ Purchase, dismantle, move purchased tower structure and antenna system
- ~ Research building tower foundation structure. Mostly complete.
- ~ Research techniques for lightning protection and RF grounding. Not complete
- ~ Locate tower base and lowering location (angle of foundation). Done.
- ~ Apply for building permit (critical point of whether project proceeds). Ready to start.
- ~ Build rebar cage for concrete construction - Started. Received rebar material.
- ~ Contract digging foundation hole - not started.
- ~ Lower and position rebar cage in hole. Not done.
- ~ Concrete form surround at ground level. Not done.
- ~ Anchor bolt placement on top of concrete form surround. Not done.
- ~ "Ufer" grounding of rebar cage and anchor bolts. Not done.
- ~ Grounding system array of entire foundation base and tie back to house AC ground and ham shack ground. Not done.
- ~ Approval by building inspector before concrete pour. Not done.
- ~ Concrete pour and finishing. Not done.
- ~ Position tower on concrete foundation and base plate. Not done.
- ~ Inspect basic tower and repaint/repair of tower structure. Not done.
- ~ Possible rebuild prop motor rotator assembly? Not done.

- ~ Rebuild vertical Winch Assembly A (raises and lower tower vertically.) Not done.
- ~ Rebuild Winch Assembly B - lowers tower horizontally to ground. Not done.
- ~ Attach Winch Assembly B.
- ~ Remove tree which could interfere with antenna system.
- ~ Reinstall mast and attach "Tilt-Plate". Not done.
- ~ Attach antennas and coax assemblies to mast. Not done.
- ~ Raise tower to vertical position. Not done.
- ~ Test prop motor rotator. Not done.
- ~ Attach Winch Assembly A. Not done.
- ~ Raise tower to full 73' height. Not done.
- ~ And, at the same time as all of the above, construct wall inside ham shack room, build house cable entry box including exterior wall penetration, build grounding station, trench and route coax and rotator wiring, etc.

Here are some progress pictures:



To be continued...

July Meeting Notes...

Attendees: Tanner KK4SZI, Tom KA4HKK, Ro K4HRM, James N4NIN, Susan N4OJN, Dick K0CAT, Gary K3OS, Phil KG4BCC, Shawn KI4ZKP, Brian KM4KIS, Jeet KK4CCA.

Trailer Committee: Tanner KK4SZI will send out date/time for next trailer workday.

Trailer Storage: Both trailers were put in the EOC compound on Drag Strip Road following close of Field Day. Discussed access and undercover issues. Ro K4HRM was asked to follow-up with Teague on these issues.

Field Day 2016. Tom KA4HKK reviewed FD stats. Discussed the good/bad issues and identified Antenna Placement and Grounding as critical follow up issues. Suggest explore getting RV sales center to donate a couple RVs for use next Field Day. Set Saturday, September 24 as a Mini-Field Day to work on these issues and to have picnic gathering.

Ham Happenings...

September 3-4, 2016 60th Annual Shelby Hamfest/ARRL Convention, Shelby Amateur Radio Club, Shelby, see www.shelbyhamfest.org

September 23-24 W4DXCC DX and Contest Convention with Ham Radio Bootcamp, Pigeon Forge, TN. See www.w4dxcc.com for information

LARC 2016 Officers



Tanner Greer
President
KK4SZI



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.**