



**N4LNR**

**MARCH 2018**

# News & Views

**P. O. Box 3276  
Lenoir, NC 28645**

**Serving Amateur Radio  
In Caldwell County  
Since 1986**

## Coming Events

### Volunteers Needed

- Mar 24 Hibriten Hill Run
- Apr 21 Catawba Valley Hamfest
- Apr 28 NC Gravity Games



## National Traffic System LARC March Meeting

The March 8 meeting of the Lenoir Amateur Club will include a presentation on the National Traffic System conducted by Clyde Sawyer WC9CW. NTS is the network of amateur radio operators organized to relay messages throughout the US and Canada via a series of regional nets. NTS also supports ARES/AUXCOMM during disasters by handling "health and welfare" inquiries in and out of disaster areas. See the **NTS Manual** for more information.

A brief Club meeting will follow the program. Hope to see you there!

## Time to renew your LARC membership

Mail your check to the Club address or see Dick K0CAT to pay your dues

**Next LARC Meeting:**  
Thursday, March 8, 7:00 PM,  
Gamewell Fire Dept.  
2806 Morganton Blvd SW,  
Lenoir

**LARC Weekly Net:** Friday,  
9:00 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

## President's Comments

John Crowe AG4ZL

This column is usually reserved for comments from the Club President where he talks about upcoming events or other items of Club interest. Recently, John got some scary health news concerning his wife, Angel. Those who interact with John know that it is always “family first!” Thus, we didn’t bug him for this month’s column.

Fortunately, John, Angel and Annabelle got good news after additional tests. A little more care is required so please keep them in your prayers as they navigate Angel’s health scare.



## SDR – And Your Eyes

By Stan Zawrotny K4SBZ

I just shipped off my long-time highly rated Yaesu FTdx5000 as a trade-in on a FlexRadio 6600M. For those of you who don’t follow new rigs, the 6600M is the top-of-the-line software defined (SDR) radio. The Flex 6000 series is rated number one in the Sherwood Engineering receiver tests.

A year ago, I had bought the new entry-level ICOM IC-7300 that turned the industry on its ear by selling over 10,000 units in less than a year. The more I used it, the less I used the FTdx5000. Last November in the CQ WW DX CW Contest, I used the IC-7300 in the single operator unassisted category employing entirely hunt-and-pounce. It was a joy to use! I could move from station to station easily by observing the spikes on the waterfall and pointing to them or tuning manually if they were close. Pointing usually put me right on frequency. If there was a nearby station causing QRM, I could easily separate them – visually.

That is the thing that SDR adds to the radio amateur’s skills – the visual sense. You not only hear signals, you can now see them. You can find them and fine-tune them with your eyes as well as your ears. Your eyes will make you a much better contester or DXer.



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## March 2018 Basic CERT Class



**Location** Caldwell County Health and Human Services Building, 2345 Morganton Blvd SW, Lenoir, NC

**Registration:** Send an email to [caldwellcountycert@gmail.com](mailto:caldwellcountycert@gmail.com) with **your name, address, phone number**. Participants are expected to attend all 5 classes and graduation. There is no fee for taking the CERT Basic Training Class.

### Time - Date

### Topic

6:00-9:00 PM  
Mon 3/12/2018

Disaster Preparedness  
CERT Organization

6:00-9:00 PM  
Tues 3/13/2018

Disaster Medical Operations-Part I  
Disaster Medical Operations - Part II

6:00-9:00 PM  
Thurs 3/15/2018

Disaster Psychology  
Terrorism and CERT  
Emergency Communications/Radios

6:00-9:00 PM  
Mon 3/19/2018

Light Search and Rescue Operations  
Cribbing Exercise

6:00-9:00 PM  
Tues 3/20/2018

Fire Safety and Utility Controls  
Fire Extinguishers Exercise

6:30-8:30 PM  
Thurs 3/22/2018

Graduation/Refreshments  
Caldwell County REACT Meeting



## FCW Moving Forward!

On July 21, 2017, Foothills Community Workshop was destroyed in the Shuford Mill Fire. Fortunately, no one was hurt but FCW lost everything -- only one Cushcraft R5 antenna was still hanging on a beam after the fire.

The members decided to rebuild and began the search for a building and equipment. Good things began to happen for FCW. Another 501(c) 3 hackerspace in NC collapsed only a few weeks later and FCW was able to get some equipment.

Also, a machining firm in Hickory was moving and gave FCW quite a bit of equipment and supplies. Several individuals also stepped forward and donated so that FCW soon had 11 storage units full, but no place to put it.



FCW was looking to stay in Caldwell County (due to grants), but looked at buildings in Lenoir, Patterson, Hudson, and other areas. It was fortuitous that one of our members was scanning a Realtor listing and found a building at 141 N. Main St., (321A) in Granite Falls. After some negotiating, FCW purchased the building on October 30. It is two floors with 11,000 square feet and a 2,000 square foot outbuilding.

The rebuilding is in progress including construction and wiring.

The top floor will house:

- Common Area/lounge - nearly complete with couches and chairs.
- Vintage Computer Museum (Save the Machine) – all the vintage equipment at the old space was lost in the fire, but there are several other machines on display, including and Altair 8800, and a Wang word processor.
- Gaming Area -- set up for video games, computer games, board games etc. The Catawba Valley Robotics Club, a group of school-age children building competitive robots out of Legos, is also currently using this area.
- Kitchen -- planned to be a full kitchen.





- Classroom - set up to handle 20 students.
- Science Center - some of the equipment, including the Electron Microscope, has been replaced
- Electronics - partially operational, includes both analog and digital, robotics, electrical, IoT, computers and controls.
- K4FCW - being set up in a corner of Electronics. Items are currently being scrounged and since we own this building, antennas should be much easier to set up.
- Arts & Crafts - a combination of the old Stagecraft and fabrication areas, this area will include sets, costumes, props, lighting, sound, video, model shop, glass, jewelry, sewing and a VR area. This area currently has a welder, metal lathe, CNC mill, metal band saw, metal drill, table saw, wood drill, chop saw, miter saw, 3 laser cutters (including a large 2'x4' unit), sewing machines, overlock machine, industrial sewing machine, 3d printers, and a vacuum-former. The area is mostly working now, but still needs exhaust.



#### The lower floor will house:

- Woodshop - currently being constructed, it has 3 table saws, 2 band saws, slide miter saw, drill press, radial arm saw, planer/molder, a mortise machine and a 5'x10' CNC wood router.
- Metal shop -- will be set up for metalworking. Sprinklers have to be installed so it will be some time before it comes on-line. Current equipment includes a large CNC mill, welder, metal band saw, drill press, pipe bender, and hydraulic press.
- Railroad -- currently being built. The new railroad will be HO gage with Digital controlled trains. Help is needed with setup.



Foothills Community Workshop is far from dead! Classes will resume soon. Meetings are Tuesdays at 7:00 PM and Saturdays at 3:00 PM. As usual, **visitors are always welcome.**



## Caldwell ARES/AUXCOMM Reorganizes



This past year was one of the busiest for Caldwell ARES with several significant weather events that required a callout of volunteers. Not only locally were ARES members in high demand, but when [The Amateur Radio Emergency Service \(ARES\) 2017 Annual Report](#) was released last week, ARES had provided almost 719,000 hours of service valued at \$17.3 million. ARES membership increased 13% over 2016 and ARES events increased by 4%, with the most activity occurring August through November.

Tom Land KA4HKK, Caldwell County ARES Emergency Coordinator/AUXCOMM Coordinator, found himself frequently at the Caldwell EOC during that busy time, not only responding to callouts for ARES support, but also testing the radio equipment and antenna system recently installed.



While not necessarily a result of a busy ARES year, Tom decided to take a new look at how ARES and AUXCOMM was operated and determined that Caldwell ARES/AUXCOMM needed added support. In January, Tom appointed three ARES Assistant Emergency Coordinators/Deputy AUXCOMM Coordinators to enhance ARES/AUXCOMM response in western Carolina (Area 12). An additional appointment for digital communications may be made. These appointments are:

- John Crowe AG4ZL will support Net Control, Traffic Handling, and Net Liaison.
- James Bradshaw N4NIN will support Transportation and Asset Management
- Ro Maddox K4HRM will support Administration, Training and Liaison

The challenge for this new ARES/AUXCOMM team will be to integrate these two entities in a manner that serves the needs of Caldwell County Emergency Management and allows members to function in the roles of disaster response where they feel capable and comfortable. Priority will be placed on defining disaster response needs/responsibilities, recruiting and training members, improving communications with members as well as with other county emergency coordinators.

Tom has set up a Google Drive where members can access ARES/AUXCOMM information, forms, applications, manuals, etc. Go to <https://drive.google.com/drive/folders/0B2y5iYIU-rSdTXAxV1BZZUktRW8?usp=sharing> to setup the Google Drive on your computer. This is a work-in-progress so stay tuned as we work with these issues. Additionally, during the coming months, ARRL ARES will be implementing a new online reporting system – ARES Connect – to support event signup, reporting and roster management.

The use of the dual identifiers – ARES and AUXCOMM – can be confusing. There is a more detailed explanation; however, the simple one will do for now. ARRL ARES has long been the accepted emergency communications arm for amateur radio during disaster and other emergency events. Training and skills are primarily as radio operators and, with the exception of an emergency communications class; very little additional training is required. In the early 2000s, Homeland Security was established and the National Incident Command System, (NIMS) was implemented. With this came the need for deployed amateur radio operators to understand the “structure” of a disaster incident; thus, the ICS 100, ICS 200, ICS 700, ICS 800 class requirements. Within this new “structure”, the Office of Emergency Communications developed “auxiliary communications” (called AUXCOMM) to educate amateur radio operators to work and train with public safety personnel, understand the value of the NIMS Incident Command System and the role of the communications in disaster operations.



North Carolina Emergency Management adopted the NIMS Incident Command System for its disaster operations including the auxiliary communications element. Simply put, NC Emergency Management only recognizes ARRL ARES for local in-county disaster response since ARES members are not required to have NIMS training. NC Emergency Management recognizes AUXCOMM for deploying beyond the county because AUXCOMM members are required to have NIMS training. Some will say: “In the county as ARES, you are a radio operator at an EOC, shelter, Command Center, Incident Site. Beyond the county as AUXCOMM, you may have other radio-related roles as directed.”

NICS went through an extensive update this past fall. As a result, the required courses -- IS 100, ICS 200, ICS 700 and ICS 800 -- will be updated this year. Those who take the current versions will be grandfathered; however, if it's been ten years or so since you have taken these courses, it would be a good idea to take the 2018 versions as refreshers. While the courses have not yet been updated, the new [NIMS 2017 Instructor and Student Learning Materials](#) have been released and are published on the FEMA Independent Study website for download.

### **Time to renew your LARC membership**

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# Tower Building 101: Partial Success, but ...

By Dick Blumenstein K0CAT

Last month you may recall that I was trying to rebuild my winch beam assembly that raises the tower from horizontal to vertical (and vice versa) after a near disaster of a broken sheave bearing shock wave breaking off the welded tabs at the bottom of the winch beam.

*("It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness..." The Tale of Two Cities by Charles Dickens.)*

Maybe Mr. Dickens was also a clairvoyant looking into the future for this project, as it sure has had its ups and downs.

The winch beam that lowers and raises the tower from the horizontal to the vertical position had been taken apart and two new (larger) tabs had been welded on, to replace the smaller tabs whose welds had failed when the sheave bearing shattered.



From mid December, it had taken almost 2 months to get the attention of the company that made the speed reducer to get a few parts which included a new shaft oil seal and cap. Recall that when the winch had initially been used, the shaft input from the electric motor



drive had been pointing downwards and gear oil had leaked out of the speed reducer, making a mess everywhere. That oil seal was blown when I pumped some grease into the reducer. Here is the old shaft seal and cap on the right with its replacement components on the left.

I asked around and could not find anyone with a small press that could press the new oil seal into the new cap, so I just used my vice to press it home. That worked out very well...thank you very much!



During the waiting period to get the speed reducer parts, the instruction manual for the speed reducer was VERY specific for the type of gear oil that was required inside the speed reducer. It required an ISO 680 gear oil. ISO 680 is about equivalent to SAE 140W gear oil. I visited multiple stores and could only find a multi-weight SAE 85-140W. On line, I could only find a minimum of 5 gallons of the ISO 680 gear oil. I only needed less than a pint. I knew that James (N4NIN) probably used a lot of gear oil on his place so I talked with him about it. He suggested that I look at Lucas products. Hey, Lucas sold a straight weight SAE 140W racing gear oil. Again, looking all over the internet at the stores that were supposed to be selling Lucas products, no one sold this gear oil in the US except for one tiny company in CA selling it out of the owner's garage. Always on the look-out for Internet scams, I was a little hesitant to put in an order to some person whose address was at a





house in the suburbs. I took a chance, and a few days later it arrived. That was quite an effort.



I rebuilt the speed reducer and put all the components back onto the winch beam and re-mounted it back into place at the base of the tower.

My attention now turned to the beam antenna. I had removed all the elements off the main beam when I bought it with the tower. I now had to disassemble every single joint, clean the aluminum in the joint, put an anti-oxidizer compound on it and reassemble the joint. Here is a joint for the main beam. Notice the oxidation and corrosion.

Here are the joint pieces before they were cleaned.



...and after they were cleaned, along with the ILSCO deox goo I smeared on each joint. I learned about the ILSCO product while monitoring an online tower forum.



Here's what the joint looked like after reassembling it. What's also important is that every single stainless steel bolt had some lubricant on it, too, otherwise stainless threads tend to gall. I also used the deox compound on them.

Every joint on the main beam was rebuilt and the beam is now ready to accept its elements.



Before I added more weight to the beam, I decided it was time to put the beam truss support parts on the beam. This truss, made of clamps and wire rope, hold up the beam ends up and reduce bending of the beam, especially when the beam encounters ice storms.

A small 4-foot mast was clamped onto the Tilt-Plate.





Endcaps were placed on the top and bottom of the truss support mast pipe and the clamps and the wire rope were placed back onto the assembly.

Here's most of the trust support assembly.



At this point, I spent hours reassembling all the elements in the beam, very carefully measuring to at least 1/32" accuracy the dimensions specified in the Hy-Gain antenna assembly manual.



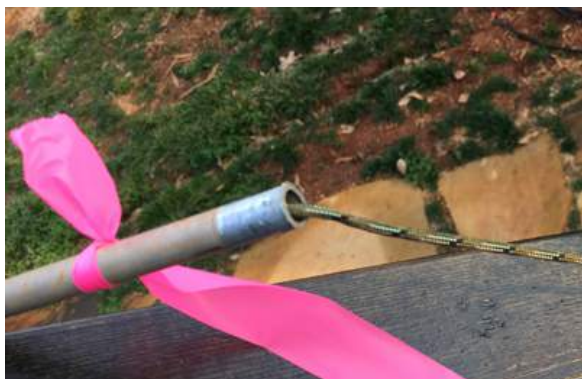
All the measurements were the same for each total element except for the last outer element piece. That piece differed on each full element depending on its position on the main beam.



Here is the entire beam fully reassembled except for one small item still left to do.

The Hy-Gain manual said to put 6 feet of anti-vibration rope into the ends of the elements, so that in high winds, the rope would dampen harmonic vibration of the aluminum elements. The elements didn't have the rope in them when I bought the tower, but still had survived. I decided to be prudent and so I threaded paracord into each element end.





I frayed the ends of the paracord, bent them over, and inserted new end caps over the ends, capturing the cord.

I then pressed the caps all the way in and that completed the beam assembly.

I then mounted a PL-259 connector onto the end of my 450 foot coax roll and screwed it into the 2m/70cm vertical at the tip of my tower mast. All outside connector joints were first covered with 2 overlapping layers of Scotch 130C (with the sticky side out) and then 2 layers of overlapping Scotch Super 88 tape.

Here's the finished product at the lower end of the vertical antenna.



The vertical was slipped into its clamped holder at the top of the mast and then the coax was fed down the mast to the coax standoff arms. I approximated how much coax was going to be needed for each tower section and temporarily attached the coax to each of the 4 "standoff" arms on the tower.

You may recall there is an arm clamped at the top of each section of the tower to hold the coax. I wouldn't know exactly how much length was needed, so it was decided to initially route just one coax cable at first. The tower was then lifted up on its maiden voyage with the beam attached! What a feeling that was after so long an effort.





Seeing the below really made my day. Wow!

I then extended the tower up to a point that was just below its maximum height. I probably could have gotten about 6' to 10' more extension, but I was already above the textbook optimum height for a 20m beam, so I stopped there. After appreciating the view for a while, I noted how the loops on the coax looked and decided to put about an additional 2 ft onto each loop the next time I lowered the tower.

My attention then turned to the two other antenna coaxes; the 20m beam and the Alpha Delta Sloper antenna. I had cut the coax off the spool for the vertical antenna after raising the tower, but I had two more coaxes to put onto the tower, and no idea at this point where to cut the last remaining piece of coax into two pieces.

Based on the advice from Gary K3OS, I had ordered a current balun for the 20m beam. Even though there was a voltage balun already on the beam, there was the possibility that I was going to need a current balun to remove stray RF off the outside of the shield. I wouldn't know if I really needed it until I was operational.



Since I had to mount the coax and wanted to minimize the times I was going to raise and lower the tower to the ground, I bit the bullet and ordered a #8231 current balun from Wireman.com. <http://thewireman.com/prodpix2.html>. It's basically a well-made 3' length of Teflon coax with connectors on each end and with a bunch of closely fitting ferrites over the wire and encapsulated within an adhesive heat shrink.

I then put on a PL-259 connector that was needed for the Alpha Delta Sloper antenna on one end of my 200+ feet of spooled coax, and a N-connector on the other end for the 20m beam voltage balun. Before I went outside and cut the coax, I put the PL-259 end into a dummy load and connected up the other end to my antenna analyzer (good idea Gary!). It tested fine.



I connected the Wireman current balun to the Hy-Gain voltage balun on the 20m beam and routed the coax down the lowered

Now I had to deal with the Alpha Delta Sloper antenna that had come with the tower. It covers the 40/80/160m bands and uses the tower as a ground and the 20m beam above it as a "top hat".



Hence, each of the 2 sloping wires are connected to each other on the center conductor of the coax and the shield of the coax goes to ground on the tower. Here's the condition of the backside of the Sloper SO-239 connector. After I pried off some hardened goo, I found that the solder joint was cold soldered and loose. Good thing I cleaned it off to inspect it. Also the mounting bracket was bent.



I re-soldered the connector, straightened the bracket and mounted it onto a standoff arm at the top of tower. I ran a ground wire from the Sloper bracket to what hopefully will be a solid enough ground on the tower. I am relying on the heavy zinc spray coating I covered the tower with in an earlier article to give me a good enough ground for the Sloper. If that doesn't work, I will have to drop a 12 GA wire in the future from that bracket all the way down the tower. Finally, I connected up the PL-259 end of the long coax to the Sloper connector and wrapped it in tape.





Now was the time to correct the length/loops of the vertical coax. Before cutting the temporary ty-wraps off the coax standoff arms, I put some red tape around the coax at 2 feet down from its original clamping spot on the 2nd tower standoff arm. I did the same but made it 4 feet and 6 feet down on the 3<sup>rd</sup> and 4<sup>th</sup> standoff arms. Hence, when I repositioned the coax bundles, each standoff leg will have an additional 2 feet of loop. I cut the tape and temporary ty-wraps off the vertical coax and then joined the three pieces of coax together.



At this point, I had to decide where to cut the coax that was joining the 20m and Sloper antennae so that I had one piece for each antenna and so that I could untangle all the remaining coax. I realized that when I cut the coax off the spool for the first (vertical) antenna, the tower had been in its vertical position. Now with the tower horizontal I realized that lowering the tower used up more coax; a lot more. Darn! I will now have to make a splice about 8 feet long and use up 2 more connectors.

Very carefully, so as not to have any kind of twisting of the bundled coax loops once the tower was vertical, I used a heavy tub of paint to help form the loop before the coax went vertical again and to attached to the next lower arm. I taped the coax bundle every 18" or so with about 2-1/2 wraps of Scotch Super 88. Here I am completing the first loop.



I then taped all standoff arms and coax and was almost ready to lift the tower. First though, I had to finish the coax wiring to the antenna interface box.

Gary suggested that I needed a choke at the bottom of the tower to remove any RF from the Sloper coax shield. He had an extra #31 mix ferrite toroid just sitting around doing nothing so he graciously delivered this handmade choke to me:

I mounted it in an electrical box with 2@ female N-connectors and oozed in an adequate amount of RTV silicone to keep it in place.

The choke box was mounted on a piece of 2x4 and clamped to the antenna coax EMT pipe under the main antenna interface box.

All the coax cables were routed up into the interface box and terminated with their proper connectors.







Here's a closeup view of the inside of the antenna interface box before it was closed up for good (...or so I thought!)



Gary K3OS came over to help. Here he is removing all the warning tapes from the antenna ends as we hoped we would not have to lower the tower again. (Mmmmm... yeah!)

Before we raised the tower, we reopened the antenna interface box and connected the antenna analyzer to the 20m beam coax connector. We had an excellent very low SWR ratio, but of course, the beam was only 3 feet off the ground. We wondered how good an SWR we would have with the tower in the raised position; hopefully something near the 1.2:1 ratio in the Hy-Gain specs.

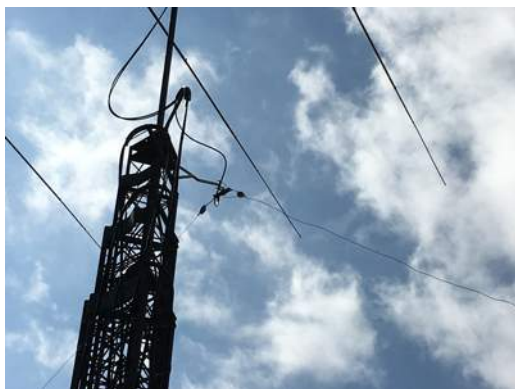


We were now raising the tower for the last time (for hopefully a long time to come). It takes about 20 minutes to raise the tower to the vertical position.

Ahhhh... what a sight! Even the coax bundles seem to hang pretty well; a testament to the long time in adjusting and taping the coax. The Alpha Delta Sloper antenna is just hanging off the tower top at this point, and as soon as the tower is raised all the way up, I'll determine where to tie the ends off so that the wires are sloping down at a 45 degree angle. For now I just walked the ends of the Sloper out and stuck the wires out of the way.







Gary and I then took another antenna analyzer reading of the 20m beam, and were shocked when the SWR was off the charts (greater than 10 ratio!!). What in the heck is going on? I am dumfounded. At that point I had to lower the tower again.



Remember the new BIGGER welded tabs on the bottom of the winch beam? It turns out that they interfered a little with the rear tower leg. It wasn't apparent until the tower was almost all the way up when we raised it. I had a heck of a time trying to push the tower forward to try to get it to start coming down. My usual method of using a long pry bar under the rear leg did not work; even if I stood on the pry bar.

I climbed up the tower a little and put a strap a ways up the tower and connected it to a come-a-long which was attached to a post that was supporting our deck. After pulling very hard on the tower, I finally got it to start to come down.



As the tower was coming finally lowering, I looked up and realized that the health of the entire tower system depended solely on the wire rope and a single "O" bolt bolted to the winch beam. If either broke, the tower would come crashing down, probably destroying it. I decided to put a safety wire rope through the "O" bolt on the winch beam, so that if it broke, the wire rope might possibly prevent this potential disaster.

We kept wondering what we were going to find that could have possibly been done wrong to end with such a horrible SWR reading.



I took this opportunity to saw and grind down a small piece of steel off the bottom of the bolting tab at the bottom of the rear tower leg, so that there was no further interference when trying to lower the tower again.

Gary started a conversation with Gene K1AVE who, like Gary, has decades experience being a ham. Gene, in turn, conferred with his friend Bruce K1BG from MA and they came up with some potential culprits.

Gene and Gary came over the next day and started looking at the driven element connection from the voltage balun. Here's Gene and Gary checking at the antenna interface box (sorry... no better picture is available and the amateur photographer should definitely be fired).



We took the driven element connections apart and cleaned them rigorously, with me shaking my head, asking if the aluminum needed to be THAT shiny? I thought I had done a fairly good job of initially putting them together. Gene felt that maybe it should be better. We then tested the driven element with his antenna analyzer and it was properly resonant. We then tested the coax all the way back from the current balun to the antenna interface box. That tested good. Hence, the only other thing that was left to suspect was the old voltage balun. Gene's friend Bruce had written to Gene in an email, *"if the choke is not new, I would be very cautious, particularly if it's one of the Hy-Gain BN-86.... These voltage baluns are known for opening up"*.

In an earlier article, I resurrected this old voltage balun I got with the Hy-Gain antenna, bench tested it with Gary and it tested OK. I then cleaned it up, epoxied an additional N connector onto it and had it looking pretty spiffy compared to its original condition.

We then put a temporary jumper to replace the voltage balun and Gene and Gary deduced that the issue probably was the old Hy-Gain voltage balun.

I then manufactured a permanent jumper to go from the Wireman current balun directly to the driven element on the beam.

Here's the nicely refurbished voltage balun ready to go into the trash!!

The tower was raised again vertically to the nested position and the SWR this time was fairly good. 1.9:1:





At this point, we then needed to tweak the beta match, which are the two aluminum rods coming off the driven element. They are both about 30" long with a shorting bar across them that slides back and forth. There were some issues about where that shorting bar should be located. The manual was no help and calling Hy-Gain did not result in anything definitive.



We lowered the tower back down (once again) to ground level and loosened the beta match hardware and then ran the tower back up so that the beam was about 15 feet off the ground. Using a painter's pole, we started tapping the beta match slider and then seeing what the resulting SWR was on the antenna analyzer.

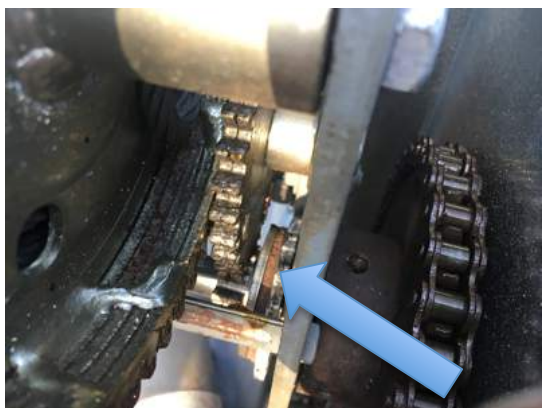
We ended up lowering the SWR somewhat and was trying to get the SWR down near to the Hy-Gain spec of 1.2:1, when suddenly as we were adjusting the tower height, the winch gearing started jumping teeth.

When I looked closer, I could see the smaller gear skipping teeth and concluded that if we continued lowering the tower, the gear train could fail and the entire tower could come crashing down. So, reluctantly, I raised the tower again to the vertical position. The gearing did not skip as the tower was being raised as the gear teeth were working on the other side of each tooth.

At this point, I knew I had to replace the winch itself, even though I had initially rebuilt it with new gear parts. The new gear I had replaced was going bad. So soon! Sigh...



As long as the tower was somewhat up and vertical I decided to run two tests. That day, I called a CQ on both the Hibriten and LARC repeaters and Tom (KA4HKK) heard me and we talked using both repeaters! OK, the vertical 2m antenna seemed to work. That was a nice sign and now it allows me to be in touch with the Emergency Operations Center in Lenoir as well as participating in weekly local nets. The next evening, I decided to warm up my old vintage Collins equipment and even though the 20m beam was only 30 feet in the air instead of about 65 feet and with the beta match hardware being loose, I was still able to raise Valencia Spain for a short contact. So there is hope for this beam after all.



I am now faced with the prospect of replacing that winch on the top of the winch beam. First, I wanted to verify if the winch that was originally put in was correctly sized for the task at hand. I ran a lengthy engineering force analysis taking into account the tower and every single component on it, each of the weights with their own centers of gravity.

What I found out was that the winch's working load limit would be exceeded by about 5 to 10% if the tower had to be lifted from ground level and was probably at its load limit when the tower was lifted off of the wooden horse I had constructed on which it sat when the tower was lowered.

So it seems my comment from the end of last month's column -- "*Check in next month to find out which, if any, boogeymen were waiting in hiding for me!*" -- came to haunt this project. The search now begins for a more robust winch and with it, the travails of trying to get it to fit on the winch beam with the rest of the hardware. Stay tuned... (Double sigh!)

**To be continued...**

~~~ **Coming in May** ~~~

**Another Adventure with Ro & Dick**



**Dayton Hamvention**

**What crazy project will  
they get into next?**



**Field Day 2018 is only four  
months away! Time to start  
thinking about volunteering.**



# Lessons From My Silent Keys

By Ro Maddox K4HRM

These cold ugly days of February can give one cabin fever! Toss in a bad head cold and a strained knee and one nears crazy. So I decided to clean out the boxes of computer and radio gear stacking up in my basement. As I dug thru “stuff,” I found lots of reminders of friends that are now silent keys and who had played a big part in my ham life. Thought I would share some lessons learned.

**Alan W1ABT SK 2014.** After I retired in 2001, I volunteered with the Red Cross and soon found myself overseeing the field operations during disasters for 8 counties in Florida. In that role, I interfaced with the local county ARRL ARES ECs for getting radio operators at the Red Cross facility and shelters. I got to know Alan as the Leon County EC. I had held a Novice license in the early 1970s, but life got in the way and I did not renew it on expiration. Alan started bugging me to get back into radio and spent time as a mentor. I was taking the Technician class when I was deployed to Washington DC to work for the Red Cross in a Call Center set up so people worried about the impending war with Iraq could talk to a “real” person when they called the “war information hotline” set up by President Bush. After 3 weeks in Washington, I was asked to deploy to Martin TN that had been devastated by floods. From there, I deployed to Lexington KY to work in a service center for floods in central KY. Two months later, I finally got back to Tallahassee and scheduled to take the Tech exam. Alan was one of the VEs. I noticed that the ARRL book that everyone was looking at prior to the exam was not the same as what I had studied – having crossed that magic date where the question pool changes. But I took the exam anyway. Alan came to me and said “you passed”, don’t you want to take the General. So I did, never having even looked at the General study guide. Alan came back a few minutes later and said, “you passed”, and don’t you want to take the Extra exam. So I did and only got 65% correct, but I was happy because I was a General!



I got to be great friends with Alan, who delighted in telling me how his grandmother encouraged him to get into amateur radio as a young boy. Alan was a true mentor and I got exposed to everything radio. Alan drove a small SUV that looked like an antenna farm and when you opened the door, there were radios and computers mounted everywhere. We often wondered if it would crank.

Alan was well known for his role as “tail end Charlie” in many marathons and bicycle races. While I knew what APRS was, I had never used it. But one night about 11:30 pm, Alan called me, saying his daughter had been hospitalized and he was in Albany GA doing “tail end Charlie” for the “Tour of Southern Rural Vistas Ride” (a 200 mile bike ride), could I come take over for him and also run APRS tracking -- and be there by 7:00 am the next morning.



It's midnight, Albany is 2 hours away, I don't have a clue how to run APRS tracking, and Alan is already on his way to South Florida where his daughter is in the hospital. Crap, was all I could think! But, I said OK. Alan gave me a quick lesson in APRS. Well, long story short, I thoroughly enjoyed being "tail end Charlie" so much that I became known for having a truck that could actually go 3 MPH and did lots of marathons and bicycle rides over the following years. Oh, APRS. It was easier than I thought, and when Alan sent me a screenshot of the final APRS tracking, I was so excited that it all worked.

Everyone who knew Alan will say that he exemplified the best qualities of the amateur radio hobby. What Alan demonstrated to me was that he was a true mentor and the "Elmer" that all of us needed and one who gave us that little extra push.

**Marilyn WM2W SK 2017.** Marilyn was a retired CPA and avid gardener whose home was filled with violets and orchids. Even though, she was married to a rabid amateur radio operator (Terry N0TW) and lived on a huge antenna farm, she held little interest in the hobby. When for health reasons she could no longer travel and was confined mainly to home, Marilyn decided to take up amateur radio and got her technician, general and extra in 2013 in one sitting. She went on to being very active in local amateur radio communications and with 10-10 International.



What Marilyn demonstrated to me was that it's never too late to learn and to become involved in something new. Looking at her LoTW, she had more contacts logged in her under 4 years in the hobby than many hams log in a lifetime.

**Mike KE4FGF SK 2014.** A fellow ham invited me to attend a meeting of the Thomasville Amateur Radio Club, saying the club's "politics" were not as evident. So, at my first meeting, I learned the President and Officers had been in place for about 15 years and not a lot of new life had been breathed into the group. The Club was very active, with lots of members, great activities supporting the community, and socials that brought area radio clubs together each year. I joined the Club and enjoyed my time as a member. I learned a lot about repeaters since the club had 8 of them in the area. I met some great hams; several I still email and visit.



I, like everyone in the Club, loved working with the President, Mike KE4FGF. Mike had a unique way of including people in the hobby and all its activities. He always made new folks feel welcome to the hobby and was a big source of encouragement to them.

Mike made a great effort to bring young people and veterans into the hobby. He often took his equipment to hams' homes to get them on the air "one last time" in their final days.

What Mike demonstrated to me was that in some small way each of us could do something to help other hams, club members and support club activities. Mike's legacy is for us to continue to do all we can do!

**Art W1FJI SK 2017.** I have known and admired Art for years, but can't say that we were ever more than just two hams that chatted a little at meetings of the Tallahassee Amateur Radio Society. It was not until I took over preparing the LARC newsletter that I really got to know him. First, you have to know that finding interesting articles for a newsletter is not easy work! So when the month's newsletter seemed bare, I would email Art and we would Facetime over something that might be interesting to share with LARC members. So many of you may have read some of his writings.



As I got to know Art, I realized he probably knew more about the history of radio than anyone I had ever known. I have now read all of his articles on radio history and find myself looking at vintage equipment with new respect.

What Art demonstrated to me was that the hobby of radio could be fun! You don't have to have a lot of equipment, or work every mode/band, or turn out for every Club activity to have radio fun. Playing radio on a park bench by the ocean or on a cold winter day indoors can be both a challenge and a pleasure, particularly if you experiment with QRP making contacts on low power. And, as Art always said "an Don't Forget to Bring Y'all's Dawg Along!" and the fun is even more rewarding.

Upon his becoming a silent key, a friend released a collection of Art's articles. You can go to [http://www.mediafire.com/folder/qzy9w1d3q83ej/Art\\_Marshall%2C\\_W1FJI](http://www.mediafire.com/folder/qzy9w1d3q83ej/Art_Marshall%2C_W1FJI) and download a copy. Enjoy!



Participation in the **NC QSO Party** on February 25 had to be cancelled due to illness of several of those volunteering to setup and operate. Wait until next year!



The Just In Time Disaster Training Library ([www.JITDT.org](http://www.JITDT.org)) provides a single, easy to searchable source where individuals can access informative disaster mitigation, preparedness, response and recovery training videos. Check them out!



# Upcoming Hamfests: Mark Your Calendar

March 9-10: **Charlotte Hamfest**, Mecklenburg Amateur Radio Society,  
<http://www.charlottehamfest.org>

July 7: **Firecracker Hamfest**, Rowan Amateur Radio Society, Salisbury,  
<http://www.rowanars.org/firecracker-hamfest>

May 12: **13th Annual Rockingham County Swapfest**, Rockingham County Amateur Radio Club, Reidsville, <http://n4iv.org>

July 7: **33<sup>rd</sup> Annual 2018 Firecracker Hamfest**, Rowan Amateur Radio Society, Salisbury,  
<http://www.rowanars.org/firecracker-hamfest/>

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

July 28: **WCARS Hamfest**, Western Carolina Amateur Radio Club, Waynesville, <http://wcars.org>

August 11: **20<sup>th</sup> Annual Cape Fear ARS Swapfest**, Cape Fear Amateur Radio Society, Fayetteville, <http://www.cfarsnc.org>

August 31-Sept 2: **Shelby Hamfest/ARRL Roanoke Division Convention**, Shelby Amateur Radio Club, Shelby <http://shelbyhamfest.org>

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Suggestions and articles are appreciated.

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