



N4LNR

JANUARY 2018

**LENOIR AMATEUR
RADIO CLUB**

News & Views

P. O. Box 3276

Lenoir, NC 28645

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

Next LARC Meeting

Thursday, January 11
7:00 PM

Gamewell Fire Dept.
2806 Morganton Blvd SW

LARC Weekly Net

146.625 Minus 94.8
Alt 147.330 Plus 141.3
Friday, 9:00 PM

Caldwell ARES Net

Sunday, 9:00 PM
147.330 Plus 141.3

DMR Digital Net

Tuesday 8:00 PM
Lenoir Local DMR

Field Day 2017

LARC January Meeting

It's never too early to start thinking about the next ARRL Field Day event! Tom Land KA4HKK will show a video about the 2017 Field Day event all over western North Carolina.

The business meeting will follow with a summary of the 2018 Officers transition meeting and planning for 2018 activities, the proposed Winter Field Day event on January 27-28, and other matters raised by members from the floor.



Time to renew your LARC membership

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



President's Comments

John Crowe AG4ZL

Wow, another year filled with sweet memories and happy times has passed!

To all our members -- you made my first year as LARC president special. I hope you will continue to do so as we move through 2018. Working with each of you has made great memories for me. I hope each of you has a happy new year and may God bless each of you with his care and warmth.

I know for me, with the counsel of our new officers and working with our members, 2018 will be a great year. We begin the 32nd year of LARC as a blank chapter in our Club history. The effort each of us chooses to contribute to the Club will write its next chapter.

I am really looking forward to being the President of LARC for a second term. My first year was a real learning experience! Thank you for trusting me to continue in this leadership role. My goals this year are to continue to build on the Club's foundation and work tirelessly to get visibility to LARC's service to the community.

As a Club, we are strong -- we are one! Carry your HT's with you when you enter stores restaurants and let the public ask questions. I meet people every day who have no idea that the hobby of amateur radio still exists. Make an effort to invite persons who may have an interest in amateur radio to attend our meetings and events. Be an Elmer to those in the hobby who need help -- you will be surprised how rewarding helping others with their ham projects can be. I know I am on my soapbox, but I have a passion for ham radio and I want to influence as many as I can to enjoy the opportunities offered by this hobby.

I look forward to seeing each of you at our next meeting -- January 11.

7 3 John AG4ZL

Connecting An Antenna To Your NOAA Weather Band Antenna

The National Weather Service maintains over a 1000 transmitters that broadcast important weather information and alerts 24 hours a day, seven days a week. But while there is coverage for almost the entire United States and territories, there are some areas where the signal may be weak, or reception might be difficult inside concrete or metal buildings like factories, schools, or hospitals. Using an external antenna will greatly improve your reception. [Read more . . .](#)

LARC Eatin' Meetin' ~ A Great Success!

Members, family and friends gathered for the Annual LARC Eatin' Meetin' and Dirty Santa to celebrate another year of service to Caldwell County and local amateur operators and to say "thank you" to the outgoing Vice President, Secretary and Treasurer. The event was held at The Mayflower Seafood Restaurant (303 Blowing Rock Blvd, Lenoir) on Thursday, December 14.

Great seeing a number of present and past LARC members and their families!



LARC to Vote on Participating in 2018 Winter Field Day

At January Meeting

The Winter Field Day (see <http://winterfieldday.com>) sponsored by the Winter Field Day Association is scheduled for January 27-28, 2018. The Club will discuss whether there is sufficient interest for participating in this event. This event will also follow ARES protocols for training purposes. Tentative plans include using both trailers, limiting operating hours, and having a hot dog/hamburger dinner at 5 PM, Saturday for all club members.

Ro K4HRM and Dick K0CAT have offered to host the event in the cul-de-sac or vacant lot at Ro's QTH including keeping the coffee flowing.

Volunteers will be needed to tow both trailers on the morning of January 27 and return them the next day. Operators will be needed for two stations to operate from 2 PM until 8 PM on Saturday and 8 AM until 2 PM on Sunday – no overnight. Need use of generator and lights.

Come to the January meeting to discuss and volunteer to assist. Contact John AG4ZL or Ro K4HRM for more information.



Great Program Planned for February Meeting

NWS Meteorologist (AWIPS Focal Point) Jake Wimberly will present the LARC February 8 program. Jake is going to put on a two-part presentation with a "virtual tour" and a discussion of good weather reporting practices.

Come out and meet Jake and bring your friends who are concerned about the weather!



Winlink Messaging System for Daily and Emergency Use

By Gary Schwartz K3OS

The need to exchange data is becoming more important, yet we hams tend to gravitate to voice communications. The ability to send from the keyboard or a file adds another service benefit that we hams could provide, whether it's a race, regular club business or a special event.

Wouldn't it be great too have a ham radio based messaging system that works locally, statewide and internationally? And, wouldn't it be fantastic:

- If it would work when the Internet goes down?
- If you could connect via VHF or HF or the Internet, if available?
- If messages could be sent to and from regular email addresses?
- If you didn't have to buy any hardware to do all of this?

For the past couple of decades, all of these capabilities have been in use by sailors and RV'ers. More recently emergency management teams have discovered the benefits of the Winlink system. The State of NC Emergency Management uses Winlink! What about our LARC members getting in on this action?



Winlink (<http://www.winlink.org>) is a radio-based email system, i.e., not a chat or conversation system. It consists of message storage "tank" which is a cloud server. There are hundreds of Winlink server stations around the globe that use both Internet and radio relaying. In non-emergency times, all the messages go into the cloud system and are simultaneously available at all the worldwide servers. There are servers for HF or VHF connections. HF connections are available on most bands. The connection method is via any form of Pactor, which is an expensive (\$1000-\$1500) hardware box

connected to an HF rig, or the free soundcard-based Winmor. Winmor is slower than Pactor, but gets the job done. VHF connection is via packet on 2 meter FM. Again, external hardware, called a TNC, can be used, or there are free software packet "engines" that work. Finally and when the Internet is up, you can direct connect via Internet to the message tank at Winlink.

RMS Express is the free software that sends and retrieves messages. (MAC and Linux software is also available). What makes it special is that it doesn't matter if you are on HF or VHF or just on the Internet, the process of sending and receiving a message or messages is the same!

What you need to connect to Winlink is a computer and a radio. For VHF, an HT will work just fine. Any HF rig will work. In both cases a soundcard interface, if not built into the rig, is preferred, though your author has been successful with direct connection between the computer and radio. It is important to get the audio levels set correctly, but once done you are good to go.

As of mid-December, Gene K1AVE and I have been successful using Winlink on HF. We are currently working on the VHF packet connections.

When the Internet dies, Winlink can still be used by agreeing to utilize a few servers within range of all the stations. This would provide us with local and statewide messaging. It assumes, of course, that the originating stations and the servers be equipped with emergency power. Caldwell County EOC has that capability.

To be honest, there are some limitations. The throughput, i.e., speed of sending a message, is slow. Messages must be short and without attachments. For health and welfare, lists of participants, etc., it is just fine. The upside is that this is a working system that has been tested in the recent hurricanes and other disaster situations. The other benefit is that this is a store and forward system. The receiving station can pick up its mail whenever it is convenient, and does not need to be present when the message is being sent. The ultimate backup plan is that Winlink software does support direct station-to-station connection. Your author has personally verified this fact.

Stay tuned for the 2nd installment covering the VHF connection side of Winlink. In the meantime get on the Internet and YouTube for lots of info on Winlink and get your gear ready. If you're interested in trying this out, please feel free to contact me.



Well, a new year is right around the corner. So I thought it would be a good idea to recycle all that content I created during the last year and put together a Ham Radio Q&A best of 2017 show. I'm going to count down the top ten video and articles found on my blog. Did your favorite article make the list? [Read More . . .](#)



Meet LARC Officer ~ VICE PRESIDENT

Tom Land KA4HKK

I am 63 years old and have two adult sons and one grandson. I have worked in the furniture industry most of my life but I also drove a commercial motor vehicle for about 13 years. One of my jobs while driving was delivering new commercial vehicles as well as fire trucks. During that time, I made my way through all of the 48 contiguous states in the US and 3/4ths of the provinces in Canada. This job required me to fly – a lot! I racked up over a

Million frequent flier miles on a couple of airlines. One day I flew out of two different airports – once from Jacksonville FL after delivering trucks there early in the morning, then flew back to Charlotte and was taken tour terminal in Cleveland NC, then delivered trucks to White Pine TN, and then later that night I flew out of Knoxville airport.

I am now retired after being laid off in 2016.

I was licensed in 1979 as a Novice. I started out with a Galaxy V Transceiver and a multi-band dipole. I upgraded to General a couple years later and then Advanced and finally got Extra class license.

I was a member of the NCVHF Contest Association Club who won many awards in the 80s. We operated VHF and UHF contests from Mt Mitchell, Grandfather Mountain, Roan Mountain, White Top Mountain and High Peak Mountain. I have worked All States-Mixed.

I have helped teach Amateur Radio classes as well as gave exams under the VE program. I have been President of LARC several times as well as Vice President and Secretary. Between mid-2000 and 2004, the Club was inactive. I called several past members to see if they would like to get it started again. We met at Golden Corral in Lenoir in April 2004 and we got the club going again. I was a charter member of LARC in 1986 and involved in getting it active again in 2004.

I have been ARES EC twice for Caldwell County and am currently the EC. I was Net Control Manager and NCS for Caldwell ARES.

I coordinated the Special Event station for the Caldwell County sesquicentennial in 1991, coordinated most ARRL Field Day activities for the Club, coordinated the Hibriten Hill Run in 2014 as well as the Rotary Cycle to Serve that year, and coordinated festivals around the County to promote ham radio. I am on the Board of Directors for the Catawba Valley Hamfest. I have had interviews with the Hickory Daily Record, WHKY Radio, and Lenoir News Topic promoting Field Day and other Club events.

7 3 Tom KA4HKK



Meet LARC Officer ~ TREASURER

Dick Blumenstein KOCAT

I've been married to my wife, Jill (a nurse), for almost 37 years, and she was the best thing that ever happened to me! We do not have any kids but in the past have taken in a niece and a nephew to live with us at different stages of their lives. We've lived in MN and FL before moving to NC in December 2015.

My professional background – I grew up and graduated with a BSEE from Drexel University in Philadelphia at the time that microprocessors were just hitting the market.

I worked for a variety of small and large companies mainly doing programming in the Avionics and Defense industries, eventually migrating towards software and system testing. Early on, I was always an entrepreneur and have started several companies, sometimes by myself and sometimes with others.

The longest lasting company was Sysdyne Corporation in MN that I started with 3 other engineers in 1985. We supplied engineering and technical temp help to fortune 500 companies in the Twin Cities area while we also contracted ourselves out, too, to these companies. In 2001 we spun off another company called EXB Solutions that capitalized on our relationship with these companies, but instead of supplying temporary help, we took on projects to do in-house. In 2013, EXB bought out Sysdyne and they are still growing to this day.

In the early 80's, I became a ham radio (Novice) operator but that was quickly snuffed out by my interest in learning to become an instrument rated private pilot, since I was working for Honeywell's Commercial Aviation Division in Minneapolis. They encouraged the people who worked there to become pilots to better understand the equipment and the aviation environment.

When we moved to FL, I couldn't find any work there since most of it was in hospitality and tourism unless I wanted to commute an hour each way. I looked around for a couple of years and decided to open a manufacturing company. Hence, Dump-Pro[®], a lightweight patented device that can be slid into your pickup truck (or trailer) and make it into a dump truck/trailer was brought onto the market in 2004. We were just starting to come into the black when the recession hit in 2006-2008 and, not having deep enough pockets, decided not to wait out the recession (which I thought was going to take years to get out of), so I closed the company down in 2009. The economy is just now slowly coming back to normal and hopefully I can find just the right buyer to bring this great product back to life.

While still in FL, I decided to get back into ham radio, so I joined the Daytona Beach Amateur Radio Club and passed the Tech and General exams. I am still fascinated by how an individual can set up a rig and talk halfway around the world by using wave propagation; still seems magical to me! I'm not much of a contester; instead, I prefer to hold longer conversations with someone in a foreign land who hopefully speaks English!

Except for a 2M/440 handheld that I occasionally use, I still am not back on the HF air yet, since moving here. Many of you have been following my efforts since August 2016 in the Club newsletter to get back on the air. I have first designed and built a rolling shack desk to house all the equipment I think I will need and, as most of you know, I have been refurbishing a 20+-year-old crank up 73' tower that I bought. When I first get back on the air, it will be with my classic Collins Radio S-Line setup as pictured on my QRZ page, as well as an Elecraft KX3 portable HF unit. Later on, I might buy something more modern than the Collins. Before I left FL, I signed up for an on-line CW class <http://cwops.org/> which took me about 3 months to get through. Unfortunately, I learned Morse Code the old fashioned way as a Cub Scout and that ruined me; my brain is still trying to "translate" the visual images of dots and dashes, instead of listening and automatically translating them into letters and words. The only phrase that bypasses that process is "CQ, CQ, CQ". For some reason, my brain automatically knows what this is without any secondary thoughts. Maybe there really is hope for this aging aspiring CW operator.

7 3 Dick K0CAT

Memory, Aging and Ham Radio

Recent research into memory shows that a loss of memory is not inevitable and can be maintained with some effort. For more information on "Memory Changes in Older Adults", go to <http://www.apa.org/research/action/memory-changes.aspx>.

So, how can ham radio help you keep your mind? Here are some suggestions.

- Remain active in the hobby.
- Go to club meetings.
- Participate in Field Day and other events.
- Break out your key and make some QSOs on CW.
- Learn a digital mode.
- Upgrade to Extra Class.
- Rag Chew.
- Participate in contests.
- Work all states.
- Go for DXCC.
- Learn something about the countries you work.
- Work QRP from the top of a 5,000-foot mountain you had to climb.
- Shoot a fishing line over a tree so you can raise your 80-meter dipole.
- Lift a 100 amp hour deep cycle battery (with your knees)
- Get active in ARES.
- Make and use a GO kit.
- And so on!

We need not lose our minds – ham radio can provide you a means of staying active and interesting as our hair and teeth fall out!

Tower Building 101: Starting to build antenna systems... and then...

By Dick Blumenstein K0CAT

Last month I was able to get the tower vertical and start dreaming about mounting the antenna systems.

When I bought the used tower (which was at least 20 years old), I also got with the tower a new Tran 2m/440 vertical, along with a 20-meter beam antenna and a large dipole. I quickly mounted the 2m/440 on the very top of the mast. Initially I was concerned that putting this antenna on the very top was going to attract a lot of lightning. After conferring with a bunch of on-line tower forum folks, the conclusion was that if it gets hit by lightning... well, it gets hit by lightning; so I went ahead and mounted it above where the 20M beam was going to go.

I had built a real heavy-duty sawhorse onto which the tower could be lowered. I used this last month to mount the coax standoff arms.

I was relieved to find out that when the tower was lowered onto the sawhorse, the working height of the antenna system was waist high, and I barely cleared the concrete walkway in front of the tower. Hence, I didn't have to chop out the sidewalk to allow room for the vertical winch assembly! That saved me a ton of work!

One of the major expenses of the antenna system was the addition of the NN4ZZ "TiltPlate" <<http://www.nn4zz.com/tiltplate.htm>>. This was not included in my purchase of the tower system, but I had learned about this innovation while I attended a hamfest a few years ago. It allows you to service the antenna system while standing on the ground. If I did not have this, I would only be able to lower the antenna system until the first elements of the beam came close to the ground and I would need a large folding ladder to climb up and service the antenna systems.



I thought that the addition of this heavy-duty piece of hardware might preclude a visit in the future to the hospital from possibly falling off of a tall ladder! An expense well worth it!

Here is the TiltPlate initially bolted to the mast about 6 feet up from the top of the tower. The empty U clamps on the swiveling plate are designed to then hold onto the main beam mast. When one lowers the tower, the beam stays pretty much level with the ground all the way down. The hook you see hanging down, is part of the optional “KARlock” system that locks the beam in place in case of high winds.



After installing the main boom in those U clamps, you need to twist the boom to a certain angle so that when the tower is vertical and the swinging plate is against the main plate, the antenna elements are level with the ground. In the instructions there were 3 methods of doing that.

Gary K3OS came over to help me adjust the mast, and after reading through the instructions a few times, he exclaimed, “Hey, I have a much better and easier method than they described. Much simpler!”. And he did. All we used was a construction right hand triangle and eyeballed an element against the tower mast when the swinging plate was clamped to the main plate. We first clamped the two plates together.

Gary K3OS eyeballed the setup while I rotated and clamped the beam mast to the TiltPlate. Easy!! I sent the suggestion to the TiltPlate manufacturer and now Gary’s back is famous in the below photograph and this method has been added to the manufacturer’s instructions.



Afterwards, I started doing some maintenance on the main mast. The first was to remove the old balun that looked a little rough after all those years and take it into the shop and check it out. (BTW - Every connection on the 20M beam (at this point) that I touched was loosened, removed, sanded and coated with an anticorrosive paste and reassembled as I worked my way down the main beam).



After cleaning up the crud on the balun (and with the help of Gary who brought over his antenna analyzer) we determined that the balun still looked good. We did that by putting a 50-ohm resistor on the output of the balun and his antenna analyzer on the input. The SWR was very close to a 1.0 in the 20M-frequency band. Now, I am just going to put another adapter into the SO-239 and pot the top of the balun with some more epoxy to make the input even more weatherproof.

At this point, I thought I was on a roll. Unfortunately, all the antenna elements that had been disconnected and its position marked with white tape when I bought it a year and a half ago had become solarized. No marking existed at all! I pulled out the antenna manual and finally figured out which element assembly went where by the lengths of the final end (tip) pieces.



It was during this time, I started to notice that the motorized geared winch assembly was acting strange when I lowered the tower onto the sawhorse. The chain was not running smoothly and was changing in speed with the links jumping a little at a regular interval. I sent a video of it out to Gary K3OS and he suggested that somehow the load on the winch system was probably varying. I just couldn't figure out what exactly was causing that. Also, the chain appeared to be a little looser than when I had originally rebuilt the winch assembly. What was going on? (I was soon to find out).

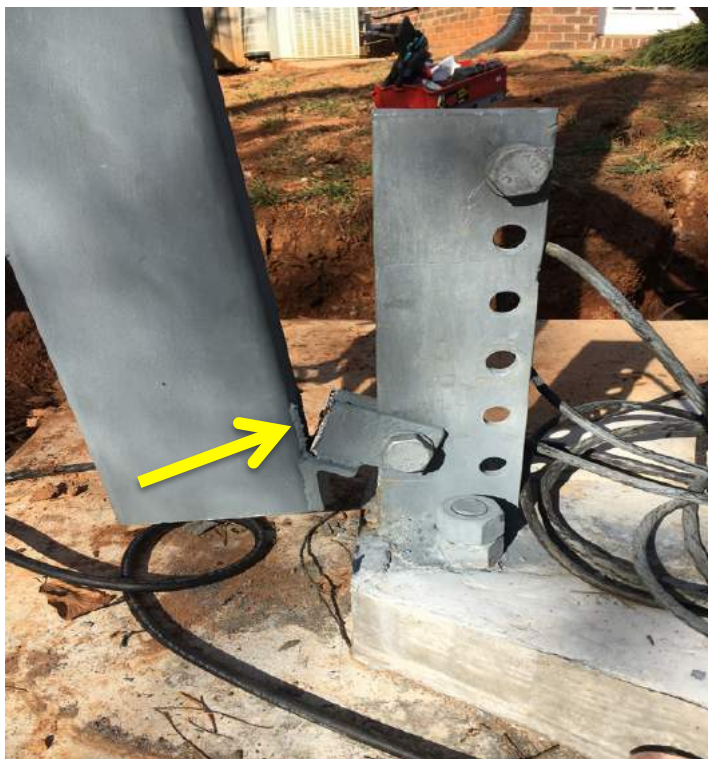


A neighbor of mine who is into a lot of mechanics and rebuilt big equipment stopped over and I raised the tower a couple of inches off the sawhorse. As I started lowering tower to show him the strange chain action, all of a sudden there was loud "CRACK" and the tower fell that couple of inches onto the sawhorse. It drove the sawhorse into the soil an inch or so, but didn't break (thank goodness). I immediately shut the winch off and the only thing I initially saw was the motor seemed to have slipped down a little and skipped a tooth on the vibration dampener. I thought that a leaking seal of the speed reducer shaft above had caused the vibration dampener to slip a tooth or more since grease was all over it. Boy, was I wrong.

My friend left and I looked down at the bottom of the winch assembly and saw the bottom welds almost totally ripped off! What was going on?



Thank goodness this failure did not occur when the tower was being lowered from much further up. If it had, the tower probably would have been destroyed.





This is what it looked like before the welds ripped.

What a sorry affair. The tower was now out of commission and I had no idea what really happened. It was then I looked down on the concrete and just below that steel beam was a $\frac{3}{4}$ " piece of polished metal piece of what looked like a bearing outside race. Where did IT come from? I carefully examined the entire winch mechanism and it looked intact. No bearings were broken there.



When I finally looked up at the very top of the vertical winch beam where 2 pulleys were buried inside the beam did I notice that one of them was askew. After I completely took down the winch beam and disassembled the pulley system at the top did I discover this:



The story was now complete. I finally figured out what happened. The rough running bike chain was an initial indication that the sheave bearing in the top of the winch beam was disintegrating. Gary K3OS was absolutely correct.

When I was lowering the tower to show my other friend, the bearing disintegrated and the forces that instantly occurred, ran a shock wave down the beam, tore the welds and the beam slammed down a couple of inches and forced the electric motor down a $\frac{1}{4}$ " or so, so that a tooth skipped in the vibration dampener.

At this point, the tower is out of commission until the sheave system can be rebuilt. I have ordered a couple of heavier duty replacement sheaves but have to machine a precision tube onto which they will rotate.

In the meantime, I took the beam to a local welding shop where they removed the ripped welded tabs and replaced them with much bigger tabs that should be able to resist future large forces (if they ever do re-occur).



When I was originally assembling the beam hardware and lubricating everything, I accidentally blew a grease seal in the speed reducer that sits just above the motor. I didn't think at the time that it was going to be a major deal. As it turned out, that seal was on the bottom of the assembly, and when the gear box warmed up, a lot of grease flowed out and down on the motor and made a mess of everything.

I removed the speed reducer. The company that made this about 1980 is still in business, but it's taking them a long time to respond to see if they can supply me with a replacement shaft seal and shaft seal cover and to answer other questions I had about the speed reducer. I sure hope I don't have to replace that, too, since this reducer is an integral part of the winch system.

So.... I have to bide my time in order to get the tower back on line. In the meantime, I picked up the antenna elements and decided not to mount them on the beam at this time, as there is no need to have them sticking out into the air for people to accidentally walk into them.

I have used my spare time to complete the coax wiring between radio components on my ham bench. Little consolation, but that had to be done anyway! (Sigh...)

Check in next month to find out what has occurred.



To be continued...

Upcoming Hamfests: Mark Your Calendar

January 6: **Winston-Salem FirstFest**, Forsyth Amateur Radio Club, Winston-Salem,
<http://www.w4nc.com>

March 9-10: **Charlotte Hamfest/ARRL NC Section Convention**, Mecklenburg Amateur Radio Society, Concord, <https://charlottehamfest.org>

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

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

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

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

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