

Nacogdoches Amateur Radio Club

2025 CLUB OFFICERS

Pres: Mark Phillips - KI5POH

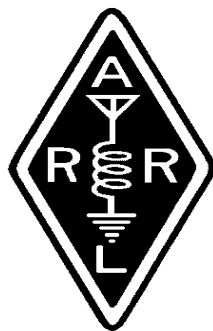
Vice Pres: Dave Emmerling - NR5AT

Sec/Treas: Darrell Thornton - KI5PYQ

Visit our web site at
<https://w5nac.com/>

MISSION STATEMENT

The Mission of the Nacogdoches Amateur Radio Club is to support and promote Amateur Radio by public service, offering training to unlicensed interested parties and licensed Amateurs, mutual support of other Amateurs, engaging events that promote Amateur radio to the general public and other Amateur radio



operators, and continuing fellowship by regularly scheduled organized meetings and events and having fun.

JUNE MINUTES

Mark, KI5POH, started them meeting off at 19:00. Introductions were made and minutes were approved. The treasury report was read.

Old business is 32 Controller programming, Swap Meet and Neches River Rendezvous.

We talked about Field Day and duty assignments.

Meeting was adjourned at 19:23.

2025 DUES ARE DUE

Dues are just \$20 a year and cover all licensed hams in a family. Please get your dues to KI5PYQ either in person or mailed to his home address. Sooner is better than later. Make checks payable to NARC.

SUPPORT YOUR CLUB

Are you a member of NARC? Do you check into one or more of the weekly nets on 2M? If not, why not? Do you participate in the club Fox Hunts? If not, why not? Do you participate in the club Special Events K5C and K5T? If not, why? Let us know how we can get

you involved in our club. Is there an event or program that you would like to see, let your club officers know.

FROM OUR PRESIDENT

I want to thank everyone that has volunteered to help with all aspects of our Field Day coming up on Saturday (6/28). Our Field Day would not be possible without all of your efforts for this event.

Our next meeting is our Ice Cream Social, so be sure to attend this meeting on Tuesday, July 1st. The Ice Cream Social is always fun and we get to meet and visit with family that support our hobby as a ham operator. I hope to see you there!

I am thankful for each of you for being a Ham and being part of our club!

73, Mark KI5POH
KI5POH21@gmail.com

FROM OUR VP

Hello to all! Hope everyone has survived all the rain and

storms we have had. It has been a wet month for sure. But, like always, in a month or so we will be praying for rain as we watch the grass turn brown and the lake levels drop! Things have been extra special crazy around here for the last three or four weeks. I have been a member of a motorcycle park on FM 225 for about 40 years. That is until now. As of the first of June the land owner informed the membership we must be off the property by the end of the month. The property (approx 1700 acres) and additional acreage down the road will have all trees removed to make room for a solar farm. SOOOO the membership of 100 families have been in a mad scramble to get trailers, decks, car ports, awnings, etc., etc., removed before the logging begins. Since I live down the road from the park, (and will now have the distinct and depressing pleasure of driving by the devastation already in place, and more devastation soon to come for the next 25 years), I

have been helping out as much as I can. Which translates into no time for radio.

I did see a YouTube video by kv4p (www.kv4p.com) re. an open source ham radio transceiver you can build (I think it is just 3 parts) and attach to your smartphone. It looked pretty interesting, and something I would probably use. Like most when I first got into radio I went out and bought an HT. AND...I never use the thing (except for fox hunts). Why? Two reasons...first not very much traffic on the repeaters in our area and second, it's just another thing to carry or hook on my belt, along with my phone, knife, and whatever else the day dictates. Being able to combine the phone with a device to turn the phone into a 2m radio might just work! The only negative I immediately saw, for me, is that, I have to solder it together. My soldering skills are.....let's say.....lousy! My last soldering job caught fire on my desk, fell off the desk onto my leg, wrapped around my knee and burned

the BACK of my knee severely (takes some skill to pull that off!....YEP). However, for those of you who know their way around a soldering iron this device might be of interest.

That's all I have folks. Hope to see everyone Saturday morning June 28th at I-Hop for breakfast, then on to the EOC to get things ready for Field Day 2025!

73, NR5AT
Dave Emmerling
Dke1955@duck.com

NOTES FROM OUR EC

We are a month into the 2025 Hurricane season. As of June 16th when I first started this column there had been no hurricanes or storms. The National Hurricane Center and Colorado State University have updated their seasonal forecast to above average. We shall see how it all goes.

June has been an awkward month. Seemingly more rain than usual and sporadic and

we didn't plan very far in advance or even over the day. We did get plenty of rain though. The forecast has been showing high temps for the middle 90's for a couple of weeks. Something about a heat/humidity bubble. Make your hydration plan and definitely get the AC checked.

Field day is just a few days away. I hope everyone is geared up for it. A reminder for those of you that will be working around the antenna, have your hard hat and gloves available and mind where you step.

A short one this month, see you at the EOC Saturday.

73 and see you on the air,
de John Chapman KC5MIB
Jlchapman2@gmail.com

VE TESTING

Our June VE testing session did not have any applicants. The VE team had a pleasant social evening out.

Many thanks to our VE team. Army AE5P, Ralph

N6RH, Dave NR6AT, Rusty KD5GEN, Mike AA5HH

Remember that we provide VE testing sessions the third Wednesday of EVERY MONTH with exams for all classes of Amateur Radio licenses. Sessions are held at the EOC with doors open at 6:30 and testing beginning no later than 7:00 p.m.

73 de AE5P.

email:

ae5p@suddenlink.net

TWO METER CLUB NETS

Please join us each week for the two-meter nets sponsored by NARC. All stations are welcome to check into the nets.

Each **MONDAY** is the **NARC ARES/RACES** net, at 20:00 on the club's 146.84 repeater (PL 141.3).

Second, on **THURSDAY** evenings at 20:00 is the **Deep East Texas Skywarn Emergency Weather Net** on the 147.32 repeater (PL 141.3).

Please join us for one or both.

HAMLIST

Are you on Hamlist? Check it out and join at:

<https://w5nac.com/about/email-reflectors/>

NEXT MEETING

The next regular NARC meeting will be TUESDAY July 1st at Nacogdoches EOC. Meeting begins at 19:00; Please plan to arrive early for socialization with the doors opening at 18:30.

We will have a short business meeting. The program will be our annual Ice Cream Social. Please bring your favorite ice cream. The club will provide toppings and bowls, plastic wear and water.

Looking forward to seeing everyone there. Bring a date/spouse.

FOX HUNT

We plan to have another fox hunt in July. Date and time yet to be determined.

We would love to have you test your skills on finding a 15 mW transmitter somewhere in the city of Nacogdoches. Can you do it? If you are the first to find the fox, the club will buy your lunch. After the fox hunt, we will meet up at CC's Smokehouse for a wonderful lunch, great discussions and stories on what you went through to find the fox. Please let Darrell, KI5PYQ, know you are planning on participating. If you are new to fox hunting and you would like to tag along with someone to see what it is about, let Darrell know as well. He can get you teamed up with someone.

UPCOMING EVENTS OF NOTE

Mark your calendars for the following events coming up in the next few months. Full information on these events and much more can be found at

<https://www.contestcalendar.com/contestcal.html>

You will need to scroll to find the correct month.

Link to ARRL Contest Calendar

<https://www.arrl.org/contest-calendar>

Club Meeting Dates

July 1st 19:00

Aug 5th 19:00

Sept 2nd 19:00

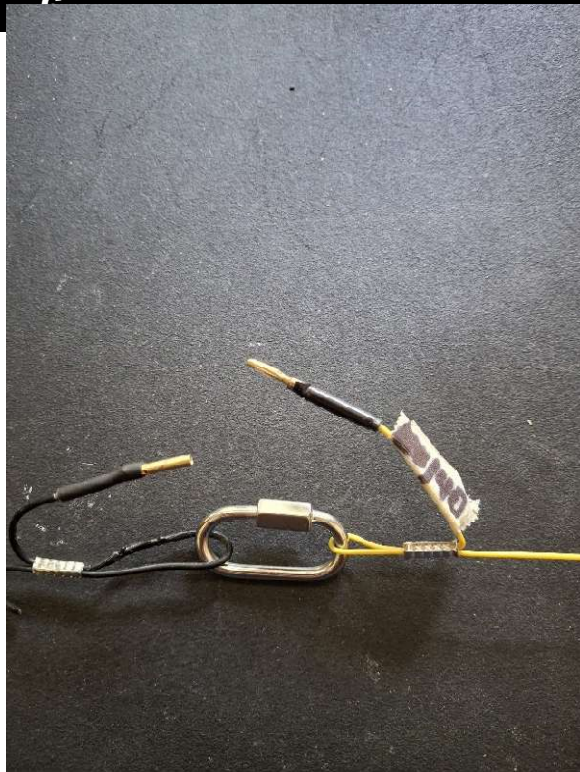
Making a Linked EFHW for Multiband Resonant Operation

Jim Edmondson, AE5JE

End-fed half-wave (EFHW) antennas are very popular for portable operations such as POTA, SOTA, field day and emergency response. There are several reasons for this, including: multi-band operation, only one support is needed, no need for radials or counterpoise, wide frequency response, long radiating element, inexpensive, easy to homebrew and can be very light weight / portable. Some downsides are the need for an unun to transform the high feedpoint impedance to $50\ \Omega$, can be noisy due to partially vertical (sloper) orientation and power loss in unun especially if under-sized for power level.

I have used EFHW antennas with great success during portable or base station operation. For portable operation, I use an EFHW cut for 40M, which is simply a 66' long wire element attached to 49:1 unun. This antenna will also resonate on 20M, 15M and 10M. At home, I have an 80M EFHW which is ~132' long. This antenna will cover all bands from 80M - 10M, although a wideband tuner may be required for non-harmonic (WARC) bands. Furthermore, the 80M EFHW benefits from mounting a high-voltage capacitor at the midpoint to move the resonance point up into the 75M phone region. It also may need an inductor several feet from the feedpoint to reduce resonance point in the 10M band. These tweaks are well-documented online and commercially available from several suppliers ([MyAntennas](#), [HyEndFed](#)). Commercial EFHW antennas can get fairly expensive at \$200 - \$300.

I mentioned above that no counterpoise is needed. If you do not attach a separate wire to act as a counterpoise, then the outer braid of your coax will act as a counterpoise. For this reason, you should not use an RF choke at the feedpoint of an EFHW (unless you provide a separate counterpoise wire). I use ferrites at the transceiver end of the coax. If you choose to use a counterpoise wire, it is



recommended to be at least 0.05λ at the lowest frequency of the antenna (6.6' for 40M).

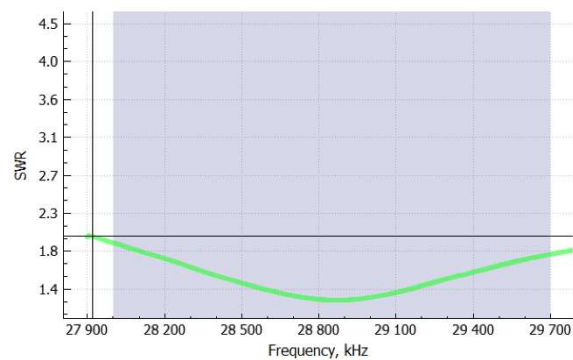
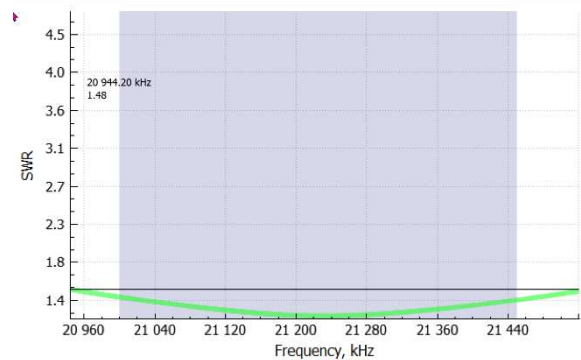
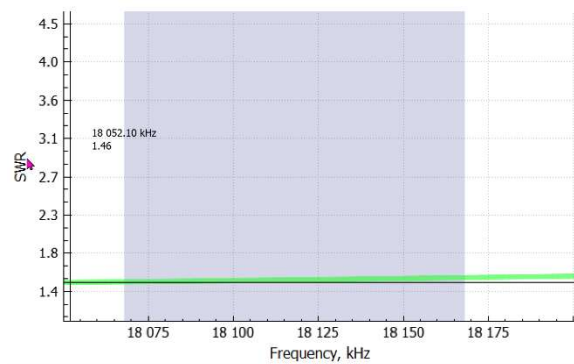
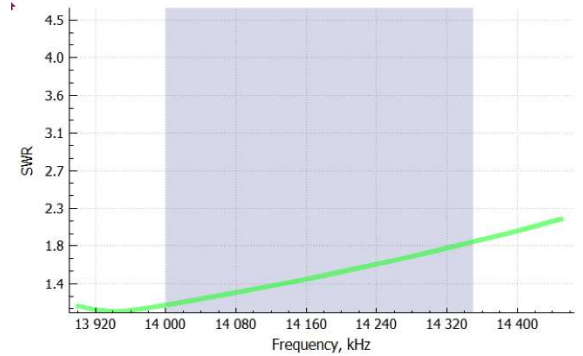
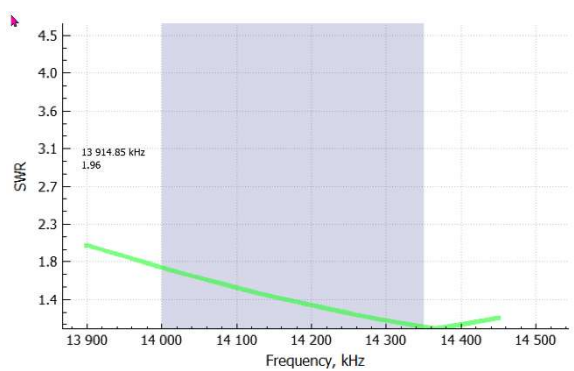
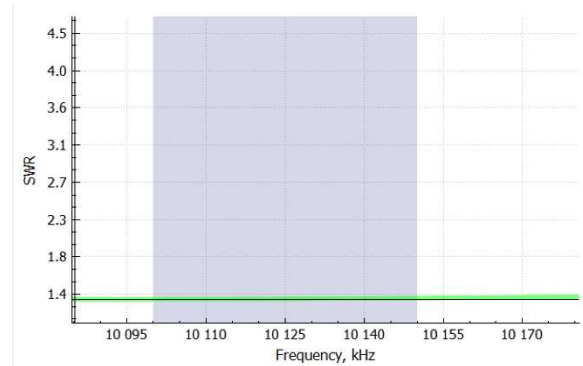
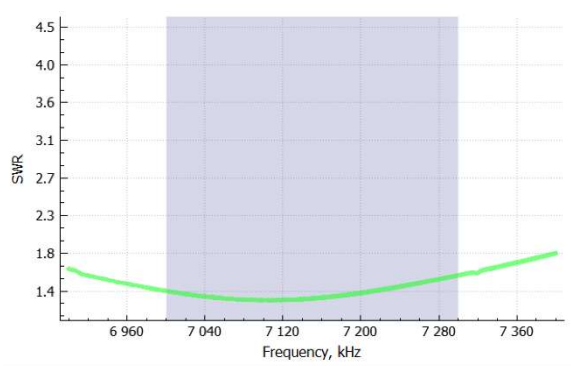
For the rest of this article, I will describe a project to increase the band agility of my 40M QRP EFHW antenna (kit from [KM4ACK](#)). I plan to also implement this for my 40M QRO EFHW (homebrew). This method has been the subject of several YouTube videos (for example: [K8MRD PackTenna](#)) and can be applied to any wire antenna. The method is to create links in the antenna where the length of the radiating element can be easily changed. This is done as shown in the photos at the top of the next page. Basically, a strain relief is created by making loops in each end of the wire pieces and connecting them with some type of link (quick link, S-biner, etc). The loops are secured with ferrules crimped at the base of the loop. The link is made by soldering a mini-banana plug and jack to the opposite wire ends. Adhesive-lined heat shrink tubing was used to cover the solder joint, providing some weather protection and mechanical stability. For 22-gauge antenna wire, I used 12-gauge ferrules and 2mm banana jacks / plugs.

As mentioned above, the 40M EFHW will also work on 20M, 15M and 10M. In my experience though, the resonance point is usually just above the 15M band and at the upper (FM) end of the 10M band. To compensate for this, I marked the wire so that I could adjust for which bands that I wanted to use. In the new version, I use a link for this. While I still have to lower the antenna to make or break the

link, it is easy than adjusting the wire length. My goal was to add the 17M and 30M bands to the antenna by links. To do this, I cut the 66' wire at 25' 10" and made a temporary loop with a uncrimped ferrule. On the remaining ~40', I also made a temporary loop and attached the loops with a quicklink and pulled the EFHW into the air with a rope over a tree branch. I used my antenna analyzer to adjust the length to 17M resonance.

When satisfied with the 17M performance, I soldered on the banana jack and plug. I then trimmed the ~40' wire to 20'5" which combined with the 17M link should resonate near 30M. Again, temporary loops were made and the wire was trimmed until 30M resonance was achieved. Finally, I made a 19'3" wire length, temporarily attached it and trimmed for 40M resonance. At this point, 20M, 15M and 10M were a little high in their respective bands. I added a short (~2') link to bring

minimum SWR into better band position. Final results are pictured below using SWR charts.



In a multiband antenna like this, you could spend days optimizing. I got every band to what I think is good enough ($\sim 1.5:1$ or better across the band) with the SWR minimum about mid-band and accepted that. For context, with an SWR of $1.5:1$, using 25' of RG-174, the power loss is 16%. Using 25' of RG-8X decreases the loss to 6% and the loss with LMR-400 is only 3%. Refer to [KV5R](#) for a very good transmission line loss calculator. I could not get 10M, 15M, 20M, and 40M all centered simultaneously, so there are two curves for 20M. One with the last $\sim 2'$ link connected and one without. With that link connected, the EFHW is best for 20M CW and digital. With the link disconnected, the EFHW is best for 20M SSB. I should note, however, that 20M performance should be acceptable over the entire band in either case ($\text{SWR} < 1.8:1$).

The final antenna is pictured below on a scale. The finished weight is only 6.5 ounces or 0.5 ounces more than the stock KM4ACK kit antenna. This is great for backpacking QRP expeditions or just low power (50W SSB, 20W CW / digital) portable operation.

