

Nacogdoches Amateur Radio Club

2025 CLUB OFFICERS

Pres: Mark Phillips - KI5POH

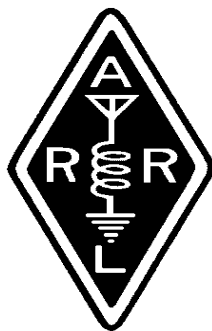
Vice Pres: Dave Emmerling - NR5AT

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.

MAY MINUTES

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

Reminded everyone about the Neches River Rendezvous, NARC Tailgate/Swap Meet, and controller update. Meeting was adjourned at 19:10.

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

Field Day is just around the corner, June 28th & 29th. Thank you to all the members that have committed to helping make this year's event successful and fun. We still need a few more volunteers for some open positions. This is always a good time working with members of our club and spending time on the air. If you are new to being a ham or just haven't participated in a while, we would love to have you come and be a part of the event!

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 is having a happy and safe month of May. As of this writing,

the weather has turned hot and humid, hopefully, the full blast of summer is not upon us quite yet.

Last week, I went fishing on Toledo Bend with my best buddy from college. We do this once a year. We had a great time, we caught 60 crappie. You would be hard pressed to find a better-tasting fish than fresh crappie. Our first night, we cooked up some fish, homemade fries, fried zucchini, and some of my wife's homemade potato salad. Yeah, I know—all those carbs, oh my!....never gave it a second thought, it was great.

Down to business. At our last meeting, the attendance was pretty low, I guess due to the storms we had in the area (storms were over by the time of the meeting). We did not have a program and jumped right into talking about Field Day. At one point, responses to questions asking for volunteers in addition to other questions such as what radios to use, what food, who'll take care of drinks, etc., the room was silent. Not one

response. So, based on the silence, Darrell asked, "Do we even want to have a Field Day?"; The room was silent...dead silent. Yep.

Folks, this is a club. In order for the club to survive and attract new members, let alone KEEP the members we currently have it would behoove everyone to show just a tad more willingness to get involved. I wouldn't think it is a huge inconvenience to, for example, be responsible for the drinks for Field Day...not a whole lot to that....but again...no response to the question asking for a volunteer...dead silence....YEP.

At the June meeting we will have a video program followed by more discussion re. Field Day (as I understand things now). Let's make it standing room only at the next meeting, and PLEASE, bring your "A" game.

73, NR5AT
 Dave Emmerling
Dke1955@duck.com

NOTES FROM OUR EC

It's June and the start of 2025 Hurricane season. We'll start there and look at a couple of things.

Let's look at the projected numbers for this year. From the Storm Prediction Center Prediction Center, 14.4 Named Storms, 7.2 Hurricanes and 3.2 Major Hurricanes. (now how do you get a fraction of a hurricane?) These numbers are based against the average of the 1991-2020 decade. Others have predicted Named Storms 13 - 17, Hurricanes 6-7 and Major Hurricanes 2-4. If you want to keep it simple, NWS predict an AVERAGE season, Colorado State ABOVE AVERAGE and The Weather Channel WELL ABOVE AVERAGE. I pulled this information from the Wikipedia webpage 2025 Atlantic Hurricane Season. Grab a soda from the fountain and a bucket of popcorn and watch how it unfolds.

Field Day is coming up, 28 June. The theme is Radio Connects. We will again

take over the EOC put up antennas, wire in radios, hook up the computers and hit the airwaves seeking field day stations. I will be contacting the usual suspects to visit with us and connecting via commercial radio to invite others to come see us.

Net Ops, Net controllers please remember to send me the count after the net is finished. Please use my jlchapman2@gmail.com Thanks to everyone who checks in to the net

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

VE TESTING

Our May VE testing session did have one applicant. The applicant was successful and had his license issued the next day. Larry Cinchen from Crocket, TX. KJ5LKR Nice turn around for the FCC! The VE team had a pleasant social evening out.

Many thanks to our VE team. Army AE5P, Ralph N6RH, Dave NR6AT, John

KN6VDG and Bernice KN6VDH, 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 June 3rd at Nacogdoches EOC. Meeting begins at 19:00; Please plan to arrive early for socialization with the doors opening at 18:30.

We will continue discussions on ARRL Field Day on June 28 & 29. Please plan to attend and help us make it a successful field day by volunteering with any one of the still open jobs that needs to be taken care of.

Coordinator - Empty

Radios - Army AE5P

Computers - Aaron KI5FIQ

Antennas - Darrell KI5PYQ

PR - John KC5MIB

Snacks - Empty

Drinks - Empty

Food for Dinner and Breakfast - Empty

Social Media - Darrell KI5PYQ

Safety - Wolfie KI5MHB

Extra Points - Wolfie KI5MHB

Info Table - Wolfie KI5MHB

Solar - Dave NR5AT

Hope to see y'all there.

FOX HUNT

We had no one attend the fox hunt for May.

Next fox hunt will be in July. Date and time will be announced at a later time. 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.

NARC TAILGATE/SWAP

Thanks to John KN6VDG and Bernice KN6VDH for heading up this years Tailgate. Hopefully this will be a first of many.

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

June 3rd 19:00

July 1st 19:00

Aug 5th 19:00

SOTA, WA3TFS 20W QRP Amplifier and Power Delivery (PD) for Portable Operations

Jim Edmondson, AE5JE

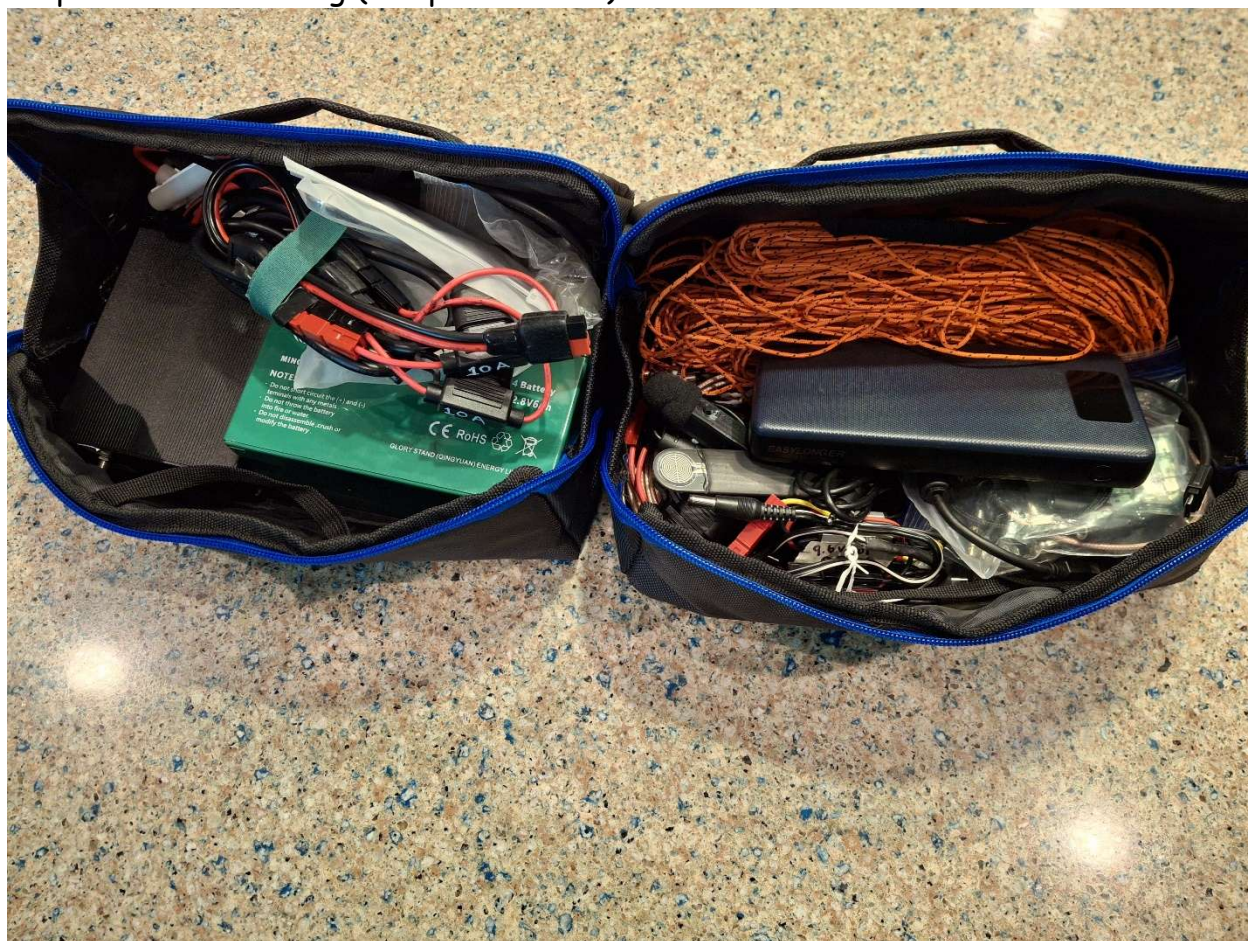
This month's article will be a mixture of topics related to portable operations. First of all, Barbara (KJ5KLY) and I went back to Mineral Wells and were able to activate Johnson Peak (SOTA Summit W5T/NT-039). Again, it wasn't easy! In addition to the QMX 5W QRP radio, we brought along a 20W amplifier designed by WA3TFS - more on that later. The idea was to use 20W SSB for the activation. We called CQ on 40M many times and had no call backs. We only managed to hear a few letters of a friend's call sign from Conroe. The amplifier seemed to be acting differently than it had at home on the power supply. I suspected that the 6A-hr LiFePO₄v battery could not provide enough current (~5A maximum needed). Based on later observations, however, I think it was common mode currents on the coax braid.

We decided to switch to 20M FT-8 and not use the amplifier. After setting up the radio and PC, we were decoding many stations. Calling CQ SOTA resulted in many call backs and I made 7 QSOs in 14 minutes - more than the four contacts needed to get SOTA points. Barbara took over and quickly made 7 QSOs also. While operating FT-8, the PC lost connection with the USB port of the radio many times. This is usually due to RF being picked up by the USB cable. We were using a rather long (36"), unshielded cable with no ferrites.

Upon returning home, I ordered a USB cable from Digirig. This cable is only 15" long and shielded with ferrites at each end. I also confirmed that the radio and amplifier worked as expected at home (on battery power) where they were much more distant from the antenna. I also added a large rectangular snap-on ferrite to our QRP bag. Multiple turns of the RG316 coax will easily fit around this ferrite and provide good RF choking. I will get another chance to test these improvements at a SOTA later this month. I will be helping as ground crew for the Doucette repeater link work.

After that I plan to head to SOTA Summit W5T/NT-031, Newton County HP (High Point).

Also, once home, I re-organized my QRP gear into two bags that fit perfectly within my backpack. One bag contains the QMX, antenna, throw weight / rope, microphone, earbuds, CW key ([VK3IL Paddle](#)), 25' of RG316, 3' for RG316, PD power bank with fused cables, 9V DC-DC converter, spare fuses, Digirig USB cable, TRS audio cables for key / mic / PTT and ferrite block. In short, everything needed for 5W SSB, CW and digital (with PC). The second bag includes the WA3TFS amplifier, 6A-hr LiFePO4 battery fused cable for 20W operation. I also put a few coax adapters and simple tools in this bag (see photo below).



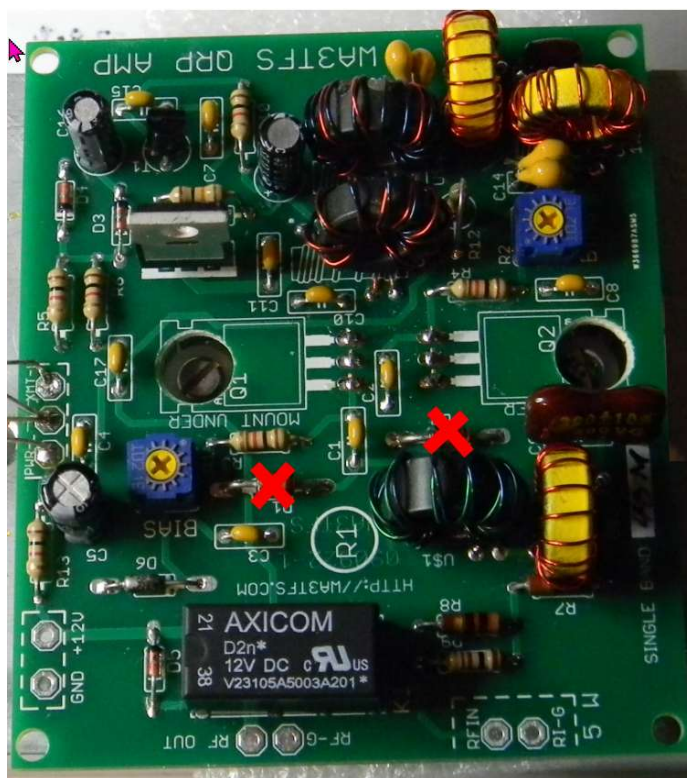
Above I mentioned the [WA3TFS 20W amplifier](#). This is available as a bare PCB or as a kit with most (all through-hole) components. I purchased the kit. The builder has to provide an enclosure as well as a power switch and connectors to mount in the enclosure. By changing the three toroids and four capacitors of the input impedance matching components and the output LPF (low pass filter), different ham bands can be amplified. Toroid and capacitor values for 160/80/75M, 60/40M, 30/20/17M and 15/12/10M versions are provided. I opted for the 20M version. The amplifier

is designed to input 5W from a QRP radio and amplify that to ~20W. I get nearly 20W output on 30M and 20M with about 12W output on 17M as the output LPF begins to attenuate. Finally, this is a linear amplifier, so all modes can be used with it, although it is not very efficient with respect to power usage.

At the input, one branch of RF input is voltage-divided to half-voltage and rectified. The rectified RF is used to turn on the base of a transistor which in turn activates a relay that provides power to the final amplifier. This is not a good method of keying the amplifier for many QRP rigs. The QMX in particular uses four BS170 transistors for the final amplifier. These transistors are very susceptible to failure due to over-voltage or over-current operation. During the amplifier keying, momentary high SWR can occur causing BS170 failure. Also, for SSB or CW operation, RF is turned on and off resulting in excessive and annoying relay chatter and "hot-switching".

Fortunately, the QMX provides a PTT output and a PTT delay. A slight modification to the amplifier build injects the PTT (+5V) into the voltage divider and then transistor / relay to turn on the amplifier just before RF is sent out of the QMX. This works perfectly to operate the amplifier and protect the QMX finals. The QRPLabs.groups.io forum was instrumental in helping me and another ham with the WA3TFS amplifier implement these changes. While I had issues with the amplifier in the field, I have made many SSB contacts from home with the QMX and WA3TFS amplifier throughout the US, Canada and even Belgium. A photo of my finished amplifier and the populated PCB are shown below. The final transistors (Q1 and Q2) are mounted under the board and bolted to the enclosure to provide heat-sinking.





When I added the amplifier to my QRP kit, I decided to use a PD power bank that I already had to power the QMX. This would relieve the 6A-hr LiFePO₄ battery of about 1A of current draw by the QMX during transmit and extend its ability to power the amp. These power banks are quite amazing. A 6.5" x 3" x 7/8" power bank weighing just under 1 lb. contains over 26.8 A-hrs of power! During about 3-hours of use at our recent SOTA activation, I used only 6% of the available power, so it could last for up to 48-hrs.

The device (or cable) attached to the output port (USB-C) controls the output voltage at nominally 5V, 9V, 12V, 15V or 20V. Not all power banks include all of these voltages, but many do. If there is no control from the cable or attached device, then the output defaults to 5V (typical USB-A voltage). You can make custom power cables for your devices with inexpensive and very small PCB boards. These typically have solder pads that you bridge together to select the output voltage. A photograph of one that I have used is shown below. These boards are very small at less than 1" x 1/2". Barely visible is a 0-ohm resistor soldered at the 12V position. By removing this and shorting the pads at another voltage pads, that output voltage can be selected.

One possible issue with PD devices is switching power supply noise from the DC-DC converter. This would usually be observed at discrete frequencies of the switcher and harmonics. I have not personally seen this to be an issue.

