

Nacogdoches Amateur Radio Club

2025 CLUB OFFICERS

**Pres: Mark Phillips -
KI5POH**

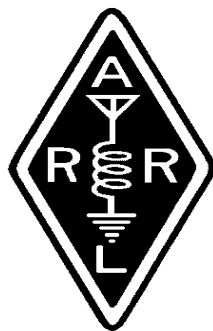
**Vice Pres: Dave Emmerling
- NR5AT**

**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.

OCTOBER 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 figuring out the status of the "Green Monster" mast. Still in process of taking to recycle center. New officers to be recommended and voted

into office for the 2026 year. Army's, AE5P, health condition. W5NAC's attendance of 2026 Blueberry Festival.

New business is Army, AE5P, stepping down as VEC Coordinator and Dave, NR5AT, and Mike, W5NXX, to dual coordinate.

Meeting was adjourned.

2026 DUES WILL BE DUE SOON

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

A Fox Hunt is a low power transmitter that is hidden, and with our club it is usually inside the loop of Nacogdoches. The fun begins when we hams try to find the Fox (transmitter). The challenge is finding the signal and then determining where the signal is coming from and finding the Fox. This is when a good directional (yagi) antenna is good to have to narrow down the direction of the signal. A simple and economical yagi antenna can be built with pvc pipe, a

metal measuring tape and a few hose clamps. We can provide instructions for anyone interested in building a yagi. The yagi antenna helps isolate the direction of the signal and then we dial in on its location. This sounds simple, but it can be very challenging with the signal bouncing off structures, trees and other obstacles. We have conducted several Fox Hunts in the past and we would like to have another hunt, if there is enough interest.

I am thankful for each of you being a part of our club and look forward to seeing you at our club meeting on Wednesday, November 6th.

73, Mark KI5POH
KI5POH21@gmail.com

FROM OUR VP

Happy October everyone, I hope this article finds everyone well. And, if you're extra special lucky you have gotten some rain in the last 30 days.

UNFORTUNATELY, the Douglas area hasn't received much rain to speak of at all, so things are looking pretty brown at the moment.

The October meeting centered around the discussion of replacing Army as the liaison for the VE team. At the meeting Army informed the group that as of the first of the year he is officially stepping down. The conversation then turned to who would like to take his place. When the question was put to the audience, as unfortunately always, no one was willing to take the position. Seeing that no one was going to step up to the plate I volunteered for the position with the caveat that someone also volunteer because I did not want to have sole responsibility as I still do a little traveling from time to time. Mike Fowler agreed to help out.

Folks, for the upcoming meeting there will be no program as officer selection and Christmas

party planning should consume the evening.

We are coming to the end of another year. Personally, I am very concerned about the future and direction (or lack of) of the club. If things don't turn around, I personally think the ship will sink. Keeping things afloat is NOT the sole responsibility of the officers/select few. For the coming year I would ask everyone to consider putting just a tad more effort into the success and future of the club!

73, NR5AT
Dave Emmerling
Dke1955@duck.com

NOTES FROM OUR EC

Wow! Did you see it we had some rain and a forecast for even more this weekend (25 Oct). My rainfall gauge at the Mill had a long string of zeroes. We had .6 of an inch, not sure how much everyone else had around the area. And the temps are dropping to Autumn like weather. Mornings have been much

better going to work.

Hurricane season concludes 30 November. The season hasn't seemed so busy. Currently TS Melissa is in the Caribbean and expected to turn to the Northeast. We only had one hurricane, Barry affected Texas. It was the storm that eventually dropped all the rain in central Texas and caused so much damage and the loss of so many lives.

We drop out of Daylight-Saving Time Sunday 2 November. Don't forget to set your clocks, check the batteries in your smoke detectors. And those of you that have generators have you checked your equipment in anticipation of the winter season.

73 to all, See you on the nets
John,
MIB
73 and see you on the air,
de John Chapman KC5MIB
Jlchapman2@gmail.com

VE TESTING

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

Many thanks to our October VE team: Army AE5P, Ralph N6RH, Dave NR6AT, Rusty KD5GEN, Mike W5NXX, and Robert KD5FEE.

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.

I am very pleased to announce that Dave NR5AT and Mike W5NXX have both agreed to share the duties of Liaison to relieve Army of that responsibility. Many thanks you guys.

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** October 7th 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 hosted by Mark, KI5POH. He will be talking about our Orange Boxes and how to deploy for emergency situations in Nacogdoches County.

Looking forward to seeing everyone there.

FOX HUNT

The Fox Hunts will be on hold for now. We currently

do not have enough attendance to continue currently. If you would like to have another fox hunt, please let Darrell KI5PYQ or Mark KI5POH know that you would like to participate.

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

Nov 4th 19:00

Dec 2nd 19:00

Jan 6th 19:00

Is Your DC Power System Up to Snuff?

Jim Edmondson, AE5JE

I made some interesting discoveries while investigating low power output on one of my HF radios. While I knew that some of these issues could be important, I did not realize the magnitude of the problem. My Kenwood TS-890S exhibited low power output on several bands. This was most noticeable on 15M and especially 6M when measuring forward power using an accurate external power meter. When set to 100W, I measured 80 - 90 W on 15M and only 60 - 70 W on 6M. The other bands were >90W. Some power loss due to reflected power was expected since my antennas are not 1:1 SWR and I was not using a tuner. Since I bought this radio used, I downloaded a service manual and looked into possible reasons for the low power.

After some input on the TS-890S groups.io forum, I took a more detailed look at my DC power system. I use an MFJ-4035MV linear power supply to power my rigs and station accessories. I set the power supply to deliver 13.8V. The MFJ and a LiFePO4 battery connect to a automatic switch (more on that later) via 10-ga zip cord. The "switch" trickle charges the battery and switches to battery power if utility power is lost. From there a 10-ga zip cord powers a fused distribution block. All DC connections are via Anderson-type power poles.

Most modern 100W HF rig spec sheets will state that the rig will output 100 +/- a few watts at 13.8V when set to full power. Also, the spec sheet will state that the rig can operate at 13.8 +/-15% DCV. This is equivalent to a range of 11.73 — 15.87 DCV. It is important to realize that these voltages should be measured at the rig's DCV input terminals (or possibly at the final power amplifier). When I measured the voltage at the rig, I found it to be 11.25V at key down when the power supply was set to 13.8V. The voltage at the rig was almost 0.5V below spec and the drop in my distribution system was 2.55 V! I never anticipated this result as I was using large gauge wire and the manufacturer's power cable.

As shown in the table below, 10-ga (my zip cord) and 12-ga (manufacturer's power cable) are sufficient to carry full rig power ($\leq 20A$). The table below was excerpted from this [webpage](#) and shows amp capacity to cause various wire temperatures (ampacity). I excerpted gauges commonly used gauges in DC wiring systems. The temperature ranges are based on what the insulation types (PVC or PE) can withstand due to ohmic heating in the cable. These conditions are for wires in open air, not crowded into a chase or conduit. Using an [online calculator](#), I determined that the voltage drop in 10' of 10- or 12-gauge the wire would be 3 — 5% or 0.4 — 0.7V. My

first order of business was to get rid of the lengthy manufacturer's cable and its unnecessary fuses / fuse holders, which could cause additional voltage drop at the contacts. I made up a new 5' x 10-ga cable to go from the distribution block to the rig to replace the ~10' x 12-ga manufacturer's cable with in-line fuses.

AWG Wire Gauge Ampacity Chart				
AWG	Diameter (mm)	Copper Ampacity (60°C)	Copper Ampacity (75°C)	Copper Ampacity (90°C)
8	3.264	40	50	55
10	2.588	30	35	40
12	2.053	20	25	30
14	1.628	15	20	25
16	1.291	10	13	18
18	1.024	7	10	13
20	0.812	5	7	9

While the voltage drop in the wire was much larger than I expected, the automatic power switch dropped over 0.6V under key down conditions (~20A). This is despite the fact that spec is 0.3V drop at 40A. Even worse, the distribution / fuse block dropped ~1V. I value the ability to seamlessly change to battery power if the utility power goes down. Also, this reduces the stresses on the equipment due to power flipping off and on as often happens with power interruptions.

Besides the large out-of-spec voltage drop of the switch, I did not like that the switch only trickle-charged the battery. After a power event, I would have to manually charge the battery to keep it ready. While the voltage drop of the distribution box was huge, the easy fuse replacement, blown fuse indicators and compact wiring setup make it very convenient.

For the above reasons, I replaced the switch with an Epic PwrGate from West Mountain Radio. This unit has a spec voltage drop of only 0.05V at 40A. It is also a

full multi-stage battery charger for lead acid, gel and LiFePO4 batteries. The max current for first-stage charging current and many other parameters can be set by the user. It also has an input for solar panel battery charging in the event of a prolonged power outage. Finally, the Epic PwrGate has a USB connection through which you can use a "terminal" program on your PC, to monitor the power supply and battery voltages, charging current, etc. in real time.

Even with the improved automatic switch and reduced wire lengths, the power at the rig was about 12V or slightly above the minimum spec voltage for the rig. I was not willing to live without the switch and the convenience of the distribution block. I do need to better understand why the block voltage is so large. Perhaps cleaning the contacts with Deoxit would help or maybe the internal connections use small gauge wire - work for another day.

In order to boost voltage at the rig, I increased the power supply output from 13.8V to 14.5V. This provides about 12.8V at the rig during key down, comfortably above the 11.73V minimum rig voltage spec. At the same time, the power supply voltage is well below the maximum voltage spec for ham radio equipment of 15.87V (13.8V + 15%). This means that when to rig is not key down, even full power supply voltage is safe for low current drawing accessories. Additionally, West Mountain Radio recommends boosting the power supply voltage to assure full battery charging. All in all, these improvements and adjustments worked out to be a good solution.