December 2024 Volume 12-2024

Nacogdoches Amateur Radio Club

2024 CLUB OFFICERS

Pres: Mark Phillips – KI5POH

Vice Pres: Darrell Thornton – KI5PYQ

Sec/Treas: Army Curtis - AE5P

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.

NOVEMBER MINUTES

Vice President Darrell opened the meeting at 7:00 p.m. in the EOC. Self-introductions were made by everyone present. The minutes of the previous meeting were accepted as published. The treasurer's report was read.

NARC meetings will move to Tuesday night, 7:00 p.m. in the EOC.

Discussion held on our Christmas Party/December meeting/White Elephant auction. The Christmas Party will be held in the Private Dining Room of Clear Springs Café on Wednesday December 4, 2024. The Party will officially begin at 6:00 PM, however it is strongly recommended that everyone be there at least 15 minutes early. We must have a list of everyone attending prior to the party. Only current dues paying members and their guests are invited to attend. Everyone attending will receive $20 cash during the Party. If you haven't already done so, or to verify if you are already on the list, please contact our current Secretary/Treasurer by email at ae5p@suddenlink.net or text at (936) 552-4351.

This must be done no later than Monday December 2nd so we can notify Clear Springs how many places to set, and the Treasurer can know how many $20 bills to bring. We will be ordering this year off the Auntie Pasta menu. If you haven't eaten there before, they have some excellent menu choices.

Nominating Committee report and election of officers. The Nominating Committee comprising AE5P, N6RH, and KD5GEN gave their report. They recommended Mark Phillips KI5POH as President for a second term, Dave Emmerling NR5AT (formerly KI5RAT) as Vice-President, and Darrell Thornton KI5PYQ as Secretary/Treasurer. The election not surprisingly resulted in a motion for the Secretary to accept the Nominating Committee's recommendation by acclimation. The vote was unanimous.

Monthly Free Raffle: A ticket was drawn and Darrell KI5PYQ was the winner of the book "Magic Band Antennas for Ham Radio".

Meeting closed at 7:36.

Program: Jim N5JGE gave a most interesting presentation on Oscilloscopes. Jim brought his Rigol Model DNO804 – 4 channel – 100 MHz o-scope and used it to demonstrate some of the things a scope can do. Well done Jim. Thank you.

Program finished up at 8:16.

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 not? Do you participate in Field Day with the club? If not, why not?

Participation in the various club events usually involves only a tiny few of our membership. Why is that? If you are a member, are you part of the problem or are you part of the solution? Is there something we can change that would make it easier for you to participate?

Let the club officers hear from you. **You are the club and without you we don't have a club.**

FROM THE PRESIDENT

December 7 th , is the 25th annual SKYWARN Recognition Day, which celebrates contributions of SKYWARN volunteers. We have several SKYWARN volunteers in our club and we want to thank all of you for participating in this crucial program!

Our December meeting is our Christmas party and White Elephant Auction. Our Christmas party will be held at Clear Springs on Wednesday (12/4) at 6pm in the Party Room. Bring a White Elephant gift and a

significant other and get ready for a good time!

Starting in January, our club meeting night will be on the first Tuesday of each month. I hope our first meeting of 2025 on Tuesday, January 7 th ,

will be full on new faces that have not been able to attend in the past.

I hope to see you all at the December Christmas party!

73, Mark KI5POH

KI5POH21@gmail.com

FROM THE VP CHAIR

It's Thanksgiving time. One of the things I am thankful for is all you guys/gals. It's great to have a community of people that enjoy our hobby together.

The fox hunt didn't happen this month due to some complications. Hopefully we will get those resolved by the next one in January.

Our annual Christmas party will take place on December 4th at 6:00PM. Please see the minutes of the meeting for details.

December is the last meeting that I will be VP for. Thank you, guys, for allowing me to serve you guys. Looking forward to what 2025 year will bring. Speaking of 2025 year, our meetings will be moving to Tuesday night. Hopefully this will allow other folks that are normally busy on Wednesday nights to attend.

73, KI5PYQ
Darrell Thornton

NOTES FROM OUR EC

It's that time of year again, fall is here and with it comes the eating and festivities season, the Winter Solstice, the shortest amount of daylight.
I've started this missive 24th November, only a few more days until Hurricane season 2024 ends. I took a look at the National Hurricane Center's website., as of 6:00 AM CST the outlook: "Tropical storm
formation is not expected during the next 7 days." It looks like the season will quietly close and we can
call it done.
Weather wise the days are certainly fall-like, sweatshirt or light jacket when you leave the house, jacket slung over your shoulder on the way home. Some rain to break the drought and a few weather warnings to keep us on our toes as tornadoes can occur any time of year with the proper conditions. Beautiful blue skies and some great clear nights. I always look for the Orion constellation this time of year.
It's also the winter dx openings for 120, 80, 60 and 40 meter bands. Is anyone staying up late or
rising early to visit those bands? Has anyone given the LW bands a try?
I'll give a short recap to the 2024 season and also look at phonetics and using numbers in communications in my January byline.
I'll close with Greetings and Blessings to you for whatever holiday season you celebrate.
Remember, St Nicholas is watching, don't eat too much.

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

VE TESTING

Chris Staudt KJ5IPW, upgraded to General with a perfect score. Chris and his wife recently retired and moved to the Joaquin area. We expect to see Chris again in the near future when he upgrades to Amateur Extra. Congratulations Chris.
Many thanks also to the VE's for this session. Ralph N6RH, Dave NR5AT, Mike AA5HH, Mike W5NXK, and Army AE5P.
Remember that we hold VE testing sessions for all classes of Amateur Radio licenses the third Wednesday of every month at the EOC. For the latest information always check the club website at: https://w5nac.com/ve testing/
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 8:00 p.m. on the club's 146.84 repeater (PL 141.3).

Second, on **THURSDAY** evenings at 8:00 p.m. 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 Wednesday December 4th at Clear Springs Restaurant. Meeting begins at 600; Please plan to arrive early. We will be in the party room.

This is our annual members Christmas party. Plus ones are invited as well. Please let Army know if you plan to attend in order to have a place for you and your plus one at the table.

Hope to see y'all there.

FOX HUNT

Next fox hunt will be in January 2025. Exact date to be announced. After the fox hunt, we will enjoy lunch at CC's Smokehouse. Be the first to find the fox and your lunch will be on the club. How long will it take you to find it?

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

December 4th at 6:00 PM (Christmas Party)
January 7th, 2025 (Tuesday) 7:00 PM
February 4th, 2025 (Tuesday) 7:00 PM
March 4th 7:00 PM
April 1st 7:00 PM

Notes of Interest

This is a reminder that our club meetings will be moved to the first Tuesday of the month starting January 2025.

Starlink for Home, Travel and Preparedness

Jim Edmondson, N5JGE

This month, I take a look at another "ham adjacent" topic with application in the shack, wherever it is, and for preparedness. Everyone has probably heard of Starlink and the deployment of it in Western North Carolina to quickly restore internet access after Hurricanes Helene and Milton destroyed much of the infrastructure there. I and another club member have recently installed Starlink at our homes due to the poor internet performance of our land-based internet providers. A 7-minute video that provides a good overview of Starlink use cases, service, costs and hardware can be viewed at PC Mag Starlink Review.

Starlink is a satellite-based internet service. In contrast to previous systems, which typically used a few GSO (geostationary orbit) satellites, Starlink uses thousands of LEO (low-earth orbit) satellites. This reduces the distance (and time) for the radio signals to travel back and forth between the satellite and user's antennas. The time in milliseconds (ms) for a signal to travel round trip from your PC, tablet or phone to the Starlink satellite and then to the Starlink ground station and finally to the internet content server is known as "latency".

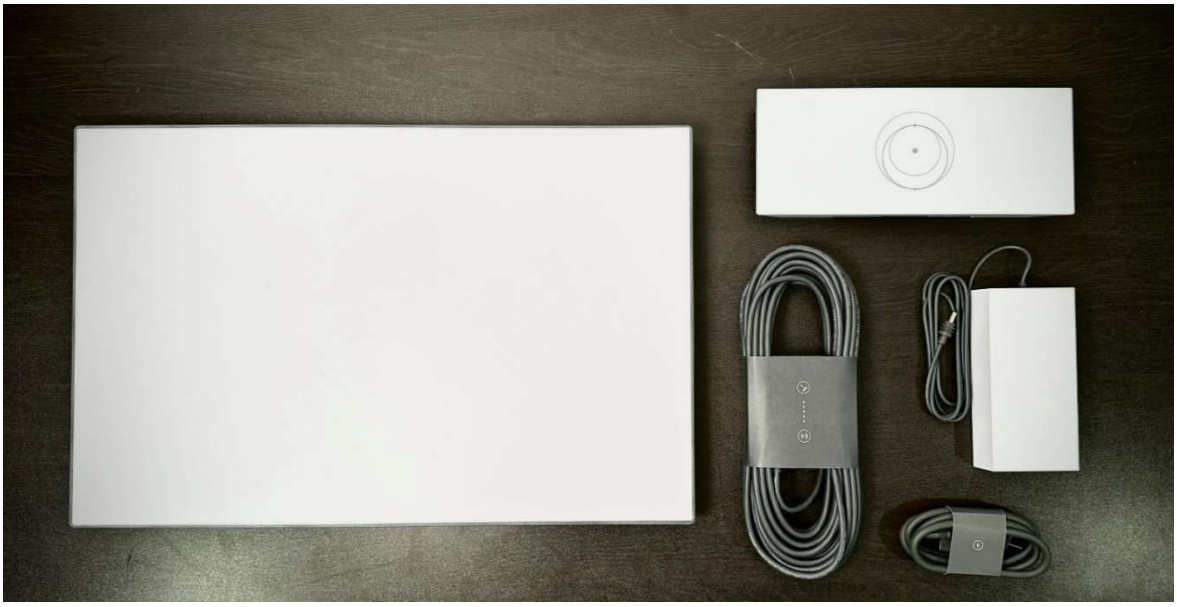
The time for the four-radio links (two roundtrips from home to satellite to ground station and back) can be a significant portion of the total system latency. For Starlink with its LEO satellites orbiting at about 340 miles above the earth, radio wave travel time is 7.4 ms and total system latency is typically 30 - 60 ms. In contrast, GSO systems which orbit about 22,000 miles above the earth, radio wave travel time is 488 ms and total system latency can be 600 to over 900 ms. At my home, Starlink's latency is typically 20 – 30 ms, although there have been very infrequent extremes of up to 100 ms.

One thing that is different with Starlink service is that the download and upload speeds can vary quite widely. The speed is dependent on many factors including distance to

the satellite, the number of users connected to that satellite, overall system load, weather conditions, obstructions, etc. I have experienced speeds up to almost 300 Mbps, but speeds are typically in the 70 – 150 Mbps range at my location. Speeds will typically be lowest during high use periods such as between 6pm and 11pm each day. Strarlink has several service plans intended for use at home, land mobile, maritime, aviation and businesses. The standard Residential installation kit is well-designed and simple to set up. Starlink says that you must have a clear view of the sky. Since my property is wooded, I was concerned about obstructions blocking the signal. I moved the antenna several times and elevated it about 17' on a pushup pole to get good connectivity. While there are still obstructions (the phone app maps those for you), I consider the performance to be very good. The phone app also has a tool to help you align the antenna northward for best performance.

The antenna is a flat panel about 15" x 23" (see photo below at upper left) and comes with a kickstand to mount on the ground or a table for testing. Various mounts for poles, fascia boards / external walls or roofs are optional. The version 4 Starlink antenna technology is quite amazing. The antenna uses a phased-array of small antennas mounted on a PC board. The directionality is controlled by microprocessors forming a beam of radio waves that can be steered over a 110° view of the sky. This is how the signal is maintained with the fast-moving LEO satellites as they pass overhead. Previous generations of the antenna used motors to physically move the antenna to follow the satellites. Version 4 provides higher connection speeds, lower latency and promises to be more robust and reliable.

The antenna is connected to the router (upper right in photo below) by a provided 50' POE (power-over-ethernet) cable with weatherproof RJ-45 connectors. The router, in turn, is powered by a "power brick" (center right in photo below) plugged into normal AC power. My system typically uses less than 30 - 40W of power. The router includes 2.4GHz, 5GHz and 6GHz wi-fi radios as well as 2 ethernet jacks with up to gigabit speed.



Starlink has been readily adopted by the RV and camping communities. In most cases, RV'ers use Starlink plugged into a 120 VAC outlet just like home users. However, there are third-party devices that allow the Starlink system to be powered by lead acid or lithium-ion batteries. The router operates on 12 – 30 VDC, so that is not an issue. The antenna, however, requires 57 VDC provided over its ethernet cable. The third-party devices power the modem and inject the correct DC voltage into the antenna cable. Of course, an inverter-based battery system or power bank could be used to provide 120 VAC in a portable operation as well. A YouTube video on operating Starlink using battery power is at Battery-Powered Starlink. There are many other YouTube videos on this topic if you are interested. This makes fast internet capable off-grid virtually anywhere in the world.

Starlink also makes a Starlink Mini antenna. It is only 10.2" x 11.75" and contains modem and router functions. The Mini can operate on as low as 12 VDC and up to 40 VDC, making it directly compatible with 12 V or 24 V battery systems or even PD (power delivery) power banks for emergency use. One YouTuber put together a rugged portable setup for that purpose. The Mini and roaming service can be quite a bit more expensive than the standard residential service (see below), so I think that this would be difficult to justify in most cases.

So far, I have been very impressed with Starlink internet, however, there are some downsides. The primary one is cost. The standard starter kit is $300 - $500 depending on any special pricing offered at the time. In some areas, including mine, there is a $100 "congestion" fee where demand is high compared to the available bandwidth. Residential service is $120 / month. There is a 30-day free trial period, no contracts and the service can be paused without penalty if you travel extensively. Many retailers sell Starlink kits, but these may not include the 30-day free trial, so buyer beware. Roaming,

maritime and aviation kits and plans are higher priced and the plans may have usage limits.

The second major downside is lack of in-person service. Installation is on-your-own. Starlink is extremely easy to get up and running – it literally took me 5 minutes to set up and connect my phone. However, optimization may take some effort. All customer support is remote, there are no Starlink technicians that come to your location if you encounter problems, however, third-party companies may offer such services.

If you live in a rural setting and are unhappy with your internet provider options, Starlink is certainly worth considering.