

Nacogdoches Amateur Radio Club

2021 CLUB OFFICERS

Pres: Bill Rascher - KT5TE

Vice Pres: Steve Bartlett-WB5IDY

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.



JULY MINUTES

The July meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on July 7th. **President Bill KT5TE** opened the meeting at 7:00 p.m. in the Nacogdoches City/County Emergency Operations Center off FM 3314. Self-introductions were made by members and guests present. Minutes of the previous meeting were approved as published. The Treasurer's report was read.

It was noted that the IARU contest was scheduled for the weekend

following this meeting. Stations will be on the air representing their Amateur Radio National Societies such as ARRL and RAC. Both phone and CW will be used.

The CQ VHF Contest is scheduled for July 17-18. After some discussion, KT5TE, KI5RAT, W5TV, N6RH, KI5FIQ and AE5P all indicated they were interested in Roving.

VE testing is scheduled for Wednesday July 21 at the EOC.

Main Trading Company in Paris, TX had an amazing sale for a short time the other night, and AE5P purchased an assortment of miscellaneous items which were raffled off. Items included precision screwdrivers, Velcro cable wraps, assorted colors of

heat shrink tubing, and more. No club funds were used for this.

The book raffle was for the ARRL book "More Wire Antennas" and was won by Mark KI5POH.

Meeting closed at 8:12.

FROM THE PRESIDENT

With that nice cool 2021 July weather behind us and the heat of August upon us it is time to think about spending the afternoon indoors. After a shower from morning's work the first item on the afternoon agenda will be to catch up on the time lost getting up before the hot sun. Just a quick snooze. The next items will be learning to operate my new Elecraft K4 or build the K2 amp with antenna tuner. It's been requested that I bring this transceiver to the Nacogdoches ARC August 4 meeting. There is a carrying handle on the side, so to the meeting it will go. I had paid for this radio in May 2019 with a hope of receiving it by January 2020, but a little bug got into the works. When this was purchased I had thought that I would be near the top of the list since it was paid for within a few days of the

announcement. But no, this transceiver is number 197. Found out that I'm near the top of the second group. Wow, that is a lot of Hams paying cash up front. Come to the meeting August 4, and I'll let you decide if it was worth the wait. So far I'm very pleased with this radio, and it is huge compared to my KX3. I need to start working on setting up the KX3 in the travel trailer so I have something to do when we go to rabbit & horse competitions (shows). So NARC Hams, are there any hints on trailer setup? Hope to see you at the meeting...

73, Bill KT5TE

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FROM THE VP CHAIR

Tech Tips

What is all the fuss over
SWR?

The term "SWR" means Standing Wave Ratio. SWR is sometimes called VSWR, for Voltage Standing Wave Ratio. The typical ham shack consists of a transmitter connected to a coax or other feed line, connected to an antenna. When you transmit, a radio frequency (RF) voltage is sent along the transmission line. The voltage travels along the coax to the antenna, called the forward wave. Sometimes part of that forward wave is reflected back towards the radio and that relationship between forward versus reflected power is what the SWR coefficient represents. SWR is simply a measure of the load impedance relative to the characteristic impedance of the transmission line.

An SWR meter is used to measure how well the transmit power signal emitted from a transceiver is traveling through the feedline and antenna system into the atmosphere. Many modern SWR meters have

2 meters in one face that show forward power and reflected power, where the SWR is read on a scale where the needles cross. Other meters incorporate a single needle or digital reading to show the standing wave ratio.

A poor performing antenna system can reduce both the transmit and receive range of your radio system. When the signal does not travel through the antenna efficiently, a portion of the output power of the transmitter is reflected back into the transceiver which can cause damage to internal circuits. Most modern radios can accommodate a pretty high SWR and have auto shut-off or power reduction features to protect the internal circuits. Many radios also incorporate a built-in tuner consisting of

inductors and capacitors that are used to "tune" an antenna so that it matches the feeder line and reduces the SWR at a given frequency. It is important to note that a tuner does not make your antenna more efficient.

Higher SWR readings translate to a loss of effective power to the antenna.

SWR LOSS OUTPUT

1:1	0.0%	100.0%
1.5:1	3.0%	97.0%
2:1*	11.0%	89.0%
3:1	25.0%	75.0%
4:1	38.0%	62.0%
5:1	48.0%	52.0%

* A 2:1 SWR or less is desirable

Antenna, feedline, and transmitter efficiencies are far more complex than just a simple SWR reading. For example, a dummy load with a perfect 50 ohm load inside, attached to your transmitter with an SWR meter in between, would show a perfect match or a 1:1 SWR reading. Will that dummy load make a good antenna? Of course not, but having a matched

antenna and feedline with a low SWR is a good start for an efficient radio system.

It is important not to get too wound up over power losses from mismatches. Looking at the chart above, you will notice a station with a 5:1 SWR, loses almost HALF of its output power from 100 watts to about 52 watts out to the antenna system. Reducing from 100 watts to 52 watts is about a 3db loss in signal strength, only barely enough to notice on the S meter with a DX station! The DX station cannot even hear the difference; they can only see it on the S meter. In voice communications, it's what you HEAR that tells the story.

Physically trim and tune your antenna and feed line for efficiency using a good SWR meter, but don't fret too much over SWR readings. Just try to keep your system under 2:1 if you can. If your radio transmits and folks can hear you, life is good!

73

Steve, WB5IDY

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NOTES FROM OUR EC

What a weird month July has been. Let's cover some Weather and we'll hit record comms again.

I checked the National Hurricane Center website and there appears to be nothing on the horizon (28 Jul). The graphic is just blank. Good for now.

Texas weather can be a fickle thing, if you don't like it wait a few minutes but the change might not be what you were looking for. We recorded about 2.3 inches of rain to date and the heat is on the way. Heat indices have already been in the 3 digits. My truck thermometer showed 105, but had been sitting in the afternoon

sun. If you must work outdoors hydrate, be careful, work in the cool of the morning and again hydrate.

On to other things, Record Comms.

First, thanks to Roger KOYY for his hard work putting together the WINLINK data. I believe he still has a couple more things in the cue. If you have ever written an instruction set or a protocol, you know they seem to take forever before they are ready for final publication and then are never ever really final.

Why record traffic? In a nutshell, because someone somewhere needs some specific information in a specific format. Think railroad telegraph, Western Union telegrams, ARRL radio message gram and the various Incident Command System (ICS) forms. Specific information, specific format, specific handling instructions and sometimes who can and who cannot see the information. Roger, I see

you nodding your head. There are few weblinks for the ICS forms, the ARRL has a tab on the website for Public Service and message handling instructions can be found there. See the end of the column for 2 ICS form websites and the ARRL Message Handling page.

Please bone up on Winlink and take a look again at NBEMS. We have practiced a couple of times with NBEMS. Though not easily compatible it will get the job done.

On a personal note. I will be in Dallas 2-6/7 August. My Lady, Lee, will be having surgery for breast cancer, left side mastectomy on Wednesday. Please keep her in your prayers.

In reference to the above, YLs, keep your appointments, it can be caught early, OMs the same thing for similar reasons (having just had a biopsy myself).

Net Controllers, please send me your reports via e-mail.

See you on the nets.

<https://training.fema.gov/emiweb/is/icsresource/icsforms/>

<https://www.nvfc.org/wp-content/uploads/2018/06/nims-ics-forms-booklet.pdf>

<http://www.arrl.org/chapter-six-arrl-precedences-and-handling-instructions>

73 de John Chapman
KC5MIB
kc5mib@arrl.net

VE TESTING

The July VE session saw one applicant, **David Turbeville KF5YAM** who upgraded from Tech to General. Congratulations David.

Many thanks to VE's **Rusty KD5GEN**, **Ralph N6RH**, **Mike AA5HH**, **Mike W5NXX**, **Robert KD5FEE** and **Army AE5P**.

Remember that we give VE tests the third Wednesday of EVERY month. For the latest information always check the club website at:

<https://w5nac.com/ve-testing/>

73 de AE5P.

email: ae5p@arrl.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.

NEXT MEETING

Our next meeting will be Wednesday July 7th at the City/County Emergency Operations Center off FM3314. Meeting starts at 7:00; doors open at 6:30. Come early for a little socializing before the meeting.

We will have our monthly book raffle, with everyone present receiving a raffle ticket without charge. One ticket will be drawn and the winner will be given a book on a ham radio subject.

MY TIME AT K5QE

On the weekend of July 16-18 I went down to Hemphill to work with Marshall Williams, K5QE, and his legendary VHF contest station during the CQ VHF contest.

Marshall takes contesting very seriously, and puts

out a "Call To Arms" for operators from across the country to come down and operate his station during the VHF contests. Thanks to AE5P I had the opportunity to be one of those operators, along with a few other hams from around the state. In total, I believe we had five operators including myself and Marshall.

I came down Friday around noon. My Mom and I were treated to some of the best BBQ I've ever had.

After that, Mike K5EEI came in, and we tinkered around with his portable moonbounce setup for a bit. We spent the rest of the day getting used to the equipment and chatting. (as hams do).

We had a great time during the contest, and made a decent amount of QSO's. It's not as fast paced and chaotic as a HF contest, but it's very fun nonetheless, especially when you consider that you are making QSO's from hundreds of miles away on

2 Meters without tropospheric ducting!

Overall I had a lot of fun, and really enjoyed the experience. Goodness knows I'm not a tester, but at least I've gotten my feet wet. I learned quite a bit about things like EME, meteor scatter, and general VHF operating. Operating a station like Marshall's is quite the experience and I can't wait to do it again!

Thanks to Bill N5YA for breakfast, and being our "Fix-It Guy" throughout the contest. And to Army AE5P for helping out with getting me on board. And to the Rover Group: AE5P, N6RH, KI5FIQ, and KI5RAT, As well as all the Hams we contacted during the contest, your help was greatly appreciated!

Thank You All!

Hope to see everyone at the next meeting.

73, Wolfie KI5MHB

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 <http://www.hornucopia.com/contestcal/contestcal.html>

Note that all dates shown here are local, CST dates while all contest logging uses UTC dates and times.

NAQP CW

Aug 7-8, 2021

<http://www.ncjweb.com/NAQP-Rules.pdf>

NAQP SSB

Aug 21-22, 2021

<http://www.ncjweb.com/NAQP-Rules.pdf>

ARRL September

VHF Contest

Sept 11 - 12, 2021

<http://www.arrl.org/september-vhf>

Texas QSO Party

Sept 18 - 19, 2021

<http://www.txqp.net/>

CQ WW RTTY

Sept 25 - 26, 2021

<http://www.cqwwrtty.com/>

CQ WW SSB

Oct 30 - 31, 2021

<http://www.cqww.com/rules.htm>

ARRL Sweepstakes

CW

Nov 6 - 7, 2021

<http://www.arrl.org/sweepstakes>

ARRL Sweepstakes

SSB

Nov 20 - 21, 2021

<http://www.arrl.org/sweepstakes>

CQ WW CW

Nov 27 - 28, 2021

<http://www.cqww.com/rules.htm>

Check out the many contests listed on the Contest Calendar link shown here. There are many State QSO parties and Parks On The Air events that may be just right for you. Check 'em out.

Solar Cycle 25

by

Thomas Atchison W5TV

Solar cycle 24 began in December 2008 with a smoothed minimum sunspot number of 2.2 and ended in December 2019. It reached its maximum in April 2014 with a 23 months smoothed sunspot number of 81.8. The maximum value was lower than other recent solar cycles, down to a level which had not been seen since cycles 12 to 15.

Solar cycle 25 began in December 2019. Solar cycles last approximately 11 years which means that solar cycle 25 should take us beyond 2030 with maximum activity occurring around 2025. Solar cycle's highs and lows are usually tracked by "sunspots" which are dark cool areas on the Sun's surface. These sunspots release solar energy and are associated with "solar flares" which are intense bursts of radiation observed near the Sun's surface and in close proximity to a sunspot group. These solar flares may be accompanied by a coronal mass ejection which shoots actual matter into space. This matter consists mostly of charged particles. The radiation that is released from the Sun can affect radio communications here on Earth.

The following is a graph representing the sunspot activity from around 2010 to 2021 and predicting activity on beyond 2030 (Fig. 1).

ISES Solar Cycle Sunspot Number Progression

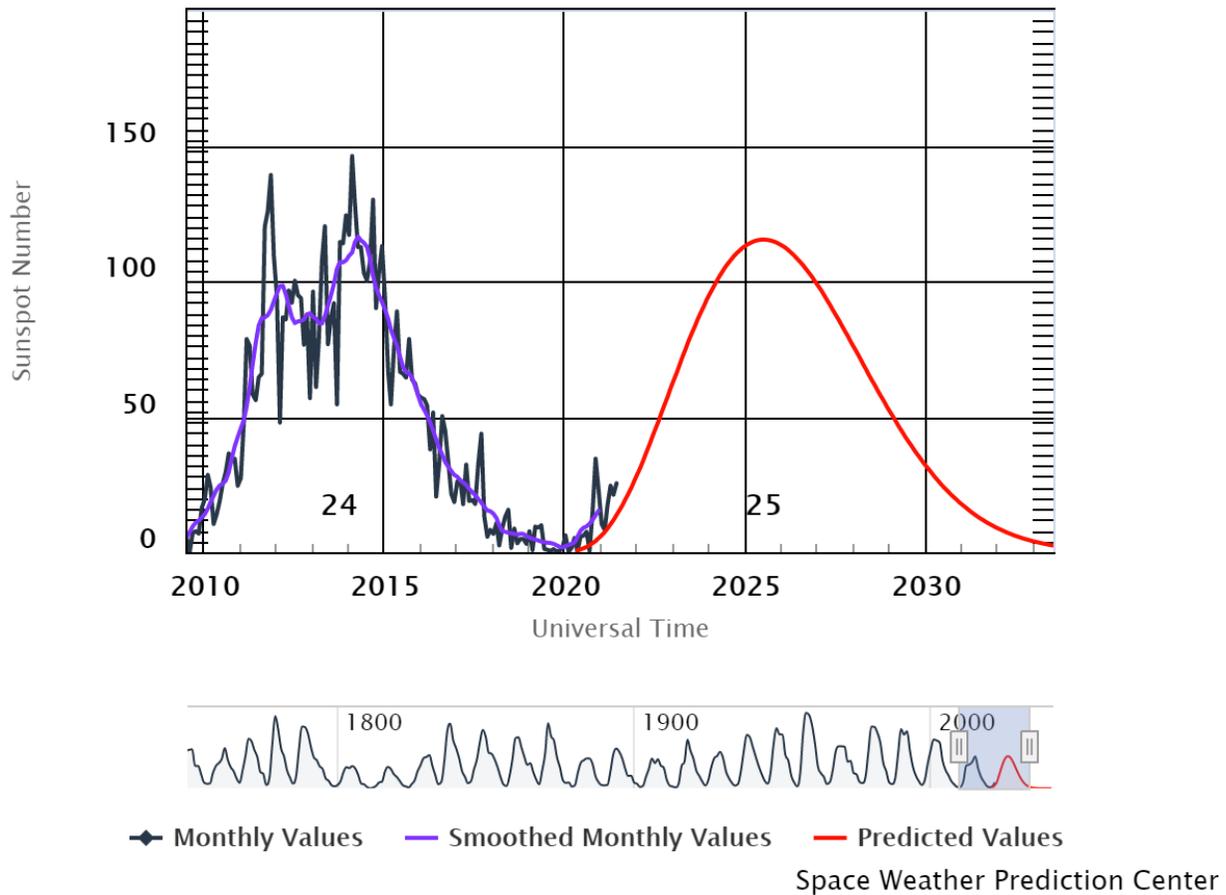


Fig. 1

Solar cycle 24 was average in length at about 11 years and it had the 4th-smallest intensity since regular record keeping began with Solar Cycle 1 in 1755. It was also the weakest cycle in the past 100 years. There is a Solar Cycle 25 Prediction Panel that is co-chaired by NOAA and NASA. This panel predicts that Solar Cycle 25 will break the trend of weakening solar activity seen over the past four cycles; however, it is predicted to be similar to Solar Cycle 24 as shown in Fig. 1.

Contrary to NOAA/NASA's models, there have been more recent studies with models which suggest that Solar Cycle 25 could be one of the strongest since record-keeping began. Only time will tell who is right.

How will Solar Cycle 25 affect amateur radio? In general, a lack of solar activity makes working the bands from 14-28 MHz and 50 MHz a challenge. More sunspots during a cycle's solar maximum means better skip propagation, improved DXing, and happier Hams. The projections are certainly mixed about the new cycle. I urge you to monitor both 10 meters and 6 meters as we get further into the cycle. Personally, I am excited!

You will find additional information at the following URLs:

<https://www.weather.gov/news/201509-solar-cycle>

<https://www.nesdis.noaa.gov/content/media-primer-solar-cycle-and-space-weather>

<https://earthsky.org/space/sunspot-cycle-25-among-strongest-on-record-says-ncar/>