March 2020 Volume 03-2020

Nacogdoches Amateur Radio Club

2020 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.

FEBRUARY MINUTES

The February meeting of the Nacogdoches Amateur Radio Club (NARC) was held as rescheduled on January 5th. **President Bill KT5TE** opened the meeting at 7:00 p.m. in the Lunch Room of Christ Episcopal School. Ten members and two guests were present. Each person present introduced them self. Minutes of the previous meeting were approved as published. The Treasurer's report was read.

The Shuttle Columbia (K5C) Special Event was held February 1-2 with several club members participating from their home stations. In spite of rather poor propagation, 404 contacts were made on 160 through 15 meters. Many thanks to the members who participated.

Skywarn training is scheduled for Tuesday February 25, 6:30 p.m. at the Church of Christ on North Street. Everyone is urged to attend.

Roger Campbell N1FVG, a past member of our club, passed away recently at the age of 97. Roger's widow has requested assistance in inventorying and selling his ham equipment. Rusty KD5GEN and Army AE5P are in progress on this request. More info as it is available.

The book raffle for the month was for a copy of

the latest edition of **"The ARRL Antenna Book"** and was won by **Bill KT5TE**.

Program: Roger K0YY presented a fine program on DMR radio, including several handouts that detailed the different talk groups in use. Roger was assisted by Chris WS5JET. Many thanks for a fine program.

Dues for 2020 are now due!

Dues are just $20 a year for all licensed hams in a family. You can pay the Treasurer at any meeting, weekly lunch, or VE testing session, or via snail mail to his home address. Make checks payable to NARC.

FROM THE PRESIDENT

Less Noise, but what about the Antenna tuning?

Last month I discussed how I reduced the noise while operating inside my F250, but that didn't solve the improper tuning of the Yaesu ATAS 120. This dang antenna would tune to 10m or 6m when tapping TUN (FT-857D radio) when in the 20M band. So the next step was to get my ATAS 120 antenna to tune correctly, and maybe reduce the noise a little more.

A while back I purchased a couple lengths of 1/2" flat tinned copper braid with nickel grommets for my shack's ground plane.

On the manufacturer's website they stated that the purpose for the strap was that it allows for easy attachment of the truck bed to the frame to provide a better "ground plane". That information has been in the back of my mind since I first purchased the ATAS 120. It got tossed aside when the ATAS 120 appeared to work very well with a Breedlove mount. What I didn't realize was that the bed probably lost all grounding over time.

Most beds are isolated from the frame by rubber bushings and paint. Any original metal to metal contact tends to corrode over time. When that happens, you have a nice big metal object floating in the electromagnetic field under the screwdriver antenna.

These antennas need a ground plane for tuning. At least that is what the Yaesu engineer said when I complained about my ATAS 120 not working. A good test is to use a magmount for the

antenna and a grounded metal file cabinet. The antenna tuned nicely inside the shop with the large doors opened (not that the doors mattered, maybe?). When the winter VHF contest was around the corner it was time to move this project to the front burner. Those nice flat strips looked to wimpy for my truck, so I tinned the ends of a thick 1" braided strap for replacements. Actually I have a large roll of braided tinned strap left over from both KG5RZT and KT5TE ground plane systems. Yeah, I didn't plan very good. :-/ Didn't think about how thin walls can be, and thus bought feet instead of inches. :-)

All the parts used on the truck are stainless steel with plenty of Penetrox A anti-oxidant. With a cordless drill I used a wire brush to remove all paint and debris from both the cab and bed attachment areas. Even though the screws were self tapping I drilled pilot holes to make the job easier.

I put one of these on each side of the bed and then fired up the truck and went for a test drive away from the shop.

The first nice surprise was the lower noise level. When I hit TUN everything worked as advertised. Noise came up a tad when 40m was tuned in, but that is expected. With the engine at idle and the NB on, 40m was pretty clear in the late afternoon. That was the second surprise. There is a weak pop that can be heard in the background, but that disappears above 20m.

You might think this should do it, but no. The radio needs to be moved to the back seat, feed lines shortened, ferrites on the feed lines, cable to the remote head and power cables. Plus, a home run setup with the power cable from the right side battery using #8 or #10 zip cord. What else? Hmmm

73, Bill KT5TE

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FROM THE VP CHAIR

Backup Antennas

A couple of years ago I attended one of the NWS Advanced Skywarn classes, much like we will have in Nacogdoches on February 25th, and decided to explore becoming active in this program. Several months later we had a series of bad storms just north of Nacogdoches. I put on my trusty Skywarn cap, grabbed an anemometer, turned on the 2 meter rig, and started

monitoring the chatter. I listened to all the local severe weather repeaters in our surrounding area. It so happened that our fellow hams in the Henderson area were tracking several tornadoes sighted near Lake Stryker. I listened intensely tracking the reported storm movements on a map.

About that time, my lightning detector app alarmed. This app shows current strikes within a defined radius of your location. I use it to remind me to disconnect my antennas. If you saw my article last month, you will recall that I learned the hard way as a Novice about lightning protection.

Well darn …. do I stay connected for the sake of public service? Risk frying my equipment? Even though my 2 meter antenna has a lightning arrestor and common grounding, I chickened out and dropped the now disconnected cable to the floor. Hey, I'll monitor on an HT. Probably can't communicate back in this storm, but at least I can still keep wearing my official hat…. No luck, I could no longer hear the reports, even on a quality HT. Dang rubber duck antennas.

This event prompted me to find some solutions for a reasonable antenna that could be set-up inside the house or placed in the attic where lightning risk would be minimal. The antenna needed to be portable, but significantly better than a rubber duck stubby. Here are a few options:

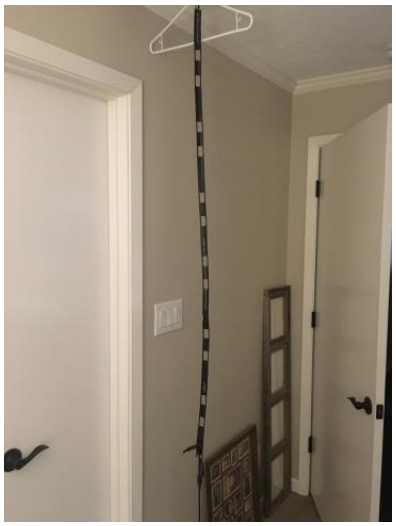
I built a simple ground plane $\frac{1}{4}$ wave antenna from welding rods and a SO-239 chassis connector for under $10. It assembles in 1 minute. It has a loop at the top to allow hanging it from an air conditioning vent, curtain rod, etc. with a zip tie.

I won't bore you with construction diagrams or formulas for wire length as they are easily available on the internet. This antenna package can be collapsed to a 21" bundle that you can fit in a drawer (or your bug out bag if you are a prepper guy like me). It is easily tuned to a low SWR for most of the 2 meter band. With this antenna, I can now hear and connect to repeaters in and around Nacogdoches. As a note of humor, I hung this antenna in the rafters of my shop while measuring SWR. The reflected power was crazy bad. After about 10 minutes of examination, I realized I was hanging it from a nail

that was electrically connected to the driven element and at a 90 degree angle. Changing that setup to a non-conducting hanger dropped the SWR to 1.1. Duh.

This antenna can be deployed in your shack during an emergency (unless you have a metal building shack …. AE5P) or it can be mounted in your attic for fast connection to a coax below. You can purchase a nice SO-239 for $5 that has tapped holes, SS screws, and a nice cover cap so nobody sees your soldering job. *Etsy.com - search "groundplane antenna hat"*

Another alternative for a quick indoor antenna is a pseudo J-Pole made from ladder wire. While you can build your own version of this antenna, N9TAX does a professional job crafting a high quality dual band "Slim Jim" antenna for not much more than the cost of a roll of ladder line (N9TAX.com). This 2m/70cm antenna claims to have twice the gain of a standard J-Pole and rolls up to fit in your pocket.



This antenna is also so a good choice for portable field operations. You can hang it in the house using a non-conducting connector. My HT can reach several local repeaters using this alternate antenna, all for about $30.

There are dozens of other variations for indoor antennas, some portable, some permanent, but all allow for safer transmissions during bad weather and emergency situations. The point of this story is not to give you build specs on antennas, but to remind us all that *an easy-to-deploy indoor antenna should be part of your emergency communication arsenal.* The Zombie Apocalypse may be near…

73, Steve WB5IDY

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NOTES FROM OUR EC

The end of the month is upon us. So far we've had a damp (read as wet) couple of months. And April is still 32 days away.

Thanks to everyone who turned out for the SKYWARN training.

Jason Hansford of the Shreveport NWS and Michael Behrens from CBS 19 TV in Tyler taught the class. We had about 20 people show up, some from

Center, a couple of hams from Lufkin and a handful of local hams. Special thanks to Steve Bartlett (WB5IDY) for his assistance obtaining the class space. Steve please pass on to North Street Church of Christ our thanks for hosting the event.

How did your station fare over our winter? We're pretty lucky living in East Texas, our seasons usually can be considered mild. Yes, I know our temps drop into hard frost/freezing and summer temps in the 100s. Our extremes don't usually last very long. But's that's the weather.

One of the slides Jason used gave a breakdown of tornadoes per month. We are going into the spring season which has tended to have the most potential for thunderstorms and tornadoes. Yes we already have had a tornado this year that unfortunately took a life.

Get those batteries charged, antennas checked and your storm season plan reviewed.

I'll close this with my usual, don't forget our ARES/RACES net every Monday night and our SKYWARN net on Thursday night.

73 de John Chapman KC5MIB
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VE TESTING

Our next VE testing is scheduled for **Wednesday March 18 at 7:00 p.m.** in the Lunch Room of Christ Episcopal Church School.

Applicants should bring a picture ID, the original and a copy of their current Amateur license, the original of any CSCE's and $15 to cover the cost of the exam(s). Correct change is always very much appreciated.

More information is available on the club website at https://w5nac.com/about/testing/

73 de AE5P.

email: ae5p@arrl.net

NEW HAMS

At our VE testing session in February, we had two candidates. Hal Moore from Bossier City, LA passes his Tech exam and is now KI5IJQ. Theunis Oliphunt from Nacogdoches passed his Tech exam and is now KI5IJR. Congratulations to both and welcome to Amateur Radio.

TWO METER CLUB NETS

Remember to join us each week for the two meter nets sponsored by NARC. 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.

BOOK RAFFLE

Each month, we give away a book on a topic of interest to Amateur Radio operators. Everyone present at the meeting will receive one ticket. A ticket will be drawn at the end of the meeting for the book of the month.

The book for March will be **"The Short Vertical Antenna and Ground Radial"** by Jerry Sevick W2FMI. You must be present at the meeting to win.

NEXT MEETING

The next meeting will be **Wednesday March 4th at 7:00 p.m.** in the Lunch Room of Christ Episcopal Church School. A program is planned.

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, RTTY
Feb 29-Mar 1, 2020
http://www.ncjweb.com/NAQP-Rules.pdf

ARRL Inter. DX, SSB
Mar 7-8, 2020
http://www.arrl.org/arrl-dx

NORTH AMERICAN SPRINT – RTTY
Mar 15, 2020
http://ncjweb.com/Sprint-Rules.pdf

CQ WW WPX, SSB
Mar 28-29, 2020
http://www.cqwpx.com/rules.htm

TEXAS STATE PARKS ON THE AIR
Apr 18-19, 2020
http://www.tspota.org/rules

SAN JACINTO DAY SPECIAL EVENT K5T
Apr 25-26, 2020

CQ WW WPX, CW
May 30-31, 2020
http://www.cqwpx.com/rules.htm

ARRL JUNE VHF
June 13-15, 2020
http://www.arrl.org/june-vhf

CQ WW VHF
Jul 18-19, 2020
http://www.ncjweb.com/NAQP-Rules.pdf

NAQP, CW
Aug 1, 2020
http://www.ncjweb.com/NAQP-Rules.pdf

NAQP, SSB
Aug 15, 2020
http://www.ncjweb.com/NAQP-Rules.pdf

ARRL ROOKIE ROUNDUP RTTY
Aug 26, 2020
http://www.arrl.org/rookie-roundup

WORLD WIDE DIGI DX
Aug 29-30, 2020
https://ww-digi.com/

ARRL SEPTEMBER VHF
Sept 12-13, 2020
http://www.arrl.org/september-vhf

LOW POWER OPERATION

by
Thomas Atchison W5TV

Low power operation in amateur radio is usually referred to as QRP operation. This comes from the Q signal QRP that is used in CW operation. QRP literally means "Please reduce power". When it is used in the form "QRP?" it means "Shall I reduce power?". Over a period of time QRP operation has come to mean operation with 5 watts or less. Some use the term "QRPp operation" to refer to operation with 1 watt or less. Other people talk about QRP operation as consisting of 5 watts or less using CW and 10 watts or less using SSB.

Now let's think in terms of S-meter readings. The S-meter scale is calibrated from S1 to S9 with some markings indicating signal strength over S9 in dB. The International Amateur Radio Union (IARU) Region 1 agreed on a technical recommendation for S Meter readings with S9 for the HF bands to be a receiver input power of -73 dBm.

This is the level of 50 microvolts (μV) at the receiver's antenna input assuming the input impedance of the receiver is 50 ohms. This translates into a difference of one S-unit corresponding to a difference of 6 dB or a power ratio of four. To illustrate this suppose a transmitter with 100 watts produces a signal strength of S-9 on a receiver.

Then we have the following:

S-9 100 w
S-8 25 w
S-7 6.25 w
S-6 1.56 w etc.

Notice that if 100 watts produces an S-9 signal then a 5 watt signal will produce a signal between S-6 and S-7. This is a reduction of signal strength that is a little over 2 S-units.

In practice, if a station is working QRP, the station should have the best antenna possible. In particular, I would suggest an antenna designed to operate on the chosen

band (a resonant antenna). Many hams like to take 5 watt rigs into the field and use an end fed wire that is as long and as high as possible. This usually means an antenna tuner must be used; however, such operation can be very enjoyable.

Some hams take a minimalist approach to QRP. They will use homebrew transmitters or transceivers and wire antennas at low height. The minimalist usually believes that you should communicate using the bare minimum of gear. They may use battery power or solar power.

There really isn't a 'right' or 'wrong' way to do this. Just have FUN.