

Nacogdoches Amateur Radio Club

2022 CLUB OFFICERS

Pres: Bill Rascher - KT5TE

Vice Pres: Aaron Baker - KI5FIQ

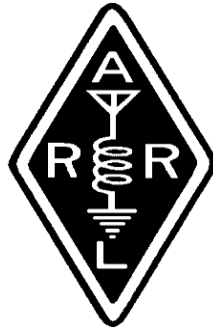
Sec/Treas: Army Curtis - AE5P

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 6th. **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 everyone present. Minutes were approved as published. Treasurer's report read.

An in-depth discussion of Field Day was held. The consensus was the change to class 3F, with use of 3 separate radios dedicated

to phone, CW, and digital was excellent. Aaron KI5FIQ was praised for his networking the 3 stations together, allowing a composite total to be displayed in real time on the projector screen in the main room. The digital station was operated in a separate room with operation shown on a large screen TV in the room. This allowed many people to observe the operation simultaneously. A great deal of excitement was generated by the digital ops, and this proved to be contagious with the other stations.

This year all three stations used various models of ICOM radios, which exhibited wide band transmit noise which impacted the other stations when they were trying to receive. To try

and alleviate this problem, it is proposed to use three Flex radios next year.

The June OTA Challenge was won by **Roger KOYY**, who was presented with the ARRL book "Hands On Radio Experiments, Parts 1 and 2". Congratulations Roger.

July OTA challenge was to make the highest score in the NAQP RTTY contest, July 16-17. Results will be announced at the August meeting.

August OTA Challenge will be to make the highest score in the NAQP SSB contest, August 20-21. No more excuses. Get on the air!

Meeting closed at 8:06 p.m.

The Ice Cream Social originally scheduled for the July meeting has been moved to the August. Bring your favorite flavor of ice cream or just bring an appetite. There is always plenty for everyone.

FROM THE PRESIDENT

The August meeting should be our best meeting of the year since it's our ice cream social. Just like July, August will be an indoor month with the heat index being over 100 each day and no break in sight. For me outside working hours usually fall from sunrise until 1100, and 1800 until the stars are out. This means I'm forced to go swimming twice a day just to cool off before going inside. Life can be rough...

The time in the radio shack/darkroom is in the afternoons for a few hours. The problem with this schedule is I'm missing out on net meetings, but by October that should not be a problem.

The Gap Titan is back up on the roof of the barn and for the guy wires clothes line adjusters have been added. Hopefully there won't be

much slippage since 3/8" line has replaced the previous guys that came with the antenna from Gap. Both the line adjusters and the DX Engineering hinge plate made getting this 25' vertical antenna up much easier.

Hope to see you at our August 3rd meeting.

73, Bill KT5TE

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FROM THE VP CHAIR

A very hot July is about to come to a close and at the time of writing a fun filled weekend of radio has just finished up. 3 separate radio events happened this past weekend and I got to participate in 2 of them and as I sit here on an early Tuesday morning, I'm still recovering from it, but boy did I ever have fun.

The two events I participated in were the Parks on the Air Support

Your Parks Weekend Summer Event and the VHF Contest. For POTA, I had the ambition to go out to 6 different parks and boy did I ever bite off more than I could chew with that one. The 6 parks I had picked out were in 6 different grid squares (EM11, EM12/22, EM20, EM21, EM22, and EM23) with the hopes that I would make 6 contacts on 6 meters for the VHF contest for an award in POTA called the 6 Pack, but I forgot that the Icom 718 in the HF go box is only a 10m on up rig and while I have a separate radio for 6, I didn't know how the antenna would work with it without the required tuner.

However, not all was lost for the VHF contest. I was able to work stations via FT8 while driving between parks using the mag mount vertical. Propagation for me was interesting because I thought I would at least get K5QE in the log, but apparently his signal would just skip over me.

But back to the parks. I would manage to visit 3 parks (Fairfield Lake State Park K-3007, Purdis Creek State Park K-3050, and Daingerfield State Park K-3002) and successfully get the first and last one activated.

I hope everyone has a good August, and don't forget that we have our annual ice cream social coming up at the meeting for August.

73 de Aaron Baker
KI5FIQ

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NOTES FROM OUR EC

It's July and in case you hadn't noticed, it's hot out. It's also dry despite a small shower we had yesterday (27 Jul). The only damp spots were under the vehicle when I parked and that didn't last very long.

At the mill we recorded

our last measureable rain 3 July. We consider measureable rain 0.10 inches. Most lawns seem to be turning some shade of brown unless they are being watered.

There are a few heat related illnesses that should be mentioned this time of year. Heat stroke, heat exhaustion and heat cramps. Immediate first aid for all is to get into a cool place. I'll put a link to the CDC website with much more information on these with symptoms and support at the end of the column. Please use your heads this time of year planning any outdoor activities, stay hydrated, watch how long you are outside in the heat and plan the times you may be out wisely.

The 2022 Hurricane season (yep, we're going there) has been quiet, to say the least. We are about half way through this season. 31 July will be 92 days of the 183 season. We have only had 4 events and the Hurricane Center's web site says

none are expected for the next 48 hours. I think that chart has been up for a while. The seasonal activity starts to pick in the next couple of months. I'm basing that on looking over a few of the older hurricane seasons.

Interesting side note, this is the first year since 2014 the hurricane season hasn't had a "pre-season."

Again, thanks to everyone who checks into our ARES and SKYWARN nets. And it's good to be able to participate more on the nets.

Hope to see many at the Ice Cream social.

<https://www.cdc.gov/disasters/extremeheat/warning.html>

See ya on the nets.

73 de John Chapman
KC5MIB
kc5mib@arrl.net

VE TESTING

We did not have any applicants for the July VE test session.

Many thanks to VE's **Rusty KG5GEN**, **Ralph N6HR**, **Mike AA5HH**, **Mike W5NXX**, **Robert KD5FEE** and **Army AE5P**.

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

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

Several of the VEC's, including ARRL-VEC who we use, are now offering remote on-line testing, allowing folks to take the exam(s) from their home without driving. After a long discussion with our NARC VE team, we have decided to make our exams available on a person to person basis only.

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

The next NARC meeting will be Wednesday August 3rd at the Nacogdoches City/County EOC. Meeting begins at 7:00; doors open at 6:30. Come early for

socializing before the meeting.

This will be our annual Ice Cream Social. Bring your favorite flavor or just an appetite. Club will furnish bowls and spoons for eating the cold stuff. This is a family event, so bring your spouse and kids and/or grandkids.

Aaron KI5FIQ, assisted by Roger KOYY and Mike W5NXX, will present a program on POTA. Should be most interesting.

HAMLIST

Are you on Hamlist? Check it and join at:

[https://w5nac.com/about/
email-reflectors/](https://w5nac.com/about/email-reflectors/)

Shreveport Hamfest

The Shreveport Hamfest is August 13, 7:00 - 2:00 in the Louisiana State Fair Agriculture Building. If you are interested in going, contact AE5P for more info.

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>

North American QSO Party, CW 1800Z, Aug 6 to 0559Z, Aug 7

Kentucky State Parks on the Air 1400Z-2200Z, Aug 13

Maryland-DC QSO Party 1400Z, Aug 13 to 0400Z, Aug 14

North American QSO Party, SSB 1800Z, Aug 20 to 0559Z, Aug 21

ARRL Rookie Roundup, RTTY 1800Z-2359Z, Aug 21

Hawaii QSO Party 0400Z, Aug 27 to 0400Z, Aug 29

W/VE Islands QSO Party 1200Z, Aug 27 to 0300Z, Aug 28

Kansas QSO Party 1400Z, Aug 27 to 0200Z, Aug 28 and 1400Z-2000Z, Aug 28

Ohio QSO Party 1600Z, Aug 27 to 0400Z, Aug 28

Colorado QSO Party 1300Z, Sep 3 to 0400Z, Sep 4

Tennessee QSO Party 1800Z, Sep 4 to 0300Z, Sep 5

Alabama QSO Party 1500Z, Sep 10 to 0300Z, Sep 11

ARRL September VHF Contest 1800Z, Sep 10 to 0300Z, Sep 12

Texas QSO Party 1400Z, Sep 17 to 0200Z, Sep 18 and 1400Z-2000Z, Sep 18

Iowa QSO Party 1400Z, Sep 17 to 0200Z, Sep 18

New Hampshire QSO Party 1600Z, Sep 17 to 0400Z, Sep 18 and 1600Z-2200Z, Sep 18

Wisconsin Parks on the Air 1600Z-2300Z, Sep 17

New Jersey QSO Party 1600Z, Sep 17 to 0359Z, Sep 18

CQ Worldwide DX Contest, RTTY 0000Z, Sep 24 to 2400Z, Sep 25

Maine QSO Party 1200Z, Sep 24 to 1200Z, Sep 25

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.

Electromagnetic Waves

by

Thomas Atchison W5TV

An electromagnetic (EM) wave is composed of two oscillating fields, an electric field and a magnetic field. Suppose we consider an EM wave that has been generated over the surface of the earth, say from an antenna. If the electric field is in a vertical plane then the magnetic field is in a horizontal plane. Conversely, if the electric field is in a horizontal plane, the magnetic field is in a vertical plane. The two fields both oscillate at the same frequency; however, the fields are perpendicular to one another. Often we use a graphical representation of an EM wave as shown in Fig. 1.

Electromagnetic Wave

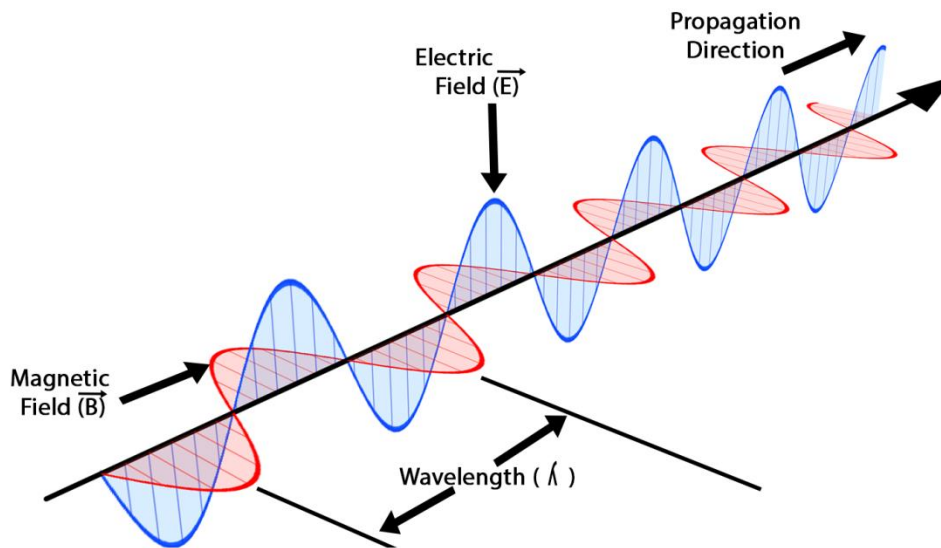


Fig. 1

If the electric field is in a vertical plane with respect to the earth then the EM wave is said to be vertically polarized. If the electric field is in a horizontal plane with respect to the earth the EM wave is said to be horizontally polarized.

If we modulate the EM wave so it carries some information, the variation of the electric field is the same as the variation of the magnetic field. That is, the same information is carried by each of the fields. Now suppose the EM wave is generated by a horizontal dipole. Then the electric field is horizontal to the earth so the EM wave is

horizontally polarized. If we have a horizontal dipole that receives this EM wave then the electrons in our receiving antenna will be excited by the horizontal electric field and we efficiently capture the electric field and the information that it contains. Note that if our receiving antenna is not horizontal then we may not be as efficient in capturing the electric field, i.e. the signal we capture will be weaker.

Now suppose we want to capture the magnetic field. In this case the shape of the receiving antenna becomes important. Antennas made to capture the magnetic field are generally made from loops of wire or other conducting material. Just as a magnetic field through a coil of wire is produced by the current in that coil, so too a current is induced in a coil of wire when a magnetic field goes through that coil. It is this current that we want to capture and demodulate. Antennas that capture the magnetic field are usually referred to as Magnetic Loop Antennas (MLA).

If you perform a Google search on the internet you will find many articles that talk about how to construct an MLA. Rather than look at some of these I would like to provide some reasons why you might want to build an MLA. If you want to try one I suggest that you consider the higher HF bands from 40 meters up.

If we compare an MLA to a vertical ground plane on 40 meters we must note that the latter requires ground dependency and it has ground losses. Also, if you shorten the vertical element you must use an inductor to resonant the antenna and that introduces additional loss. In the case of the MLA, it is already small, but it does require a capacitor to make it resonant. A small loop resonated by a capacitor will have much higher Q than a short vertical resonated by an inductor. Of course it is true that one of the disadvantages of an MLA is that it has a smaller bandwidth. As I understand, users of an MLA experience bandwidths of 10 or 20 kHz at 7 MHz.

A loop antenna is usually defined to be 'small' if it has a circumference of more than $1/8$ wavelength but less than $1/3$ wavelength. The loop presents an inductive reactance at its terminals so it can be tuned with a single capacitor. A vertically oriented short transmitting loop has maximum radiation in the plane of the loop with far-field nulls at right angles to the plane of the loop.

In a high noise environment an MLA will nearly always hear more than a big beam on the HF bands. The MLA responds predominately to the magnetic component of the EM wave, while being nearly insensitive to the electric field component. This is why an MLA is very quiet on receive. In fact the MLA is often referred to as a 'magnetic dipole'.

If you want to learn more about small loop antennas I recommend reading the following:

[An Overview of the Underestimated Magnetic Loop HF Antenna](#)

This was written by Leigh Turner, VK5KLT in 2009. Just do a control-click on the above title and it will take you to the pdf file you need. Have fun!

Field Day - From The Bonus Point Chair

Field Day 2022 was one of fun, challenge, and heat, too much heat! I thoroughly enjoyed setting up, operating, and socializing with the club. It is unfortunate that Field Day is only once a year- and the hottest part of the year, at that! Chasing after bonus points was fun, especially copying the W1AW Special Bulletin, huge thanks to W5TV for helping with that!

Also, we demonstrated operating a station using battery power, our digital station hooked their transceiver and it's peripherals to a Bioenno LiFePO4 (lithium iron phosphate) high capacity battery that was charged using solar power, and made a total of 20 QSOs on EP. Roger, KOYY, also operated from his in-car POTA station using battery power for a bit on Sunday.

I myself made only 20 Contacts, operating phone exclusively. The propagation over the weekend was subpar, as it has been for a bit, and that made working phone quite difficult at times. i suppose that is even more reason for me to learn CW before next year.

Overall, we had a decent turnout of 25 attendees, 12 of whom operated stations at some point. Unfortunately no one from the Daily Sentinel nor our usual invitees showed. The public information table was decked out with a sign-in sheet, ARRL Flyers, Club Flyers and a display of DX QSL Cards courtesy of AE5P. Very good food and drinks provided by Mike, W5NXX. I was able to check off all applicable points in the FD Safety Officer's Checklist, and no known injuries were sustained during our operation.

Thanks to all our FD Chairmen and to everyone who participated this year. As always, I look forward to seeing you all at the next meeting, and at Field Day 2023!

73 de Wolfie KI5MHB
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