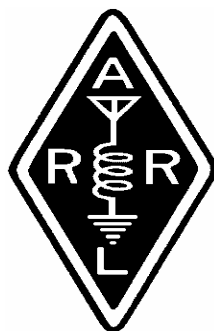


Nacogdoches Amateur Radio Club

Pres: Lon Glaze - AE5BN

VP: Tom Atchison - W5TV

Sec/Treas: Army Curtis - AE5P



APRIL MINUTES

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.

The April meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on April 1st. Twenty members and two guests were present. **President Lon, AE5BN**, opened the meeting at 7:00 p.m. in the Bailey Library of Christ Episcopal Church. Each person present introduced himself. Minutes of the previous meeting were approved as published. The Treasurer's report was not available.

Reminder that Belton is coming up April 18th. Several members reported they were planning to go.

KTRE-TV is asking for help on June 12 when they switch to digital. Contact Steve, KB8QWN if you can help.

Discussion held on possible Field Day sites. Voted to use the airport this year.

The Lufkin Hamfest will move to another date, as June 20 is not available at the church site used previously. New date to be announced later.

Army, AE5P, passed around two special QSL cards received from the Shuttle Columbia SES in February.

John, KC5MIB, spoke of Hurex 09 scheduled for May 6. Need operators on that day.

Andy, KE5EXX, suggested starting a 2 meter SSB net.

On May 24th, the annual **N5YA/K5QE** cookout will be held at N5YA. All are invited.

Meeting was adjourned at 7:40 p.m.

Show and Tell:

K5QE: 2M WAS

KC5MIB: NA SW Assoc.

AE5P: miniVNA

Program:

The scheduled presenter did not appear.



HAMMING IT UP

Howdy all, another month has flown by. I spent a good bit of time getting ready for the trip to the hamfest in Belton. I made arrangements for a friend of mine to ride out there with me. I changed the oil, rotated the tires and adjusted the air pressure.

Topped off all the fluids. Made sure that I had some tools, flashlight and a cooler with some drinks just in case. I put the radio back in it along with the antenna on top. I even put the GPS in so I wouldn't get lost. I made out a shopping list too. Wasn't much of a list but I needed a replacement nut for a NMO mount, a few powerpoles, PL-259s, NMO Mount with coax, and a NMO Cap with metal threads.

I wanted to leave my house by about 3:45 AM so that I could pick up my buddy in the Ratcliff area and still make it there by 7:00 AM. I ended up getting in the bed a little later than I would have liked on Friday night. I unfortunately ended up waking up at about 1:45 AM and couldn't go back to sleep. I finally gave up and got up at 3:00 AM. I ended up leaving my house at about 3:30 AM. We headed that way. After several bathroom /refreshment breaks and despite the GPS still managing to go past my

turn in Belton we got to the hamfest at the desired 7:00 AM. I managed to find all the stuff on my list except for the NMO cap with the metal threads. I guess Larsen might be the only ones that have them. We did lots of browsing and I even bought my wife a bag for her new laptop. Who would have thought that a ham would think of getting something for their non-ham wife at a hamfest? My buddy and I ended up eating lunch with a bunch of guys there before heading back this way. I ended up making it back about 4:30 PM or so and wasn't able to go to bed until about 1:30 AM Sunday morning. Made for a pretty long day since I had woke up so early and had so little sleep.

See you all at the meeting.

73, this is AE5BN Lon.

email: ae5bn@arrl.net

VP's CORNER

The next meeting of the Nacogdoches Amateur Club is on Wednesday, May 6, at 7:00 p.m. at Christ's Episcopal Church. Marshall Williams, K5QE, will have an interesting demonstration for our program so please plan on attending.

From what I am hearing on the HF bands, we don't have anything unusual going on. There have been some brief signals on 6 meters but no big openings that I have heard.

If you have any 'Show and Tell' matters, please bring them to the meeting. It is always exciting to hear what people have that is new and/or different.

See you at the meeting.

73, Tom W5TV

email: w5tv@arrl.net

VE TESTING

Our next VE testing is scheduled for Wednesday, May 20th at 7:00 p.m. in the Parish Hall of Christ Episcopal Church. 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. 73 de AE5P

email: ae5p@arrl.net

CLUB NETS

Remember to join us each week for the 2-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 Net on the 147.32 repeater (PL 141.3). Please join us for one or both. We are always looking for folks who would like to become

net control operators. If you are interested, please contact any of the existing net controls. We will be pleased to help you in any way we can.

NEXT MEETING

The next meeting will be on Wednesday May 6th at 7:00 p.m. in the Parish Hall of Christ Episcopal Church. The church is at the corner of Starr and Mound Streets in Nacogdoches. Our new NTX Section Manager, Jay Urish, W5GM, plans to attend. Please come out to meet our new SM. If you have items for show and tell, please bring them. Hope to see y'all there.

BASIC ANTENNAS

PART 6

by

Thomas Atchison W5TV

Now let's consider that we have a horizontal wire antenna that is $\frac{1}{2}$ wavelength long at a resonant frequency of 14 MHz. Referring back to

Basic Antennas, Part 1, we recall that wavelength is given by the formula

$$\lambda = \frac{983.5592}{f} \approx \frac{983.6}{f},$$

where f is in MHz and λ is in feet. This means that at 14 MHz, $\lambda = 70.257$ feet.

Therefore the total length of our antenna is $\frac{\lambda}{2} = 35.13$ feet. In the following discussion we will not consider the length/diameter ratio of the conductor or the end effects of mounting the antenna. If we open the conductor at the center and apply a driving voltage across the gap at 14 MHz we want to know how the signal is radiated away from the antenna.

To discuss the radiation pattern from an antenna we need a graphical representation that considers the relative intensity of the field at a fixed distance from the antenna as a function of the direction from the antenna. Suppose we place our antenna in the center

of a sphere and measure the field strength at every point on the surface of that sphere. With this information we could construct a figure such that the distance from a fixed point (the antenna) to the surface, in any direction, is proportional to the field strength from the antenna in that direction. The resulting three-dimensional figure is called the radiation pattern of the antenna (Fig 1). (If you are looking at these figures electronically you should be able to enlarge them by clicking on the figure then pulling the corners to a larger size)

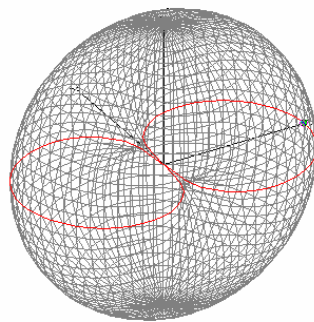


Fig. 1

Here the dipole is considered in 'free space' (no ground around). The red highlight is a slice of

the radiation pattern through the plane of the dipole at 0 degrees azimuth. In Fig. 2 we look down at the azimuth slice alone.

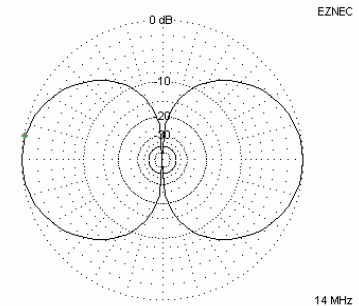


Fig. 2

The radiation is strongest perpendicular to the dipole and is zero off the ends.

If we changed the slice to 25 degrees azimuth we have Fig. 3.

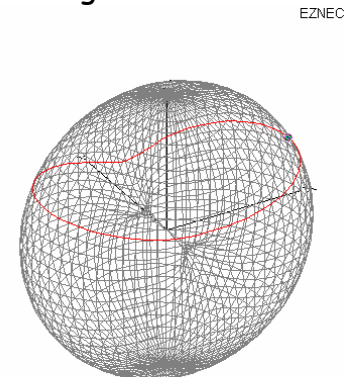


Fig. 3

In Fig. 4 we look down at the azimuth slice alone.

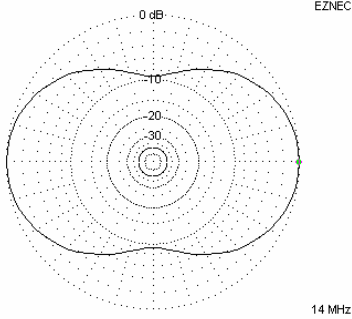


Fig. 4

Notice at the 25 degree angle the radiation in the direction of the ends is not zero, but it is less than the radiation perpendicular to the dipole.

We can do the same thing with elevation. Here is the pattern with the elevation highlighted in red (Fig. 5).

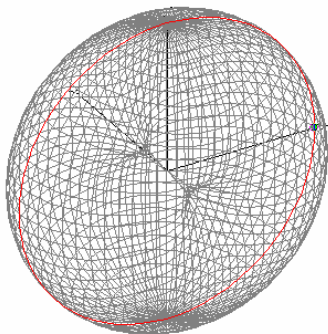


Fig. 5

In Fig. 6 we look at the slice that is highlighted in red (perpendicular to the antenna).

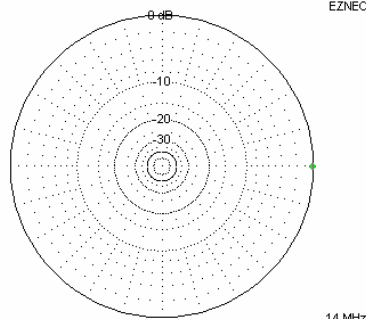


Fig. 6

In this case you are looking at the end of the wire antenna as the center of the circle.

In Fig. 7 we rotate our slice through 75 degrees.

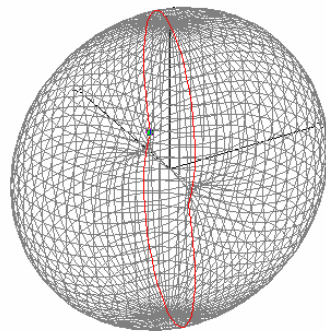


Fig. 7

In Fig. 8 we look at the slice by itself.

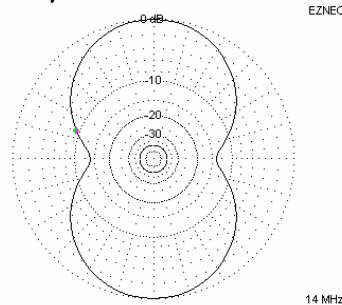


Fig. 8

I hope these plots will give you some idea of how we can look at the radiation pattern of a dipole in free space.

In Basic Antennas, Part 7, I want to consider what happens when we put our antenna over an earth ground. This changes the radiation pattern depending on how high the antenna is above the ground.