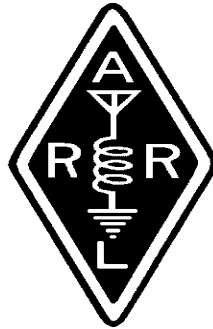


# Nacogdoches Amateur Radio Club

Pres: Rusty Sanders - KD5GEN

VP: John Jordan - N5AIU

Sec/Treas: Army Curtis - AE5P



## DECEMBER MINUTES

The December meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on December 2nd. **President Lon, AE5BN**, opened the meeting at 6:00 p.m. in the Parish Hall of Christ Episcopal Church. Each person present introduced themselves. Minutes of the previous meeting were approved as published. The Treasurer's report was read.

### Unfinished Business:

The antenna still needs to be installed at the Nacogdoches Recreation Center.

The Telpac Node needs some work at the Fredonia Hotel.

### New Business:

Motion made to donate \$250 to Christ Episcopal Church. Approved.

**Army - AE5P**, announced that in lieu of a seller's commission, he will donate \$642 to the club as a WM5J memorial. Ken was the President of NARC a number of years back, and was an important part of the club. He will be missed.

**Army - AE5P**, presented a 3-500Z transmitting tube as a thank you to **Lon - AE5BN**, for his service to the club as Vice-President and this past year as President. Thank you Lon. You did good!

The new officers for 2010 were installed, and will

## 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.

begin their official duties at the January meeting.

Meeting closed at 6:11 p.m. An excellent pot-luck supper was enjoyed, followed by our annual White Elephant auction. A total of \$432.00 was raised from the auction and as usual, there were some terrific deals.

## Oscillations From The Chair

Now comes the hardest job of holding the office of club president and that is coming up with an article for the monthly newsletter.

I appreciate the consideration that each member of the NARC has given me in nominating me as your club president. I sincerely appreciate the support and dearly hope that I can live up to your expectations.

As I consider my role in the forthcoming year, I must remember that our club is a team of people from various walks of life

with various experiences, needs, and wants. Each and every person has something to offer, big or small. Each member is a viable part of our club or team who can contribute not only to our ham radio club but also to the community in time of need.

From a previous career, I noticed that egos tend to get in the way of progress and those persons with the biggest ego kept trying to spell "team" with the letter "I" stuck in there somewhere.

As club president, I do not consider myself the leader of the team but the facilitator of a group of people who enjoy a tradition of communication called Amateur Radio. Amateur Radio has been around many years and in some aspects is tradition bound yet exploding with new ideas, technology, view points, and basically an expanding frontier to explore. When many of the new subjects are exposed, I catch myself wanting to disregard those items and stay hidden in

my comfort zone. I have to give myself a slap to the back of the head and stay focused and consider the new technology.

We have hams within our community that have desires to explore those new frontiers and I plan to respect their efforts whether or not I plan to utilize the technology. I hope that those hams who want to explore old or new ideas or methods express their feelings. Along the same line of thought, please do not be offended if you are in the minority. Remember, people use to think the world was flat. The Patent Office was once shut down because the people in high offices thought nothing else could be invented. Change takes time!

I hope to see our club membership grow with members and enthusiasm of our hobby. I hope to see those with particular interests submit articles relating to their interest to our monthly newsletter. You never know, it may cause some of us to move

out of our comfort zone or expand our comfort zone.

Many exciting things can come forth in 2010, not by one person but by the synergism of the group that is known as the Nacogdoches Amateur Radio Club.

73 until next month.  
KD5GEN- Rusty

email:

[rusty.sanders@att.net](mailto:rusty.sanders@att.net)

### VP's CORNER

First, let me thank you for your support in nominating me as your club vice-president! I hope to live up to your expectations.

My job is primarily to schedule programs for the club meetings. Marshall - K5QE - has already volunteered to present a program for January. I know this will be great and you will not want to miss it. Our club has members with many talents. Please contact me asap so I can get you scheduled for a program. Also, if you have topics of interest let me

know. Maybe I can find someone who can present a program on that topic.

As we begin a new year, it is a great time to think about how we personally can do a better job supporting our hobby. It might be as simple as going to more meetings, checking into the nets more often, or elmering a new ham. It might be trying something new in ham radio or old as learning the code. I already have set myself some new goals for this coming year. It is time for all of us to set some new goals for ourselves and our club. Certainly something to think about.

I hope everyone was good this year and Santa treats you well. I look forward to some new show and tell after Christmas.

73 de John N5AIU

email:

[jjordan@nacogdoches.k12.tx.us](mailto:jjordan@nacogdoches.k12.tx.us)

### VE TESTING

Our next VE testing is scheduled for Wednesday, January 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](mailto: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 January 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. Please bring any show and tell items you might have received over the holidays.

## NEWEST HAMS

Please welcome the newest members of our wonderful hobby:

KF5EBX - Zane Smith,  
Lufkin

KF5EBY - Megan Glass,  
Lufkin

KF5EBZ - Guy Ham, Pollok

## BASIC ANTENNAS

### PART 14

by

Thomas Atchison W5TV

As we mentioned in Part 13, we will now consider what will happen if we create an antenna with a driven element and two parasitic elements, a reflector and a director. We will choose the director to be 4% shorter than an electrical half wavelength and the reflector to be 5% longer than an electrical half wavelength. Remember that the driven element is to be an electrical half wavelength. We will use a spacing of  $0.15\lambda$  for both the distance between the driven element and the director and the distance between the driven element and the reflector just as we did in Part 12 and Part 13.

To put numbers to these statements, consider designing our antenna for a frequency of 14.1 MHz. That means the driven element will have a length of

$$\frac{1}{2}\lambda(\text{in feet}) = \frac{468}{14.1\text{MHz}} = 33.2 \text{ feet.}$$

Since the length of the director is 4% shorter that would be 31.9 feet. The length of the reflector should be 5% longer so that would be 34.9 feet. The spacing should be  $0.15\lambda = 0.15(66.4) = 9.96 \text{ feet}$ . If we put this information into our antenna simulation software, EZNEC, we have an antenna that looks like Fig. 1

EZNEC

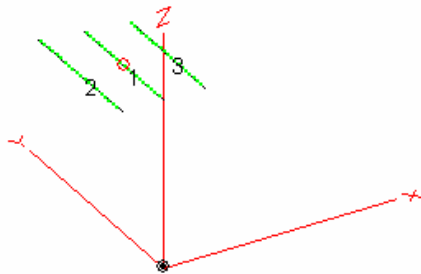


Fig. 1

The green lines are the elements of the antenna with the element labeled 1 being the driven element, 2 the reflector, and 3 the director. The radiation pattern for this antenna is in Fig. 2

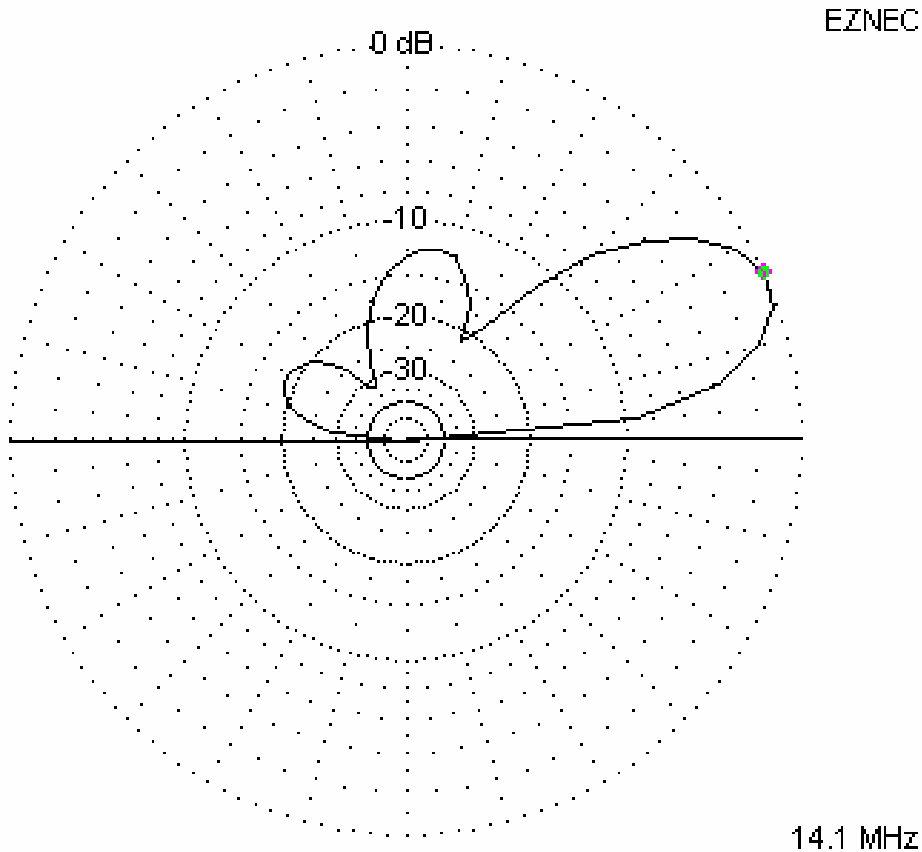


Fig. 2.

We are viewing a vertical slice of the radiation pattern. We are looking into the side of the antenna with the reflector to the left and the director to the right. The main lobe has an angle of 25 degrees for maximum field strength in the direction of the director (to the right). Notice the small lobe on the reflector side (left side). The gain of the antenna is computed by comparing the field strength of the main lobe to that of a dipole. The front-to-back ratio is the ratio of the field strength of the main lobe to the field strength of the small lobe on the reflector side.

Whether a parasitic element operates as a director or a reflector is determined by the relative phases of the currents in the driven and parasitic elements. At the spacing we have used, the current in the parasitic element will be in phase to make the element act like a reflector when its length is adjusted to the low-frequency side of resonance (made longer). The parasitic element will act as a director when its length is adjusted to the high-frequency side of resonance (made shorter). When two parasitic

elements are used as we have done, optimum gain and directivity result when one is used as a reflector and the other as a director.

The radiation resistance at the center of the driven element of a three-element array like the one we are considering is a function of the element spacing and the lengths of the parasitic elements. The resistance tends to be lower the closer the spacing between the parasitic and driven elements. In general, if you want to maximize the gain of the antenna you will sacrifice some in the front-to-back ratio. If you want to maximize the front-to-back ratio, you will sacrifice in the gain of the antenna. If you want to design the antenna to have a specific radiation resistance for matching a transmission line, then you will probably not have either maximum gain or maximum front-to-back ratio.

In addition to the above factors there are several other factors that are of interest in the design of a parasitic array. Two of these are the bandwidth of the antenna and the addition of other parasitic elements to the array. We will not deal with these factors at this time.