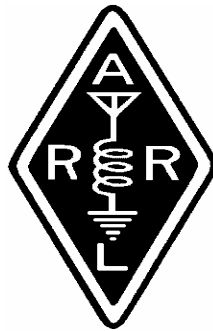


Nacogdoches Amateur Radio Club

Pres: Andy Delgado - KE5EXX

VP: Lon Glaze - AE5BN

Sec/Treas: Army Curtis - AE5P



DECEMBER MINUTES

The December meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on December 3rd. Twenty-five members and fourteen guests were present. **President Andy, KE5EXX**, opened the meeting at 6:00 p.m. in the Parish Hall of Christ Episcopal Church. Each person present introduced himself. Minutes of the previous meeting were approved as published. Treasurer's report was read.

Army - AE5P, made a motion to make a \$200 donation to the Church in

thanks for them letting us use their facilities each month for our meetings and VE testing. Approved.

2008 President Andy - KE5EXX, turned the meeting over to the 2009 President, Lon - AE5BN, who was able to close the meeting at 6:15, a new all time record for the shortest meeting ever!

This being our annual Christmas party, we proceeded to eat the wonderful food that our members and guests had brought, followed by our White Elephant Auction, hosted by our resident auctioneer, KC5MIB. The auction raised a total of \$617 for the club. In addition, AE5P donated an Icom W2A dual band handheld with many accessories for raffle,

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.

which raised an additional \$143 for the club.

It was a great evening, and everyone seemed to have a great time of it. Many thanks to all who worked so hard to make it a success. You'll find pictures of the evening at the end of this newsletter.



HAMMING IT UP

Wow, another year has flown by fast. I had a great time at the party this year and I hope you all did too. I also got a great deal on the computer printer/copier/scanner.

It works great and it didn't even need ink. Best \$5 I ever spent. I hope Army didn't get in too much trouble over that. Wink, Wink, Nudge, Nudge!

I haven't really talked a whole lot on the radio lately. I was feeling kind of puny last week. I had a fever and when I would

get up I would feel woozy. Kind of strange that I didn't have any other symptoms. I did get over it and seem to be feeling fine now.

I was glad to hear KD5FHL Bob back on the air. If you haven't heard Bob had a triple bypass. Let's keep Bob in our thoughts and prayers. Glad to have you back on the air with us Bob.

I got an email the other day with a link in it to the Soviet Woodpecker Antenna. If you are on dialup you might want to skip it but take a look. This thing was huge.

<http://www.artificialowl.net/2008/12/abandoned-giant-duga-3-system-antenna.html> Some of you that have been hams a long time have probably heard this thing before. It was responsible for a lot of interference on the radio and telephones worldwide. There were many complaints and the Soviets did not shut it down until after the Chernobyl incident. The close proximity to Chernobyl

probably had something to do with them finally shutting it down. There are some other things on that site that some you might be interested in.

It is that time of year again. The January VHF Sweepstakes is the 17th-19th. It begins 1900 UTC Saturday and ends 0359 UTC Monday. Rovers will be out and we would appreciate all contacts. I am sure that Marshall will be updating us with a time and frequency to meet up with him on 2m FM. We all did very well last year in June and had a great time in the process. I look forward to having a good time this time too. Hopefully, we will be able to make a good showing on this one too.

See you all at the meeting on the 7th.

73 de AE5BN Lon

email: ae5bn@arrl.net

VP's Corner

I had forgotten that the Vice President has an article to prepare each month for the NARC Newsletter. Army was kind enough to remind me.

I would like to start the New Year off with a program on January 7 that is a Question and Answer Session. I believe Kent, KD5SHM, tried this some time ago and everyone seemed to benefit from the Q & A session. Please bring your amateur radio questions to the meeting and we will see if there is someone who is able to answer them.

If you have been listening on the bands you might also bring a report of what you are hearing and what conditions are like at your location. As I am writing this, I am listening to the Texas Traffic Net at 3873. The net control station is KB5TCH in Douglassville, Texas. He is very weak here tonight. This net comes on each evening at 6:30 p.m. and

closes at 7:30 p.m. Give a listen if you have a chance.

See you on Wednesday night.

73, Tom W5TV

VE TESTING

Our next VE testing is scheduled for Wednesday, January 21st 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. Please note the slight increase in the cost of the exams.

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.

NEXT MEETING

The next meeting will be on Wednesday January 7th 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. If you have items for show and tell, please bring them. Hope to see y'all there.

Basic Antennas

Part Three

By Thomas Atchison

The velocity at which electromagnetic waves travel through a medium depends upon the dielectric constant of the

medium. At radio frequencies the dielectric constant of air is 1, so waves travel at essentially the speed of light. If the dielectric constant of the medium is greater than 1, then the velocity is lowered. If we introduce insulating material having a dielectric constant greater than 1 we will cause the radio wave to slow down. This happens when we connect the ends of our wire to insulators and when we connect a transmission line to the antenna to bring the radio wave to the antenna.

Another factor that affects our wire antenna is the ratio of the length of the wire to the diameter of the wire. This is usually called the K-factor. As this ratio gets smaller, the electrical length of the wire becomes shorter. For our half-wave wire, the electrical length is the length of wire required for energy to travel from one end to the other in the time of one-half cycle at the applied frequency (See Part 2). This K-factor is not critical at the lower

frequencies, however, at VHF and higher it becomes significant. For example, if we have an antenna constructed of 1-inch diameter tubing for use on 144 MHz, the K-factor is about 40 and we would need to reduce the electrical length about 5 percent from the length of a free-space half wavelength antenna.

As mentioned above, we use insulators at the ends of our wire antenna and there is a loop of wire that goes around the insulator. The loop adds a small amount of capacitance to the system. This is called an end effect. Because of this end effect, the standing wave of current does not quite reach zero at the ends of the wire. This is because a small amount of current flows in the end capacitance. This end effect increases with frequency. The way the wire is looped around the insulator and the size of the insulator both affect the amount of end effect capacitance in a wire antenna. In practice, we usually cut the physical

length of the antenna a little long and 'prune' the length to resonance.

As we stated above, the current is not exactly zero at the ends of our practical half-wave wire antenna. Similarly, the voltage is not exactly zero at the center. A more accurate statement would be that the voltage is minimum at the center. In fact, according to Ohm's law, if we had zero voltage with an associated non-zero current, then the resistance would have to be zero. Obviously that is not the case for a piece of wire.

In our Basic Electronics series we talked about impedance. We defined the impedance of a circuit to be the voltage divided by the current. In the case of our wire antenna, the impedance is equal to the voltage applied to its terminals divided by the current flowing into those terminals. If the current and voltage are in phase the impedance is purely resistive. If the current and voltage are not in

phase, then the antenna will have reactance as well as resistance. This reactance will be capacitive reactance if the current leads the voltage and inductive reactance if the voltage leads the current.

If the frequency applied at the center of a half-wave antenna is the resonant frequency the current will be in phase with the voltage at the input terminals and we have pure resistance. A half-wave antenna has resistive impedance at the center that is approximately 70 ohms. If the applied frequency is lower than the resonant frequency, the phase of the current will lead the voltage and the reactance will be capacitive. If the applied frequency is higher than the resonant frequency, then the phase of the voltage will lead the current and the reactance in the antenna will be inductive reactance. This means if we have an antenna that is cut too short so that the resonant frequency is higher than

the applied frequency, then the antenna will exhibit capacitive reactance. Similarly, if we cut our half-wave antenna too long, the antenna will exhibit inductive reactance.

In a practical wire antenna for a band of frequencies, we may cut the antenna to resonance at the center frequency of the band. When we tune our transceiver away from this frequency, either up or down the band, we introduce inductive or capacitive reactance.

The Party



Our terrific auctioneer, John - KC5MIB, trying his best to stir up some interest in bidding.



And trying to stir them up is always a challenge :o))