

Nacogdoches Amateur Radio Club

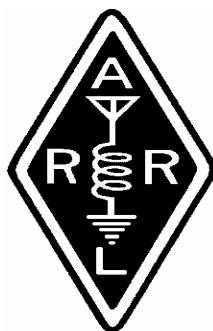
Pres: Lon Glaze - AE5BN

VP: Tom Atchison - W5TV

Sec/Treas: Army Curtis - AE5P

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.



FEBRUARY MINUTES

The February meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on February 4th. Twenty-three 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 read.

The Shuttle Columbia Special Event Station operation is scheduled for

Saturday, February 7 at McMichael Middle School. The day will begin with breakfast at IHOP at 7:00 followed by antenna raising at 8:00. K5QE will bring a 756, computers will be by KC5MIB and N5AIU. All are urged to participate.

The club's liability insurance is due. Motion made to pay the renewal. Approved.

A short report was given on the January VHF contest.

The Orange Hamfest is coming up the end of February. Belton will be the second Saturday in April.

John, KC5MIB, produced a great Public Service Announcement (PSA) on the Columbia Special Event Station that is getting lots

of air time on local radio stations.

Meeting was closed at 7:20 p.m.

Show and Tell:

K5QE: 2nd place certificate US and VE for the January 2008 VHF contest. A 2 meter cheap yagi made on a PVC boom. Very nice looking antenna.

WK5F: his new Yaesu VX8R handheld.

Program for the evening had to be cancelled when the presenter did not show.



HAMMING IT UP

When I first got back into amateur radio I cut a hardiplank board and drilled some holes in it. One set for ladder line and one for a coax. This somewhat limited me on what I could do outside antenna wise. I decided

that I wanted to make it a little easier to experiment with antennas without having a whole rat nest of wires coming in. About a month or so ago I ordered a MFJ-4600 Balanced Line /Coax Feed through Panel. I ordered it from R&L Electronics because they had it a little cheaper. I might have got it a little faster if I had ordered it straight from MFJ. I could probably have built something similar to this but decided that I would be lazy this time. This panel has four sets of ceramic feed through insulators for ladder line, two SO-239 connectors for coax, and one for a ground. I had this shipped to my work and when the UPS guy got it off the truck I had no idea what it was in the box. This box was about six feet tall. I figured out what it was when I opened it up. I got it home and did some measuring of the window before cutting it. Remember, measure twice cut once. I measured twice and had to cut twice. Oh well at least I hadn't cut it too short. This kit

included a long board to put in the top of the window to keep someone from opening the window from the outside. It also included some foam to seal it with. It wasn't quite enough to seal it quite like the instructions said to. Fortunately the windows in my house kind of seal themselves at the top when open. I measured my coax and made my cut. I installed new PL-259s. I also measured and cut my ladder line. I installed forks on both sides to make it easier to get on and off. I feel like it makes a good looking installation. Now that I have this panel installed, I need to figure out how I am going to do a 160m antenna on my place. I want to feed this with ladder line like I use feed my 135' dipole. This panel will allow me to switch between two or more ladder line fed antennas without having to have a switch. When I want to change antennas I can simply move the ladder line to the tuner from one set of feed throughs to another. Not quite as fast

as a switch but probably fast enough.

73 de AE5BN Lon

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VP's CORNER

Our next meeting will be on Wednesday, March 4, at 7:00 p.m. Put it on your calendar because we have a great program planned for that meeting. Jerry Wilson, K5JLW, will present a discussion entitled "The Clothesline Antenna". You may want to try this antenna out in your back yard. In addition, I think it will give each of us an appreciation for matching a transmission line to an antenna.

On 80 meters last Tuesday evening I was very excited to work DF2PY in Germany. He was running 700 watts and I was running 100 watts to a dipole antenna. Long skip was definitely 'in'. Check the bands often and let me know what you are hearing.

See you at the meeting.

73, Tom W5TV

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VE TESTING

Our next VE testing is scheduled for Wednesday, March 18th at 7:00 p.m. in the Bailey Library 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

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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 March 4th at 7:00 p.m. in the Bailey Library 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 Five

By Thomas Atchison

Let's think again about our ideal transmission line that is infinitely long. If the characteristic impedance

of the line is 300 ohms then we can cut the transmission line at any point and insert a 300 ohm resistor across the two wires. The result is that the line looks infinitely long to any signal that is fed into the other end of the line. The voltages and currents are just the same in the transmission line as they would be if the line were infinitely long. If the line had no losses, all the power put into it would be delivered to the terminating resistance.

Now, suppose we replace the resistor with an antenna whose impedance is 300 ohms. If the transmission line has negligible losses, an ammeter inserted anywhere along its length will give the same reading. Also, a voltmeter connected across it at any point will give the same reading. There are no standing waves of current or voltage such as we find along an antenna, even though the line may be many times longer than the antenna. This is true only when the line is

terminated in its characteristic impedance. In this case there will be a maximum transfer of RF energy from the transmission line to the antenna. The energy is then radiated from the antenna as electromagnetic waves as we desired.

In a more practical situation, the conductors of the transmission line have resistance of their own. Also, the insulation between the two conductors is not perfect so there is some leakage between the two wires. Some of the power introduced into the transmission line is used up by the losses in the line itself. This power is converted into heat. We are assuming that the wire conductors are close enough together that there is no radiation because of cancellation of the fields.

If the load connected to the far end of the line does not exactly match the line's characteristic impedance, then some of

the power reaching the end is absorbed by the load and some of it is reflected back toward the input end of the line. We then say that a mismatch exists between the transmission line and the antenna. The worse the mismatch, the greater the proportion of power reflected back.

On a mismatched line there are standing waves because some of the power is reflected back along the line. The reflected voltage and current can't completely balance out the incident voltage and current at the nodal points unless there is as much coming back as there is going out. Since this is not the case, there are no points of zero voltage and current along the line. Instead there are points of minimum current and points of minimum voltage. Similarly, there are points of maximum current and points of maximum voltage.

If we move along a mismatched line measuring the amplitudes of the

current and voltage we would discover that both vary along the line with maximum and minimum points that are one-quarter wavelength apart. This is what we discovered in our antenna earlier. The ratio of the voltage at a maximum point to the voltage at a minimum point is called the voltage standing-wave ratio (VSWR). We usually just say this is the standing-wave ratio (SWR). If there is very little power reflected from the load then there is very little variation in the current and voltage along the line. This means that the SWR would be low. This would be the case if the line is nearly matched to the antenna. If the mismatch between the transmission line and the antenna is large, then the power reflected back along the line would be large and the SWR would be high.