

Nacogdoches Amateur Radio Club

2006 CLUB OFFICERS

President: Tom Atchison - W5TV

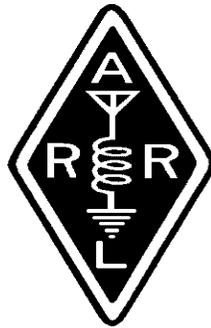
VP: John Chapman - KC5MIB

Sec/Treas: Army Curtis - AE5P

JUNE MINUTES

The June meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on June 7th. Nineteen members and five guests were present. **President Tom, W5TV**, opened the meeting at 7:00 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.

Field Day: **Tom, W5TV** reviewed assignments as published in last month's newsletter.



Kent, KD5SHM, gave a report on the Neches River Run held last Saturday (June 3rd). Over 300 people came out to float down the Neches River.

Marshall, K5QE, reports that he now has K5QE-10 on the air from his contest station site, and he would like to receive reports of how well it works. **Kent, KD5SHM** and **Alan, NE5AH** are talking about doing a Winlink net.

Kent, KD5SHM proposed that the club purchase the latest Technician license study books, and make them available to interested persons for a

deposit. Motion made and carried.

Jerry, K5JLW, reported on his Technician classes and testing in Lufkin. He expects about 15 to test tomorrow evening, and he will soon begin another class with 20 - 30 more. Contact Jerry for more information.

Several door prize drawings were held, with Icom frequency charts and Icom/Yaesu caps given away that were brought from Dayton by AE5P.

Meeting was adjourned at 8:15 p.m.

Show and Tell included a hand-cranked lantern by **Robert, KD5FEE**.

Program: An excellent program on coaxial stubs for tuning and matching

was presented by Marshall, K5QE.

PRESIDENT'S CORNER

Summer is here and the club has another successful field day in the books. As I understand, this was the most successful field day the club has had in terms of contacts, food, and fun. I'm sure there will be much discussion at the next club meeting on July 5. Come and share your experiences.

If you will go to the ARRL Web Site www.arrl.org you will find an excellent article entitled 'Tips and Tonics for Healthier Radio Clubs'. This article offers some excellent suggestions for us to consider so I hope you will take some time to read it. I believe one of the important parts of being a Ham is participating in the meetings of the club and helping others to experience Amateur Radio. The VE Testing that is provided by our club is an

excellent service to Amateur Radio because it brings new members into the hobby and, in many cases, into our club.

For those of you who enjoy contests, we have the ARRL UHF Contest on August 5 - 6, the ARRL VHF QSO Party on September 9 - 11, and Sweepstakes on November 4 - 6 (CW) and November 18 - 20 (Phone).

Come to the meeting on July 5 and bring "Show and Tell" to share.

73 de Tom, W5TV



V.P.'s CORNER...

Field day has come and gone. Wow! Was that a good time! Thanks, again, to everyone that put in the time, effort and energy to work the stations. We made a number of contacts, Canada on 6 and Mexico on 40, I truly think a good time was had by all. I really want to especially

thank Kent for his help and past knowledge of how we put up field days before and Mike for the great food. Okay, now please don't feel slighted, everyone that was there put in a lot of hard effort and struggle. You should have seen us scramble to get the plastic sheeting up to keep the rain off of the equipment. NOTE TO SELF: get a boxed roll, a staple gun and more clothes line cord.

Henry Middlebrook, N5SHL, sent me an e-mail from the Navy-/Marine MARS ETX State Director, Bob Cox AB5X/NNNOGBW. He is asking for folks to become members of the Navy-Marine MARS team. We have had a presentation from Army MARS and one or two of our members are affiliated with MARS. The MARS program not only supports the Morale and Welfare of our Military members but also, like us is emplaced during a time of emergency. I watched the local MARS team work a National Disaster Medical exercise

at Kelly. It was interesting to see them in action. If you are interested please contact me, I'll get you an application. You do not have to be a General or above to work as in MARS, but you do have to have a radio capable of operating in the HF bands and outside of the normal Amateur radio segments.

Net Ops, we've have a pretty good turn out for net ops this past month, but we missed the 3rd Monday. I have a scheduled activity the 3rd Monday of each month so I can't cover that day. Please listen for the Net, if it isn't called please chime in and call the net. You don't need the logging software to run the net, a stubby pencil and piece of paper work just fine, I use that regularly.

I haven't anything planned for the program this week, so please bring your goodies for show and tell, maybe we can work on a couple of J-poles Wednesday night. Have a great 4th of July and

remember our service women and men in your thoughts as we go about our activities this week.

73 to all,
John Chapman
e-mail:
jlchapman2@juno.com or
kc5mib@arrl.net

VE TESTING

Our next VE testing is scheduled for Wednesday, July 19th 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 \$14 to cover the cost of the exam(s). Correct change is always very much appreciated.

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 July 5th at 7:00 p.m. in the Parish Hall of Christ Episcopal Church. This is at the corner of Starr and Mound Streets in Nacogdoches. Hope to see y'all there.

COAXIAL STUBS FOR TUNING AND MATCHING

By K5QE

A. Transmission line facts and fancy

1. Terminations (also called the load) -- open, short, or something in between. Every piece of coax has a characteristic impedance. Example: RG-8 has a characteristic impedance of 50 ohms. RG-59 has a characteristic impedance of 75 ohms, and so on.

a. A shorted piece of coax (termination=dead short) -- draw a voltage chart.

b. An open piece of

coax (termination=infinite ohms) -- draw a voltage chart.

c. Termination exactly equals the characteristic impedance (FLAT LINE).

d. Termination is not open or short but is also not equal to the characteristic impedance. Draw a chart.

e. $VSWR = V_{max} / V_{min}$

2. Radio waves travel slower in coax than they do in a perfect vacuum. The ratio between the speed (velocity) of radio waves in a piece of coax and the speed (velocity) in a perfect vacuum is called the "velocity factor" of that coax. So $VF_{coax} = V_{coax} / V_{vac}$. Because of the velocity factor, THE PHYSICAL LENGTH OF A PIECE OF COAX IS ALWAYS LONGER THAN THE EQUIVALENT ELECTRICAL LENGTH.

RULE: It is the Electrical length that matters not the physical length.

EXAMPLES: The velocity factor of common RG-8 and RG-58 is 0.66. The velocity factor of LMR-400 is 0.85. The velocity factor of LDF (all types) Heliax is 0.88.

NOTE: From here on, everything will be in **ELECTRICAL** lengths not physical lengths.

B. A coaxial stub is nothing more than a short piece of coax in parallel with your feedline. Normally, we use a T fitting to attach the stub, but it could be soldered directly in place.

C. Special Cases are very interesting, so let's look at them first

1. Shorted quarter wave of coax. Remember the voltage chart.

NOTE: One quarter wavelength from a high voltage point is a voltage node (Min)--and vice versa. So a shorted quarter wavelength of coax at frequency F appears open to frequency F, but appears like a short to

other frequencies. Hence we have a band pass filter--it allows F to pass, but attenuates other frequencies.

2. Open quarter wave of coax. Looks like a short at frequency F, but not at other frequencies. Hence we have a "band stop" or "trap" at frequency F.

ASIDE: A half wave of coax repeats the impedance. Whatever impedance you see at one end, you will see exactly that same impedance at the other end. However, the phase will be reversed. A full wave of coax (being two half waves) also repeats the impedance, but shows the same phase as the input end.

D. General rules

1. An open piece of coax less than a quarter wavelength is a capacitor.

2. An open piece of coax longer than a quarter wavelength but less than one half wavelength is an inductor.

3. A shorted piece of coax less than a quarter wavelength is an inductor.

4. A shorted piece of coax longer than a quarter wavelength but less than one half wavelength is a capacitor.

E. Using a coaxial stub for tuning.

1. Insert a T fitting into your feedline.

2. Attach a halfwave of coax to one port of the T
HINT: Start long--use a physical halfwave of coax to be sure you are too long.

3. Attach your antenna to the other port of the T

4. Put your Bird Wattmeter or MFJ Antenna analyzer in the feedline on the rig side of the feedline. Watch the meter.

5. Start trimming...cut off short pieces of coax and see what happens. You should be able to find a length where $R=50$ ohms and $X=0$. It may not be

perfect, but you should be able to get the VSWR down very low.