September 2009 **Volume 9-2009**

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.

SEPTEMBER MINUTES

The September meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on September 2nd. **President Lon, AE5BN**, 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 they will be published. The Treasurer's report was not available.

Announcements:

1. The Belton Hamfest will be on October 3.

2. The Texas QSO Party will be the last weekend on September.

3. The September VHF QSO Party will be on September 12-13. K5QE will be listening on 146.46 at 9:00 p.m. on both Saturday and Sunday.

Unfinished Business:

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

2. The Telpac Node needs some work at the Fredonia Hotel.

3. We may want to check the expiration of our RACES cards because they may be expiring soon.

4. John, KC5MIB, is stepping down from the position of Emergency

Coordinator. Ronnie Kimbrough KE5LWV has agreed to take on the job.

New Business:

None

Show and Tell:

1. W5TXR passed around an IRC since many people may not have ever seen one.

2. W5TXR also showed an Elecraft 220 MHz transverter kit that his is building.

3. K5RNT showed some QSL cards that he had received for 6 meter contacts.

4. K5QE showed a rotor loop that had had water in it. He had transmitted with about 1250 watts on 144 MHz and the heat melted the foam and completely displaced the center conductor.

Meeting Adjourned.

Program: K5RNT invited everyone out to the parking lot to see his rebuilt VHF/UHF rover.

Newest member:

Please join me in welcoming our newest member, Sherry Christiansen, KB5FCB. Sherry has been a novice for several years, and recently upgraded to Technician.

HAMMING IT UP

Howdy all. We had a great time during the September VHF Contest this month. Army went out with Jonathon on Saturday and Rusty on Sunday. John and I went out together both days. We did run into some technical difficulties with my secondary battery that supplies the extra volts for the relays. This was an Optima 12 volt Red Top battery that I use for winching on the trailer and as a secondary battery in the Toyota Highlander. I have placed this battery in one of the fancy marine style boxes that they sell at Wally World. Army gave us a report that he didn't think the relays were pulling in and to make sure the secondary battery was hooked up. I looked and sure enough the Anderson Power Poles are hooked up to the relays and the screw terminals on the outside of the battery box are tight. I wiggled the wire and sure enough there is a loose connection in the ring terminal. I pull on the wire and apparently the ring terminal is two piece in the crimp part. I cut off the part of the ring terminal and start to strip the wire with my pocket knife. About this time Army calls and I just hand the phone to John. Army must have told John to tell me to hurry up cause I heard John say, "I'm not telling him anything, he has a knife in his hands!" I got the wire stripped back and try to get the the screw terminal loose on the outside of the marine type battery box and the whole terminal comes loose when I try to unscrew the

wing nut. I then took the top of the box off and got the wires made straight to the battery. The rest of the weekend went pretty well compared to those first few hectic minutes. We didn't have a whole lot of contacts with folks other than club members. John and I ended up with about 35,000 points. I believe that Army ended up with around 37,000 points. Not bad considering how bad the bands were and how dead 6m was.

I know that some of you participated in the TX QSO party and I hope you all had fun that weekend.

73, this is AE5BN Lon.

email: ae5bn@arrl.net

VP's CORNER

The next meeting of the Nacogdoches Amateur Club will be on Wednesday, October 7, at 7:00 p.m. at Christ's Episcopal Church.

Army Curtis, AE5P, plans to provide a demonstration of receiving PSK31 for our program. This is an exciting digital mode with lots of hams on the bands using it.

If you have 'Show and Tell' items, please bring them to the meeting. Folks are always interested in what is new around the club.

See you at the meeting!

73, Tom W5TV

email: w5tv@arrl.net

VE TESTING

Our next VE testing is scheduled for Wednesday, October 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. 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 October 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 11

by

Thomas Atchison W5TV

Let's talk about connecting an antenna to our transmitter. Most of today's solid state transmitters are designed to work into a 50Ω load (antenna). Usually the full rated output will be delivered when the transmitter is connected to such a load. That is, if the transmitter is working into a load that deviates very much from a 50Ω load, then protection circuits reduce the output to protect the finals. We have talked about standing wave ratio (SWR) earlier.

Most modern transmitters will begin to reduce the output when the SWR exceeds 2:1. One of the neat things about older tube type equipment is that they are much more tolerant of higher SWR. Most of these older radios have a matching network, usually a pi-network, which allows the transmitter to work into a much wider variety of loads.

In order to get the best possible signal out we usually put our antenna outside our ham shack and as high as possible. The connection between the transmitter (located in the shack) and the antenna is the transmission line. The impedance at the input of a transmission line is determined by many factors, including the characteristic impedance of the wire, the velocity factor of the wire, the frequency we are using, etc. We may want to discuss these factors in more detail later when we talk about different types of transmission lines.

We are also concerned about the connection between the transmission line and the antenna because an antenna has a characteristic impedance depending on where we connect the transmission line. The question is then, what is the impedance of the transmission line at the point where we connect the transmitter? What if the SWR measured at the input of the transmission line is much higher than 2:1? If we want to use this antenna system with a solid state transmitter, then we must have some way of matching the transmitter output to the transmission line input.

Such a matching device is sometimes called a trans-match, for 'transmitter matching'. This is an impedance matching network that is connected between the transmitter output and the transmission line to allow the transmitter to 'see' a 50Ω load. Some people call this an antenna tuner; however, it DOES NOT change the characteristic impedance of the antenna. The SWR on the transmission line will not be altered in any way. That means that if you are looking at a loss in your antenna system because of a high SWR, that loss will NOT be changed using a matching network.

The basic system for many amateur stations is at Fig. 1:

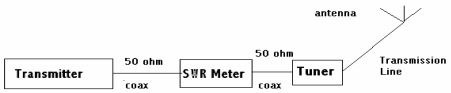

Fig. 1

Most modern transmitters have an output that grounds one side, therefore we show the transmitter connected to the SWR meter with 50Ω coax. We also show the SWR meter connected to the tuner with 50Ω coax. The transmission line may be constructed of coax (unbalanced line) or it may be parallel conductor line (balanced line). All of this depends on the type of antenna system you have.

The matching system (tuner) can be as simple as a capacitor-inductor combination or it can consist of a variable inductor and multiple capacitors (see Fig. 2).

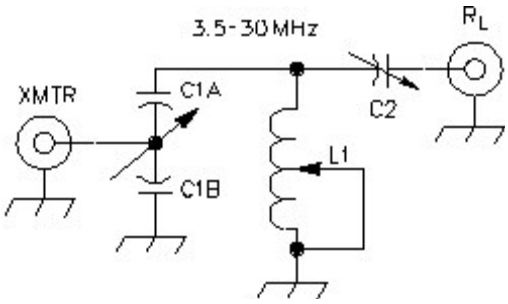

Fig. 2

We won't get into the values of C1, C2, or L1 at this time however; you can locate many different configurations in the ARRL Handbook with specified components.

We will attempt to discuss transmission lines in the next few articles.