March 2006 Volume 03-2006

Nacogdoches Amateur Radio Club

2006 CLUB OFFICERS

President: Tom Atchison – W5TV

VP: John Chapman – KC5MIB

Sec/Treas: Army Curtis - AE5P

MARCH MINUTES

The March meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on March 1st. Twenty-two members and six guests were present. **President Tom, W5TV**, 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. Treasurer's report was read.

Special certificate was presented to **Judith, KE5FUZ,** for her participation as a rover in the last VHF/UHF contest.

A new antenna has been installed at the Nacogdoches County Annex, which will be the County's new EOC. Many thanks to **Kingham Construction** for their donation of time and materials to get this done.

Discussion held on the Shuttle Columbia Special Event. Attendance was way down, especially from out of town. It was a good training exercise, but we need more club participation.

Army, AE5P asked for a motion to approve payment of our liability insurance renewal. Approved.

Discussion held on the upcoming Field Day. Was decided to hold it again at Pecan Park, with the club furnishing food for Saturday evening.

Howard, KI5KR, Jerry, K5JLW, and **Kent, KD5SHM** were appointed to a committee to explore and make recommendations back on possible club construction projects.

Skywarn Training will be held on Thursday, April 6 in the Boynton Building on the SFA Campus.

Marshall, K5QE, presented new Texas call sign name badges to **W5TV, AE5P**, and **KD5SHM**.

KA5BQM, Johnny, will be hooking up the TNC at **K5QE's** contest station.

Meeting was adjourned at 7:45 p.m.

Program: Ken Winkler, AAA6TX, the Texas State MARS director, presented a program on MARS, the Military Amateur Radio program.

PRESIDENT'S CORNER

Since the weather is warming up it is time for hams to begin thinking about antennas. As we have discussed before, one of the most inexpensive antennas to experiment with is a wire antenna. I have been thinking about putting up a long wire antenna for several months and the warm weather forced me to 'get on with it'. In order to encourage you to consider such experimentation, I would like to briefly describe the antenna I recently installed.

First, I found a spool of 500 feet of number 14 stranded wire on sale, so I purchased it. I stored it in a cabinet for several months trying to decide exactly what I wanted to do. I finally decided to erect an inverted L antenna and make it as long, and as high, as possible. Since I have a very tall pine tree on the south side of my house, I used a fishing rod and reel to throw a line over a limb that was about 60 feet in the air. Once that was done, I used the line to pull the wire over that limb and run it into the shack. The other end was still on the spool, so I simply laid it on the ground and began to consider which tree to use to further support the wire. After looking in several directions, it was decided to throw another line over a similar pine that was about 150 feet from the first one. Having accomplished this, the line was used to pull the other end of the wire over a limb that was also about 60 feet in the air. The antenna was then slanted down at an angle of about 45 degrees and attached to a bungee cord that was about 5 feet off the ground. The wire was cut and tied off at that point. The result was an antenna of total length about 300 feet with a vertical component about 60 feet long, a horizontal component about 150 feet long, and a slant component about 90 feet long.

The antenna is fed into an MFJ antenna tuner that is grounded to a copper rod. Initial tests showed that the antenna would load on all bands, however, it was better on some than others. In particular, I wanted it to load on 160. It didn't seem to want to operate on 160 as well as would be desired, so I unrolled more wire to use as a counterpoise. This wire was connected to the ground strap and two lengths were used, one about 125 feet and the other about 75 feet, using up the remaining wire. The counterpoise helped the antenna load on 160 with an excellent SWR between 1875 and 2000. The icing on the cake is that the antenna is a crackerjack on 30 meters. It loads beautifully there and I have worked a number of

stations with 5 watts and excellent reports.

Get out your wire and experiment! Each situation is a little different so you may need to play with different lengths and heights, but the results are certainly worth the effort.

73 de Tom, W5TV

V.P.'s CORNER…

It's official, we have Pecan Park for Field Day this year. So please mark your calendars for the last weekend in June, the 24th and 25th. We'll have the pavilion and park space for those days and over night.

By the time you read this the Heart Beat 5K has been run. We got a late notice of this one; just Tuesday before the event. Thanks to AE5P, KD5FEE, KD5ING, KC5IIT, KC5MIB and WK5F for coming out and supporting this.

Have you checked the batteries in your go gear lately? Are they still in good shape? Are they past the expiration date? Have you cycled the batteries in your handheld? Have you checked the fluid levels in your back up station batteries-that is if you are using wet batteries? Batteries are so easily over looked. I was in a class a few years ago with a broadcast engineer from Chicago. He worked in the same building as the *cough, cough* World Famous Jerry Springer. New batteries were installed in all of the wireless devices used for the production before the show started. You can see how important Jerry and his producers think batteries are for his show. Now, how important are batteries to you and your kit?

Marshal will be presenting a piece on Wire antennas. The oldest antennas used for long stretches of wire and in some applications are still being used and used quite well, please come over for our regular meeting Wednesday April 5th at Christ Episcopal Church. Bring your show and tell goodies. Andy KE5EXX told me he has something new to show off.

AND we will have our Sky Warn certification training. Remember this is a certification class and the certification is good for two years. The reminder has gone out on Hamlist and a reminder will be sent again on the nets. It will be the April 6, on the SFA Campus in the Boynton Building, Room 104. If you need directions, please let me know they will also be posted a couple more times on the list.

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

VE TESTING

Our next VE testing is scheduled for Wednesday, April 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 April 5th at 7:00 p.m. in the Bailey Library of Christ Episcopal Church. This is at the corner of Starr and Mound Streets in Nacogdoches. Hope to see y'all there.

BASIC ELECTRONICS Part Three

By Thomas Atchison, W5TV

Let's look at a circuit that contains resistors in parallel. A circuit node is any point in a circuit where two or more conductors connect. A node is the point where two resistors connect. The point where a wire connects to a battery is also a node. Most of the time we look for nodes that are branch points in the circuit. At least three conductors connect at that point. In Fig. 1 we have identified two nodes, node A and node B.

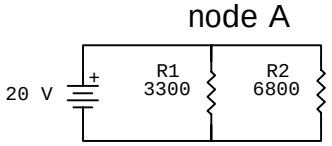


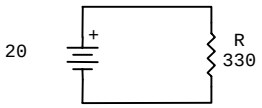
Fig 1

If we think of the current, I_T, flowing from the + side of the 20 volt battery into node A, then we realize that the current splits into current I_1 flowing through R1 and current I_2 flowing through R2. We now observe that **all currents flowing into a circuit node must equal all currents flowing out of that node**. If we express the above statement in symbols we have

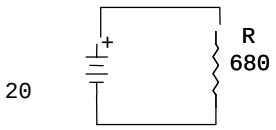
$$I_T = I_1 + I_2.$$

This equation represents the three quantities we want to find. The question is, how do we find them?

To calculate the currents in this circuit we go back to Part 2 and use the Voltage Law. We can identify two voltage loops in the circuit of Fig. 1. One loop includes the battery and R1 and the other loop includes the battery and R2.



Loop 1



Loop

The current in loop 1 is I_1 = 20 v / R1 = 20 / 3300 = 0.00606 A = 6.06 mA.

The current in loop 2 is I_2 = 20 v / R2 = 20 / 6800 = 0.00294 A = 2.94 mA. Therefore, the total current in the circuit of Fig. 1 is I_T = 6.06 + 2.94 = 9 mA.

We now know the total current in the circuit of Fig. 1 (I_T = 9mA) and we know the voltage (E = 20 volts). We now ask what resistor, R, would be equivalent to the resistors R1 and R2 in the circuit? In other words, what resistance R would produce a current of 9 mA when a voltage of 20 volts is placed across it? Ohm's law comes back into the picture. In this case

$$R = \frac{E}{I_T} = \frac{20}{0.009} = 2222 \text{ ohms.}$$

Another way of looking at this situation is as follows. Since we have the relationship

$$I_T = I1 + I2,$$

We may use Ohm's law in the form

$$I = \frac{E}{R}$$

to write

$$I_T = \frac{E}{R} = \frac{E}{R1} + \frac{E}{R2}.$$

Since the voltage, E, is common in this equation, we may divide through by E to get the relationship

$$\frac{1}{R} = \frac{1}{R1} + \frac{1}{R2}$$

This is the way to combine two resistors in parallel.

The statement that THE SUM OF ALL CURRENTS FLOWING INTO A CIRCUIT NODE EQUALS THE SUM OF ALL CURRENTS FLOWING OUT OF THAT NODE is called Kirchhoff's Current Law. We have combined this with Kirchhoff's Voltage Law to solve the unknowns in the parallel circuit of Fig. 1. This process can be used to solve more complicated circuits. To practice what we have discussed before, consider the circuit in Fig. 2.

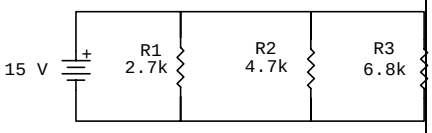


Fig. 2

Now try using Ohm's Law to determine the value of a single resistor that would be equivalent to the circuit in Fig. 2. The result of this exercise should suggest how you can combine three resistors in parallel. That is

$$\frac{1}{R} = \frac{1}{R1} + \frac{1}{R2} + \frac{1}{R3}.$$

You should get an answer of around 1400 ohms for the equivalent resistor.

Editor's Corner

Many thanks to the many folks who regularly support the functions and events of our club. We just had our first fun run of the season, and there are more coming up. Cycle the batteries on your HT and come out and play with us. You'll be glad you did, and so will we.

73 de AE5P