May 2006 **Volume 05-2006**

Nacogdoches Amateur Radio Club

President: Tom Atchison – W5TV

VP: John Chapman – KC5MIB

Sec/Treas: Army Curtis - AE5P

MAY MINUTES

The May meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on May 3rd. Twenty-three 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.

Winlink training was held in Nacogdoches on April 19th in conjunction with our VE testing. Many thanks to all who came out to help and to learn.

Field Day 2006. John, KC5MIB reports that Pecan Park has been reserved for us. Food will be handled by **Mike, KD5PFQ** and **Howard, KI5KR**. We plan to operate as 3A.

The Simulated Emergency Test (SET) was held today. Many thanks to **W5TV, KE5EXX, KC5MIB, KE5ASM, KC4LUY, KD5GEN, AE5P, KD5SHM, N5AIU, KC5IIT, KD5WX, WK5F, KD5FEE, AC5Z, KD5PFQ, NE5AH, K5JLW, K5QE,** and possibly others for participating. Winlink was effectively used from Memorial Hospital and from the Nacogdoches Temporary EOC. K5QE-10 was on the air. We need to set time-out timers on all radios.

Marshall, K5QE reminds everyone that the VHF South Barbeque will be Sunday, May 28 at 10:00 a.m. at the K5QE contest station. RSVP to K5QE. Also, remember the June VHF contest on June 10 and 11. All bands from 6 meters up will be used. QSO's with K5QE on any band, any mode, will be appreciated.

Meeting was adjourned at 8:05 p.m.

Program: Bert, AC5Z presented training on written message traffic handling.

PRESIDENT'S CORNER

We have two exciting events coming up in June. The ARRL June VHF QSO Party is June 10-12 and Field Day is June 24-25. The first involves operating on VHF/UHF and the second involves HF operation. Both give us a chance to practice what we all enjoy, operating a radio and talking with other hams. I hope each of you will mark your calendars and participate as much as possible in one or both of these events.

I urge you to check in as often as possible to the nets we have each week on Monday (146.84) and Thursday (147.32) at 8:00 p.m. Consider taking a turn as net control some time. If there is a Monday or a Thursday that you would like to serve as net control, contact either John, KC5MIB, or me and we will help you get started. We need more of our members serving as net control because there will come a time when we need all the net controls we can find. We all need to keep in practice.

Our next meeting will be June 7. If you have some interesting piece of equipment or event that you have enjoyed, please come and share it with the club.

73 de Tom, W5TV

V.P.'s CORNER…

It's almost upon us, Field Day. I'm looking forward to this one. It's been a while since I have participated. I participated in my first Field Day just after getting my ticket. My oldest son came with me and we worked the 10 meter station at W5SC with some other friends. It'll be fun working it again.

We will be running a 3A station. So, here's the gear breakdown as I have it right now and knowing my memory, I may have missed something or just forgot to write it down, so if I did, please let me know. Don't forget some of the other miscellaneous but necessary equipment like coax, Ethernet cable and the like:

RADIOS
John Jordan, N5AIU, ICOM 756
Jerry Wilson, K5JLW, ICOM 756
Bert Fisher, AC5Z, ICOM 756

COMPUTERS,
John Chapman, KC5MIB
Jerry Wilson, K5JLW
John Jordan, N5AIU

ANTENNAS
John Cechin, KC5IIT, The Green Monster
Army Curtis, AE5P, Club G5RV, Butternut
Bert Fisher, 160m Vertical

Miscellaneous
Andy Delgado, KE5EXX, Batteries

Again, if I missed anything please let me know so we can make sure it all gets taken care of.

Disaster Drill 3 May

I again want to thank everyone that participated in the statewide disaster drill. We learned a few things. Ham radio got some news coverage here in the Nacogdoches/Lufkin area. We haven't scheduled the after-action with Alan, Mike and the folks from the RAC. As soon as that is scheduled we'll get the word out.

I won't be at the club meeting, I'm heading home and then towards Tulsa for a family event. Those of you going to DFW for HamCon, have a great time and bring back the details for a report. AND those of you that will compete in the VHF/UHF contest: knock 'em dead.

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

VE TESTING

Our next VE testing is scheduled for Wednesday, June 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 $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 June 7th 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.

School Antennas Up

On Saturday, June 3, the new tower and antennas were installed at McMichael's Middle School. The antennas (a Cushcraft R-8 vertical and a Comet GP-3 VHF/UHF vertical), coax (LMR-400), tower base plate and house bracket were all purchased by NCEC. The tower (Rohn 25) and anti-climb panels were donated by Army – AE5P.

Many thanks to the club members who came out to help, including Bryan - KK5XM, Terry - KE5FVB, Andy - KE5EXX, Andy's trusted sidekick Jimbo, Andrew - KE5GAQ, Erica - KE5FVA, John - N5AIU, Robert - KD5FEE, John - KC5IIT and Army – AE5P.

The new tower and antennas provide an important public service for the community and for the school club, headed up by John – N5AIU. Keep an ear tuned for them; they expect to be hitting all of the major HF contests with their new antennas.

BASIC ELECTRONICS

Part Five

By Thomas Atchison, W5TV

When current flows in a resistance, heat is produced. The heat is evidence that power is used in producing current. The power is generated by the source of applied voltage and consumed in the resistance in the form of heat. Power can be expressed in terms of the potential difference or voltage in a circuit and the current in that circuit. The formula for power (P) in terms of voltage (V) and current (I) is

Power = (volts) * (amps)

or

P=VI

Since power is dissipated in the resistance of a circuit, it is convenient to express the power in terms of the resistance R.

From Ohm's law,

$V = IR$,

therefore,

$P = VI = (IR)I = I^2R$.

In deciding what size resistor to use in a circuit, the first requirement is to have the amount of resistance needed. Consider the circuit in fig. 1

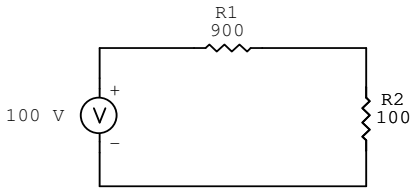

fig. 1

In this case, we are given a resistance in the circuit of 900 ohms (R1) and we want to determine the resistance needed at R2 so the current will be limited to 0.1 A. Using Ohm's law we get:

$$R = \frac{V}{I} = \frac{100V}{0.1A} = 1000\Omega .$$

If the combined resistance $R_T = R1 + R2$ and $R1 = 900\Omega$, then the required value of R2 is $1000\Omega - 900\Omega = 100\Omega$ as shown in fig. 1.

The I^2R power dissipated in R2 equals 1 W. This calculation is

$$P = (0.1A)^2(100\Omega) = (0.01)(100) = 1W$$

Normally, if this were a carbon resistor, we would select a 2 W resistor to provide a safety factor of 2 in the power rating. A resistor with a higher wattage rating but the same R could also be used if there is space to physically put it in the circuit. Wire-wound resistors can operate closer to their power rating, assuming adequate ventilation.

Now consider the example in fig. 2

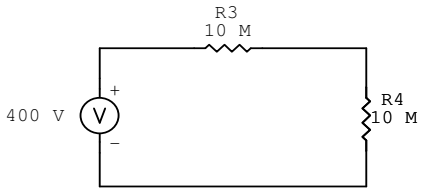

fig. 2

The $10M\Omega$ resistor of R3 is used with the $10M\Omega$ resistor of R4 to provide an IR voltage drop of 200 volts or one-half the source of 400 volts. Since the two resistances are equal, they divide the applied voltage into two equal parts of 200 volts. To calculate this use Ohm's law

$$I = \frac{V}{R} = \frac{400V}{20M\Omega} = 0.00002A$$

or $I = 20\mu A$.

Using Ohm's law again on each resistor we get

$V_{R3} = (20\mu A)(10M\Omega) = 200V$.

Similarly, $V_{R4} = 200V$.

To calculate the I^2R power dissipated in R4 we proceed as follows:

$P = (20\mu A)^2(10M\Omega) = 4mW$.

The normal selection would be ¼ watt carbon resistors (250 mW) for R3 and R4. Observe that the power dissipated in this circuit is small even though we have a relatively high applied voltage of 400 volts. The reason is that the very high resistance limits the current to a low value.