March 2006 **Volume 3-2007**

Nacogdoches Amateur Radio Club

Pres: John Chapman – KC5MIB

VP: Andy Delgado – KE5EXX

Sec/Treas: Army Curtis - AE5P

MARCH MINUTES

The March meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on March 7th. Twenty-eight members and nine guests were present. **Vice-President Andy, KE5EXX**, 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 corrected. Treasurer's report was read.

Please welcome our newest member, **John Streeb, KE5DXJ**. John is a student at SFA, and has attended several club meetings and functions in the past. We are most pleased to have him now officially join the club.

Army, AE5P, reminded everyone that the club's liability insurance is up for renewal, and asked for a motion to approve payment in the amount of $325. Motion carried.

Andy, KE5EXX, asked that everyone keep him informed of their current e-mail address for the Hamlist and WxList reflectors.

SE States VHF Conference will be in Atlanta, GA April 27-28. **Marshall, K5QE** and **Army, AE5P** will be presenting papers at the conference on the new White Rover.

Rusty, KD5GEN proposed a ECWO Net. See article at end of this newsletter.

Kent, KD5SHM, reported on the WinLink project planned for the Fredonia Hotel.

Jerry, K5JLW, will be teaching a General class at Lufkin City Hall.

Reminders: Belton April 14. HamComm June 9 in Plano. Neches River Rendezvous June 2.

Field Day, June 23-24. **N5YA** will present a tower safety class at Field Day. A fox hunting demo is planned by **James, N5VOO**. All will be at

Pecan Park, with breakfast at 7:00 at IHOP.

Skywarn training will be held at SFA on March 24.

Meeting was adjourned at 8:10 p.m.

Special program presented by **Karai, KE5FJN**, **Mike, WD5EFY**, and **Bob Hurst**, on Texas State Emergency Management and RACES. A regional emergency drill is planned for March 20, with ham participation asked for at the trailer EOC and both hospitals.

PRESIDENT'S CORNER

Finally spring is here. It's been teasing us for a while. It's a beautiful day out, and sometimes I miss my yard.

Thanks everyone that attended the SkyWarn training. I saw on the Weather Channel this morning that we are going into the "height" of the tornado season as far as numbers are concerned. Bill Parker from NWS came over to give the class and it was great to listen to him and his tale of weather while traveling in Arkansas. I think everyone had a good time listening to him. Kent, thanks for getting him over.

Our next big event will be Field Day. Most have at least seen the link to the ARRL website for Field Day. It will be the last full weekend in June. It is a great opportunity to get out and be seen by the community and let them know what we do. It's also a great time to get together, operate, visit and learn more about Ham radio. I had a good time last year, and I think we did well even though we got a late start due to weather. But that's what Field Day is all about.

Thanks everyone that participated in the SET. I got my schedule crossed up and couldn't break away. Spring break does that, messes up the month.

Now, apologies. Sorry I missed the last meeting. Something got crosswise with me and I wasn't feeling quite up to snuff.

Look forward to seeing everyone Wednesday at Christ Episcopal.

73 to all,
John Chapman
e-mail: kc5mib@arrl.net

V.P.'s ELEMENT…

I heard a statement one time. "The minute you stop learning you are dead." That's an interesting one.

I am amazed that I learn something new about Amateur radio all the time. Now you have to understand I've only been involved with the activity for two years. That's definitely not enough time to become familiar with even one fourth of what there is to learn about Amateur radio, but I'm learning more and more…and I look forward to it.

We had a visit last month from Karai Tatro, Mike Miles, and Bob Hurst. Bob talked a little about the upcoming SET. Karai talked about the Texas Emergency Management Plan. Mike talked about Texas RACES. By the way, if you filled out a RACES application and have not gotten it back to Mike, bring it to the meeting and we can get it to him.

The Texas Simulated Emergency Test occurred last month; we had a good show of Amateurs on short notice. We staffed both hospitals and the EOC, plus had a net control operator and a "Lufkin Liaison". I think 8 people got involved. We learned a lot.

I attended the National Weather Service Spotter Training this past Thursday. I have to tell you Meteorologist Bill Parker did a FANTASTIC job of teaching us about Storm Spotting. Even though I attended the course last year I wanted to go again so that Andrew, KE5GAQ would go. I think I learned more this time than last. It's been said that repetition is key to learning. You'd think I'd have learned that by now. ;)

We have some exciting things coming up:

- Heartbeat Pregnancy Center has asked for our help providing communications at the upcoming 5K Run. April 7
- Neches River Rendezvous – June 3 – Come operate and get a free T-Shirt.
- The ARRL June VHF QSO Party – June 9-11 – Ops needed, rove with a veteran, rove on your own, operate at the K5QE station.
- ARRL Field Day – June 23-24 – Ops needed, volunteers needed, fans needed.
- HamCom – June 8-9 (Plano, TX) – I understand this is a good one to attend, too bad it falls on the same weekend at the VHF QSO Party

So, during the period from March 1 to June 30, we will have had the opportunity to experience Emergency Communications, Severe Weather Spotter Training, Assisting the community, VHF Contesting, HamCom, and Field Day. I need to take a breath.

Thanks for all that you do. You are a great team. I look forward to seeing you on Wednesday.

73 de KE5EXX
email: ke5exx@arrl.net

VE TESTING

Our next VE testing is scheduled for Wednesday, April 18th 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.

73 de AE5P

email: ae5p@arrl.net

TRAINING MATERIALS

The club has purchased several copies of the latest ARRL "Now You're Talking" books, which provides everything a person needs to be able to pass the Technician class Amateur Radio license exam. Anyone may "borrow" one of these books for a $20 deposit. When you return the book in good condition, you will get your deposit back. Interested? See **Army, AE5P**.

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 4th at 7:00 p.m. in the Bailey Library of Christ Episcopal Church. The Bailey Library is just to the left of the Parish Hall, which will be in use for Lenten services of the church. The church is at the corner of Starr and Mound Streets in Nacogdoches. Hope to see y'all there.

Basic Electronics Part Thirteen By Thomas Atchison

Suppose we apply a sine wave voltage to a capacitor. If the voltage applied to the top capacitor plate is positive during the first sine wave half cycle, this voltage increases from zero so there is a sudden rush of current as the capacitor begins to charge. The flow of electrons is onto the bottom plate since the top plate is positive. That current tapers off as the charge increases. The sine-wave voltage reaches a maximum and begins to decrease to zero again. When the voltage begins to decrease, the capacitor begins to return its stored energy to the circuit. In this case, the current direction changes. Instead of electrons moving onto the bottom capacitor plate, the electrons move off the bottom plate, because the capacitor is returning energy to the circuit.

During the next half cycle, the voltage polarity reverses, so the voltage applied to the top capacitor plate is negative. Electrons continue to move off the bottom plate, and onto the top plate. The capacitor returns all the original charge to the circuit and it begins to charge in the opposite direction. As the capacitor charge increases the current decreases.

After the sine-wave voltage reaches its maximum negative value, the voltage begins to decrease to zero again. Now the capacitor returns

its stored energy to the circuit again.

It would seem that capacitors don't like the applied voltage to change. They react to a voltage change by opposing that change. When the voltage is increasing, they take energy from the voltage supply. This could be thought of as an attempt to prevent the voltage from increasing. When the voltage is decreasing, the capacitor returns stored energy to the circuit. This action works to prevent the voltage from decreasing. This opposition to voltage change is called reactance. It is similar to the opposition to current of a resistor. Because of this we measure reactance in ohms.

So when a capacitor charges and discharges with a varying voltage applied, alternating current can flow. There can't be any current through the dielectric of the capacitor, however, the charge and discharge of the capacitor produces an alternating current in the circuit connected to the capacitor plates. If the voltage applied to a capacitor varies as a sine wave, then the amount of current that results depends on the capacitor's capacitive reactance. The symbol for capacitive reactance is X_C and its unit is the ohm. The capacitive reactance of a capacitor depends on the capacitance, C, and the frequency of the applied voltage, f. The formula for capacitive reactance in terms of f and C is

$$X_C = \frac{1}{2\pi fC},$$

where the frequency, f, is in hertz and the capacitance, C, is in farads. Note that X_C decreases for higher frequencies and for higher capacitance.

As an example, consider a 4-μF capacitor in a circuit with a 120 volt, 60 Hz, applied (Fig. 1).

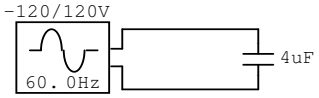

Fig. 1

Here the capacitive reactance of the capacitor is

$$X_C = \frac{1}{2\pi(60)(4 \text{ X } 10^{-6})} = 663$$

ohms.

If we replace the 4-μF capacitor in Fig. 1 with a 1-μF capacitor, the capacitive reactance will be 2652 ohms. So, as we decrease the capacitance, we increase the capacitive reactance.

If the frequency of the applied voltage in Fig. 1 is changed to 4 MHz ($4 \text{ X } 10^6$ Hz), then the capacitive reactance will be 0.01 ohms. In this case we have increased the frequency of the applied voltage so the capacitive reactance decreases.

We can use a form of ohm's law to also calculate capacitive reactance. If we know the voltage across the capacitor in Fig 1, V_C, and the current in the circuit, I_C, then the value of X_C can be measure as V_C / I_C. If we place an ammeter in the circuit in Fig. 1, the meter will read the amount of charge and

discharge current. If this meter shows that I_C is 0.181 A, then the capacitive reactance is $X_C = \frac{120}{0.181} = 663$ ohms.

ECWO Net

E-CodOp Net

Embarrassed Code Operators Net

Group of wanna-be code operators who would like to operate over the air but feel their code skills are lacking.

Purpose/Goals/Objectives

To develop confidence in one's ability to properly work CW

To develop speed in recognition of code characters

To develop speed in sending ability

To increase accuracy in sent code

To recognize and correct poor sending traits

To enable operators to work in some locale so if something is wrong, they can pick up the phone or use email to correct problems.

If local 'Elmers' listen-in, hopefully they will give tips on poor operating practices and how to correct mistakes

To build an interest in one of the fundamental operating mediums that has been a cornerstone in the history of Amateur Radio and many other communication needs.

Need to pick times that are convenient yet not have set times. This could be set up between amateurs that want to work as partners who can work when times are convenient for their situations.

Use frequencies that would allow for cross-town/county and the minimum power to achieve the objective.

6-meters – 50.0 thru 50.1

10-meters – 28.100 – 28.300

Please consider this new net and see if it would fit your needs, wants and desires. This is simply a basic concept that if wanted, can be expanded upon.