May 2007 **Volume 5-2007**

Nacogdoches Amateur Radio Club

Pres: John Chapman – KC5MIB

VP: Andy Delgado – KE5EXX

Sec/Treas: Army Curtis - AE5P

MAY MINUTES

The May meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on May 2nd. Thirty members and eight guests were present. **President John, KC5MIB**, 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 corrected. Treasurer's report was read.

The ARRL June VHF+ Contest is coming up June 9 and 10. Several club members will be going out in Rovers. More operators are always welcome at the K5QE contest station.

Field Day will be June 23-24 at Pecan Park in Nacogdoches. Everything is pretty well set. **Andy, KE5EXX** is the man in charge.

Kent, KD5SHM, reports that the W5NAC-10 Telpac node is now up and running from the top of the Fredonia Hotel.

Ronnie, KE5LWV, reported on the funeral services for Capt. Ivy and thanked the club members who came out to help with traffic control.

Jerry, K5JLW, reported on a hamfest planned for June 30 in Lufkin at the Denman Ave Baptist Church. Tailgate sale, 2M HT raffle, and VE exams are planned. No admission charge.

John, N5AIU, reported that the school club **KD5VVI** scored 1st place in the West Gulf Division in the November SSB SS. Congratulations to John and his students.

Red Cross did Shelter Training for National Guard personnel last Saturday. **Kent, KD5SHM**, made a presentation on Ham Radio.

The July NARC meeting will be a "Build-Fest" for 2M roll-up J-pole antennas.

Meeting was adjourned at 8:50 p.m.

Program on WinLink and Airmail was presented by **KE5EXX** and **KD5SHM**.

Door prize raffle won by **N5AIU**.

KE5EXX took pictures for ARES ID cards.

PRESIDENT'S CORNER

June is almost upon us. Wow, where has the year gone? June will be a busy month for the club; the ARRL June VHF QSO Party will be June 9-11, HAMCOM will be that same weekend and we have Field Day the 23rd and 24th. I will be going to HAMCOM and then traveling to see my son. The computer and the ARRL repeater software will get a work out for the trip. I'm wondering how many repeaters are as traveler friendly as Nacogdoches, I guess that will be an interesting check as I go across to North Carolina.

I want to thank everyone for all the support they have given for the nets. BUT we have a problem. We are short a net control operator for the 3rd Monday of the month. We need a net control. The nets give us practice working in a more formal environment. This is something that will especially come true as the summer with its storms and as the hurricane season opens. Net control isn't hard; I have the announcements in my e-mail and can get them to you. Even though I have net control logging software, I still use a stubby pencil and a piece of paper to keep the log. AND while I'm talking about net control, can someone cover my net, the 2nd Monday in June. I will be traveling and think it may be hard to run a 2M net from Atlanta Georgia.

Kent made some comments on Hamlist about the city plans in case Nacogdoches has to shelter evacuees from the coast. How prepared are you for the upcoming hurricane season? Do you have a go bag fitted out? Do you even have a checklist for what you want to put in a go bag? Does your radio have all the repeaters in Nac loaded? There are so many things to consider. Do you think you are ready as a Ham operator? Are you ready with your family and your pets?

Army has been asked and accepted the position as Legislative Action Assistant. This is a division position. He'll be working with David Woolweaver, the West Gulf Division Vice Director. As most of you know, East Texas isn't represented at Division or Section, so this should show what the division thinks of us. Congratulations Army.

Look forward to seeing everyone June 6th. Maybe Marshall can give us an update on the Barbecue feast over Memorial Day weekend.

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

V.P.'s ELEMENT…

KI5KR DE KE5EXX FAREWELL GOOD FRIEND 73 DE KE5EXX SK

Sadly we saw the passing of Howard Hinton, KI5KR this month. I will remember Howard as always having a smile on his face, kind words coming from his mouth, and a willingness to help out where needed. The same characteristics most HAMs have. I'll miss him.

We had a huge crowd for our last VE Session. Let me take a minute to congratulate everyone who tested!

The June 2007 ARRL VHF Contest is almost upon us. We could use more help if you are available. The K5QE contest station will be in full swing Saturday and Sunday. Contact Marshall if you are interested in helping or watching. Marshall's email address is k5qe@sabinenet.com. If you are interested in being a rover or riding along with a rover, contact me at ke5exx@arrl.net, Army ae5p@arrl.net, or Kent kd5shm@arrl.net. Even if you just want to see what it's like, you can rig up with a couple of mag mount antennas and a multimode radio. You could probably borrow enough to get out and make some contacts.

HAMCOM is the same weekend as the VHF Contest. There may be a few people traveling from Nacogdoches to the Metroplex to attend. Be sure to check at the meeting to find out about carpooling.

ARRL Field Day 2007 occurs this month. This is probably the single biggest event in the US. If you would like to join us (Come on, why wouldn't you join us?) we will be meeting at IHOP on North St in Nacogdoches for breakfast at 7:00 a.m. on Saturday June 23, 2007. After a time of fellowship and full bellies we will migrate over to Pecan Acres Park on Starr Ave. Army will coordinate the antenna installation. I will be wiring up the pavilion. We can use all the help that you can give. We will plan on being on the air at 1:00 p.m. to start racking up points. Plan on attending the Tower Safety class and the FoxHunt class and hunt Saturday afternoon. The hotdogs should be ready to go by 6:00 p.m. or so. Bring your families. There is a playground adjacent to the pavilion. Some of us will be spending the night. Some of us will sleep while others operate. We will probably tear down and clean up around 10:00 a.m. Sunday morning unless the bands are running wild.

Finally, the Lufkin Hamfest will be held at Denman Avenue Baptist Church in Lufkin on June 30, 2007 starting at 8:00 a.m. There will be new and used items, a time of fellowship, a VE Testing Session, and a drawing for

an Icom HT. Come out and support the Lufkin ARC.

We've got a busy month. Let's make the most of it. Be careful, the temperature is rising.

See you this Wednesday at the next NARC meeting!

73 de KE5EXX
email: ke5exx@arrl.net

VE TESTING

Our next VE testing is scheduled for Wednesday, June 20th 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 June 6th 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. Hope to see y'all there.

Basic Electronics Part Fifteen By Thomas Atchison

As we observed in Basic Electronics, Part 14, in a series circuit with resistance, inductance and a battery (Fig. 2 of Part 14), changes in resistance cause changes in the current of the circuit. The resistance and inductance determine how quickly the current reaches a new value when the resistance changes. The inductor works against any current change. Inductors store energy in a magnetic field. Any change in current produces a change in the magnetic field. This produces a voltage that tries to prevent current change.

We use the term reactance to describe the opposition of an inductor to changes in current. We use the same term to describe the opposition of a capacitor to changes in

voltage as we discussed earlier. We call the former inductive reactance and the latter capacitive reactance. The symbol, X_C, denotes capacitive reactance, and the symbol, X_L, denotes inductive reactance.

Since an inductor consists of a piece of wire wound to form a cylinder, the wire itself has a low resistance. If we connect the inductor to a dc voltage, the current won't change instantly because of the inductance, however, it will build to a high value because of the low resistance. That is, inductors act like a short circuit to direct current. In many circuits, we place a resistor in series with the inductor to limit the current. Inductive reactance is the opposition inductors have to current changes. Since inductors act like a short circuit at dc, we say they have zero reactance at dc.

Now suppose we apply a 100 Hz sine-wave voltage to a 10 mH inductor as in Fig. 1.

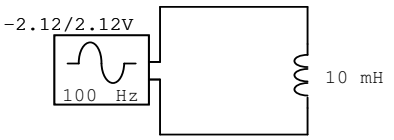

Fig. 1

In this case the ac source is 100 Hz with a peak value of 2.12 volts. This means the RMS value of the voltage is $E_{RMS} = (2.12)(0.707) = 1.5$ volts. If the inductor is $10mH$ and we measure the current as 0.239 amperes, then we can use Ohm's law to calculate the inductive reactance, as follows:

$$X_L = \frac{E_{RMS}}{I}.$$

In this case the inductive reactance, X_L, replaces resistance on Ohm's law. Therefore,

$$X_L = \frac{1.5}{0.239} = 6.28 \text{ ohms.}$$

Now let's replace the 10 mH inductor with a 20 mH inductor. When we read the ammeter in the circuit it reads 0.1194 A. If we calculate the inductive reactance again we get

$$X_L = \frac{1.5}{0.1194} = 12.56 \text{ ohms.}$$

Notice that this inductive reactance is exactly twice that of the previous example.

If we change the applied sine-wave voltage to a 1000 Hz source and change the inductor back to the original 10 mH inductor, the voltage supply still produces 1.5 volts RMS, but the current now reads 23.9 mA. If we calculate the inductive reactance with the new voltage source we get

$$X_L = \frac{1.5 volts}{0.0239 A} = 62.8 \text{ ohms.}$$

Notice that the new signal frequency is ten times larger than the original frequency and the current is ten times smaller than the first example. Also, the reactance is ten times larger! We see that a higher frequency signal produces a larger inductive reactance, for a given inductor.

We find that when either inductance or signal frequency increases, the inductive reactance increases. A relationship

that expresses inductive reactance in terms of inductance and signal frequency is as follows:

$$X_L = 2\pi fL$$

where f is the frequency in hertz and L is the inductance in henrys.

Use this formula in the above examples to see how they work. For example, if $f = 100$ Hz and $L = 10$ mH, then

$$X_L = 2\pi(100)(0.010) = 6.28$$

ohms.

You calculate the other examples.