

# Nacogdoches Amateur Radio Club

Pres: John Chapman - KC5MIB

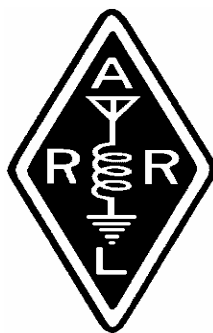
VP: Andy Delgado - KE5EXX

Sec/Treas: Army Curtis - AE5P

## AUGUST MINUTES

The August meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on August 1st. Twenty-four members and three 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 published. Treasurer's report was published.

The CQ VHF contest was recently held, and preliminary results show **K5QE** placed second in the country in the multi-multi



category. Congratulations to **Marshall**, and many thanks to all the stations who worked him during the contest.

The ARRL UHF contest is coming up the weekend of August 4<sup>th</sup>. This contest is for all bands from 222 MHz and up. A special local "contest within the contest" was announced for single band rovers, with cash prizes of \$50, \$30 and \$20 for 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> places. This special contest requires only that a rover or mobile station make at least one contact from at least 2 grid squares. This can easily be done with just an IC-706 or FT-100 or similar rig on

432 with a magmount vertical. Send your logs to **Army, AE5P**.

**Jerry, K5JLW**, brought up the important issue of new Generals calling outside their band limits. When you were a Tech, you could call anyone you heard. Not so on HF. Jerry has developed a small "cheat sheet" showing all General class phone frequencies and will furnish one to anyone who asks.

The **Texas QSO Party** is coming up September 29-30.

Meeting was adjourned at 7:45 p.m.

### Show and tell:

**John - KC5IIT**: Military A-62 phantom antenna.

**John - KC5MIB**: His new FT-857 rig.

**Jerry - K5JLW:** A wind-up hand held emergency weather radio.

**Kent - KD5SHM:** A "Kill-A-Watt" power meter for 60 Hz appliances.

Program: **Marshall - K5QE** presented an excellent program on different kinds of coax and how much loss each has. He also had samples of each type of coax and/or heliax discussed, along with connectors.

Door Prizes: Several door prizes were awarded to lucky ticket holders. You had to be present to win. We may have more of this at the next meeting.

## PRESIDENT'S PODIUM

It's Saturday, the start of the Labor Day weekend, the "end" of summer, the "start" of fall AND the start of Football season. Football got off with a bang on Thursday, with more games than you can shake a stick at. I'll be working this evening with SFA's first game.

We have our own games coming up, the ARRL September VHF QSO Party 8-10 September (remember start and stop times are all UTC). I'm sure Marshall will put in a plug, no change that a huge advertisement to participate. The Texas QSO Party will be the last weekend of the month. John Jordan told me he wanted to talk about this contest. The School Club Roundup will be in October and I'm sure John will have a few words about that weekend.

Contests are great ways to fill in your map for Worked all States or to chase a few counties or just even to get that rare one. It will improve your skill at listening especially if you work the weak signal stuff out at Marshall's contest station.

Kent has done a great job of keeping everyone up to date on the weekend activities. There seem to be contest, QSO parties or just things to do with the radio over the weekend. Take a minute to

tell him thanks when you see him.

One last item to bring up: the Simulated Emergency Test. This will occur the weekend of 6-7 October. Many of you may have read the article in the September QST. We'll talk about this at the September meeting on Wednesday.

I'm looking forward to seeing everyone at our next meeting on Wednesday at Christ Episcopal Church. Don't forget to bring your goodies; I have a few to bring over the next few meetings.

73 to all,

John Chapman

e-mail: [kc5mib@arrl.net](mailto:kc5mib@arrl.net)



### V.P.'s ELEMENT...

CQ CQ Contest this is KE5EXX Rover in Echo Mike forty five...

Yep, that's right, it's that time again. The September 2007 VHF Contest is upon us.

KE5GAQ and I will head out bright and early on Saturday September 8 headed for parts North and East of here. We intend on hitting EM21, EM22, EM23, EM24, EM33, EM34 on Saturday. We'll spend the night in or around Little Rock, AR. Up and at 'em Sunday morning to hit EM35, EM45, EM44, EM43, EM42, EM32 and maybe even EM31, EM30, EM20 (these last three depend on how tired we are). This is our usual route. We usually travel between 800 to 900 miles on this weekend. Yeah, it is tiring, but it sure is fun!

I can blame it all on KD5SHM who got me

interested in roving, then on K5QE and AE5P for adding fuel to the fire. Finally I have to blame Andrew who always wants to know when we are going out again. Of course everyone knows I am the innocent angel. (I'm the one who is always looking to add more stuff to my arsenal).

So do you have to go all out to enjoy VHF Contesting? Certainly not. If you have an Icom 706 type radio you can get on the air from your QTH with very little expense. For example, I have built a 2 meter dipole out of some scrap wire and a PL-259 Connector. Just this little antenna allows me to contact EM21, EM22, and EM31 from my house with the antenna up in the air maybe 16'. I have built a WA5VJB Cheap Yagi for 144, 222, and 432. In fact I use the 432 on the rover. Now you may think that these inexpensive antennas are something to laugh at, but the 432 has 11 elements. That's a lot of antenna for just a little

PVC and some welding rods.

If you want to try your hand at roving, you can gear up with the same 706 type radio and 2 mag mount antennas. Some of us have these antennas that we could loan you to get your feet wet.

Last but not least, you can make plenty of contacts locally with just your 50 watt FM radio and a roll up j-pole hanging from a tree limb. (Andrew had his 5 watt HT at his grandparents' house near Apple Springs, TX and was able to check in to our net with his roll up j-pole up 10' in a tree.

You don't have to go hog wild to enjoy VHF'ing, With just a little ambition, determination, drive, etc you could make a quantum leap in fun...and if you are the least bit competitive you can face off against one of your peers and open up a can of .....

73 de KE5EXX  
email: [ke5exx@arrl.net](mailto:ke5exx@arrl.net)

### VE TESTING

Our next VE testing is scheduled for Wednesday, September 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.

73 de AE5P

email: [ae5p@arri.net](mailto:ae5p@arri.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 September 5th 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 Eighteen By Thomas Atchison

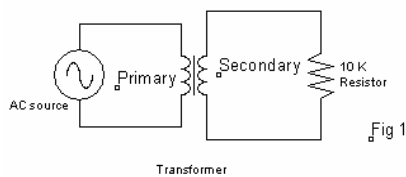
Suppose we have an inductor with an AC source connected to it. This AC source will cause a changing magnetic field to

exist around the inductor. If we place another inductor close enough to the first inductor so that the changing magnetic field will intersect the coils in the second inductor, then the magnetic field will induce a voltage across the second inductor. We say the two coils have mutual inductance. When two coils are arranged so that a changing current through one induces a voltage in the other we have a transformer.

Transformers can have more than two coils.

In a transformer, one inductor has the input signal applied across it. This is called the primary winding. This primary winding induces a voltage across one or more secondary windings. These secondary windings provide an output voltage to other parts of a circuit. In this sense, a transformer transfers energy from one part of a circuit to another part. Note that there is no direct

connection between the two parts of the circuit.



To insure good energy transfer between the two coils we try to maximize the mutual inductance between them. One way to accomplish this is to have most of the magnetic field of the primary coil cutting through the secondary coil. We can accomplish this by winding the transformer inductors on a single form, or core. The core is often made from iron, powdered iron or ferrite materials. These core materials will make the magnetic field stronger. Another factor that increases the magnetic field is higher voltage on the primary because this increases the current flowing in the primary winding. The field is also stronger when there are more turns of wire in the coil.

Suppose we have a transformer with the same

number of turns in the secondary as there are in the primary. If we apply 120 volts ac to the primary, the output voltage of the secondary will be 120 volts ac. The voltage induced by the changing magnetic field is proportional to the number of turns on the inductor. For example, if a primary winding has 500 turns and a secondary winding has 250 turns, then the output voltage will be half the input voltage. Therefore, a primary voltage of 120 volts ac will produce 60 volts ac in the secondary. Similarly, if the primary has 500 turns and the secondary has 1000 turns, then an input of 120 volts ac will produce 240 volts ac on the secondary.

We can express this mathematically as follows:

$$\frac{N_p}{N_s} = \frac{E_p}{E_s},$$

where:

$N_p$  is the number of turns on the primary winding,

$N_s$  is the number of turns on the secondary winding,

$E_p$  is the primary voltage, and

$E_s$  is the secondary voltage.

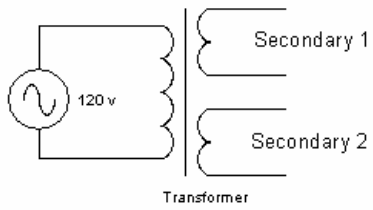
This will allow us to design a transformer to produce any desired voltage. For example, if we want a transformer that will produce 12 volts ac from a 120 volt ac source, we solve the above equation for  $E_s$  to get

$$E_s = E_p \frac{N_s}{N_p}$$

Since  $E_p = 120$  volts ac and we want  $E_s = 12$  volts ac, then the ratio of secondary turns to primary turns must be  $\frac{1}{10}$ .

If the primary consists of 1000 turns, then the secondary must have 100 turns.

Now consider the transformer below with 120 volts ac applied to the primary.



If the primary winding consists of 500 turns, secondary 1 consists of 1000 turns, and secondary 2 consists of 250 turns, what is the output of secondary 1 and secondary 2?