August 2006 **Volume 08-2006**

Nacogdoches Amateur Radio Club

President: Tom Atchison – W5TV

VP: John Chapman – KC5MIB

Sec/Treas: Army Curtis - AE5P

AUGUST MINUTES

The August meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on August 2nd. Twenty-six members and three 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.

Discussion held of the recent CQWW VHF Contest, and the incredible 6 meter propagation that weekend.

Motion was made and seconded to reimburse **Kevin, KD5WX**, $20 for registering w5nac.com and w5nac.org. Passed.

Was also moved and seconded that a special certificate be presented to **Kevin, KD5WX**, in recognition of his hosting and managing Hamlist and Wxalert for so many years. Passed.

Kudos to **Jerry, K5JLW**, on the success he has had in teaching classes for new hams in Lufkin.

Kent, KD5SHM, spoke with Nacogdoches City EMC Tommy Wheeler about the siren tests. Tommy reiterated his desire to have Amateur Radio gear in the Emergency Trailer.

Discussion held on possible sites for the annual Christmas party. After much consideration, it was agreed to hold it at the **Knights of Columbus Hall** where we have held the Shuttle Special Event. Reservations are required, and **all must pay in advance**. We will have our usual White Elephant Auction, so get your elephants groomed and ready!

Meeting was adjourned at 7:55 p.m.

Show and Tell: **John, KC5MIB,** showed a new compass / pocket transit. **Robert, KD5FEE**, showed a Pelican case knockoff and AA battery carrying

case. **Bert, AC5Z** showed a new 160 meter base loading coil he made, and **Army, AE5P** showed a new digital vector wattmeter and radio controlled airplane.

PRESIDENT'S CORNER

After a little rain and some slightly cooler temperatures, things seem to be looking better here in East Texas. We do have the September VHF contest coming up on the 9th and 10th. Also, the Belton HamExpo is October 7 and the Brenham Swapmeet is October 21 if anyone is interested.

There was an interesting note on www.eham.net called "Study Materials for Tests". If you are interested, go to that web site and use the links in that note.

The next meeting of NARC will be on September 6 at 7:00 p.m. at Christ's Episcopal Church. Please bring your 'Show and Tell' items to share with the group.

73 de Tom, W5TV

V.P.'s CORNER…

I have been contemplating this one for a while. I was wondering where all of our heroes have gone. I started thinking about this when I heard that MCBM Carl Brashear, Master Diver, had passed. He died in July just before the August news letter. Carl overcame many stumbling blocks not only to be a diver but also to achieve the rank of Master Chief Boatswain's Mate. His story was chronicled in the movie MEN OF HONOR, Cuba Gooding played him in the move and I'm sure most of you have seen the movie. If not, please grab the movie and watch it or look for it on the movie channels. I shed a few tears.

Chuck Brady, N4BQW a retired space shuttle astronaut and Ham died July 23 following a lengthy illness. He was just 54 (I looked in the mirror for a bit). He was active in establishing SAREX. We have had the opportunity to talk via satellites, witness the OSCAR program but he gave us a chance to talk to the astronauts, when they are in space. I wanted to be an astronaut, the likes John Glenn, Gus Grissom, Ed White and Neil Armstrong all sparked that desire, but vision problems prevented me from ever achieving that goal. I travel in space vicariously through NASA's television programs and their website.

Where have all the heroes gone?

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

VE TESTING

Our next VE testing is scheduled for Wednesday, September 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.

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 6th 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.

BREAKFAST BUNCH

Mark, W5TXR has organized a Breakfast Bunch to meet the first Saturday following the NARC general meeting, 8:00 a.m. at IHOP. So, the next meeting of the Breakfast Bunch will be Saturday, September 9th. Hope to see many of you there.

Basic Electronics Part Seven By Thomas Atchison

In the previous discussion, we introduced the concept of a decibel (dB). We now want to explore how the dB is used to compare power levels in electronic circuits. Let's begin with a 2-meter transmitter with an output of 10 watts. Suppose we purchase a new amplifier, attach it to our existing transmitter, and measure the output at 100 watts. How many dB increase is this?

We will use the 10-watt signal as the reference and compute the power ratio:

$$ratio = \frac{P_1}{P_0}$$

where P_0 is the reference power level and P_1 is the power level compared to the reference power. The number of dB in this case is

$$\begin{aligned} dB &= 10\log\left(\frac{100}{10}\right) \\ &= 10\log(10) \\ &= 10. \end{aligned}$$

This means we have increased the power of the 2-meter signal by 10 dB.

Now suppose we start with the same 10-watt transmitter, but attach an amplifier that increases the power output to 20 watts. In this case the increase in dB is

$$\begin{aligned} dB &= 10\log\left(\frac{20}{10}\right) \\ &= 10\log(2) \\ &= 10(0.30) \\ &= 3. \end{aligned}$$

Therefore, we have increased the power of the 2-meter signal by 3dB.

If we start with a transmitter having 100 watts of power output and, using an amplifier, increase the power to 200 watts of output, then the increase in dB is

$$\begin{aligned} dB &= 10\log\left(\frac{200}{100}\right) \\ &= 10\log(2) \\ &= 3. \end{aligned}$$

We again have a 3 dB increase in signal. Observe that as we double the power level of a transmitter we have a 3 dB increase in signal. If we were to double the power again we would have a 6 dB increase in signal.

This process also works for loss. For example, suppose we have a 50-watt transmitter on 2 meters and we need a run of 100 feet of coax to reach the antenna. Suppose we find some RG58 coax and use it. Also, suppose the SWR is such that the total loss in the coax plus the SWR at 146 mHz is 6 dB. Since a 3 dB loss is ½ the power, then a 6 dB loss is ¼ of the power to the antenna or 12.5 watts. Better coax does make a difference.

Any time you calculate a decibel value, you must use some power level as the reference. If we use the same reference level to specify power in several circuits, we have a convenient way to compare those circuits. If the reference power is a milliwatt (0.001 W), then we indicate the result as dBm. This is convenient when measuring power levels in receivers. Therefore,

$$dBm = 10\log\left(\frac{P_{watts}}{0.001}\right).$$

A signal specified as 3 dBm has twice as much power as a 1-mW signal. This means a 3-dBm signal has a power level of 2-mW.

Now suppose the power in part of a circuit measures 5-mW and in another part of the circuit it measures 40-mW. If we use the 5-mW value as the reference power, how many dB greater is the 40-mW power?

$$\begin{aligned} dB &= 10\log\left(\frac{40mW}{5mW}\right) \\ &= 10\log(8) \\ &= 10(0.90) \\ &= 9. \end{aligned}$$