

Nacogdoches Amateur Radio Club

2006 CLUB OFFICERS

President: Tom Atchison - W5TV

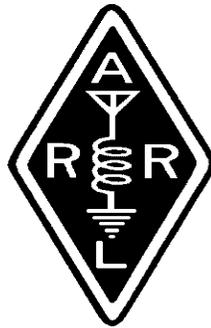
VP: John Chapman - KC5MIB

Sec/Treas: Army Curtis - AE5P

JANUARY MINUTES

The January meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on January 4th. Twenty-six members and four 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 read. Treasurer's report was read.

The January VHF contest is coming up the weekend of January 21. **K5QE** is planning a full scale operation from his multi-multi contest station in



Hemphill, and several other members are planning to be rovers.

The Shuttle Columbia Recovery Special Event is planned for February 4th. The club will provide the food with **Mike, KD5PFQ** in charge. The day will begin with breakfast at IHOP at 6:00 am, followed by setup at the KC Hall at 7:00. Operation will be from 8:00 until 5:00 p.m. local time. There is a desire to operate some PSK31 during the event.

As a follow up to our Christmas Party at the Barbeque House, motion was paid to reimburse **James, N5VOO** in the

amount of \$110.96 to cover a number of persons who had made reservations but then did not come. Motion passed.

Rusty, KD5GEN, reported on a new plan for Regional Disaster Planning including the various COG's. This seems like a great opportunity for hams and for WinLink.

Kent, KD5SHM, is our new Skywarn Coordinator. Radar interpretation training is planned for the future. Contact **Kent** if you are interested in such training.

Meeting was adjourned at 8:00 p.m.

Program: John - KC5MIB showed an emergency SW receiver, hand cranked.

John - KC5IIT showed a home brew antenna for

144, 220, and 440. **Kent - KD5SHM** showed a LED voltmeter he built from a kit. **Army - AE5P** demonstrated an IFR-1200S service monitor with spectrum analyzer.

PRESIDENT'S CORNER

Since our January meeting we have had the January VHF/UHF contest. I think some of you may have heard that NARC had several members participating in this contest. This is an event that everyone can enjoy if you can get on 2 meters. If you happen to also have 6 meters or 70 cm available, you can get a few more contacts. If anyone wants to participate in future VHF/UHF contests, just mention it and there will be several who will help you get started.

The Shuttle Columbia Special Event day will be on Saturday, February 4, at the KC Hall East of Nacogdoches. The time for putting up antennas is

7:00 a.m. and operation will begin around 8:00 a.m. Mike, KD5PFQ, will be cooking hamburgers around noon and we will conclude our operation around 5:00 p.m. Please put this event on your calendar and plan to come out some time during the day.

Some other information that may be of interest from ARRL:

ARRL Certification and Continuing Education course registration remains open through Sunday, February 5, for the following ARRL Certification and Continuing Education Program on-line courses: Amateur Radio Emergency Communications Level 2, Amateur Radio Emergency Communications Level 3, Antenna Modeling, HF Digital Communications, VHF/UHF Beyond the Repeater, and Radio Frequency Propagation. Classes begin Friday, February 17. To learn more, go to the ARRL Web page at www.arrl.org.

The best time to catch International Space Station (ISS) Expedition 12 Commander Bill McArthur, KC5ACR, on the air from NA1SS is during a weekend. The crew's work day ends about 1930 UTC, but McArthur and crewmate Valery Tokarev usually stay up for another couple of hours so that is the best time to try to contact ISS.

The NA1SS worldwide voice and packet downlink frequency is 145.800 MHz. In Regions 2 and 3 (the Americas, and the Pacific), the voice uplink is 144.49 MHz. In Region 1 (Europe, Central Asia and Africa), the voice uplink is 145.20 MHz. The worldwide packet uplink is 145.99 MHz.

When NA1SS is in crossband FM repeater mode, the worldwide downlink is 145.80 MHz, and the uplink is 437.80 MHz. All frequencies are subject to Doppler shift. The Science@NASA Web site provides location information for the ISS

<http://science.nasa.gov/tem/StationLoc.html> .

73 de Tom, W5TV



V.P.'s CORNER...

Hi! Folks. This is my first column for NARC and you wonder where to start--a mission statement, maybe, job description, a little about me. I have been a ham for just over 10 years and generally have enjoyed all of it. Now, where to start?

Okay, let's do the last first and then get into a couple of other things. Many of you have seen me at the club meetings others have shared lunch with me. I work at SFA in the School of Communications maintaining the KSAU and SFA-TV2. I'm a broadcast engineer. I'm also a member of The Society of Broadcast Engineers. I don't have any certifications, but like some other things that are

in the queue. I spent 21 years in the Air Force as a communications technician. I've been an equipment trainer, frequency manager, electronics team chief, an evaluator for the Inspector General, truck driver, cable dog, antenna installer, just to name a few. Those that have done some military service will know that many times the things we put down just scratches the surface of all the things we've done. One experience, working as the Emergency Action Officer, has given me a huge experience working emergency situations.

Job Description, hmm usually that's pretty easy: Take over for Dr. Tom when he can't preside; set up programs for our meetings and other extra activities for our club. I have a few programs already in the works and after visiting with Dr. Tom and looking over the surveys you have returned, we'll try to get to more of them and peak some interest. Now some, I'm sorry, may not be the most inspiring, we need to keep up our training for our

Public Service work, like formal message traffic. Others, I hope get you to thinking, and one other will be about an affiliated organization that in recent years hasn't gotten a lot of publicity. Stay tuned.

I was asked to consider being the County Emergency Coordinator and I've taken that tasking on and will be studying the ARRL EMCOMM classes. AND with that thought, those of you that have a generator—when did you last check the oil and checked to see if it would start? AND how many of you have checked your go gear lately?

73 to all,

John Chapman

e-mail:

jlchapman2@juno.com or
kc5mib@arrl.net

VE TESTING

Our next VE testing is scheduled for Wednesday, February 15th 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 February 1st 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.

BASIC ELECTRONICS

By Thomas Atchison,
W5TV

The purpose of this article is to introduce some basic electronics. For some it may be boring, however, I hope some will find it interesting. If there is enough interest, there will be follow-up articles at the same level. Much of this material is taken from "Understanding Basic Electronics" by Larry Wolfgang, WR1B.

All materials present some opposition to the flow of electrons. If that opposition is relatively small, the material is called a conductor. If the opposition is large, the material is called an insulator. Some materials have too much opposition to be good conductors, yet they allow too much current to be insulators. Such materials are useful in electronics circuits because of their opposition to electron flow. We call materials like these resistors. The material resists the flow of electrons through them.

You can control the amount of current in an electronics circuit by carefully selecting the

amount of resistance in that circuit. Carefully selected and properly placed, resistors will guide exactly the right amount of current to each part of a circuit.

Current flowing through any resistance will produce heat. There will be more heat when there is a larger current. Most of the time this heat is a waste product that we must remove from the circuit.

The resistance in a piece of wire depends on the type of metal used to make the wire, the length of the wire, and the diameter of the wire. We can construct a resistor by winding a length of wire around a piece of wooden dowel or other form. The exact amount of resistance depends on the type of wire and on its length and diameter. Such resistors are called wire-wound resistors.

Carbon has a resistance that is quite a bit greater than copper. Manufacturers mix carbon with clay and form it into thin cylinders, or pellets. Then they attach wire

leads to the ends, forming resistors that we can conveniently connect into an electronics circuit. The clay serves to hold the powdery carbon together. By changing the amount of clay in the mixture, manufacturers can also control the resistance. Such resistors are called carbon-composition resistors.

If we start with a cylinder of ceramic material, which is an insulator, place a thin film of carbon over the ceramic, attach leads, and coat the resistor with a layer of epoxy sealer to insulate and protect it, we have a carbon-film resistor. A similar construction method uses a thin film of metal on the ceramic base. Resistors made in this way are metal-film types.

We now want to talk about an electronic circuit. What is an electronic circuit? One simple definition is that an electronic circuit is a path that electrons follow. We probably would like to have such a circuit do something useful, so we

are talking about more than just a wire from the negative to the positive side of a voltage source. To make an electronic circuit we need a voltage source, the electrical pressure to move electrons through the circuit. Next we need some wire or other conductor for the electrons. Finally, there should be some purpose for the circuit such as lighting a light bulb. We often refer to the part that gives a purpose to the circuit as the load. Any useful electronic circuit has at least these three parts.

We often draw a resistor to represent the load in a circuit. Sometimes a resistor also represents the combined resistance of all the other parts of a circuit. This resistor can include the resistance of the wire that connects the various parts. Even batteries, often used as the voltage source for circuits, have some resistance to the flow of electrons. All of these resistances represent the unavoidable

natural resistance of the materials in a circuit.

If a circuit is such that all electrons that leave the negative battery terminal must follow the same path, going through every part of the circuit, to reach the positive battery terminal, then we call the circuit a series circuit (See Fig. 1).

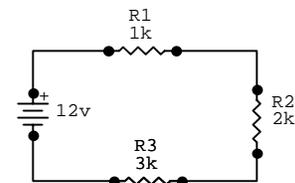


Fig. 1

In this case, the current in one part of the circuit is the same as in every other part of the circuit. If you measure the current at any place in a series circuit, you'll know the current everywhere in the circuit.

You can have more than one load in an electronics circuit. If you connect several loads so the same current must flow through each load, you have a series circuit. A Christmas light string with several small bulbs may be connected in series. The big disadvantage of such an arrangement is if one bulb burns out no

electrons can flow. That means that all bulbs go out. Finding the one that is burned out may be a problem.

Many electronic circuits include alternate paths for the current to follow. Such a circuit is called a parallel circuit. Each possible electron path forms a branch of a parallel circuit. The current that flows through each individual path may be different (See Fig. 2).

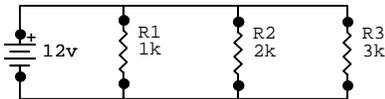


Fig. 2

Ohm's Law is a tool that is used to study most electronic circuits. It is usually written as $E = I \times R$ or $E = IR$, where E is the voltage in volts, R is the resistance in ohms, and I is the current in amperes. When you know any two of the three quantities in a circuit, you can calculate the third quantity. We can use Ohm's Law to calculate the voltage drop across any resistor in a series circuit. The only requirement is that we know the resistance and the current through the series circuit. For

example, if we measure the current in the series circuit in Fig. 1 as 2 milliamps or 0.002 A, then the voltage drop across each resistor may be calculated as follows:

For R1, the voltage is $E = (0.002)(1000) = 2$ volts.

For R2, the voltage is $E = (0.002)(2000) = 4$ volts.

For R3, the voltage is $E = (0.002)(3000) = 6$ volts.

Notice that the sum of the voltage drops across the three resistors is the total voltage of the series circuit.

The parallel circuit presents a slightly different problem. The current through each branch of the circuit is different. Notice that the full battery voltage is applied to each parallel branch. This means that we can use Ohm's Law to calculate the amount of current through each branch. In this case we use Ohm's Law in the form $I = E / R$.

If we denote the current through R1 as I_1 , then $I_1 = E / R_1 = 12 / 1000 = 0.012$ A or 12 milliamps. Similarly, $I_2 = 6$ mA, and $I_3 = 4$ mA.

The Nets:

I want to thank every one for participating in our 2 weekly nets, the Monday ARES/RACES and Thursday Skywarn Nets.

ARES/RACES

1st Monday	Billy Aiken, KD5HOZ John Chapman KC5MI B
2nd Monday	Robert Judy, KD5FEE
3rd Monday	
4th Monday	Dr. Tom, W5TV Kent Tannery, KD5SHM

5th
Monday A la Carte

SKYWARN

1st Thursda y	
2nd Thursda y	Army Curtis, AE5P Robert Judy, KD5FEE
3rd	Rusty Sanders

Thursda
y

4th

Thursda Mike Miquez,
y KD5PFQ

As you can see, we still have a couple of holes in our schedule, the job of net control isn't very hard and will get you some experience if you have to work a net operation during one of our emergency or public service activities. If you would like to fill one of the empty days, please do, if you want to pair up with one of the primaries, you can do that too.

Here are the scripts, just in case, no our memories aren't that good that we always do them from memory:

NARC ARES/RACES net
CQ, CQ, CQ.....This is the Nacogdoches Amateur Radio Club ARES/RACES net. Your net control station is -(call sign)-. My name is -(name)- and my location is Nacogdoches, Texas. At this time this

net will stand by for anyone with Priority, Emergency, or Time valued traffic.

<pause>

This net meets for the exchange of ideas and comments each Monday night at 8pm local time. This is a directed net so please enter the Net with you call letters and first name only. Please speak slowly. This net is open to all licensed Amateurs with privileges for this frequency. I will recognize check ins at this time.

<take names, read off stations and ask for additions>

At this time I will stand by for additional check ins and rechecks. Please call --

----- closing this session of the Nacogdoches Amateur Radio Club ARES/RACES net. I want to thank all stations that participated in the net and I will now turn the repeater back to normal use. 73 and good night.

SKYWARN NET

CQ, CQ, CQ... This is the Deep East Texas Skywarn Emergency Weather Net. Your net control operator this evening is -----. My name is -----, and I'm in Nacogdoches, Texas. This is a directed net. Full callsigns must be used and comments will be asked for after check ins. This net will now standby for anyone having priority, emergency, or time-valued traffic.....

<pause>

None heard , We'll now standby for check-ins to the Deep East Texas Skywarn Emergency Weather Net. Stations are asked to check in giving their call sign, name, and grid square or location. Please call -----.

I would like to thank all stations for participating in this net and for taking time out of your busy schedules to be a part of our Skywarn team. Be careful and have a good evening. Until next week, this is -----, securing

the Deep East Texas Skywarn Emergency Weather Net. 73's to all and I will now turn the repeater back to normal amateur use.

That's all there is to it. When you have finished, if you will e-mail me at jlchapman2@juno.com or kc5mib@arrl.net with the number of check ins to the net, I will prepare those for our monthly reports.

Again, thanks to everyone who has participated

73 de
John

Editor's Corner

After an absence of several months, we are finally getting the newsletter together again. My apologies for missing a few issues.

A reminder that it's **Dues Time** again. Dues are \$24 a year, and that covers all licensed Amateurs in one household. You can pay at the next meeting, or you can send your check to:

Army Curtis - AE5P

167 County Road 2093

Nacogdoches, TX 75965

You can also renew your ARRL membership through the club. If you are not currently an ARRL member, we want to encourage you to join. For new ARRL members, the club is able to keep \$15 of your first year's dues.

Remember, the club is only as good as you, its members. Come to the meetings, get involved, participate in the various club events.

Also, Tom, W5TV, is looking for some feedback on his Basic Electronics article this month. If you would like to see more articles like this, let Tom know you like it.

73 de AE5P