May 2013 Volume 05-2013

Nacogdoches Amateur Radio Club

2013 CLUB OFFICERS

Pres: Mike Brown – KF5KEY

VP: John Cechin – W5FWR

Sec/Treas: Army Curtis - AE5P

MISSION STATEMENT

The Mission of the Nacogdoches Amateur Radio Club is to support and promote Amateur Radio by public service, offering training to unlicensed interested parties and licensed Amateurs, mutual support of other Amateurs, engaging events that promote Amateur radio to the general public and other Amateur radio operators, and continuing fellowship by regularly scheduled organized meetings and events.

MAY MINUTES

The May meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on May 1st. **President Mike KF5KEY**, opened the meeting at 7:00 p.m. in the Parish Hall of Christ Episcopal Church. Seventeen members and three guests were present. Each person present introduced themself. Minutes of the previous meeting were approved as published. The Treasurer's report was read.

Bob K5ME reported on the Florida QSO Party that he participated in, CW only of course.

Army AE5P gave a report on current repeater status and expenses incurred in their maintenance and repair. More work is planned.

John W5FWR gave a report on QSL's from the Shuttle SES operation in February. A few QSL requests continue to trickle in.

Steve KB8QWN gave an update on the Neches River Rendezvous coming up June 1. Communications for this event will use the Lufkin 146.940 (141.3) repeater.

Jerry K5JLW gave a report on the Lufkin Hamfest for 2013. After discussion at the Lufkin club, no Hamfest is planned for this year.

Field Day 2013: After discussion, motion was made to hold the club Field Day at AE5P. Motion carried.

Army AE5P noted that the CQWPXCW contest will be held the last full weekend in May. This is one of the better contests during the year.

Meeting adjourned at 7:40 p.m.

Show and Tell: Robert KD5FEE showed off his ever growing collection of special fastener drivers.

Program: Army AE5P presented a program he called "dB or not dB", where he attempted to explain how power can be measured and compared using decibels.

FROM THE PRESIDENT

Wow! What a busy month for ham activity June is going to be. It starts off with a bang on the 1st with the Neches River Rendezvous. Steve Glass, KB8QWN, has had his hands full with the organization of this year's affair. It's quite a feat trying to organize all of the personnel who are to take part in this water-born nightmare. Imagine trying to get all of the following people rounded up and positions filled: net controllers (3), stager (1), checkpoint people (3), boat operators (3), put-in/take-out people (2), vans and drivers (9), trailers (7), floats (1), and who knows what else! If Steve doesn't deserve a heartfelt thank you, then we as hams are missing the boat (no pun intended).

Then there is the Plano Ham-Com on Friday and Saturday, June 7 and 8 to consider. If you haven't attended this affair, then you owe it to yourself to go there. While there is the usual assortment of ham gear to browse, bargain for and buy (a much larger than usual selection, by the way), there are usually a number of ham-related programs to choose from which are presented by various clubs, organizations and manufacturers. These programs that I have attended in the past were truly top-notch. If you get the chance to go, do yourself a favor and make the trip. You won't be sorry.

And if that's not enough, as QST magazine calls it, "the most popular on air operating event," we have the ARRL Field Day 2013, on June 22nd and 23rd. This was the very first ham function that I attended two years ago at the regional airport, and it really got me hooked. I had just received my general ticket in March of 2011, and I went to the airport to help the fellows set up. Mainly, I was a go-fer who tried to stay out of the way, but after we had both stations and antennas set up, I had my very first chance to get on the air...it was a baptism by fire. Army and Dr. Tom sat me down in front of an HF transceiver and told me to say, "CQ field day, CQ field day, CQ field day...this is W5NAC calling

CQ and standing by." I was so nervous that I probably wasn't able to be understood, but I managed to make a few contacts and thought that I was done. Oh no...Dr. Tom and Army gave me the signal to keep going....and going...and going....and going. When I finally became so hoarse that I could barely talk, they took pity on me and began to call CQ in morse code...no scratchy throats for them! Anyway, after the two days were over, we had contacted most of the states and several foreign countries, and I was totally hooked as a ham.

This year, the Field Day will be at Army Curtis' ham shack, and he has issued an invitation to one and all to come by and join in the operation. If you are new to the hobby, this is a perfect opportunity to see how it's all done and get your feet wet. It's a great chance to operate with great operators and use world class gear. You will learn more in a few hours watching (and doing!) than is possible in any other context. In addition, Army has offered the use of all manner of gear and equipment to set up any type of station you desire from a basic, low power, battery/generator powered station with a hastily strung up wire antenna to the very highest quality transceivers and antennas. His station is also air conditioned! Please don't pass up this opportunity to enjoy fun, fellowship and learn more about the great world of amateur radio.

I hope to see you there.

Take very good care of yourselves.

73 to all....

KF5KEY – Mike
Email:
michaelleebrown@hotmail.com

MY 2 CENTS

FOX WILLY ROGER

May, I don't know what to say about May, so I won't say.

To continue from my Hamlist posting:
Once more a stellar program was presented to the club by **AE5P** on decibel understanding. Thank you **ARMY**. Folks we, the club, cannot keep asking the two major program givers, **W5TV** and **AE5P** to carry the load. These two hams have a wealth of knowledge that would take, I'm sure, many many hundreds of one hour programs to present and not even scratch the surface of what they know. This is not to say that Tom and Army are the only hams that have the knowledge, you all do so please step up to the line and give.

Talking about giving, Jerry has requested the limelight for June. Marshall, K5QE, stepped up and offered to give a program on whatever the club wanted to hear. One

program Marshall presented in the past was on meteor scatter and other fine programs as well. Bob, K5ME, requested a program on the birth of K5QE's contest station and how it all came together, and to any of you who have been to his shack might want to know also, I do. Well it looks like we have our program for July. Now what about the rest of the year? Bill, WK5F, are you ready for August? I don't know when to schedule the Ice cream social.

Robert KD5FEE gave a show & tell about what is needed in taking apart electronic devices, Robert showed the group many wrenches needed to complete the project, in seems that in all the wisdom of mfg. engineers that the game was to use as many different wrenches and sizes as possible to disassembly the objects. Once more the engineer has found a way for the repair person to support the tool company. What Robert didn't show us was the tools needed to reassembly the devices, oh well, a wrench by any other name. I'm sure that my tool kit would have some paper clips, epoxy, and a roll of silver tape, I can generally get stuff apart the other part is what gives me problems.

June is known for VHF contest, Hamcom, Tyler Gun Show, and FIELD DAY. The VHF contest will be held all over N.A., Hamcom will be held, the same weekend as VHFcontest, in or around Dallas, the Tyler Gun Show will be in Tyler, generally the same days as Field Day, and Field day. Field day is going to be at AE5P's shack this year, I would like to work FD but Army's radio doesn't have any knobs, and I was told that SDR radio's were over my head and there was no way I could ever learn to operate an SDR, of course I can't, no knobs, can't be that good of a radio if it doesn't have knobs.

Besides FD and Tyler are in conflict. The sacrifices one must make for His/Her hobby.

It looks like my word tree is producing better now, better word count, not the assembly of them. I will stop here and let someone else have the soap box.

73 Enjoy

What do you think, let me know?

73,
John Cechin W5FWR
Carrots4ever2u@suddenlink.net

CONGRATULATIONS

To Andrew, KE5GAQ, who in addition to winning an appointment to the US Naval Academy, has also received a $2,000 scholarship from the ARRL Foundation.

Congratulations Andrew!

VE TESTING

Our next VE testing is scheduled for Wednesday, June 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 $15 to cover the cost of the exam(s). Correct change is always very much appreciated. 73 de AE5P

email: ae5p@arrl.net

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 Emergency Weather Net** on the 147.32 repeater (PL 141.3). Please join us for one or both. We are always looking for folks who would like to become net control operators. If you are interested, please contact any of the existing net controls. We will be pleased to help you in any way we can.

NEXT MEETING

The next meeting will be on **Wednesday June 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. Please come join us and bring a friend.

NARC WEEKLY LUNCH

Please come join us for lunch each Wednesday beginning at 11:30 a.m. at Clear Springs Restaurant on Old Tyler Road.

BASIC SIGNAL PROPAGATION

PART 1

by

Thomas Atchison W5TV

As we determined in the last article, the electromagnetic wave that is radiated from the transmitted antenna consists of an alternating electric field and an alternating magnetic field with the energy passed from the electric field to the magnetic field and back. The alternations duplicate the alternations of the current in the transmitting antenna. When the electromagnetic wave contacts a receiving antenna, it creates an alternating current in that antenna that corresponds to the alternating current in the transmitting antenna, however, the amplitude of this alternating current on the receiving antenna is MUCH smaller than the amplitude that started this process in the transmitting antenna. The receiving antenna alternating current is then routed by feed line to the receiver where it is amplified and demodulated.

The energy from a propagated wave decreases with distance from the source. The spreading of the wave energy over larger and larger spheres as the distance from the source increases causes this decrease. If we measure the intensity of the field at some distance from the source, it is measured as the voltage between two points lying on an electric line of force in the plane of the wave front. This is called the field strength of the wave. It is usually expressed in millivolts or microvolts per meter. For example, suppose the field strength at a distance of 1 mile from the source is 100 mv/meter. Then the field strength at a distance of 2 miles will be 50 mv/meter. To measure the actual field strength of a signal we would need some very expensive equipment, however, for most amateur work, we only need a relative measurement. That is, we only need to consider relative measurements of field strength to determine if a change in the antenna has been beneficial or not. Such instruments can be easily made at home or purchased.

The propagation of an RF signal explores how an RF signal travels from the transmitting antenna to the receiving antenna. There are many different paths that the electromagnetic wave can follow from the transmitting antenna to the receiving antenna. These paths are affected by many different parameters, for example, the frequency of the transmitted signal, the distance between antennas, the state of the atmosphere, the state of the ionosphere, etc. We will consider the various parameters that can affect the propagation of the transmitted electromagnetic wave in this and the next several articles.

Let's begin with what is usually called a **ground wave**. Waves that travel close to the ground may or may not have considerable contact with the ground. Generally, we say a transmitted electromagnetic wave is a ground wave if it reaches its receiving point without leaving the Earth's lower atmosphere. This will allow us to distinguish a ground wave from a **sky wave**, which utilizes the ionosphere for propagation between the transmitting and receiving antennas.

If a ground wave stays in contact with the earth it is called a **surface wave**. If the transmitting antenna and the receiving antenna can see one another so that the ground wave travels directly from one to the other, the wave is usually called a **direct wave**. Of course, a ground wave may be reflected off the ground and/or scattered off surrounding material so we may have a ground-influenced wave interacting with a direct wave arriving at the receiving antenna. It is possible for a transmitted wave to follow the Earth's curvature by bending in the Earth's lower atmosphere, or troposphere. Such a wave is usually very close to the ground and the process is called **tropospheric bending**. Tropospheric bending or refraction of radio waves occurs at boundaries between air masses and the amount of bending increases with the frequency of the radio wave. Consequently, tropospheric propagation, sometimes shortened to just **tropo**, generally occurs in amateur bands above 50 MHz. We will discuss tropospheric propagation in a following article.

When we talk about ground waves we usually talk about **polarization**. An electromagnetic wave is polarized in the direction of the electric lines of force. That is, if the electric lines of force are vertical, the wave is called **vertically polarized**, and if the electric lines of force are horizontal, the wave is called **horizontally polarized**. The concept of polarization is generally more complicated than the simple statements above, however, we will consider these simpler cases, usually called linear polarization, in the present discussion. Later we may have occasion to consider **circular polarization**.

Surface waves travel in contact with the Earth's surface and there is considerable attenuation of such waves because of this contact. This attenuation increases with frequency; therefore, ground waves are more useful at lower frequencies such as 160 meters and 80 meters.

If we consider a direct wave, we recall that such a wave travels directly from the transmitting antenna to the receiving antenna. In this case, the attenuation is about like that of attenuation in free space as described above. At the same time we may have waves that are reflected from the ground or from surrounding objects. These reflected waves combine with the direct wave to affect the actual signal that is received. Such a reflection reverses the phase of the wave, therefore, the combination of the reflected wave and the direct wave could be stronger or weaker depending on the phase of the waves. If the distances traveled by both the direct wave and the reflected wave were the same, the two parts would arrive out of phase and they would cancel each other. This is, of course, an idealized situation. Usually the reflected wave travels further; therefore, the amount of cancellation or reinforcement will certainly depend on the phasing of the waves. The signal being received may therefore have wide variations in

strength at the receiving station. In a receiver this results is what we observe as a variation in signal strength.

These comments lead us to a more detailed discussion of tropospheric propagation. We will consider such propagation in the next article.