

# Nacogdoches Amateur Radio Club

## 2012 CLUB OFFICERS

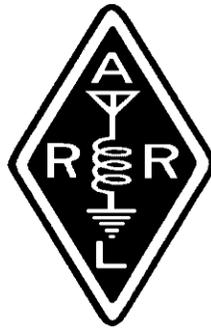
Pres: Rusty Sanders - KD5GEN

VP: Mike Brown - KF5KEY

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.



## JUNE MINUTES

The June meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on June 6th. **Vice-President Mike KF5KEY**, opened the meeting at 7:00 p.m. in the Parish Hall of Christ Episcopal Church. Sixteen members and three guests were present. Each person present introduced himself. Minutes of the previous meeting were approved as published. The Treasurer's report was read.

### Old Business:

The Neches River Rendezvous report was given by **Jerry K5JLW**,

**Andy KE5EXX**, **Robert KD5FEE** and **Fay K5FAY**. Lots of Amateur Radio participation and lots of folks enjoyed their trip down the river.

**Army AE5P** reported that the club 440 repeater has been fixed and is back on the air. The club 146.84 repeater however is off the air and awaiting repair.

**Bob K5ME** reported he worked the WPX CW contest with some success.

### New Business:

Ham-Com is scheduled for this coming weekend in Plano. Several club members are planning to attend.

Field Day is planned to be held at the A.L. Mangum Airport, with breakfast at IHOP 7:00 a.m.

The June ARRL VHF contest is scheduled for this coming weekend.

The 6 meter grid dxpedition to DL88, DL79 and DL89 is scheduled to run from June 20 through June 24. Several club members will be participating in this.

It was reported that **Kay Simpson** is no longer with the Columbia Museum in Hemphill.

The Lufkin Hamfest is planned for this fall. Exact date has not been agreed to by the church where it will be held.

Meeting adjourned at 7:41.

Program: **Tom W5TV** presented a very interesting program on the various digital modes used on the Amateur Radio bands. His program included audio samples of each mode to give us all an idea of what we might be hearing on the bands.

## OSCILLATIONS FROM THE CHAIR

Hello to All NARC members and readers.

Last summer was hot and it appears that after a short delay, Mother Nature may be rather harsh to us again this year.

I understand that the Neches River Rendezvous was successful with a number of hams operating at this event. Those who ventured to the Hamfest in the Metroplex apparently had a good time and brought home some items they just could not live without.

I was on the beach for two weeks and tried unsuccessfully to engage in two separate events. I was hoping to make contact with the 5 ships in Texas that were a part of the special event but never heard the first ship from Texas. I was almost within sight of two of the ships and never found the frequency they were operating on. I attempted

to operate in the VHF contest and was able to weakly hear K5QE but they never heard me call. The area in which I was located had lots of QRM, which is to be expected with the salt air constantly on the electric lines and insulators.

Army AE5P hosted the NARC Field Day activities at his QTH. We had a small crowd but had fun and stayed cool. I think back to the days when some of the club members used to set up at the Scenic Overlook on Hwy 7 East. They operated off the concrete picnic tables and stayed on-site for the entire event. Those guys were tough to stand the heat of the event. Later on we roughed it in Kevin Anderson's pasture shack, which had electricity and some cooling. Later years, guys endured the heat, rain and wind at Pecan Acres Park on Starr Avenue. Field Day takes a lot of work from a number of people to be successful. To set up at a 'remote' site takes cooperation from a large number. In the last

few years, members have been too busy with other commitments to allow us to really set up a field operation. Maybe things will change in the future years and we can go back to something like that.

In any case, I certainly appreciate Army and his lovely wife Pat for putting up with the gang! While we were conducting field day, we did get the woodcutting done on 3 of the tri-band VHF antennas. I certainly appreciate Bill, WK5F, for writing up the detailed specifications on the tri-band antenna. He made the first one and used it in mobile ops for the vhf contest. His specs sure made a lot of measurements easier to work with.

In the July issue of *QST*, page 41d (on-line issue), there is an article titled "The Considerate Operator's Frequency Guide". This is an interesting list of recognized frequencies for certain modes or activities. The FCC does

not specifically authorize certain groups of amateurs or nets to be the "OWNERS" of certain bands or frequencies but over the years, there are certain frequencies designated by gentleman's agreements for certain modes to operate on them. It is disheartening to be listening and some group comes on ranting that someone is on THEIR frequency and they have a net that just has to operate or the world will fold up.

Recently while on vacation, an ole college buddy who in his high school days was a ham, was monitoring my radio on 40-meters. Two hams were having a QSO and one blurted out some foul language. I looked at him and said, "Things have really changed since you were on the air!" He agreed that such was totally not called for. I am proud of our members and the other hams in this area that we still respect the hobby and do not degrade the airways with the filth that many other

hams have resorted to over the years.

Okay folks, I will get off my soapbox but I do respect and appreciate each and every one of you making the effort to support our hobby and our club.

Please set aside time in your schedule to come to the meeting and offer your thoughts to how our organization can be better.

KD5GEN- Rusty

email:

[rusty.sanders@att.net](mailto:rusty.sanders@att.net)

### FROM THE VICE PRESIDENT

Well, June is just about over, but it was truly full of happenings radio-wise.

First of all, if you didn't get a chance to see the write-up and photo of the ARRL January VHF Sweepstakes results that started on page 84 of the July *QST* magazine, you should take a peek. Nacogdoches ARC was

tops in the nation with over 3,000,000 points in the Medium Class club, with the second place club earning only 782,902 points. There's a great shot of all eight rovers at the bottom of the page. Right above the photo, the standings were posted. Marshall, K5QE, took top place in the nation in the multioperator class. Then there were the rovers: (#1) Bob, K5ME, (#2) John, W5FWR, (#3) Mike, KF5KEY, (#4) Army, AE5P, (#5) Ken, K5TRK, (#6) Fay, K5FAY, (#7) Tom, W5TV. The numbers indicate the standing in the nation. And then Bill, WK5F, took #1 spot in the limited rover class. I guess that we've made them mad up in the Northeast again.... sure hate that....

Then there was Ham-com in Plano. On a beautiful Friday morning, Army, AE5P, John, W5FWR, Bob, K5ME, and I, KF5KEY, made a great trip to Plano to join the thousands of other hams who attended. I knew that is was going to be a great day when I

arrived last at Army's and was greeted by Bob, asking, "How are you today?" I promptly replied that I was fine to which he responded, "I don't know why, you look like hell!" I could tell right off that it was going to be a great trip! Bill, WK5F joined the group driving his newly outfitted rover with the newly assembled "toolbox" radio setup with rotator. Nice rig, Bill.

After making a fine trip to Plano and arriving about lunch time, we stopped at Joe's Crab Shack and were served by a delightful YL with very long legs and very short shorts. I think that the food was great. We then went to the Ham-com locale and had a great time looking at all the goodies, meeting friends, attending info sessions, buying goodies, etc, etc. In short, a great time was had by all.

Overnight at the Holiday Inn Express and back to Ham-com again with more of the same. The SDR guys beat up on me and forced, literally FORCED

me to buy a Flex 3000....it was terrible. After an enjoyable morning, we once again went in search of food and wound up at Joe's Crab Shack. And for all you dirty minded people, it was only because of the quality of the food that we went there the second time...just the food.

And then there was Field Day. We wound up having it at Army's QTH, and it couldn't have been more fun. Great group of people, lots of contacts on many bands and best of all, we didn't have to set up and tear down in the 100 degree heat as in the past. Quite a few came and went during the day with it coming to an end about 9:00 PM or so on Saturday night. Being a wuss, I can't tell you if more went on Sunday or not as I wasn't there. All in all, a great Field Day in air conditioned splendor with good friends, fun and great pizza....oh yeah, we radioed, too. If you missed out on this one, then condolences are in order.

Hope to see you on the air....

73 to all....

KF5KEY - Mike

Email:

[michaelleebrown@hotmail.com](mailto:michaelleebrown@hotmail.com)

## VE TESTING

Our next VE testing is scheduled for Wednesday, July 18th 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](mailto: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 July 11th** 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.

## BASIC ANTENNAS

### PART 44

by

Thomas Atchison W5TV

All transmission lines introduce some attenuation. This attenuation is usually stated in terms of decibels per 100 feet at a particular frequency. That loss must be factored into any calculation of power reaching the load. The amount of loss in a particular transmission line depends on the frequency that is being transmitted and how the transmission line is constructed. For coaxial transmission lines some have stranded wire center conductors while others use a solid copper conductor. Similarly, the outer conductor or shield may be a single layer of copper braid, a double layer of braid, solid aluminum, aluminum foil or a combination of these. Since these vary from one manufacturer to another, the manufacturers provide datasheets that specify attenuation at various frequencies. An example of such a specification sheet was taken from the Wireman web site for RG-213 (CQ 110) and is shown in Fig. 1.

Cable Type & Appearance	RG 213 type	<b>Loss per 100 ft</b>
Manufacturer/Brand	CQ Original	MHz dB
Impedance ohms	50	30 1.3
Velocity Factor	0.66	50 1.5
Center Conductor	bare copper	150 2.3
Stranding	(7/21)	450 4.7
AWG, OD(in)	13 0.088	1000 8.0
Dielectric	Solid polyethylene	<b>Average Power</b>
Capacitance (pf/ft)	30.8	MHz Watts
		30 3700
		50
		150 800

Shield(s)	(2)97% ++ bare copper braid	450 900 1500
Jacket	Black, IIA NC PVC	
OD (in)	0.405	
Temp (i;½C)	-40/+80	
Lbs/1000 ft	100	

Fig. 1

Notice in the upper right hand corner of this sheet we have the loss in dB per 100 feet of transmission line at various frequencies.

If you have a perfect match to your antenna and you have a transmitter that provides 100 watts to the input of the transmission line then the amount of power delivered to the antenna through 100 feet of transmission line will be reduced as shown in Fig. 2.

<b>Power when SWR 1:1</b>				
Frequency Mhz	→ 30	50	150	450
Cable Type				
CQ 110 (RG-213)	82w	77w	60w	35w
Times LMR-400	86w	82w	71w	54w

Fig. 2

I included information regarding Times LMR-400 based on their specification sheet. Note that the LMR-400 has less loss, particularly at higher frequencies.

If the line impedance and load do not match, some of the power delivered to the antenna will be reflected back along the transmission line as we discussed in Part 43. As we determined in Part 43, the amount of power reflected is a function of the frequency of the signal being delivered to the antenna. The calculation of combined losses becomes a bit more complicated, however, I discovered a calculator on the WEB at the following URL:

<http://www.saarsham.net/coax.html>

You can use this calculator to determine the loss of power for various transmission lines and various mismatches. Two examples are shown in Fig. 3. These examples assume that the transmitter is generating 100 watts to the input of a transmission line that is 100 feet long. The tables show the power delivered to the antenna.

<b>Power when SWR 2:1</b>					
Frequency Mhz	→	<b>30</b>	<b>50</b>	<b>150</b>	<b>450</b>
Cable Type					
CQ 110 (RG-213)		79w	73w	55w	31w
Times LMR-400		83w	79w	66w	49w

<b>Power when SWR 5:1</b>					
Frequency Mhz	→	<b>30</b>	<b>50</b>	<b>150</b>	<b>450</b>
Cable Type					
CQ 110 (RG-213)		65w	58w	39w	21w
Times LMR-400		71w	65w	50w	34w

Fig. 3

Many amateurs use 450-ohm ladder line as a transmission line for a multiband dipole. Suppose we consider using a dipole of length 100 feet. Let's put it up about 30 feet and feed it in the center with 450-ohm ladder line. The loss of such a transmission line feeding an antenna on bands from 7 MHz to 28 MHz is extremely low even for high SWR. Fig. 4 shows a table for 7, 14, 21, and 28 MHz with corresponding SWRs. For this example I used The Wireman balanced line number 552. This is a 450-ohm, 16 AWG, 19 strand copper-clad steel conductor with poly-clad 'windows'.

WIREMAN 552 Ladder Line		Output with 100 watts input
BAND	LOSS (dB)	WATTS
7 (SWR 8:1)	0.544	88
14 (SWR 5:1)	0.507	89
21 (SWR 12:1)	1.323	74
28 (SWR 6:1)	0.842	82

Fig. 4