

# Nacogdoches Amateur Radio Club

## 2016 CLUB OFFICERS

Pres: John Cechin - W5FWR

Sec/Treas: Army Curtis - AE5P

Visit our web site at

<http://w5nac.com/>

## 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.



## MARCH MINUTES

The March meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on March 2nd. **President John W5FWR** opened the meeting at 7:00 p.m. in the Parish Hall of Christ Episcopal Church. Eleven members were present. Each person present introduced himself. Minutes of the previous meeting were approved as published. The Treasurer's report was read.

**Army AE5P** gave a report on the 13<sup>th</sup> annual Shuttle Columbia Special Event Station held the weekend of February 6. Operators

included **AE5P, Jim WA5GVQ** operating from the AE5P station, **Tom W5TV** operating from his home station, and **Ray W5NRF** operating from his home station. A total of 621 contacts were made, all using SSB on 20 and 40 meters. Over 100 QSL cards have been received so far. It is planned to post all contacts to LOTW and to send QSL cards for all contacts as well.

**Army AE5P** gave an update on the high altitude balloon program at Timpson ISD. **Roy Platt KF5YSG**, the driving force behind the program, is leaving Timpson. Ms. Cindy Sessions will replace Mr. Platt as the school representative for the program. The next launch is expected this coming fall.

**NPOTA**, the National Parks on the Air event, continues with many operations from all over the country. See the ARRL web site for latest details.

Planning for the **NARC Field Day** operation continues. Current plans call for operation from the City/County mobile EOC to be located at the Nacogdoches Airport. Save the weekend of June 25-26 and plan to participate.

Meeting closed at 7:30 p.m.

**Program: Army AE5P** gave a program on the recent balloon launch by Timpson ISD dubbed NS-8 with pictures taken from the balloon payload. The balloon landed just south of Ruston, Louisiana. The chase crew from Timpson ISD saw the payload descending on its parachute and was able to recover the payload immediately upon landing. The NARC tracking package was recovered without damage.

## MY 2 CENTS FOX WILLY ROGER

### APRIL 2016:

April has sneaked up on us, what was it, April showers brings May hay fever?

Now that we have the "spring" season with us we can talk about many things, some of which are the higher gas prices, getting back to cutting the grass and trimming the trees and bushes, and most important, working on one's "man cave" a must for the married man.

NPOTA is in full swing with some of the club members taking part in the fun. What happened to the club doing a turn in the Big Thicket, what happened with that? Field Day is just a few months away and it looks like the club will be doing our part from the airport once more, a great choice, they have bathrooms next door, no tree seeking, what a relief. The VHF season is in full swing with June, July, and September to cover a few,

and I believe the club is going to have a few more non-contest fun runs.

The most important day to remember and mark on your calendars is my birth day, 21 September, if I had my way it would be a national holiday.

### THE CRAZY CAT GUY:

It seems that one of my outside cats didn't like her name I bestowed on her, Strips. She petitioned a cat-pellet court, one Douglas O. Graves presiding, Strips is history, her new name is Daisy May, and so from hence forth she will be "Daisy May". How or where she came up with that name I will never know, maybe it's from the Lil Abner books?

My trips to Houston have been and continue to be many in the future months, so as in the past, when I do get back my cats jump for joy, literally, chasing each other from one end of the house to the other, Rolly using the floor and Tar Baby the tops of everything else, and for

the rest of the evening Tar Baby requires me to hold her.

I think I mis-named the two inside cats; their names should have been Water and Oil. Tar Baby being Oil and Rolly-Polly is Water, Rolly is laid back, takes everything in stride, Tar Baby is Oil, the two don't mix but do mix it up, and then separate to different parts of the room.

I got the outside cats to one meal a day, on the other side of this is, these cats will eat a lot of different foods, and among these are scraps from my homemade bread.

#### **GREAT INVENTIONS:**

Skis just think what it would take to treed through snow. Who came up with snow shoes? The porcelain fixture, just think how happy that made the trees, let us not forget toilet paper. Did you ponder where you would be without TP, what you would be using? Mind boggling.

#### **DID YOU EVER THINK? (This one is for Maria)**

Now that spring is with us and the Bees are doing what Bees do, flower to flower, what about the FIRST flower, how does it get the pollen, it's the first, think about it. Where do hummingbirds learn to fly up, down, sideways, and backwards and stay in one spot? What about picking the right flower to drink from? Do they have classes right after birth or is it while they are still in the egg?

How do you grow another plant from seedless fruit? When I was a kid you could take some of those seeds, stick them in the ground and grow some more of the same, and some people talk about things being better now, I'm sorry, I can't see it.

#### **HMMM**

I will now leave more spaces for the others to use, don't be shy, fill up the pages; I understand that Dr. Tom has another great Column.

KEEP YOUR POWDER DRY  
AND YOUR HEAD BELOW  
THE HORIZON

Happy Trails

73 Enjoy, what do you think, let me know?

John Cechin W5FWR

[Carrots4ever2@gmail.com](mailto:Carrots4ever2@gmail.com)

### **NOTES FROM OUR EC**

NARC has a few events throughout the year which tie into Emergency or net communications--the Neches River Rendezvous, Field Day and Piney Woods Purgatory.

DETARC/Lufkin has already asked for assistance with the Neches River event. In a nutshell it is a boat trip down the Neches River with check points at several locations and other support teams. The Piney Woods Purgatory is a bicycle event across the

highways and by-ways of East Texas. We can expect a request to assist with that event. AND we all know about Field Day. It is my understanding we will be at the A.L. Mangham Airport for this event.

The Rendezvous and Purgatory are run as formal, tactical nets. Both operate over a number of hours and cover a wide area of Nacogdoches and Angelina counties. Obviously not everyone has to work the full duration of the event but some positions are manned for the duration.

Tactical nets are handled just a bit differently than a regular net. Most folks are assigned a second call sign, usually relating to a station assignment or duty, ie Rest Stop 1, Supply, SAG, Net Control, and the like.

Usually after the net starts, you use your tactical call sign to talk to call up or answer Net Control. That way they have an idea of where you

are or what you are doing or to call a specific location. Remember, you always have to identify with your FCC call sign every 10 minutes or at the end of the communications. Most communications with Net Control won't exceed 10 minutes, so don't forget to ID.

Field Day is a great time to take apart your station, transport it to the park, set up under somewhat austere conditions (What, no air conditioning?) and operate for up to 24 hours (yeah, right) and then drag it all back and restore your shack to some semblance of normalcy. Are any shacks normal? It is a great time to operate, get some club and ham radio publicity, have a little camaraderie and a general good time. I don't think all the details have been ironed out. We will be working at the airport which is a pretty nice place to set up.

Please help us to make these events a success. Neches River Rendezvous-4 June 2016, Meet Time

6:00 AM  
Field Day--25-26 June,  
start time 1:00 PM  
Piney Woods Purgatory--  
TBA

73 de John Chapman  
KC5MIB

[jlchapman2@juno.com](mailto:jlchapman2@juno.com)

## VE TESTING

Our next VE testing is scheduled for Wednesday, April 20 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 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.

## NEXT MEETING

The next meeting will be **Wednesday April 6** at **7:00 p.m.** in the Parish Hall of Christ Episcopal Church. A program on the National Weather Service weather balloon program is planned. Come join us.

## VE TEST RESULTS

Congratulations to **David Kirby KG5MLX** of Nacogdoches on passing his Technician test and to **Bradley Dotson KG5MLY** of Benton, LA on passing his Technician and General tests.

## FIELD DAY

Field Day can be fun! Here are the goals for NARC Field Day 2016:

- Have fun.
- Maximize participation.
- Help all our members become more comfortable contesters.
- Promote Amateur Radio.

As I read the rules, we will be eligible to operate FD for 24 hours. (See rules link in Army's write-up, below.) If we run 2 hour shifts with two operators on duty, we will need 24 operators total. Not sure we have that many active members, so everyone will have to take one or two shifts. The plan is for each of us to choose someone to operate our shift with us. The format is up to you. For example, each can operate for 1 hour, one of you can operate for two hours while being coached by the other, one can operate the radio and the other log for an hour and then swap for

the second hour, one can make 5 contacts and then the other make 5 contacts, etc. Just the operating will give all our active members a chance to participate and learn something or teach something at the same time. I need a volunteer to make a list of the time slots and who has signed up for each.

We also need a team to help set up the antennas Saturday morning and take them down Sunday afternoon. Another team to set up and take down the station. Another team to add ground support, e.g. food and water. (It will be hot. Drink lots of water. The bathroom is only about 25' from the operating trailer.) I need another volunteer to make a list of teams and who has signed up to help.

There will be some work preparing and testing the rig, computer, logging software, antennas and beam support mast. As you see in Army's write-up, some of the preparation is covered but

we need volunteers to help with integration and testing. Contact Army or Jim to help with this aspect of the project.

The above is only the core of the endeavor. We must do all that in order to make NARC Field Day happen. There are many other activities that we can add to promote Amateur Radio. Army mentions some below, but there are even more that he did not mention. Read the rules to find all these. They include inviting government officials and local emergency personnel to visit our site, obtaining media coverage, copying the ARRL Field Day message and sending it to our SM via amateur radio, making a satellite contact, making some contacts on emergency power, etc. There is something for everyone.

Jim WA5GVQ, has developed preliminary plans for Field Day as follows:  
Field Day will be held the 4<sup>th</sup> full weekend of June.

It begins Saturday 6/25 at 1800Z (1:00 p.m. CDT) and runs until Sunday 6/26 at 2059Z (3:59 p.m.). Our Field Day will be held at Nacogdoches airport, using the City/County Mobile EOC trailer located just behind the Pilot's Lounge.

Jim will furnish an ICOM 756 transceiver for the radio for our entry in class 1F. Jim will supply a Cushcraft A3S 3 element yagi for 10-15-20 meters to be mounted on the club's Green Monster portable mast. Jim will also supply a Butternut HB-2V vertical for 40-80 meters. Army will supply a 40M wire dipole, a K1EL Winkeyer, and laptop computer. Logging software will be N3FJP as it is currently used by many other club members. The club will provide an Orange Box with VHF/UHF FM radio and portable VHF antenna.

Setup is planned to begin Saturday morning after breakfast at IHOP. Operators will be scheduled in one and two hour increments with at

least one experienced operator present at all times. Jim is especially interested in making this event available to new hams and even to those not yet licensed. Jim also wants to see our station manned and making contacts for the entire contest period.

We have many opportunities for bonus points during this event. In particular, we will be looking at bonus points for a satellite contact (Ralph?), Public Relations (John MIB?), site visits by city/county officials (Rusty?), Solar power (Army?).

Everyone is asked to review the full rules for Field Day at <http://www.arrl.org/field-day> and see where they can contribute this club effort.

Your comments and questions are welcomed. Please contact Jim at [james-moyer@att.net](mailto:james-moyer@att.net) or Army at [ae5p@suddenlink.net](mailto:ae5p@suddenlink.net).



## UPCOMING EVENTS OF NOTE

Mark your calendars for the following events coming up in the next few months. Full information on these events and much more can be found at <http://www.hornucopia.com/contestcal/contestcal.html>

### CQWW WPX Contest - CW

May 28-29

<http://www.cqwp.com/rules.htm>

### NECHES RIVER RENDEZVOUS

June 4

[kb8qwn@gmail.com](mailto:kb8qwn@gmail.com)

### HAMCOM 2016

June 10-11

<http://www.hamcom.org>

### ARRL June VHF Contest

June 11-12

<http://www.arrl.org/june-vhf>

### ARRL Field Day

June 25-26

<http://www.arrl.org/field-day>

### IARU HF World Championship

July 9 – 10

<http://www.arrl.org/iaru-hf-championship>

### CQ VHF Contest

July 17-18

<http://www.cqww-vhf.com/>

### North American QSO Party CW

August 6 – 7

<http://www.ncjweb.com/NAQP-Rules.pdf>

### North American QSO Party SSB

August 20 – 21

<http://www.ncjweb.com/NAQP-Rules.pdf>

### ARRL September VHF Contest

September 10 - 11

<http://www.arrl.org/september-vhf>

### Texas QSO Party

September 24 – 25

<http://www.txqp.net/>

### CQ WW DX Contest SSB

October 29 – 30

<http://www.cqww.com/rules.htm>

### ARRL Sweepstakes CW

November 5 – 7

<http://www.cqww.com/rules.htm>

### ARRL Sweepstakes SSB

November 19 -21

<http://www.cqww.com/rules.htm>

### CQ WW DX Contest CW

November 26 - 27

<http://www.cqww.com/rules.htm>

### ARRL 160 Meter Contest CW

December 2 - 3

<http://www.arrl.org/160-meter>

### ARRL 10 Meter Contest CW/SSB

November 10 - 11

<http://www.arrl.org/10-meter>

## Log-Periodic Antennas, Part 1

by

Thomas Atchison, W5TV

A log-periodic antenna is a multi-element, directional, antenna designed to operate over a wide band of frequencies. It was invented by Dwight Isbell and Raymond DuHamel at the University of Illinois in 1958. Some people refer to this antenna as an 'Isbell antenna'. There are several different antennas that fit into this family. We will look at some examples of such antennas.

The Log Periodic Dipole Array (LPDA) is probably the most popular antenna in this family. It looks like a conventional Yagi antenna; however, there are some remarkable structural differences. The most common frequency range for an HF LPDA is from 14 to 30 MHz. This is a good compromise between bandwidth and size. If we attempt to go lower in frequency the length of the longest element gets large.

The basic design consists of a number of dipoles at frequencies between 14 and 30 MHz that are spaced along a boom and fed in a zig-zag pattern. (Fig. 1)

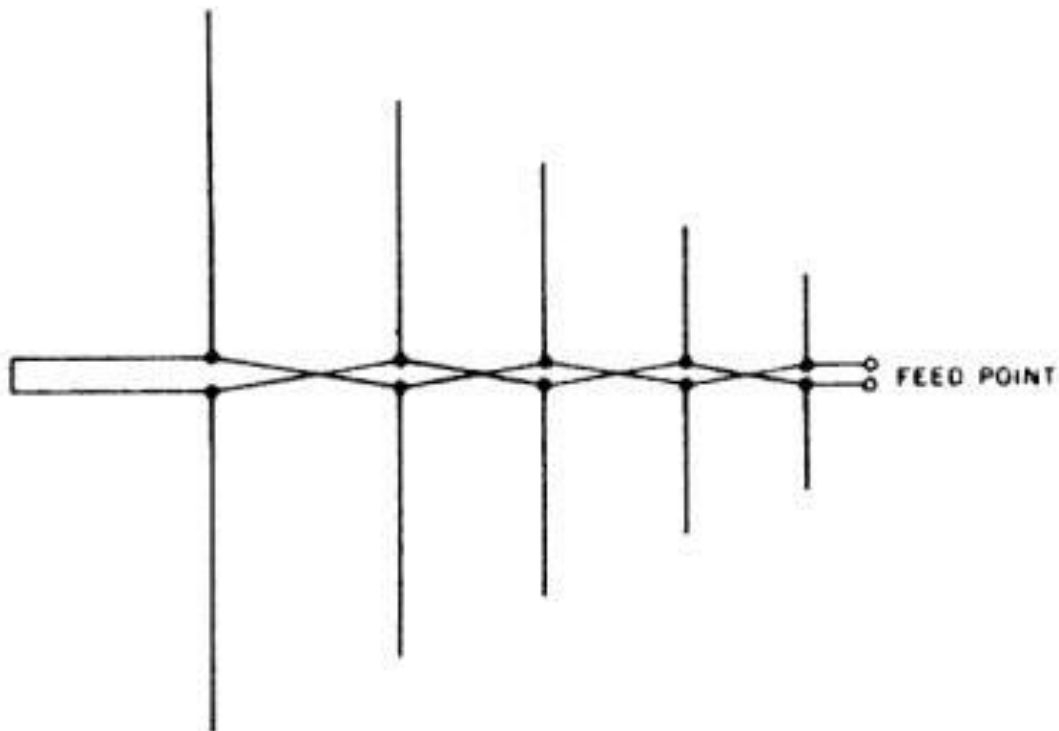


Fig. 1



The elements are spaced at intervals following a logarithmic function of the frequency known as sigma. The lengths of the elements correspond to resonance at different frequencies within the antenna's bandwidth. In the above case these dipoles would be in the range between 14 and 30 MHz. The relationship between the lengths is a function known as tau. The longest dipole is approximately  $1/2\lambda$  at the lowest design frequency and the shortest dipole is about  $1/2\lambda$  at a frequency that is above the highest operating frequency. The dipoles are fed with a phase-line that reverses the phase as we move from dipole to dipole. A stub is usually added to the back of the LPDA for matching purposes. This all yields an array that has relatively constant gain and front-to-back ratio across the desired operating frequencies. The LPDA also exhibits a constant feed-point impedance across the desired operating frequencies which provide an easier match for a transmission line. The usual length of the matching stub is  $1/8\lambda$  cut for the lowest operating frequency. This will provide a reasonable match to 300  $\Omega$  ribbon transmission line.

In general terms, the log-periodic design operates in a manner that is similar to a series of 3-element Yagis, where each set of three consecutive elements forms a separate antenna with the driven element in the center. This is an oversimplification since, in reality; all elements receive power from the feed line. The power is not uniformly distributed over the elements, however, since the operating frequency dictates which elements will receive more power and which elements will receive less power. In particular, for a given frequency,  $f_0$ , most of the radiation from this antenna will come from the dipoles with lengths near half a wavelength at  $f_0$ .

In the actual design of a log-periodic antenna most people use formulas for the calculation of sigma and tau that were proposed by L. B. Cebik, W4RNL. Mr. Cebik passed away some time ago, however, he is well known for his many articles and books on antennas. I currently use the 19th edition of the ARRL Antenna Book which contains a chapter (chapter 10) on log-periodic arrays that was contributed by L. B. Cebik. I plan to use this chapter as a primer on log-periodic arrays and discuss basic design and implementation of these antennas in future notes. We will see how this progresses.