

# 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.



## NOVEMBER MINUTES

The November meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on November 7th. **President Rusty KD5GEN**, opened the meeting at 7:00 p.m. in the Parish Hall of Christ Episcopal Church. Thirteen 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.

### Contest report:

**K5ME** reported he worked the CW Sweepstakes and

was very close to a clean sweep of all Sections. Congratulations Bob.

### Old Business:

**Skywarn training** was held on Thursday November 1 in Lufkin. **Ralph WD5RAH** attended from NARC.

### New Business:

The Nominating Committee reported on its recommended slate of candidates for 2013 as follows:

**President: Mike KF5KEY**

**Vice-President: John W5FWR**

**Secretary/Treasurer: Army AE5P**

Motion was made and seconded to accept the Committee's report, and direct the Secretary to cast a unanimous ballot for the slate. Motion voted on and was carried.

The **NARC weekly luncheons** have settled on every Wednesday at 11:30 a.m. at Clear Springs Restaurant in Nacogdoches. All are welcome to join us.

President Rusty reported receiving a letter from **Frank, KF5MLJ**, suggesting that a joint committee be established with members of NARC and DETARC. Matter was tabled.

**December Meeting / Christmas Party** will be held on December 5, beginning at 6:00 in the Parish Hall of Christ Episcopal Church (our regular meeting place). The club will furnish drinks, cups, plates, utensils, napkins and ice. Please bring your favorite thing to eat with enough to share. As is our custom, we will have a **White Elephant Auction** with all proceeds going to the club. You are invited to bring a ham radio related gift, wrapped or unwrapped, to be auctioned off.

Discussion held on the upcoming **Columbia Special Event Station**. This will be the 10<sup>th</sup> anniversary of the loss of Columbia, and it was felt we need to have a QSL card or certificate worthy of the occasion.

**John W5FWR and Army AE5P** have been working on a design and presented their efforts to the club for comments. Army will send notice of the SES to ARRL for publication.

Meeting adjourned at 7:45.

## OSCILLATIONS FROM THE CHAIR

Hello to all readers. Hope all of you had a great Thanksgiving and will have a wonderful, safe Christmas and New Year.

Our next meeting will be our annual Christmas party. This will be on Wednesday, December 5. We will be starting at 6 pm instead of 7 pm. We request that each family bring along something to eat, sort of their favorite

dish. The club will provide the tableware supplies and drinks. Also, bring along something for the White Elephant sale. John Chapman will be our auctioneer for the evening.

The 32 repeater is back on the air with some special features. Many kudos to Army, AE5P, for all the work he has done to get this repeater back on the air. As you probably know, we have 3 really good repeaters that have a great range. The 32 repeater can be cross-banded to allow operation with other repeaters. All of the repeaters are located at sites with backup power generators and batteries. This can be of benefit during emergency situations that may arise in the future.

Many government agencies are moving to having their communications operations rely on Internet access. I am sure they have some varied reasons for this. Hopefully, they have a Plan B for when the Internet goes down. Many occurrences can cause

Internet failure causing problems with emergency call reception and dispatch. As you are aware, Internet failure can be a local, area wide or national event.

Any communication medium can fail for a myriad of reasons. Recently, the city of Nacogdoches changed to a telephone system that does not use the normal telephone wiring but computer circuits. Local government is looking at establishing a dispatch and command center at a site of the old racetrack complex behind the Expo center. However, some public service agencies attempt to locate the 911 center close to the main telephone office. This is done to reduce the distance from the switching center to the answering point. Reducing the distance helps to eliminate the possibility of disrupted service due to severed lines.

Many folks are eliminating their home telephones and using cell phones or

telephones that are linked via local cable systems. Questions may be raised as to how the cell phones will work during major incidents when the cell towers are flooded with everyone trying to make a call. Cable powered telephone systems normally have more above ground lines along with amplifiers at various locations between the central office and the user's location.

Basically, all this was written to emphasize that as more people rely on the internet to communicate, the more possibilities that amateur radio will be needed during future emergencies. Most all of us have base, mobile, and portable units that can be put on line during emergency situations.

With our 3 repeaters, our community has got some valuable resources that have been used in the past and will probably be utilized in the future. You can expect that Amateur Radio will be called upon more in the future to

overcome communication gaps that may arise.

Hope to see all of you at the Christmas Party.

73,  
KD5GEN- Rusty

email:

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

### FROM THE VICE PRESIDENT

Greetings to all. It doesn't seem possible that the holidays are upon us....again....and so soon. I must admit that I do enjoy this season with one notable exception...leaves! It's not that I don't enjoy the beautiful fall foliage with all the colors of fall. It's the "falling" that I object to...the falling leaves. As I gaze out my living room window, I can't see my front lawn, or the sides, or my back lawn. I have already picked up leaves 3 times this season, and I have at least 3 more to go. I have a large corner double lot with some 30 trees and an infinity of leaves. When I first moved here, I had

seventeen large pine trees, but after seeing so many of them fall in stormy weather in the neighborhood, I had them all removed. But that still leaves me with worlds of deciduous trees. When I pick up the leaves, I usually have 20 to 30 bags of mulched leaves weighing between 25-30 pounds each. I'm really looking forward to the last of the falling leaves. But enough of griping about the leaves and on to the world of amateur radio.

Hats off to Army Curtis for all his hard work getting the 32 repeater working again. It was quite a struggle, but he finally got the darn thing on the air again. Spent a beautiful morning with Army, Rusty Sanders and his son and grandson reinstalling the repeater at the tower site and had a wonderful time standing around watching others work and being a gopher. It's great to do nothing and then rest.

The HF bands continue to be great. I've been having

a great time on every band from 10 through 80 meters with the majority being open almost all the time. I made a contact with a ham in the town of Stanley in the Falkland Islands recently and added another site to the contact list....always a pleasure.

I was made a gift of a GAP Titan DX antenna from Bill Krause and am looking forward to getting it up and running. I contacted the folks at GAP in Florida to order the missing parts and I must admit that they were exceedingly nice and jumped through hoops to make sure that I had all the parts and pieces that I needed to get the Titan functioning. Thanks, Bill and to the folks at GAP. And if that wasn't enough, Rusty heard about the antenna that I was given and asked if I had a mast for it yet. I replied that I hadn't, and he invited me to his house to look at a couple that he had. He had two telescoping masts that looked to be just right, and I selected one of them. He wouldn't let

me pay him for it, and if THAT wasn't enough, he also gave me a sweet little 2 meter Cushcraft antenna on top of all that. Also would not take any payment for that either. I am constantly amazed at the Hams who go out of their way to help other Hams, giving both of themselves, their knowledge and their equipment. It's a great hobby and a great bunch of folks in it. Thanks, Rusty. I'll try to do the same for someone else.

I'm sure that someone else will mention this, but the next meeting, Wednesday, December 5th, will be our annual Christmas party and white elephant auction. Last year was my first party and auction, and I had a great time. Please bring your favorite dish to the supper and please bring an item or two, hopefully radio related, for the auction. This is really a fun auction, and it's great to see the gifts, gag, useful and otherwise. Also, please be advised

that the party time will start at 6:00 PM, an hour earlier than usual. Please come if you possibly can.

Well, I've wasted another perfectly good few inches of newsletter column, so I guess that my work is done. I hope to see you all at the Christmas party and wish you all the best for the Holiday season.

73 to all....

KF5KEY - Mike

Email:

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

## VE TESTING

Our next VE testing is scheduled for Wednesday, December 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](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 December 5th** at 6:00 p.m. in the Parish Hall of Christ Episcopal Church. The church is at the corner of Starr and Mound Streets in Nacogdoches.

This will be our December meeting and annual Christmas Party / White Elephant Auction. See details in the minutes of the November meeting.

Please come join us and bring a friend.

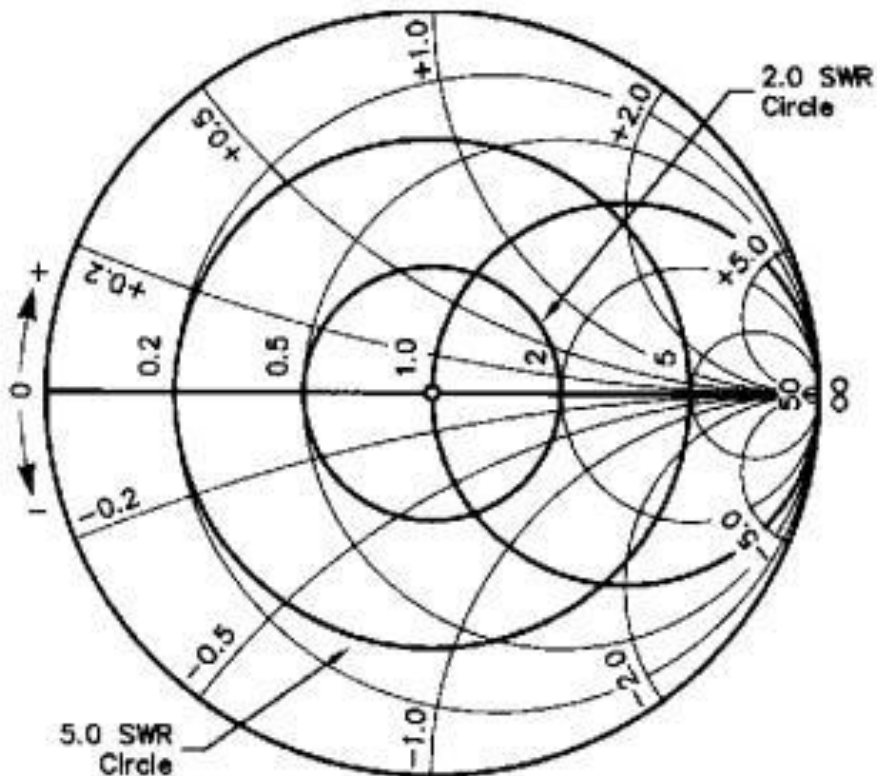
## BASIC ANTENNAS

### PART 47

by

Thomas Atchison W5TV

This is a continuation of the article *Basic Antennas Part 45*. In that article we introduced the basic concepts related to a Smith chart. Members of a third family of circles on a Smith Chart are standing-wave-ratio or SWR circles as seen in Fig. 4. This family is centered on prime center, and the SWR circles appear as concentric circles inside the reactance axis (the outer circle). The center point at 1.0 can be thought of as an SWR circle with zero radius. During calculations, one or more of these circles may be added by using a compass centered on prime center. Each circle represents a value of SWR, with every point on a given circle representing the same SWR. The SWR value for a given circle may be determined directly from the chart coordinate system by reading the resistance value where the SWR circle crosses the resistance axis to the **right** of prime center. Note that the value where the circle crosses the resistance axis to the left of prime center is the inverse ratio.



**Fig 4—Smith Chart with SWR circles added.**

In Fig. 4 above we observe that the inside SWR circle represents an SWR of 2 to 1 and the next SWR circle represents an SWR of 5 to 1.

Consider the situation where a load mismatch in a length of line causes a 3 to 1 SWR ratio to exist. If we temporarily disregard line losses, we may state that the SWR remains constant throughout the entire length of this line. This is represented on the Smith Chart by drawing a 3:1 constant SWR circle. That is, we construct a circle that crosses the resistance axis at 3.0 to the right of prime center as in Fig 5 below. The design of the chart is such that any impedance encountered anywhere along the length of this mismatched line will fall on the SWR circle. The impedances may be read from the coordinate system merely by progressing around the SWR circle by an amount corresponding to the length of the line involved.

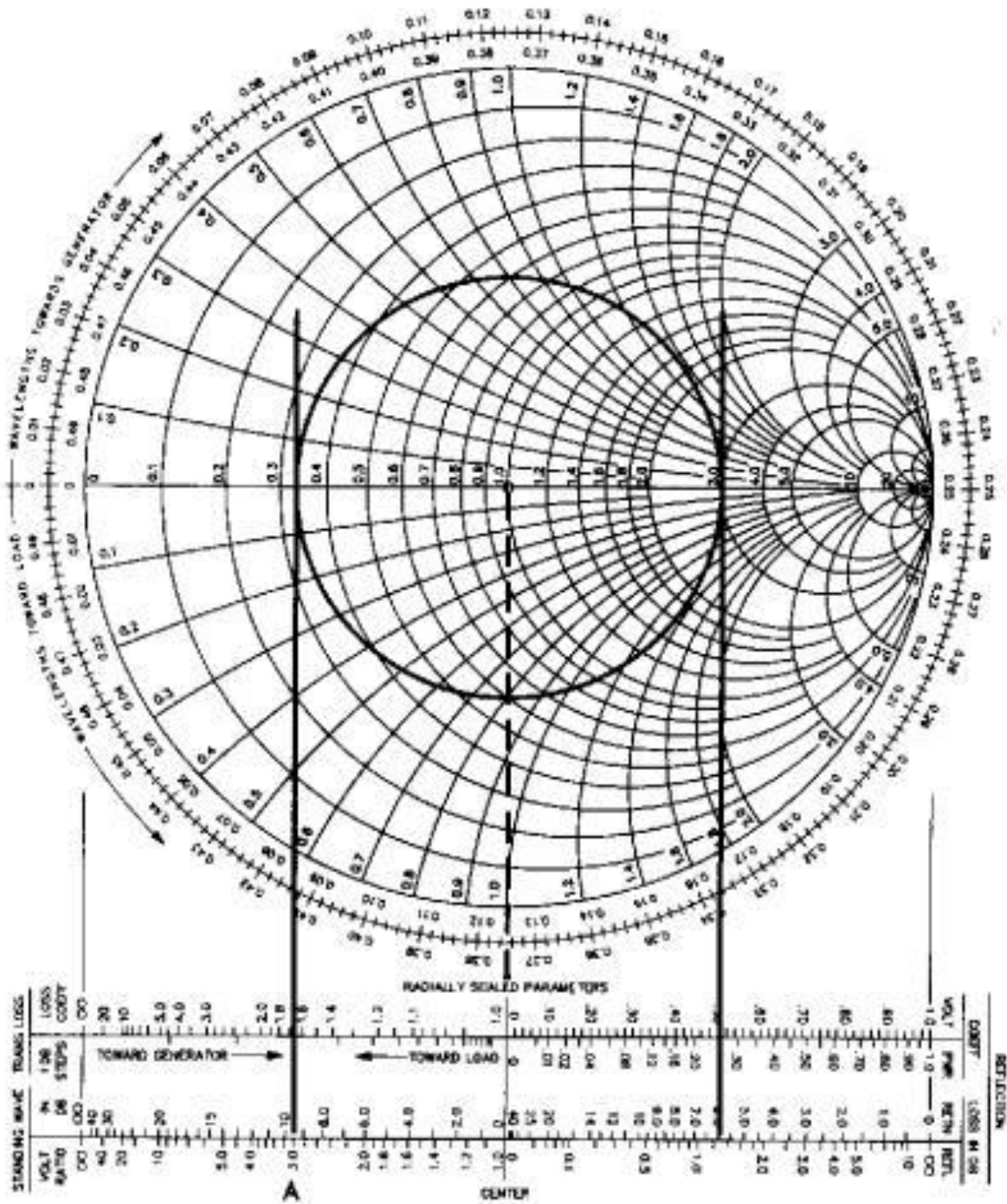


Fig 5—Example discussed in text.



This brings into use the wavelength scales, which appear in Fig 5 near the perimeter of the Smith Chart. These scales are calibrated in terms of portions of an electrical wavelength along a transmission line. Both scales start from 0 at the left of the chart. One scale, running counterclockwise, starts at the input end of the line and progresses toward the load. The other scale starts at the load and proceeds toward the input end of the line in a clockwise direction. The complete circle around the edge of the chart represents a half-wavelength ( $\lambda/2$ ). Progressing once around the perimeter of these scales corresponds to progressing along a transmission line for a half-wavelength. Because impedances repeat themselves every half-wavelength along a transmission line, the chart may be used for any length of line by disregarding or subtracting from the line's total length an integral number of half-wavelengths.

Also shown in Fig 5 is a means of transferring the radius of the SWR circle to the external scales of the chart, by drawing lines tangent to the circle. Another simple way to obtain information from these external scales is to transfer the radius of the SWR circle to the external scale with a drawing compass. Set a compass to the radius of the SWR circle on the Smith chart. Then place the point of the compass at the center or 0 line of the bottom scale and inscribe a short arc across the appropriate scale. It will be noted that when this is done in Fig 5, the external voltage standing wave ratio (VSWR) scale indicates the SWR to be 3.0 (at A) our condition for initially drawing the circle on the chart (and the same as the SWR reading on the resistance axis).

You can get a good copy of a Smith chart at the URL below. Just click on the link.

[http://charon.phys.uoa.gr/moag/admin/pdf\\_files/smithchart.pdf](http://charon.phys.uoa.gr/moag/admin/pdf_files/smithchart.pdf)