

Nacogdoches Amateur Radio Club

2015 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.



JUNE MINUTES

The June meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on June 3rd. **President John W5FWR**, opened the meeting at 7:00 p.m. in the Parish Hall of Christ Episcopal Church. Nineteen members and two guests were present. Each person present introduced themselves. Minutes of the previous meeting were approved as published. The Treasurer's report was read.

Old Business:

The **Neches River Rendezvous**, scheduled for

Saturday, June 6, was cancelled because of continuing heavy rain and high water in the river.

The **Timpson ISD high altitude balloon launch** scheduled for late May has also been cancelled due to the continuing rain and overcast skies. They hope to reschedule the flight after school resumes in the fall.

Field Day: Discussion held on putting together a Field Day operation this year. Field Day is scheduled for June 27 - 28. With no interest shown, the club will not be participating in Field Day as a club. Individual members will be participating from their home stations.

The now annual NARC **Ice Cream Social** will be held on our regular meeting

night in July. Start planning now on what flavors of the cold stuff you want to bring. The club will furnish bowls, spoons, and napkins. Several members expressed their disappointment that Blue Bell Creameries is temporarily shut down and said they would accept a non-lethal dose of Listeria if they could again get Blue Bell Ice Cream.

New Business:

Robert KD5FEE noted that solar activity has been causing radio blackouts recently on the HF bands.

Bob K5ME and **Army AE5P** participated in the WPX CW contest.

Army AE5P gave an update report on the status of the club's 146.840 repeater.

John KC5MIB is the new EC for Nacogdoches County. Many thanks to **Robert KD5FEE** for his valued service in this role for the past year.

Mike WD5EFY gave a report on RACES and passed out forms to apply for RACES membership. These should be mailed directly to Mike for processing.

Meeting closed at 8:13 p.m.

Show and Tell: **John W5FWR** showed off his latest tactical flashlight.

Program: **Army AE5P** with assistance from **Tom W5TV** presented a program on **NBEMS**, a digital communications mode that can be used with Android tablets and smartphones to send and receive digital messages via VHF/UHF repeaters. Members are encouraged to become familiar with the software and practice with it during our weekly nets.

MY 2 CENTS

FOX WILLY ROGER

JULY 2015:

Summer is here with a bang, 90 deg plus weather, what happened to the cool weather?

JULY is also our **ICE CREAM SOCIAL** month, remember big prize for BLUE BELL flavor of the month.

AE5P has gotten us on to a new mode with this Nimble Butt and its insatiable messaging system. I also understand that I am not the only person that is having problems with this, I for one cannot bring up the program on my duty-dot, at least I got the program from my computer to my duty-dot, one giant step.....

Army is making up another radio box, this time with real metal, not a plastic enclosure, could this be a portable nimble butt system, wait and see?

AE5P went to HAM COM and didn't purchase the latest Flex radio; he must

be coming down with something. On this trip were the usual suspects, all of them came back with the same report, "another great place to eat", a long way to go for a burger.

The big rains have passed but not all together, seems like when I get up enough energy to cut my grass, it rains again, with that my riding mower is sick and all I have is an electric push mower, and that doesn't take long to wipe me out, by the time I have regained my energy the grass is back where I started, go figure.

FLASH: Bailey Curtis is doing better, I was over to his home and there wasn't any sign of his being changed in any way. Keep charging Bailey. Your get well cards helped, I want to take this time to thank all who sent cards, thank you.

WOW, another great program "the mystery of Nimble Butt" thanks Army, once more you have come up with a challenge that I

can't master, what will he come up with next?

It has been reported to me once more that the 84 repeater is still sick, maybe you folks should send it some get well cards too. It worked for Bailey. So send those cards to:
84 repeaters
c/o AE5P

Remember a card today will go a long way, so don't be shy, send in those cards today, and you can send more than one.

The **FIELD DAY** has come and gone with no good results, I guess the rocking chairs were too comfortable to get out of?

The latest **QST** page 83 has a picture of a California friend and his crank up trailer rig; this is what you can do if you get out of those rocking chairs

As you can see, as with last time I am using more spaces, this system seems to work well, so why not use it till it drops?

PHASE II.V.V:...

I have been watching **CU** lately, how is it that cats know how to find the middle of the path, I reported this last month, lately I have caught her with a tape measure, measuring the middle of the pathways, she even got **TB** to help, so now both have the whole house mapped, and they are not afraid to lay or set right in the middle. I still have to climb over around but not through them.

It has come apparent that **CU** has a system, and she has it down pat. "Why walk when you can stand, why stand when you can sit, why sit when you can lie, why lay when you can nap", something she must have gotten from Rusty. At times I think **CU** is trying to get **TB** to stretch for her, I can't prove this, but that's what it looks like.

GB still walks on the roof on occasions and does it in a fashion of "I am king of the hill". **Visitor** is around more with her kitten, and **Tuff Guy** makes his present known along with

Ghost, I will try and take pictures of my extended family and get them in the paper so all can see who I am talking about.

THOUSANDS OF YEARS AGO CATS WERE WORSHIPED AS GODS, THEY HAVE NEVER FORGOTTEN THIS

WHY IS IT?

Now that the **HOT** weather is upon us, how come birds don't burn there feet on the road way? And what about **BEEF JERKY**, everybody knows how it's produced, then why is some producers call it "FRESH BEEF JERKY"?

And another thing, **ICE MAKERS**, you know your frig has one. How does the frig know how much water to fill the trays? And why are they half round, all that does is make a dam in the glass and holds back what you are trying to drink and all you get is a face full of drink. Can/will anyone give me an answer?
HMMMM

GREAT INVENTIONS OF ALL TIME:

Electric car windows, how else are you going to lower the window fast enough in order to scream at a fellow driver or someone standing on the sidewalk? In my day, it seemed to take forever to roll down the window.

The end is here, **TWT** and I thank you all for tuning in and remember to shop our sponsors.

It's Army's turn to fill in all the blank spaces.

Remember: keep your powder dry and your head below the horizon.

Happy Trails

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

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John Cechin W5FWR

Carrots4ever2u@suddenlink.net

EDITOR'S NOTES

This month we are pleased to add a column from our new Emergency Coordinator (EC) KC5MIB. As many of you remember, John previously was our Vice President and wrote a monthly column for our newsletter. There is no truth to the rumor he moved away to be able to quit writing his monthly VP's column. But now that he's back, I have imposed on him to write a few things we need to keep in mind regarding emergency communications. I hope you will find them useful.

Also, I would call your attention to the special time and place for our next meeting.

VE TESTING

Our next VE testing is scheduled for Wednesday, July 15 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 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.

The actual operating frequency for each net is at the discretion of the net control operator. The Monday night nets have been meeting recently on the club 444.050 UHF repeater or the 147.32 VHF repeater. Stay alert to other possibilities such as a simplex frequency or even HF.

NEXT MEETING ICE CREAM SOCIAL

The next meeting will be on **Wednesday July 1st** at **6:00 p.m.** at First Baptist Church in Nacogdoches. The address is 411 North Street (across the street from the old Mize building). You can park in the North parking lot and enter through the Northwest door. The meeting room will be the first door on the left after you enter the building. Bring your favorite ice cream or just your appetite. The club will provide paper goods, bowls and spoons. Families are most welcome to attend.

84 REPEATER UPDATE

Several club members conducted further tests on the main heliax run

using a Time Domain Reflectometer (TDR) that can measure the distance to impedance discontinuities. The measurements showed a major impedance bump near the top end of the heliax run, so we may be able to fix this problem by simply cutting more off the top end and replacing it. We are making arrangements to have this done.

In the meantime, 84 continues on the air with a temporary antenna about 15 feet high instead of the permanent antenna which is 300 feet high.

OUR NEWEST HAMS

Please welcome our newest hams, Sam Fuller KG5IDP from Carthage, and Rick Timbs KG5IDQ from Jacksonville. Both passed their Tech exams at our last VE test session. Congratulations to Sam and Rick.

NOTES FROM OUR EC

First off, thanks to everyone who handles our two traffic and practice nets and to EVERYONE that participates. It's good to have you.

June 1st started the 2015 hurricane season. I do not recall how many severe storms the National Weather Service and Hurricane Center said might occur this season, but, it only takes one storm the likes of Katrina to get us hopping. Are you ready?

So? How prepared are you not just as a ham but also for the family, your pets and so many other things. If you are going to leave the area, do you have a route and an alternate route to travel?

Again, thank you to all the hams who are participating in the nets. If you are reading this and haven't been on the nets, please check in when you can. Our ARES/RACES net meets every Monday at 8:00 PM local and on Thursdays

the Deep East Texas Skywarn Emergency Weather net meets at 8:00 PM. Right now we are meeting on the Skywarn repeater 147.32. If there is a change to the 70 cm repeater the operator usually announces it in enough time to plan for the frequency change.

The nets have been doing well and there has been some after net, net work. I'll let you figure that one out. Army has taken the lead practicing passing digital traffic. No, it's not WINLINK, but MT63_2000_LG. It seems to be working fairly well. Everybody is learning something about the system. I'll go into MBEMS and this neat little and powerful program and passing traffic with it next month. Again Army thanks and for all the folks that are participating in the testing.

A reminder: Net Control Operators don't forget to send me your net reports. I compile those reports and send them to

our DEC who in turns passes them to our SEC.

Until next time,
73 de John KC5MIB

UPCOMING EVENTS OF NOTE

Mark your calendars for the following events coming up in the next few months:

IARU HF World Championship
1200Z, Jul 11 to 1200Z, Jul 12
<http://www.arrl.org/iaru-hf-championship>

CQ Worldwide VHF Contest
1800Z, Jul 18 to 2100Z, Jul 19
<http://www.cqww-vhf.com/2014VHFcontest%20rules.pdf>

North American QSO Party, RTTY
1800Z, Jul 18 to 0600Z, Jul 19
<http://www.ncjweb.com/N AQP-Rules.pdf>

North American QSO Party, CW
1800Z, Aug 1 to 0600Z, Aug 2
<http://www.ncjweb.com/N AQP-Rules.pdf>

North American QSO Party, SSB
1800Z, Aug 15 to 0600Z, Aug 16
<http://www.ncjweb.com/N AQP-Rules.pdf>

ARRL Rookie Roundup, RTTY
1800Z-2359Z, Aug 16
<http://www.arrl.org/rookie-roundup>

ARRL September VHF Contest
1800Z, Sep 12 to 0300Z, Sep 14
<http://www.arrl.org/september-vhf>

Texas QSO Party
1400Z, Sep 26 to 0200Z, Sep 27 and
1400Z-2000Z, Sep 27

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

CQ WW DX SSB
0000Z, Oct 24 to 2400Z, Oct 25
<http://www.cqww.com/rules.htm>

ARRL Sweepstakes Contest, CW
2100Z, Nov 7 to 0300Z, Nov 9
<http://www.arrl.org/sweepstakes>

ARRL Sweepstakes Contest, SSB
2100Z, Nov 21 to 0300Z, Nov 23
<http://www.arrl.org/sweepstakes>

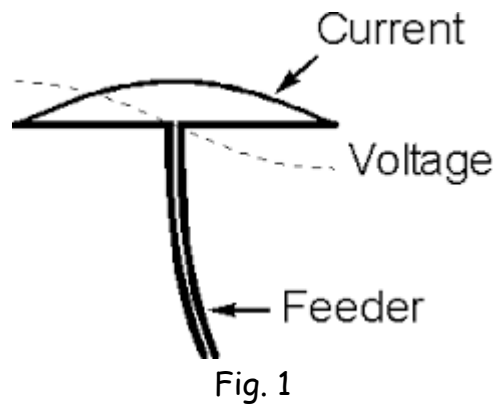
CQ Worldwide DX Contest, CW
0000Z, Nov 28 to 2400Z, Nov 29
<http://www.cqww.com/rules.htm>

Baluns, Part 2

By

Thomas Atchison, W5TV

In this article I would like to focus on a half-wave dipole that is fed with a transmission line. The half-wave dipole is usually constructed of wire and we connect a two conductor transmission line to the center, one conductor of the transmission line to one half of the antenna and the other conductor of the transmission line to the other half of the antenna. Ideally, the dipole is horizontal and symmetric about the feed point. The center impedance of the dipole is around 72 ohms. Also ideally, the transmission line has a characteristic impedance of around 72 ohms and it leaves the dipole at a right angle. (Fig. 1)



We also assume there are no other objects near the dipole or feedline (an obvious ideal situation).

We now feed an r.f. current into the transmission line at the bottom. This current feeds into the halfwave dipole at the center. Since this is a halfwave dipole the current on the antenna elements is always moving in the same direction at any point in time. This means that the current in one wire of the transmission line is moving in one direction whereas the current in the other wire of the transmission line is moving in the opposite direction (Fig. 2).

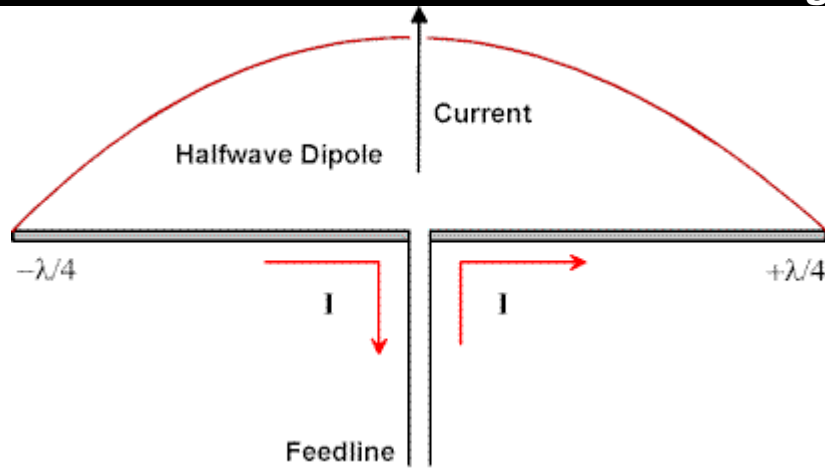


Fig. 2

Recall that this is an alternating current so it reverses direction depending on the frequency of the r.f. signal. This current on the transmission line is called a differential mode current. A moving current sets up a magnetic field around the conductor, however, the two conductors are very close and the magnetic fields created by the flow of current in each conductor in opposite directions causes the two magnetic fields to effectively cancel one another. This means the transmission line will not radiate electromagnetic energy.

When a current flows through a conductor with no close-by opposing current, we call the unopposed portion of current common mode current.

Note that the current on our dipole antenna element above is a common mode current. This is necessary if we are to radiate an electromagnetic wave from our antenna. In effect, the common mode current generates an electromagnetic field that propagates away from our antenna. We want this to happen in our antenna element, not on our transmission line.

If we are not in an ideal situation then an undesired r.f. current may be generated that flows in the same direction at any instant on both conductors of the transmission line. This is again a common mode current. This common mode current can be generated by asymmetries in the antenna, by objects around the antenna and/or transmission line, by the way the transmission line leaves the antenna, or a number of other non-ideal conditions. Common mode current can also create noise during receive and it can distort the pattern of the antenna on both transmit and receive. This common mode current can occur on either coax or parallel transmission line.

Let me give you an example of what may happen if you feed a dipole with a coaxial cable. This example is from the ARRL Antenna Book, 19th Edition. Consider the current flow model in Fig. 3.

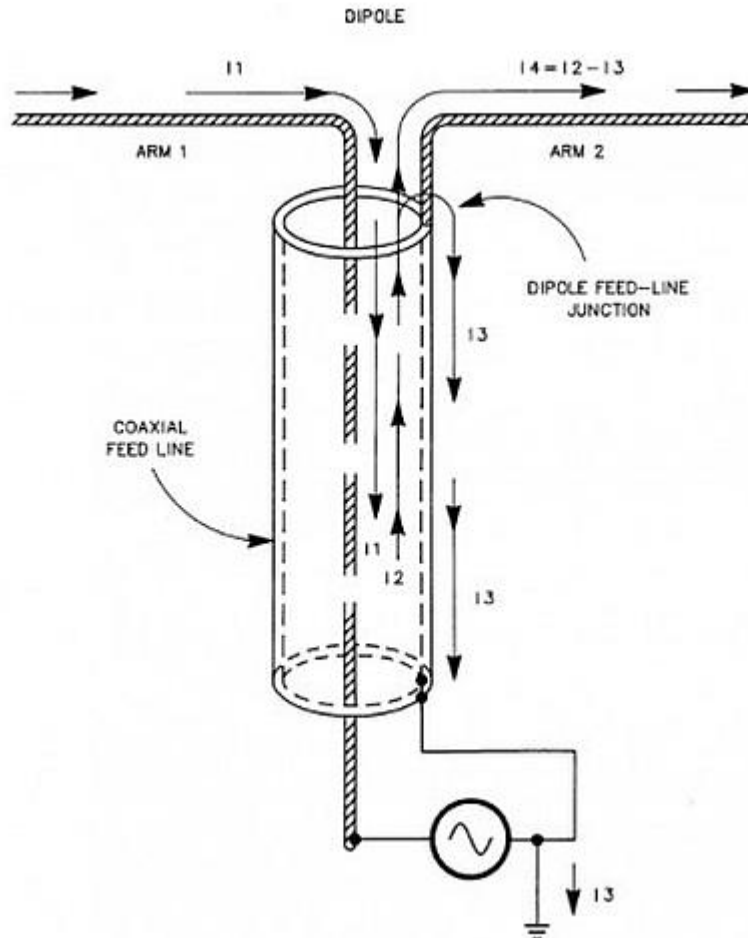


Fig. 3

Currents I_1 and I_2 flow on the inside of the coax. Because of skin effect, I_1 flows on the outer surface of the coax's inner conductor and I_2 flows on the inner surface of the shield. Since these currents are inside the coax shield, the field outside the coax is zero as described above. Notice that the currents that are flowing on the dipole are labelled I_1 and I_4 and they both flow in the same direction as we mentioned above. Current I_1 on ARM 1 flows directly into the center conductor, however, when current I_2 reaches the junction with ARM 2 it splits into two components. The current I_3 flows down the outside of the shield (because of skin effect). This means that the current I_4 is actually given by the formula $I_4 = I_2 - I_3$. The magnitude of the current I_3 depends on the relative impedances in each current path beyond the split. I_3 is a

common-mode current on the transmission line. Similar situations can occur with different antenna elements i.e. vertical ground planes, J-poles, yagis, etc.

One solution to this problem of common mode currents is to place a common mode choke balun at the feed point. One way of doing this is to wrap some of the coaxial feedline into a coil at the feed point. A particular antenna that I have at my station is a 2 meter J-pole . This is certainly different from a dipole, however, it can have common mode current on the transmission line. This particular antenna is fed with a short length of RG-58 coaxial cable. In order to handle the common mode current on the transmission line I wound 5 turns of this coaxial feedline around the PVC base holding the J-pole. The differential mode current inside the coax is unaffected by the coiled cable, however, the common mode current trying to flow on the outside of the coax braid is choked off by the reactance of the coil.

We will explore other types of common-mode choke baluns in later articles.