

# 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 and have fun.



## MAY MINUTES

The May meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on May 4th. President John W5FWR opened the meeting at 7:00 p.m. in the Parish Hall of Christ Episcopal Church. Sixteen members and two guests 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 an update 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 120 QSL cards have been received so far. All contacts have been posted to LOTW and QSL cards have been made out for all contacts. All cards should be in the mail within the next week.

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.

**John W5FWR**, proposed a new Special Event station be considered for March 21 next year, celebrating San Jacinto Day.

A reminder to everyone that our July meeting on July 6<sup>th</sup> will be our annual **Ice Cream Social**. More information will follow.

Meeting closed at 7:40 p.m.

**Program:** Army AE5P presented an update on our proposed Field Day operation this year. Chairmen have now been set for all bonus point categories. We expect to enter as a class 2F with a GOTA station. Everyone is invited to participate.

## MY 2 CENTS FOX WILLY ROGER

### JUNE 2016:

June means FIELD DAY, yes, FIELD DAY, that's when we all go out roughing it away from our QTH stations and play radio for 24 hours. This is a good training time for many of us, to sharpen our radio skills, one day we may be called on to help in the time of need, so come out and sharpen your radio skills. See you out there.

FD is not the only event happening, a VHF fun run get together. And don't forget the ham fest in the Dallas area, so many things going on its hard to choose one, if nothing else the one you choose should be the FD, fun for all.

NPOTA is start going on its sixth month of the one year planned run. The club is not talking about doing a turn in the Big Thicket but anyone can go and have some fun for a few hours or a day or a weekend, go out and have some fun. Many things to do; go out and do some.

### THE CRAZY CAT GUY:

Mother cat had another litter of kittens, so far I've seen three, one like mom with white socks, the second looks like mom with a bad hair day, and third is black, that's three litters in a row with a black offspring, what's the odds on that? Lou is doing some catting around, one day about a week ago he showed up with a bit of his right ear chewed on, a few days ago he appeared with a chunk out of his butt, it looks like Lou is learning how to be a tom cat. Daisy May got fat and now she's slim, I guess I'll have to look around for more kittens. Tigger Boy is doing a little bit of roaming too, but his travels are closer to home, brave isn't he? Tigger Girl sticks close to home and is usually the first one in the chow line. Lou is the last one, most of the time we have to wait on him to show up.

The inside cats are just the same, just more demanding, each one thinks that she is number one and

should be the only one getting attention from me. My cats are still happy to see me when I make a trip away from the house and return. Tar Baby likes to investigate the inside of the refrigerator and freezer, she likes to walk inside and check everything out.

LG is showing up less and less, he's another one that could use some tom catting lessons.

#### DID YOU HEAR THE ONE:

A guy named Frank wanted a pet to live with him. Frank didn't want just a kind of pet that everyone else had, so he started looking around. Frank called every pet store in the phone book and visited all that were not. One day Frank was in China Town and came to a small shop with some animals for sale. He looked at all the shop had to offer and came across a ball of fur. Frank had to ask the person attending the shop what the animal was. The shop owner said that the animal

arrived a week ago in a shipment, all the shop owner could say was that the papers called it "Perary". Frank was sold; he purchased Perary and took it home. One week later Perary grew to twice its original size. Frank thought nothing of it until the next week with Perary growing twice its size as the week before. This went on for a few weeks with Perary growing and growing. Frank got a pickup truck and carried Perary back to the shop in China Town and found an empty store with no sign of the owner. By now Perary was so big that Frank had to build a special back yard pen, soon that was too small. Frank got an 18 wheeler flatbed truck and loaded Perary onto the truck and drove it to the highest cliff around, backed the truck to the edge and started to unload the animal when all of sudden two eyes appeared and looked at Frank and then over the edge and then back to Frank, with a strong voice said:

WAIT FOR IT

It's a long way to Tip Perary

#### GREAT INVENTIONS:

Nails, how else you going to hang those pictures or repair that fence or get into your tires, how else will all the tire places stay open? Boxes, how else you going to carry all your radio stuff or how would you get anything new from the store? Paper, now plastic sacks, I can remember when we went to the grocery store, before paper bags, the goods were loaded into boxes that the store got their food in. Sometimes the boxes were all used up and we had to carry the food in my wagon. Also in those days a butcher and bakery departments with fresh non-frozen goods were fresh every day. I can remember purchasing horsemeat, used for dog food?

#### DID YOU EVER THINK?

Math problem for you extras:

$$1 + 4 = 5$$

$$2 + 5 = 12$$

$3 + 6 = 21$

$8 + 11 = \underline{\hspace{2cm}}$

And the answer is 40

Check with Dr. Tom, he got it right.

(Maria did you get that answer?)

Why is it that automobile tires don't last? You should be able to develop a life long tire; NASA put a man on the moon didn't they? The rovers the astronaut's took to the moon didn't go flat, forever, and no oil changes, go figure.

HMMMM

I will now leave a lot more spaces for the others to use, don't be shy, and fill up the pages.

LIVE WELL, LAUGH OFTEN, LOVE MUCH!!!

Let me know, what do you think?

KEEP YOUR POWER DRY  
AND YOUR HEAD BELOW  
THE HORIZON.

HAPPY TRAILS

John Cechin W5FWR  
[Carrots4ever2@gmail.com](mailto:Carrots4ever2@gmail.com)

## NOTES FROM OUR EC

June will soon be upon us. Field Day is 25 June at the airport. We have some really good plans. Let's see if we can have a really good turnout and demonstrate what we can do.

June is also the start of Hurricane Season. Some forecasters are predicting it will be the most active season since 2012 with 12-14 named storms, 6-8 hurricanes and 2-3 of those being Category 3 or higher. We have felt the effects and the aftermath of Katrina, Ike and Gustav. That being said, there are a number of EC resources that Andy KE5EXX has collected and made them available on our website:  
<http://w5nac.com/resources/ares-races/>

A couple of them you should get familiar with, ICS 213 and Nac ICS 309. Please take a look at them. Those of you who have practiced with NBEMS have seen the 213. I think

the fldigi program can also pick them up for transmission. The 309 is a message log which can come in very handy for tracking any message traffic. Andy will be bringing a program on the 213.

To close: Monday, 30 May, is Memorial Day. Will you all please take a moment and remember the men and women from the Army, Navy, Marines, Air Force, Coast Guard and Merchant Marines who paid the ultimate price for our freedom

73 de John Chapman  
 KC5MIB  
[jlchapman2@juno.com](mailto:jlchapman2@juno.com)

## VE TESTING

Our next VE testing is scheduled for Wednesday, June 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](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 June 1st** at 7:00 p.m. in the Parish Hall of Christ Episcopal Church. Come join us.

## VE TEST RESULTS

We have two new hams after the VE test session on May 18. **Gregory Ates KG5NRO** from Lufkin and **Timothy Lucas KG5NRP** from Big Sandy. Congratulations to both. Please make them feel welcome if you hear them on the repeaters.

## FIELD DAY

Plans for Field Day are taking shape, but we need you to make it all work. Here's the current plan:

We will operate from the Nacogdoches Airport using the City/County Mobile Command Post EOC Trailer located behind the Pilots' Lounge. We will operate Class 2F using an Icom 756 Pro-II furnished by WA5GVQ and a solar powered Flex 1500 furnished by W5TV. Antennas will include a Cushcraft A3S tri-band yagi to be mounted on the 'Green Monster' and a

Butternut HB-2V vertical for 40/80 meters. In addition, we will have a club 'Orange Box' with VHF/UHF FM radio and portable antenna.

Ralph WD5RAH will bring his 5<sup>th</sup> wheel RV out and operate a GOTA station from it with his new Flex 6300 and separate antennas.

Ralph and Bill KT5TE plan to work one or more of the satellites. You don't want to miss watching this.

Please check out the full rules for Field Day at <http://www.arrl.org/field-day>. There are many opportunities for bonus points, and we now have volunteers for all of them.

Bonus points categories include:

Media Publicity (**KC5MIB**)

Public Location (**done**)

Public Information Table (**WK5F**)

Message Origination to SM (**W5TV**)

|   |  |   |
|---|--|---|
| Satellite QSO ( <b>WD5RAH / KT5TE</b> )   | The club will provide drinks (soda, water, coffee) for the event, pizza for supper Saturday evening for participants, and Sunday breakfast prepared by WD5RAH.   | You do not have to be an expert to participate; you do not need to be a member of NARC to participate; you don't even need to be ham. You only need to come out to the airport Field Day weekend and <b>PARTICIPATE</b> . |
| Alternate Power ( <b>AE5P / W5TV</b> )  |  |   |
| W1AW bulletin ( <b>W5FWR</b> )  |  |   |
| Educational Activity ( <b>KE5EXV</b> )  | Logging will be via laptop computers running N3FJP software.   | <b>Please help make this our best Field Day ever.</b>   |
| Site visitation by elected governmental official. ( <b>KC5MIB</b> )   | Breakfast at 7:00 Saturday morning at IHOP will be followed by setup at the airport. We will definitely need lots of help in getting antennas and other equipment setup Saturday morning, and taken down again Sunday.   |   |
| Site visitation by representative of an agency. ( <b>AE5P</b> )   |  |   |
| GOTA bonus ( <b>WD5RAH</b> )  |  |   |
| Web submission of results ( <b>AE5P</b> )   | Please plan to assist.   |   |
| Youth participation ( <b>Everyone</b> )   | Field Day can be a lot of fun, but it is also a lot of work. The only way it can happen is if everyone pitches in and helps. It is probably one of the best opportunities available to learn about setting up a ham station and operating it under emergency conditions. Many hams have gotten their first real radio experience during Field Day. |   |
| Social Media ( <b>KE5EXX</b> )  |  |   |
| Safety Officer ( <b>WA5GVQ</b> )  |  |   |
| See something you would like to do? Volunteer at the meeting or via e-mail to AE5P, or at the Field Day site. |  |   |

## 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>

### **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>

## A Two-Meter Loop

by

Thomas Atchison, W5TV

In the May 2016 issue of QST there is an excellent article entitled "Another Look at the Full-Wave HF Loop Antenna" by Joel Hallas, W1ZR (pp. 42-45). This article gave me the idea of looking at a VHF full-wave loop. I would like to examine what we can do with a full-wave loop on 2 meters.

For this simulation I constructed a horizontal loop in the form of a square with 1.82 feet on each side. I used #12 copper wire and placed the loop 30 feet above simulated real ground. The feed point was at one corner so the antenna looked like Fig. 1.

EZNEC

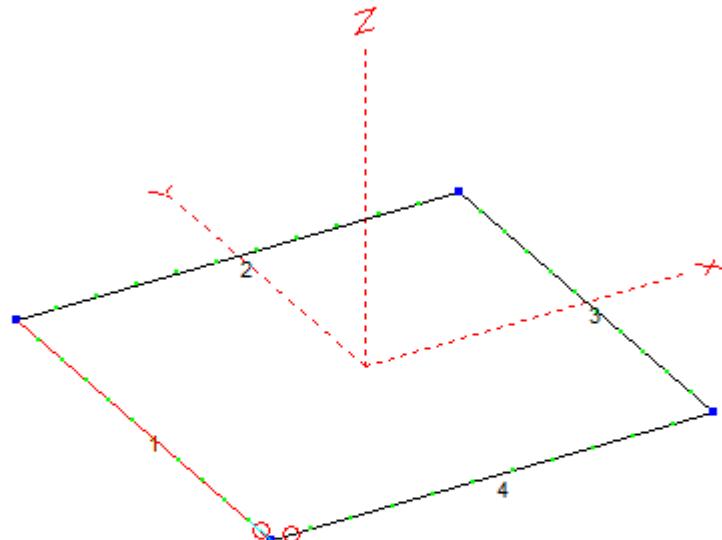


Fig. 1

The feed point is shown by the two red circles where wire 1 and wire 4 join. The impedance at this point is about 125 ohms and the SWR over the range from 144 to 148 is shown in Fig. 2

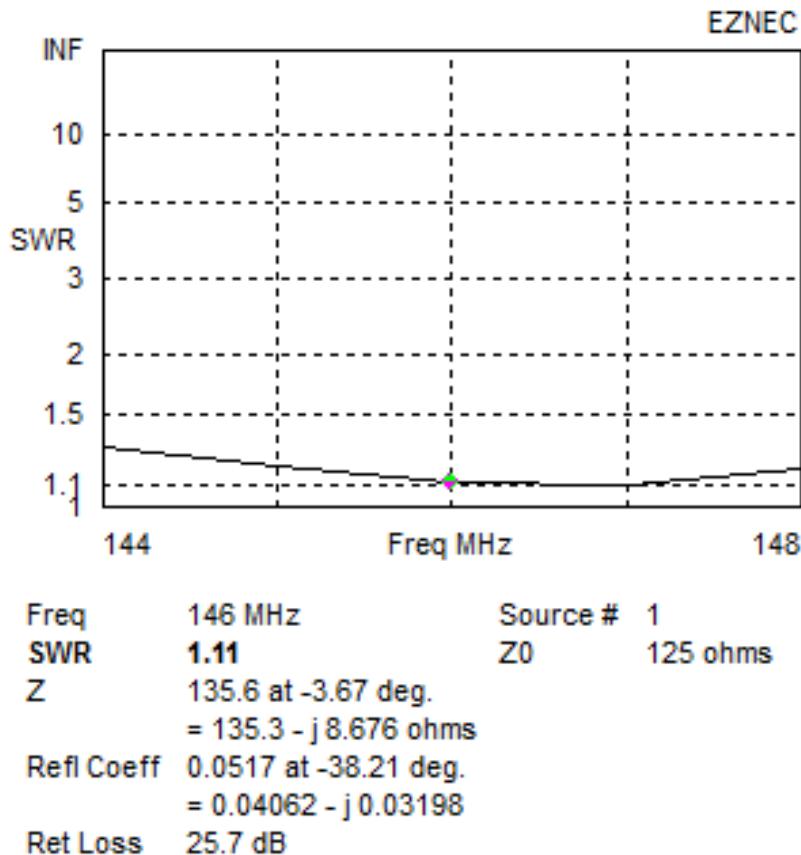


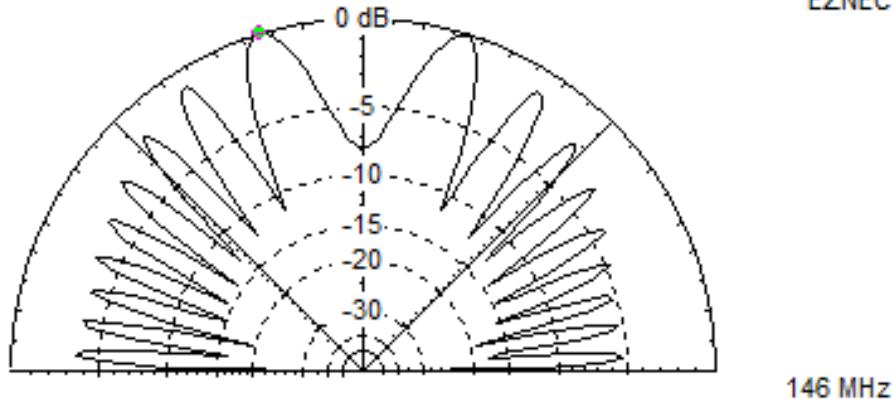
Fig. 2

Notice that  $Z_0 = 125$  ohms. It is possible to construct a coaxial matching network that will allow you to use 52 ohm coax as a feed line. In the May issue of QST that I referred to above the author suggests the use of a  $\frac{1}{4}$ -wave section of 75 ohm coax to transform the 125 ohms to about 50 ohms.

The radiation pattern shows maximum radiation in a plane containing the feed point corner and the corner opposite from the feed point corner. In that sense it is behaving like an unterminated rhombic antenna. The elevation pattern is shown in Fig. 3.

Total Field

EZNEC



Elevation Plot

Azimuth Angle    0.0 deg.  
 Outer Ring      6.69 dBi

Cursor Elev    107.0 deg.

Gain              6.69 dBi  
 0.0 dBmax

Slice Max Gain    6.69 dBi @ Elev Angle = 107.0 deg.  
 Beamwidth        12.1 deg.; -3dB @ 100.1, 112.2 deg.  
 Sidelobe Gain    6.56 dBi @ Elev Angle = 73.0 deg.  
 Front/Sidelobe   0.13 dB

Fig. 3

Note that the main lobe of this pattern is at 107 degrees so we have a lot of vertical radiation.

If we change the feed point to the center of wire 1 the only thing that will change is the direction of maximum radiation. In this case it will be in a plane bisecting wire 1 and wire 3.

The radiation pattern in Fig. 3 suggests that we might obtain a better radiation pattern by orienting the antenna so the loop is perpendicular to the ground. We will have the lower wire (wire 1) at 30 feet elevation and the antenna will look like Fig. 4.

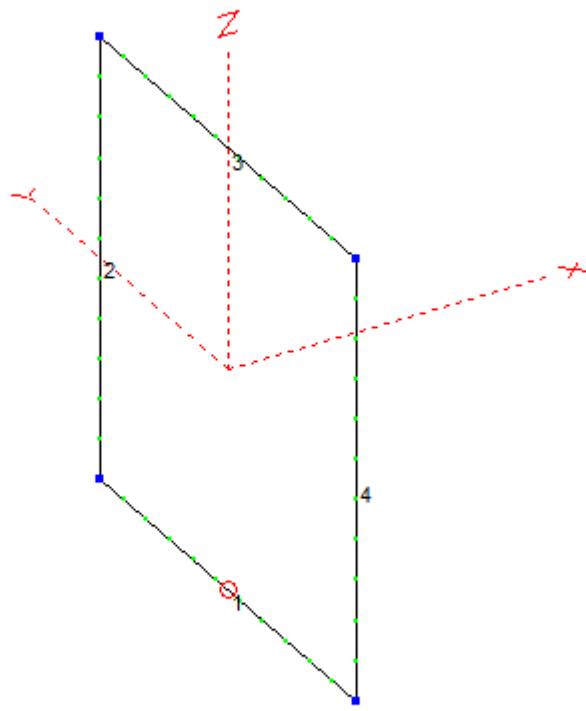
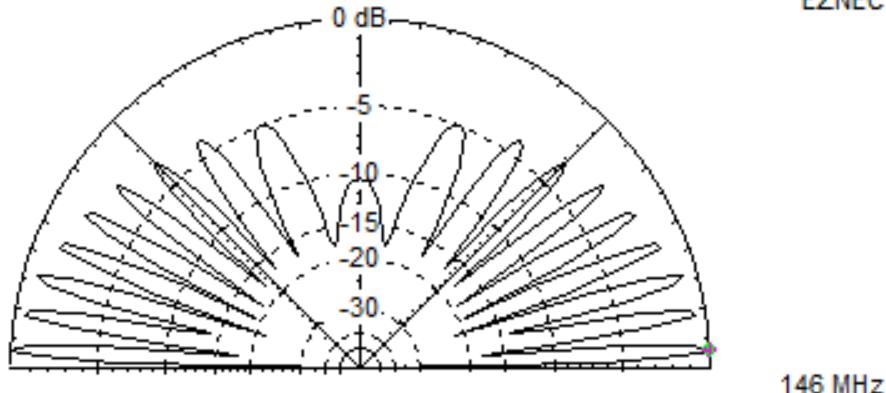


Fig. 4

We will feed the antenna in the middle of the lower wire (wire 1). The SWR remains the same however the elevation plot now looks like Fig 5.

Total Field

Elevation Plot

Azimuth Angle 0.0 deg.  
Outer Ring 9.27 dBi

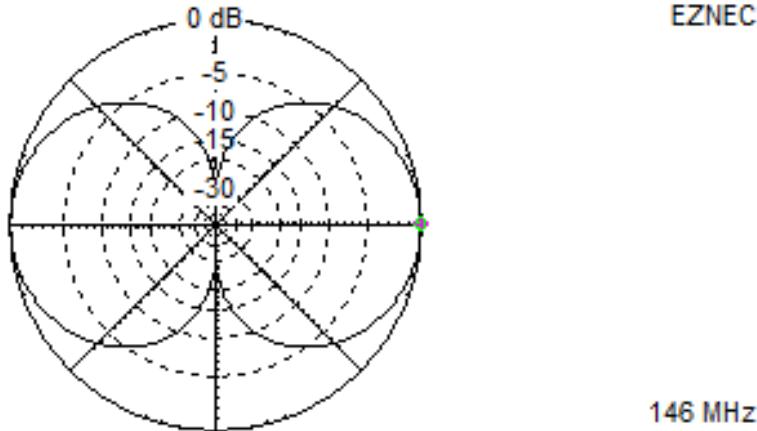
Cursor Elev 3.0 deg.

Gain 9.27 dBi  
0.0 dBmax

Slice Max Gain 9.27 dBi @ Elev Angle = 3.0 deg.  
Beamwidth 2.9 deg.; -3dB @ 1.7, 4.6 deg.  
Sidelobe Gain 9.27 dBi @ Elev Angle = 177.0 deg.  
Front/Sidelobe 0.0 dB

Fig. 5

Here maximum radiation occurs at 3 degrees and it is in a plane perpendicular to the plane of the antenna. This is a much better pattern than the previous one for distance work. The azimuth plot at 3 degrees is shown in Fig. 6. Notice that we have nulls in the plane of the loop.

Total Field

Azimuth Plot

Elevation Angle 3.0 deg.  
Outer Ring 9.27 dBi

Cursor Az 0.0 deg.

Gain 9.27 dBi  
0.0 dBmaxSlice Max Gain 9.27 dBi @ Az Angle = 0.0 deg.  
Front/Side 25.75 dB  
Beamwidth 84.2 deg.; -3dB @ 317.9, 42.1 deg.  
Sidelobe Gain 9.27 dBi @ Az Angle = 180.0 deg.  
Front/Sidelobe 0.0 dB

Fig. 6

By the way, if we feed the antenna at the center of wire 1 we have horizontal polarization. If we feed the antenna at the center of wire 2 we have vertical polarization (Fig. 7).

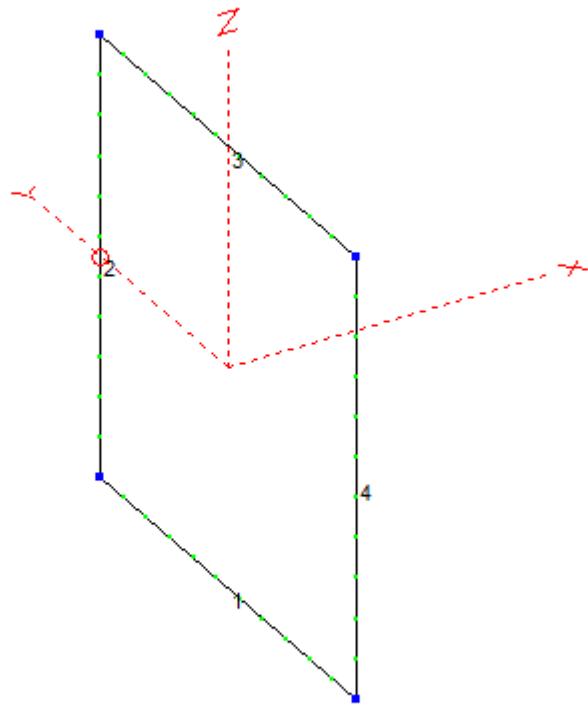
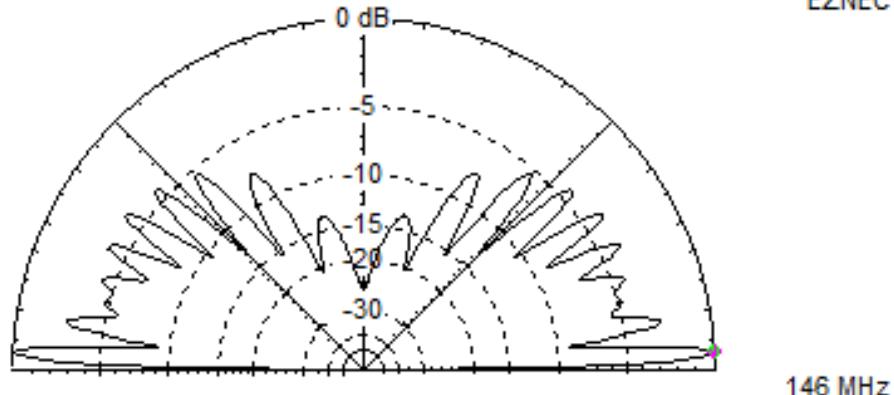


Fig. 7

The feed point is at the center of wire 2 and marked by the red circle. The SWR plot remains the same as before. The elevation radiation pattern is shown in Fig. 8.

Total Field

EZNEC



146 MHz

Elevation Plot  
Azimuth Angle 3.0 deg.  
Outer Ring 7.78 dBi

Cursor Elev 3.0 deg.  
Gain 7.78 dBi  
0.0 dBmax

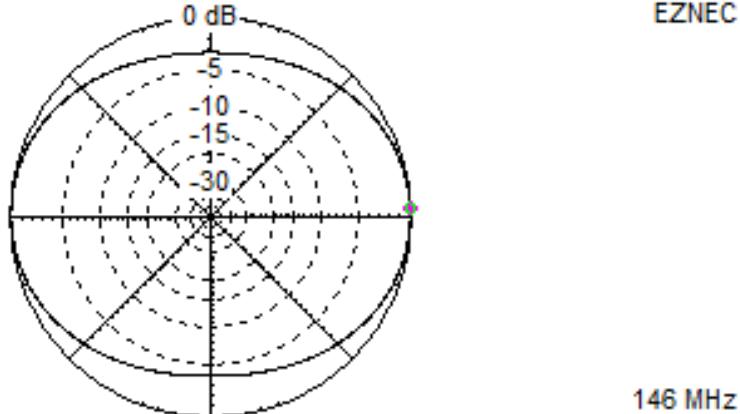
Slice Max Gain 7.78 dBi @ Elev Angle = 3.0 deg.  
Beamwidth 3.2 deg.; -3dB @ 1.4, 4.6 deg.  
Sidelobe Gain 7.76 dBi @ Elev Angle = 177.0 deg.  
Front/Sidelobe 0.02 dB

Fig. 8

Note that maximum radiation is still at 3 degrees and is perpendicular to the plane of the antenna. If we look at the azimuth plot of this antenna at the elevation angle of 3 degrees we observe that there are no nulls in the pattern, Fig. 9.

Total Field

EZNEC



Azimuth Plot

Elevation Angle 3.0 deg.  
Outer Ring 7.78 dBi

Cursor Az 2.0 deg.  
Gain 7.78 dBi  
0.0 dBmax

Slice Max Gain 7.78 dBi @ Az Angle = 2.0 deg.  
Front/Side 3.32 dB  
Beamwidth 136.5 deg.; -3dB @ 296.8, 73.3 deg.  
Sidelobe Gain 7.78 dBi @ Az Angle = 178.0 deg.  
Front/Sidelobe 0.0 dB

Fig. 9

This suggests that we have a good omnidirectional antenna for repeater work.

This vertical full-wave loop is the basis for the construction of a cubical quad antenna. I will discuss the construction of a two element cubical quad and a three element cubical quad in the next article. I have constructed the two element cubical quad antenna for two meters and used it successfully to contact several repeaters at some distance. This was several years ago but the process remains a good one.