



See you at our next meeting!

January 3, 2012 - 7 PM  
First Church, Nashua

## Program

### Project Night

Now is the time to show the Club the results of 2011 “experiments,” trials, errors and, yes **SUCCESSSES or FAILURES** with the projects you undertook and worked so diligently on during the year.



2011-2012 MEMBERSHIP  
as of Dec 23, 2011

8 Life 44 Regular  
TOTAL - 52

### **This month . . .**

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### Announcements

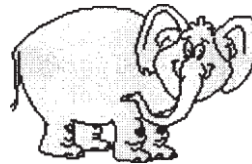
**Additional 2011-2012 New/Renewed Members:**  
AB1NE (Greg) and W1SMN (John)

**IT WAS UNANIMOUS** – All 2011 members of the NARC Board of Directors were **RE-ELECTED** in Dec for 2012 terms.

**However, a VACANCY** does exist for the Programs Director –  
Contact Ed, K2TE, if you are interested

**K1SMD, Steve, provides Fldigi practice and technical support every Monday night at 7:30 – digital ops on 144..950 with voice on the N1IMO system. All are invited to participate.**

# Tiny Elephant's Corner



A NARC Bulletin Exclusive

A monthly column by Ed Deichler, K2TE

## An Antenna with Moxie - Part 2

Well the Christmas holidays have come and gone. In the weeks leading up to the end of the year, I was planning on what I was going to get done with my Beverage before the snow flies. Unfortunately, a nasty stomach virus early in the month and other unplanned disruptions left me with little time available to take off. Oh well, it isn't that big a deal since sunspots have finally returned and 80 and 160 meters have gone dormant.

I did use the expanded weekends of the holiday period to figure out what I want to do for a replacement for my tree-battered 12-meter beam. In last month's bulletin, I mentioned the Moxon antenna developed by Les Moxon, G6XN (SK). Physically, a Moxon antenna resembles a conventional 2-element beam except a portion of the ends of each element is turned to face each other. Modeling the antenna with EZNEC indicated that it has about a dB more of gain and nearly 10 dB better front-to-back rejection. I used copper and aluminum losses for the antenna material, and rocky, mountainous soil conductivity to match the New England area. I chose a height above ground of 60 feet to match my 12-meter beam height.

The resulting EZNEC elevation pattern showed a nice low-angle lobe around 9°. What I was not expecting was additional lobes at higher angles. Figure 1 (Pg 4) is a screen capture of the elevation pattern for the antenna. The overall pattern contains three prominent lobes in elevation with only a slight drop in gain from one lobe to the next. The middle lobe occurs at 29° with a gain a little over 1 dB less than the lowest lobe. The table below shows the performance at each lobe.

Elevation Angle (Degrees)	Max Gain (dB)	F/B (dB)
9	11.55	29.1
29	10.42	20.74
54	8.58	10.71

The prominent lobes meant a good chunk of my signal would be going where I did not want it. Likewise, if I wanted to work the distant, low-angle DX, I would be hearing relatively close stations on the higher lobes almost at the same loudness.

(Cont'd page 3)

### NARC Club Badge Order Form

Please print your First Name and Callsign as you would like them to appear on the badge:

Send (or give) to : **Price: \$5.00 each**  
**Treasurer, Nashua Area Radio Club**  
**PO Box 248**  
**Nashua, NH 03061**

Please make checks payable to: **Nashua Area Radio Club**  
 Badges will be mailed.

### WORLDWIDE DISTRIBUTION



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## An Antenna with Moxie – Part 2 (Cont'd from Pg 2)

I wondered why I had not seen this phenomenon before with the 12-meter beam. I pulled up the model for the beam to have another look. The beam had nearly an identical pattern in the elevation plane and slightly more gain, contrary to what I found last month. The multiple high-angle lobes for the beam now have me wondering if I've been missing a lot of DX because of the deep null around  $18^{\circ}$  –  $22^{\circ}$  as shown in the figure. This range of angles is the usual range for low-angle DXing.

I went back to EZNEC to see what I could do to mitigate the high-angle lobes. I remembered that the higher the operating frequency at HF, the lower the antenna should be for optimum performance, i.e. take-off angle. With that in mind, I lowered the height of the antenna down to 20 feet. The resulting elevation pattern shown in Figure 2 (Pg 5) looks more like a normal pattern with a single lobe at  $26^{\circ}$ . The table below the figure shows the gain is only slightly less than at 60 feet. The front-to-back ratio, however, drops significantly.

So, what do I do? I thought about building two Moxons for the band since they are small. I could mount the one on a push-up mast that I have and use the "Armstrong" rotator to turn it. It would be interesting to compare signals for the different heights. I have observed a difference in signal levels when operating on 10 meters when comparing my 4-element yagi at 55 feet to my tribander at 110 feet. Europe is consistently louder on the lower antenna while the tribander does help pull in the Far East. I think I'll wait on building a second Moxon until I see how the first one compares to the yagi.

There are a number of approaches to building a Moxon. Many of the designs use wire elements with insulated spreaders such as fiberglass poles to provide support and separation. Installing the poles requires an X-shaped center support that also mates up to the mast. I may be able to cannibalize some of my scrap antennas to fabricate a support. Another design uses schedule 40 PVC pipe configured as a compact, 2-element beam with the wires fitted through the pipes or taped to them. The PVC arrangement is easier to install since it looks like a conventional beam, and it is easier to support the feedline to the

(Cont'd page 4)



## An Antenna with Moxie – Part 2 (Cont'd from Pg 3)

driven element. However, the threat of icing on makes me a little skeptical about using PVC without some type of reinforcement. For now, I'm still looking around to see what I can work with.

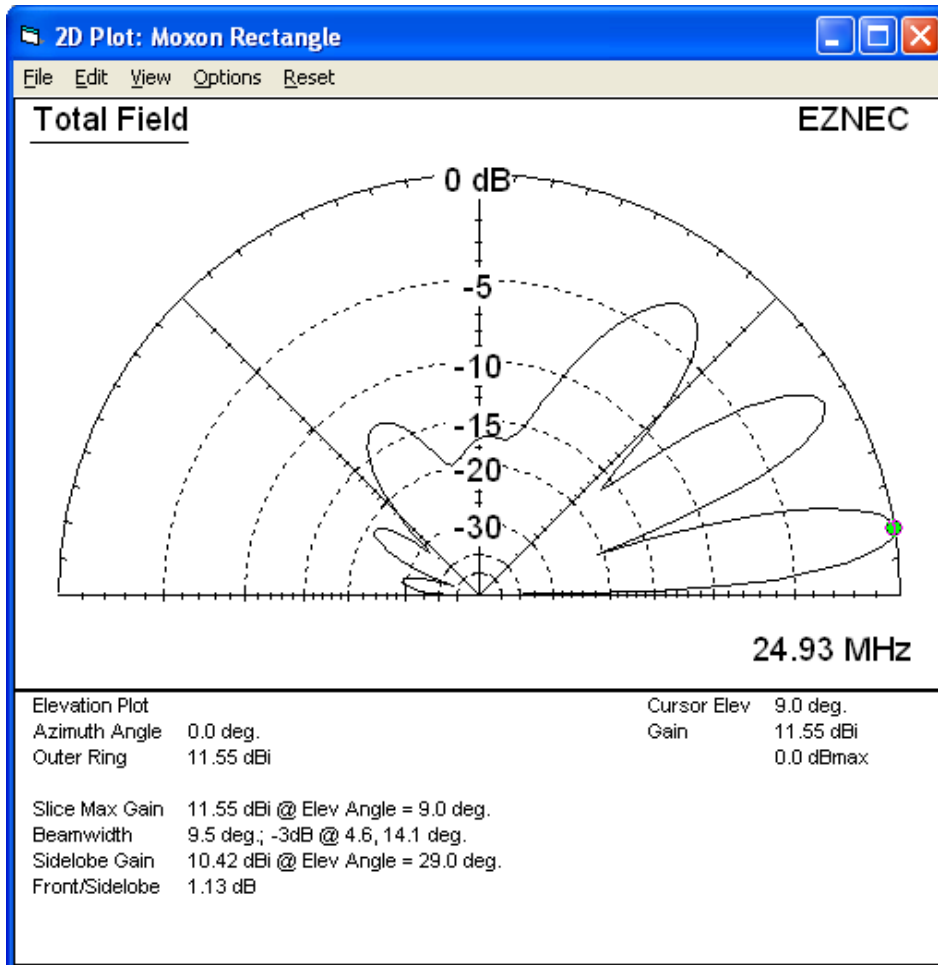


Figure 1 – 12-meter Moxon Pattern at 60 Feet

(Cont'd page 5)

# SEWING MACHINES

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**An Antenna with Moxie – Part 2** (Cont'd from Pg 4)

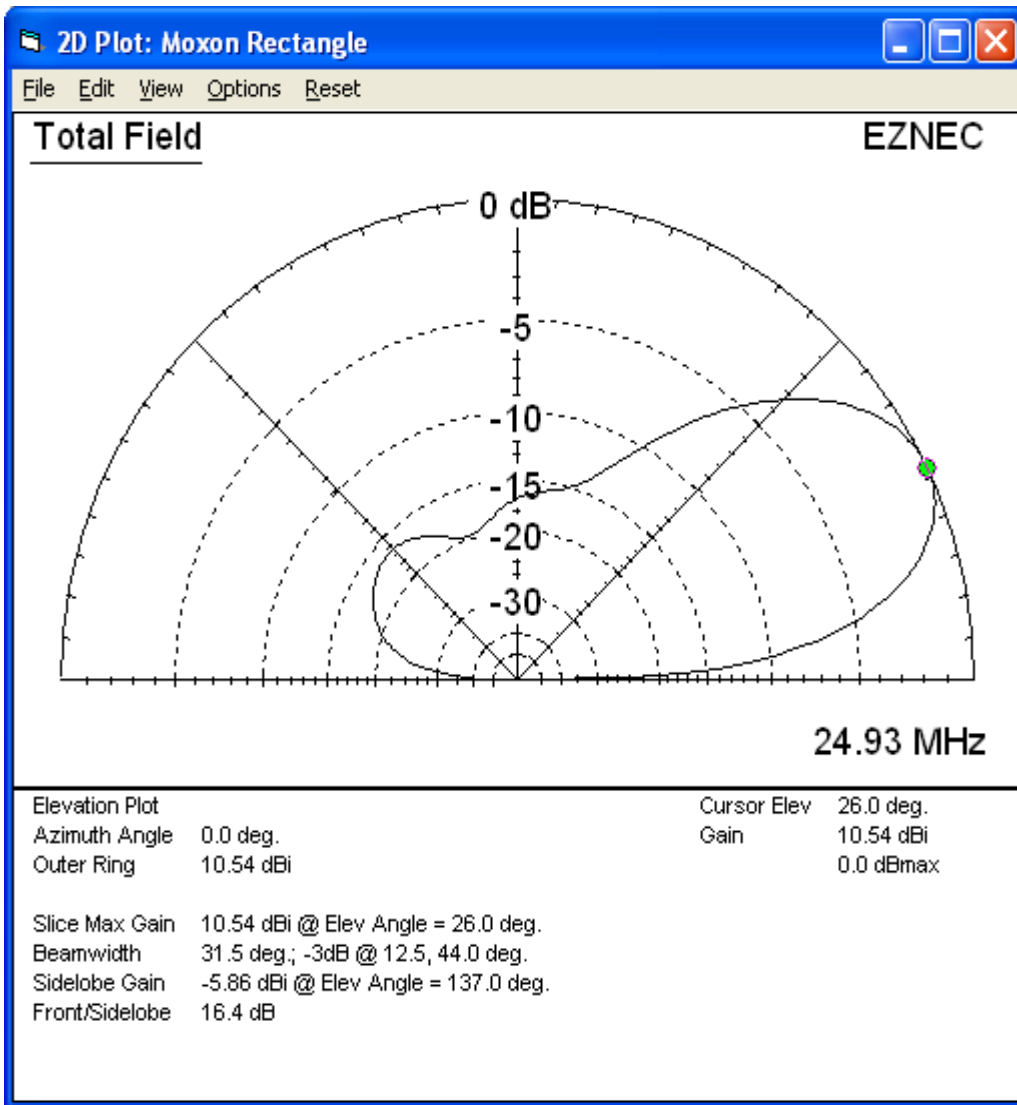


Figure 2 – 12-meter Moxon Elevation Pattern at 20 Feet

Elevation Angle (degrees)	Max Gain (dB)	F/B (dB)
26	10.54	18.0

**Treasurer’s Report – November 1, 2011 to December 6, 2011**

	<b>Beginning Balance</b>	<b>\$4,064.30</b>	
<b>Receipts</b>	<b>Disbursements</b>		
Refreshment Donations	\$ 7.00	Refreshments	(\$13.98)
Membership	\$ 60.00	Newsletter (Nov)	(\$34.50)
<b>Total Receipts</b>	<b>\$ 67.00</b>	<b>Total Disbursements</b>	<b>(\$48.48)</b>
	<b>Balance:</b>	<b>\$4,082.82</b>	

## Minutes of the Board of Directors Meeting - November 23, 2011

**Attendees:** Present were President, Ed Deichler (K2TE); Vice President, John Halbert (W1SMN); Secretary, Jack Duffy (NF1L); and the Membership Director, Bill Lana (N4COY). The Treasurer, Bill Bordy (NJ1H), and Activities Director, Bill Hammond (KA1SSR), were unable to attend.

**Location:** The November Board Meeting was held at the Nashua Public Library.

**Program:** December's program will be the approval of the 2012 Budget, the election of Officers for 2012 and a Classy Jonque (NARC Spelling) Yankee Swap. Refreshments will be Eggnog and Christmas Cookies. January's Program will be Project night.

**Renewal of Go Daddy Domain:** Treasurer needs to take care of it.

**Activities:** No Pizza this week.

**Treasurer:** The Treasurer reported via other means that we have \$4082.82 in the bank at this time.

**Membership:** Currently the Club has 50 members with 42 active members and eight life members.

**Adjournment:** Having no further business the Board Meeting was adjourned. The next Board meeting is December 28<sup>th</sup> at 7:15 PM in the Nashua Public Library. Board meetings are open to any interested members.

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## Minutes of the NARC Club Meeting - December 6, 2011

The Vice President, John Halbert, (W1SMN) called the meeting to order with introductions at 7:05 PM in the First Church.

**Treasurer's Report:** The Treasurer, Bill Bordy (NJ1H) reported that the current Club Treasury balance is \$4082.82.

**Budget:** The Treasurer then presented the Proposed 2012 Budget for review and discussion afterwards a vote was taken to accept the Budget for 2012. The motion carried with a majority vote.

**Election of Officers:** The Vice President then called for nominations from the floor for new members of the Board of Directors. None were received. He then asked for volunteers, noting open positions such as the Program Director. None were received. A motion was made to reelect the current Board. The vote carried by majority acclaim.

**Membership:** The Membership Director Bill Lana (N4COY) reports that we have a total of 44 active members and 8 life members for a total of 52 members.

**Activities:** Pizza this week will be at Bob's in Nashua at 6:30 P.M. Remember Saturday Breakfast at Joey's Diner in Merrimack at 7:00 A.M

**Yankee Swap:** At this point those that brought gifts participated in the Classy Jonque (NARC spelling) Yankee Swap.

**Adjournment:** Having no further business, the meeting was adjourned. Next Meeting is January 3<sup>rd</sup>.

# The Nashua Area Radio Club

Founded In Nashua, NH on October 3<sup>rd</sup>, 1979, in order to operate a non-profit corporation for education and scientific purposes as follows:

- 1) To educate and increase proficiency of its members in the science of radio communications
- 2) To provide for the dissemination of information among its members concerning scientific advancement and progress in the field of radio communication
- 3) To organize and train units of licensed radio amateurs capable of maintaining radio communication as a public service during periods of emergency

## Executive Board - 2011:

President	<b>Ed Deicher</b> K2TE	603-420-8380, pres@n1fd.org
Vice President	<b>John Halbert</b> W1SMN	603- 595-2177, vp@nifd.org
Secretary	<b>Jack Duffy</b> NF1L	603- 882-2085, secy@nifd.org
Treasurer	<b>Bill Bordy</b> NJ1H	603- 882-3789, treas@n1fd.org
Activities	<b>Bill Hammond</b> KA1SSR	603-341-0324, activities@nifd.org
Membership	<b>Bill Lana</b> N4COY	603-557-9783, membership@nifd.org
Programs	<b>VACANT</b>	

## Activities & Committees – 2011:

QSL Manager	<b>Ed Deichler</b> , K2TE	603-420-8380
Field Day Mgr	<b>Ed Deichler</b> , K2TE	603-420-8380
Field Day Ass't	<b>Madison</b> , W1BXR	603-420-8380
Station Trustee	<b>Ed Deichler</b> , K2TE	603-420-8380
Club Property Mgr		
Training		
EC Liaison	<b>Bill Lana</b> , N4COY	603-881-7308
Audit Committee	<b>Frank Swiech</b> , N1DGQ	603-888-0277
Audit Committee	<b>Rich Carter</b> , KE1EV	603-889-2459
Volunteer Exams		

Nashua Area Radio Club Internet Home Page: <http://www.n1fd.org>

WebMaster: **Bill Bordy**, NJ1H  
[webmaster@n1fd.org](mailto:webmaster@n1fd.org)

NARC Board Mailing List: [bod@n1fd.org](mailto:bod@n1fd.org)

NARC General Members Mailing List : [members@n1fd.org](mailto:members@n1fd.org)

ARES Emergency Coordinator for Hillsborough County:  
**Fletch Seagroves**, N1MEO, 673-3036, [fseagroves@myfairpoint.net](mailto:fseagroves@myfairpoint.net)

ARRL: 1-800-32-NEWHAM or [newham@arrl.org](mailto:newham@arrl.org),  
[www.hello-radio.org](http://www.hello-radio.org)

Nashua Area Radio Club meetings are accessible for the physically challenged

## 2012 NARC Calendar

### Board Meetings:

Wednesday, Jan 25, 7:15 PM - Nashua Public Library  
Wednesday, Feb 22, 7:15 PM - Nashua Public Library

### Club Meetings: (Coffee & Donuts at 6:30 PM)

Tuesday, Jan 3, 7 PM - First Church  
Tuesday, Feb 7, 7 PM - Concord St, Nashua

### Programs:

Jan - Project Night  
Feb - TBD

### Weekly Events:

**6 Meter Net:** 2nd & last Sun - 9 PM - 50.18 MHz USB

**10 Meter Net:** 1<sup>st</sup> & 3<sup>rd</sup> Sun - 9 PM - 28.480 MHz USB

### Pizza:

Thursdays 6:15 PM, Various Locations, check 147.045

### Breakfast:

Saturdays 7:00 AM - Joey's Diner at Craftmans Lane, off Rt 101A, Amherst

### Hillsborough County ARES Training Nets

[www.hcnh-ares.org](http://www.hcnh-ares.org)

4<sup>th</sup> Monday once per quarter - 7 PM - Simplex 147.405

3<sup>rd</sup> Monday each month - 7 PM - 147.045 PL 100.0

Other Mondays - 7 PM - 146.730 PL 88.5

Every Monday - Fldigi - 7:30 PM - 146.730 PL 88.5

### New Hampshire ARES HF Training Net:

Saturdays - 8:30 AM 3.945 MHz +/- LSB

## Nashua Area Radio Club Bulletin

Published by the Nashua Area Radio Club, Inc. just prior to its monthly meeting and distributed free to members and friends of Amateur Radio.

### Bulletin Staff:

Editor:	<b>Bill Lana</b> , N4COY	(603) 881-7308
	<a href="mailto:N4COY.NH@gmail.com">N4COY.NH@gmail.com</a>	
Advertising:	<b>John Halbert</b> , W1SMN	(603) 595-2177
Circulation:	<b>Bill Lana</b> , N4COY	(603) 881-7308

**Deadline** for submitting articles or photographs for the next issue is the Monday following the current month's Club meeting. Electronic submissions are preferred and should be sent via electronic mail to [N4COY.NH@gmail.com](mailto:N4COY.NH@gmail.com). On-line images may also be sent electronically in any standard image file format. Material for publication can also be sent to Bill Lana, 29 Pemberton Rd, Nashua, NH 03063

**Advertising** enquiries should be addressed to P O Box 248, Nashua, NH 03061-0248 or by contacting any of our Board Members. Advertising matters must not be raised over the Amateur airwaves.

## Nashua Area Radio Club Official Membership Application

New Applicant:	<u>Date Applying</u>	<u>Regular</u>	<u>Student/Sr. (Over 65)</u>	<u>Family</u>	Renewal:	<u>Regular</u>	<u>Student/Sr. (Over 65)</u>	<u>Family</u>
	Sep-Nov	\$20.00	\$15.00	\$30.00		\$20.00	\$15.00	\$30.00
	Dec-Feb	\$15.00	\$11.25	\$22.50				
	Mar-May	\$10.00	\$ 7.50	\$15.00				
	Jun-Aug	\$ 5.00	\$ 3.75	\$ 7.50				

Annual Dues - due September 1st of each year.  
Membership year runs from September to August.

Name \_\_\_\_\_ Callsign \_\_\_\_\_ Class \_\_\_\_\_ Packet address \_\_\_\_\_  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Home Phone \_\_\_\_\_ Work Phone \_\_\_\_\_ Email address \_\_\_\_\_  
 Monthly Newsletter Mailing Preference    Electronic    US Mail    ARRL Member    yes    no    Expiration date \_\_\_\_\_

**Additional Family members:**

Name/Callsign \_\_\_\_\_ ARRL Member    yes    no    Exp. \_\_\_\_\_ Email address \_\_\_\_\_

Name/Callsign \_\_\_\_\_ ARRL Member    yes    no    Exp. \_\_\_\_\_ Email address \_\_\_\_\_

Make checks payable to: The Nashua Area Radio Club. Mail check and application to: Membership, Nashua Area Radio Club, PO Box 248, Nashua, NH 03061.

In signing this application, I hereby apply for membership in the Nashua Area Radio Club, and agree to abide by its constitution and by-laws.

Signature \_\_\_\_\_ Date \_\_\_\_\_

*Tour the World with Amateur Radio  
 Next meeting January 3, 2012 7 PM – First Church, Nashua*

Nashua Area Radio Club  
 P. O. Box 248  
 Nashua, NH 03061-0248