



Volume XXIV, Issue 5

May 2017

Editor: Thomas Price; KC2PSC

### April 13, 2017 Board Meeting

Frank Petrone retiring. Invite for a meeting?  
Give him a plaque. Has always supported club.

210 tower/repeater. Waiting to hear from town. Bill says soon, and looks positive  
Going to test lines and antennas. May be able to use other service's abandoned equipment  
Looking at RF accessed controller

Field day

Site secured. Fliers, and website needed.  
Discussing where to promote. Boy scouts?  
Mesh camera?

Discussion on QRP. Expeditions, equipment

Huntington hospital. Parts list provided.  
Antenna ready.

Dennison repeater. Still trying to get access. May be easier now that we're a corporation.

### April 13, 2017 General Meeting minutes

Roll call  
President report: qrp in the field  
Recap of repeater report above  
VE. 2 people attended and passed  
Night timers. 2to 4  
Looking to change from Yahoo to Facebook  
Schools: we have students interested in classes and testing

QSX always needs articles.  
ARES RACES new website:  
[huntingtonnyaresraces.org](http://huntingtonnyaresraces.org)  
Field day recap of above. Need to concentrate on GOTA station. Scouts?  
Antenna on firehouse for Cow Harbor Day?

**Presentation: Jim Meazey**

# Larkfield's 6 Meter Field Day Quad Antenna

by: Thomas Price, KC2PSC

Several years ago I started bringing a VHF station to field day to expose fellow club amateurs to how easy it is. It doesn't hurt that we get free points just for having the station. The first year I used a very simple dipole antenna. This antenna did work, but I thought it would be great if we could get more performance out of a simple easy to setup antenna.

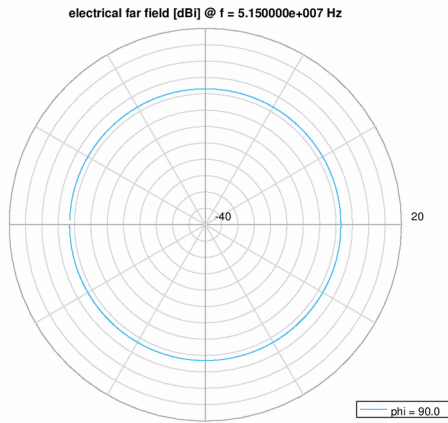
My immediate thought was to search for 6m antenna designs that would be easy to setup and straightforward to setup at multiple locations. 6 meters is called the magic band because it can experience both ionospheric propagation and tropospheric propagation phenomena. Propagation can occur at any time during the year, but most of the propagation enhancement occurs between May and the end of July. Field day happens to fall right in the middle of this time frame.

After considering all my options I decided that a quad antenna would be the best option. A quad is one of the simple antennas typically used for HF. A quad antenna is a version of the loop antenna with a physical length of one wavelength. I chose it because I figured it would be an improvement over the simple half wave dipole while not requiring a complicated rotator and tower assembly.

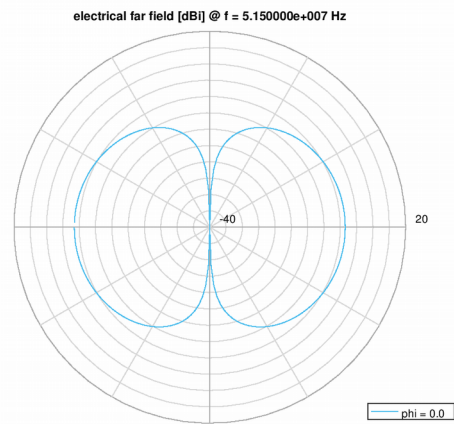
The antenna consists of a frame to support the wire antenna. I constructed the frame using PVC pipe and a cross pipe fitting that can be purchase at Home Depot. In

order to join each arm of the frame to the PVC cross I drilled a hole thru both the cross and the arm for a screw. It is important to do this before measuring and making the final cut on each arm to the right length. A couple of inches should be added to the minimum length required for the wire to be properly stretched for an eye bolt. The eye bolts on the upper arms are tied to a quick link using equal lengths of rope. The quick link is tied to an additional rope that hangs the antenna. The eye bolts on the bottom arms are used to stabilize the antenna while it is hanging with ropes tied to adjacent trees at the field day sight. I had planned to use them to steer the antenna, but the wide beamwidth of the antenna has meant that I have never used them for that purpose. The wire antenna is a full wavelength as calculated at the center frequency of your choice. I soldered one end of the wire to the center pin of a PL-259 panel mount connector. On the other end I crimped on a small circular end that I could then screw down to one of the four mounting holes on the PL-259 connector. To install the antenna to the frame the wire is strung thru holes in each arm that are wide enough for the O-ring connector. The O-ring connector needs to be screwed tightly to the PL-259 connector or the input impedance is degraded. The autotuner on my IC-7410 had trouble last year with the match initially.

The antenna has worked very well. The first year we used it during an abbreviated field day our first contact was with a station in Illinois. I couldn't believe the station was in Illinois that I asked him to repeat his state. We made contacts with stations in several New England states and even had a DX contact to Portugal. More recently last year in addition to working stations in several states in the Mid-Atlantic and New England we were able to make contacts during several openings. We made contact with stations in Kansas, Florida, and Alabama. I decided to model

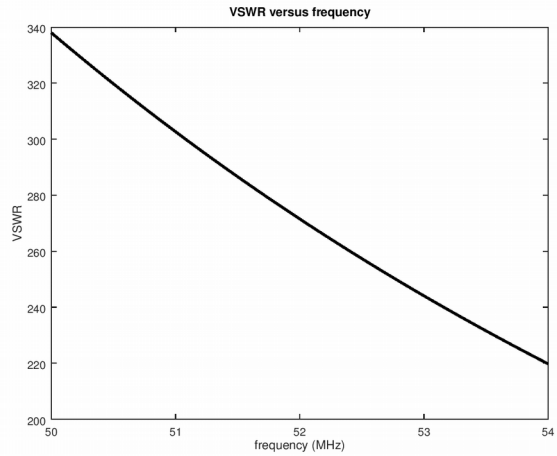


**Figure 1 Azimuth Plot of Antenna Gain** the antenna using antenna modeling software. The results showed that the antenna pattern has the same shape as that of a half wave dipole. As can be seen in figure 1 the antenna gain is constant in all azimuth directions. The elevation pattern of this antenna shows a wide beamwidth. This is a compromise compared to yagi antennas which are typically used on 6 meters.



**Figure 2 Elevation Plot of Antenna Gain**

The VSWR plot was the most interesting of all the results for this antenna. I figured that the minimum VSWR would be at the frequency I designed this antenna for. Instead the plot shows the VSWR is extremely large at the resonant frequency and decreasing as the frequency increases. I should point out this does not match actual antenna when tested with an antenna analyzer. Maybe we need to run the analyzer on the antenna again and look at a wider frequency range. Also I plan to run simulations with wider frequency bandwidths to figure out where the null exists. There lies the possibility of an error in how the simulation is setup.



### **Figure 3 VSWR vs. Frequency**

The construction of this antenna is quite easy for the performance we have experienced. If I were building this antenna again I would design it using a

lower center frequency. Placing a stiffening crossbar near the end of the upper arms will help keep the quad properly stretched out.



**QRP**  
**John Meade, W2XS and Neil Goldstein,**  
**W2NDG**  
**Thursday May 11, 2017 7:30PM**  
**Town of Huntington Senior Center**

## **Yahoo Group**

Please join the Clubs Yahoo group. Not a member already send an e-mail to the following address:

[larkfieldarc-subscribe@yahoogroups.com](mailto:larkfieldarc-subscribe@yahoogroups.com)

## **Join our facebook group**

<http://www.facebook.com/Larkfieldarc>

### **ARES/RACES NET**

Sunday 0900 New York State RACES 3993.5 LSB  
Monday 1900 Huntington - 147.210  
Monday 1930 Smithtown - 145.430  
Monday 1930 Southampton - 147.195  
Monday 2000 Nassau County ARES RACES - 443.525  
Monday 2000 Easthampton - 145.270  
Monday 2015 Babylon - 146.685  
Monday 2030 Brookhaven - 145.210  
Monday 2100 Suffolk County RACES - 145.330

**Huntington ARES/RACES**  
**[www.huntingtonnyaresraces.com](http://www.huntingtonnyaresraces.com)**

## The Larkfield Amateur Radio Club

Affiliated with American Radio Relay League

Officers (one year terms)

President Peter Deluca AA2VG(2015)  
Vice President Neil Harris KC2TAF(2015)  
Secretary Neil Goldstein W2NDG(2015)  
Treasurer Roger Rapp W2GLE (2015)

### General Directors (two year terms)

Thomas Price KC2PSC (2016-2017)  
Jonathan Schwartz KC2PBE (2016-2017)  
Roy Diers KD2HWE (2017-2018)  
Bob Benward AC2AZ (2017-2018)  
Rich Florio W2TMA (2016-2017)  
Scott Conover AC2FV (2015-2016)

**WA2PNU Station Trustee Bob Benward AC2AZ**  
**WR2ABA Station Trustee Bob Benward AC2AZ**  
**W2LRC Station Trustee Bob Benward AC2AZ**

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**Members of the Larkfield Amateur  
Radio Club are invited to use the  
W2RGM Dix Hills Repeater System:**

2 meters  
147.075 MHz out/147.675 MHz in  
4z/136.5 Hz PL

**The Larkfield Amateur Radio Club wishes to thank Bruno KC2ESI, Jack K2JX, Joe N2QPD, Bob AC2AZ, Thomas KC2PSC, and Pat WB2CMF for their dedication and efforts in maintaining the Club's repeaters and our packet and APRS stations. Their collective efforts and donations of equipment along with the overview of Bob AC2AZ and Peter AA2VG have kept us "on the air". Still to go, another 440 MHz repeater and adding IRLP or Echolink to one of our repeaters. We need volunteers for this new work.**

**General Meetings 7:30 PM**  
May 11,2017  
June 8, 2017

**Board Meetings 7:00 PM**  
May 11,2017  
June 8, 2017

### GOOD AND WELFARE

Attention members: Our Good and Welfare Chairperson is Helene Lazarus (XYL of Arnie N2PLS (SK)). Please inform her (499-2837) of news about club members so she may make submissions to this publication.

70 centimeters  
448.500 MHz out/ 443.500 in  
2a/114.8 Hz PL

### THE LARKFIELD AMATEUR RADIO CLUB OPERATES:

**WR2ABA HUNTINGTON REPEATER**  
2 meters  
147.210 MHz out/147.810 MHz in  
4z/136.5 Hz PL

**W2LRC HAUPPAUGE REPEATER**  
2 meters  
145.430 MHz out/144.830 MHz in  
4z/136.5 Hz PL

**W2LRC HUNTINGTON APRS**  
2 meters  
144.390 MHz In/Out

**USA EASTNET FLEXNET NETWORK**  
2 meters  
WA2PNU (0-15) Nodes 145.070 MHz  
WA2PNU (-4) Node 145.070 MHz (BBS)

<p align="center"><b><u>2017 DUES SCHEDULE</u></b>  <b>Regular Membership: \$35.00</b>  <b>Members Age 65 or older: \$25.00</b>  <b>Members Age 17 or less: \$25.00</b>  <b>Disabled Members: \$25.00</b>  <b>Living Outside Club's Operating Sphere:</b>  <b>\$15.00</b></p> <p><b><u>Add \$10.00 if you want QSX via U.S. Mail</u></b></p>	<p align="center"><b>Pay by PayPal at <a href="http://larkfield.org">larkfield.org</a></b></p> <p align="center"><b>Make your check payable to: LARC</b></p> <p align="center"><b>And Mail to:</b>  <b>Larkfield Amateur Radio Club Inc.</b>  <b>PO Box 1450</b>  <b>Huntington, NY 11743</b></p>
<p align="center"><b>VE SESSION SATURDAY</b>  <b>June 10th</b>  <b>HUNTINGTON TOWN HALL</b>  <b>100 MAIN ST., ROOM 114</b>  <b>WALK-Ins WELCOME</b></p> <p><b>Team Liaison is Rich W2TMA. Fee is \$15. All elements will be offered and exams start at 9:00AM. You must have 2 forms of ID, one of which includes a photo. If upgrading, bring an original and a copy of your license and an original of any CSCEs.</b></p>	<p><b>The next Executive Board and General meetings will be on Thursday, May 11th at 7PM and 7:30PM, respectively.</b></p> <p><b>You can submit articles or photos for publication by e-mail at:</b>  <b><a href="mailto:larkfieldqsx@gmail.com">larkfieldqsx@gmail.com</a></b></p>

**Larkfield Amateur Radio Club, Inc.**  
**Post Office Box 1450**  
**Huntington, NY 11743**