

ARC-SHORTS

March 2015

Club Repeaters: 147.315 (PL 107.2), 444.6 (PL107.2), 224.82 (PL107.2), 53.13 (PL107.2) 927.6 (-25Mhz, PL107.2), and 1282.600 (PL 107.2), DSTAR 145.38Mhz, 442.060, and 1284.600 ALL AR UP AND RUNNING – HAM IT UP! Get on the air!

George Washington Birthday Parade

For one of the few times in the history of the parade, the organizers cancelled the event due to the SUPER cold weather. While it's important to honor our first president and Commander in Chief, it's also important to do a risk assessment and in this case the cold could have caused more problems than the parade was worth. Maybe next year we will have better weather.

NEXT CLUB MEETING

Our next meeting is March 13th at our normal location, 3600 Wheeler Ave, just off of Duke Street about half a block west of Quaker Lane. Our program will be Rob Anderson and will be his presentation on the use of the Smith Chart for matching antennas.

FEBRUARY MEETING MINUTES

Our program was provided by the VA QSO party folks. This is an annual prep for our individual station participation. The VA QSO party is one of the best attended or participated in of all the state QSO parties. This is primarily an HF contest, but a great deal of stations work on VHF and UHF and many on FM simplex frequencies.

President's Corner –

This month's topic is Elmering. According to KB6NL the term "Elmer" first appeared in the Mar 71 issue of QST magazine. Rod Newkirk, W9BRD called them the "unsung heroes of amateur radio".

Quite simply an Elmer is an experienced amateur who is willing to help new hams avoid pitfalls and mistakes. We have many "Elmers" in the Alexandria Radio Club. Who are they? They are the active hams who volunteer for training class support, or who linger after meetings to discuss topics of interest to new hams or just savvy hams who volunteer their knowledge gladly. Would you like advice on which rig to buy, or possibly help to make a build or buy decision? Or perhaps get an explanation of a term or concept you don't quite understand like DX or WAS or how to use LOTW? If you are unsure as to whom you should approach with a question just

make sure you are subscribed to alexandriaradioclub@mailman.qth.net. Congratulations, you now have access to many Elmers who will be willing to answer your questions! Also be sure to check the www.W4HFH.org web page under Elmer Posts – you will find a wealth of information there.

And finally of course, attend one (or all) of the many club events and ask your question directly to one of the members who attend these. Above all, don't be afraid to ask. We have all been there and understand.

VA QSO PARTY RULES

SPONSOR Sponsored by the Sterling Park Amateur Radio Club, Call Box 599, Sterling, Va. 20167.

OBJECTIVE To promote amateur radio activity in the 95 Virginia Counties and 39 Virginia Independent Cities. **DATES** Saturday, 16 March 1400 UTC - Sunday, 17 March 0200 UTC and Sunday, 17 March 1200 UTC - 2400 UTC.

(For Virginians, this is Saturday 10 AM - 10 PM and Sunday 8 AM - 8 PM Virginia local time.)

ENTRY CATEGORIES Operator Categories Single Operator - One person performs all operating and only one transmitter may be on the air at a time. Multi Operator / Single Transmitter - Two or more operators with one transmitter on the air at one time. Multi Operator / Multi Transmitter - Two or more operators with two or more transmitters on the air at one time. Station Categories Fixed Station Mobile - Single or Multiple individuals operating Mobile under a single call sign with only one transmitter on the air at a time. A mobile station is self-contained and capable of legal motion (land, water or air) while operating. Motion is optional, and discouraged, during operation. Expedition - One or more operators of a station that moves between two or more Virginia locations during the course of the contest. All equipment, power supplies and antennas must be transported to each operating site. Power Categories High (greater than 150 watts), Low (150 watts or less) and QRP (5 watts or less) Band Categories Multi-Band or Single Band Mode Categories Phone, CW, Digital, and Mixed Club Entry Club - Minimum of three valid contest entries each indicating club affiliation.

VALID CONTACTS Virginia stations work all stations. Out-of-State stations work Virginia stations only. Work fixed stations once per band/mode. Work Virginia Expeditions and Mobiles in each Virginia County or Independent City from which they operate. Stations on County or Independent City lines count as one QSO and one County/Independent City multiplier. Mobile and Expedition stations must use appropriate suffix in callsign. Satellite contacts allowed. No cross-mode or repeater QSO's. Spotting nets, DX clusters, etc., may be used to locate other stations - no self-spotting permitted.

EXCHANGE Exchange QSO number and QTH (Virginia County or Independent City for VA stations; State, Province or "DX" for others). Virginia Mobile and Expedition Stations log QSO's by Virginia Independent City or County of operation. Identify all QSO's with band/mode, sequential QSO number sent/received and date/time of contact in UTC. Please follow standard contest practices by making and responding to "CQ Virginia QSO Party" calls. Multiple

Transmitter stations may maintain sequential QSO numbers independently for each transmitter. SCORING QSO Points: QSO's count 1 point per Phone, 2 points per CW, 2 points per digital mode (RTTY, PSK31, etc.), and 3 points per contact made with a Virginia Mobile (Phone or CW or Digital). Multipliers: Multipliers are only counted once, i.e., contacting the same Virginia County, Independent City, State, Province or Country using a different band or mode counts only as a new QSO, not as a new multiplier. Virginia Mobile, Expedition, and Fixed Station multipliers are the total number of Virginia counties, Virginia Independent cities, U. S. States (except Virginia), Canadian Provinces, and DX entities. No extra DX multiplier for U.S. (including Alaska and Hawaii), Virginia, and Canada. Mobile and Expedition stations that contact 10 (ten) or more different stations while operating from a county or independent city may claim it as a multiplier, if not otherwise worked. Outside of Virginia station multipliers are the total number of Virginia Counties (95) and Independent Cities (39) worked. Bonus Points: Virginia Mobile and Expedition stations receive a bonus of 100 additional points for each Virginia County/ Independent City from which they log a valid QSO.

All stations add 500 bonus points for a contact with K4NVA, the club station of the Sterling Park Amateur Radio Club

Recommend you use a logging program (N3FJP seems to be the favorite and is cheap, but you need to order it a few days prior to the QSO to get the unlock key. Any program that generates a correct Cabrillo format report can be used.

PLEASE add Alexandria Radio Club to the club ID in the report so the club gets credit in addition to your individual entry. The Contest DOES overlap the Sterling Park Amateur Radio Club Hamfest at the Annadale NOVA campus, but you can do both.

Presidents Corner

A Six Meter Folded Dipole By Larry Walker, KK4CBL The planning phase

The Alexandria Radio Club is fortunate to have several repeaters in operation. One of these, a six meter repeater, is now being used to host a net on Thursdays at 7:30 pm just prior to the normal two meter net at 8 pm. This new 6 meter net seemed an excellent opportunity to test emergency capability and to check out my 6 meter Yaesu FT-8900 radio. However, joining the net raised a problem as I had no suitable 6 meter antenna that would both meet the outdoor antenna restrictions for my present location in Burke, Virginia and provide full quieting on the repeater.

The first antenna I had tried for 6 meters was a $\frac{1}{4}$ wave dipole mounted vertically. It did not provide enough signal for full quieting of the repeater so another solution was needed. Some possible alternatives were a yagi array, a j-pole, or a folded dipole. Any of these could be installed in the attic and would not be visible from the exterior. However, placement of the yagi or j-pole would be limited to the exact centerline of the attic which already contained a trapped 10 meter/20 meter antenna.

Therefore, a half wave dipole seemed to be ideal. It would consist of two half-wavelength conductors, separated by a dielectric, shorted at each end and fed at the center. It would fit anywhere along the interior roofline.

A Google search revealed that Brian Smith (G0IER) http://www.qsl.net/g3pto/6m_dipole.html had published plans for a 6 meter antenna resonant on 51 MHz. Benefits of his antenna included (in his words):

- Simple 50 ohm feed design
- No antenna tuning unit required
- Wide bandwidth of 50.0 to 52.0 MHz*
- Lightweight – ideal for portable/indoor use

* At 1:1.2 VSWR

Since our repeater accepts input on 52.13 Mhz, it would require some retuning of Brian's antenna to resonate at a more desirable 52 to 54 Mhz range. He also used 300 ohm twin lead whereas I wanted to use 450 ohm ladder line which is a little more robust. Additional features of Brian's antenna included shorting bars 220 mm from each end and a variable tuning capacitor in parallel across the feedline 292 mm from where the 50 ohm feeder cable joins the antenna. This capacitor effectively tunes the antenna to 50 ohms.

To recap, I wanted a different resonant range, using a different type of parallel conductor cable. An order to MFJ quickly produced the ladder line, a coax connector, a 0 to 30 picofarad variable capacitor and some 10 picofarad fixed capacitors as a backup. Time to start the project.

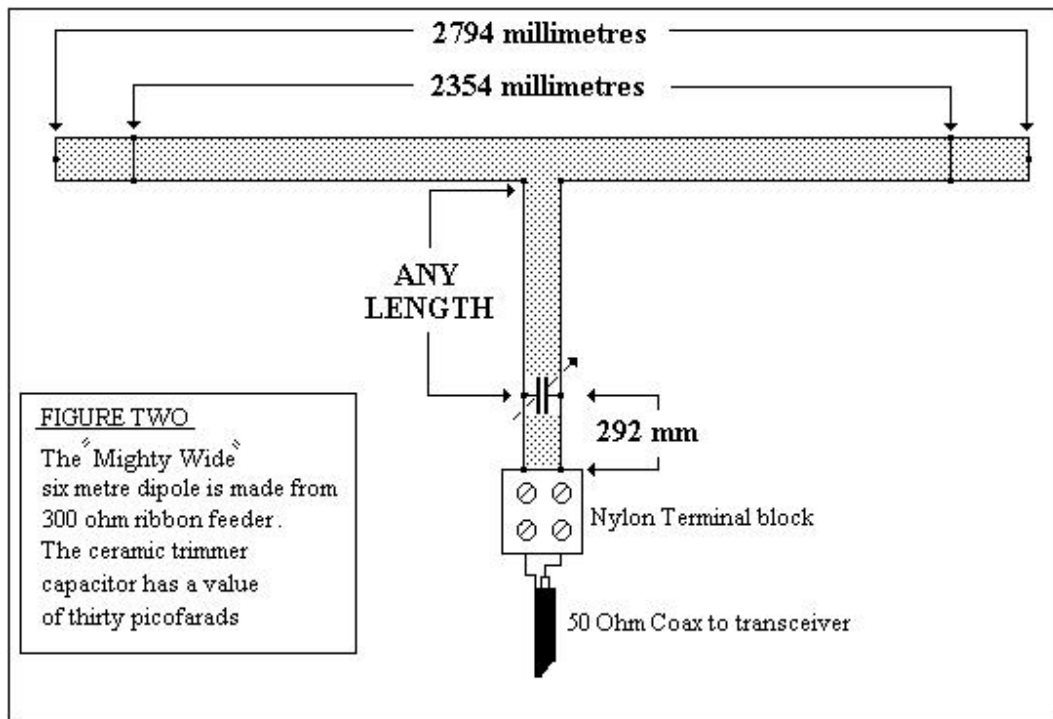


Fig. 1 Above - The original plans as published by Brian Smith G0IER (Above diagram extracted from http://www.qsl.net/g3pto/6m_dipole.html)

The build

All metrics from the original plans were converted to English units and a proportional factor applied to Brian's measurements. This resulted in what I hoped would be the correct dimensions for the antenna. I thought it would be shorter than Brian's so I elected to start at the same size as his and snip and analyze until the desired resonant frequency was attained. Fortunately, I had purchased enough cable to cover one or two false starts as the first attempt ended up too short; resonating on 55 MHz. (Snip carefully and patiently came to be my motto). It is difficult to add ladder line back. Much easier to snip!

On the second attempt, I started larger than Brian's plan and soon was in the ballpark. Next, the shorting bars 220 mm from each end were added. Note: Be careful when cutting the excess material from the cable or you may need some bandaids before you are finished. A measurement of the variable capacitor using a capacitor checker revealed the capacitance would only vary from 27 to 47 picofarads versus the 0 to 30 picofarads I was expecting. Therefore I elected to use 10 picofarad capacitors and add them in parallel until the antenna impedance dropped to 50 ohms. Lady luck smiled as the first capacitor hit the mark nicely! With 10 picofarads in parallel (Fig 3) the impedance dropped from over 100 ohms to 50 ohms. I just ended up using the fixed capacitor instead of a variable one for the final build.

Next, I used a MFJ Antenna Tuner to measure the VSWR and it was 1:1.2 at 52 to 54 MHz. Just what was needed. Next, I taped the antenna to the wall in the shack and joined the 6 meter net to check it out. Signal reports were good with a little scratchiness (expected as the antenna was on an interior wall) but fully readable.

Further thoughts

The 450 ohm lead I used versus the 300 ohms used by Brian did not pose a problem. Final measurements were 2813 mm for the folded dipole length. (I used the original 220 mm measurements for the shorting bars and 292 MM for the capacitor displacement from the 50 ohm coax connector). A Nylon terminal block was not available so the method in Fig 3 was used to attach the 50 ohm coax.

Overall VSWR is very good and the antenna is quite light and durable for a twin lead-based antenna. Build time is about three hours. Soldering required.



Fig. 2 The 10 picofarad capacitor in parallel across the antenna feed line



Fig. 3 A homebrew option for joining 50 ohm cable to ladder line. (Watch out for the heat – it will melt the ladder line quickly).

MVARC Special Event

If you have time, our sister club in Mt. Vernon is holding a special event station at Mt Vernon (Mr. Washington's home) to celebrate his birthday. Info on the link <http://w3bsa.org/2015SpecialEvent.pdf>

Hamfests –

Later this month is the Winterfest sponsored by the Vienna Wireless Society. Take a few hours out from the VA QSO Party on Sunday, March 22 and stop by the Annandale campus of Northern VA Community College. The Alexandria Radio Club has tables reserved to display your gently used items.

The Culpepper Amateur Radio Association is sponsoring their amateur radio swapfest on April 11. The location is the Culpepper County Enterprise, which is on US 29, about 2 miles South of the town of Culpepper. Its an easy drive from our area. Talk-in will be on the CARA 147.120 repeater (PL 146.2 Hz).

Its not too early to start thinking about the Dayton Hamvention. Its always the third full weekend in May, so that means May 15 through 17. Thursday is normally the travel day, but there was interest in touring the US Air Force Museum, so we will travel on Wednesday, May 13 and do the museum on May 14. If you have any interest in aviation, this is well worth the visit. I have 6 rooms at the Holiday Inn Fairborn and 2 and a half are already spoken for. There are several other hotels in the area, but they are filling up fast. Other club members may have a room or two available nearby. Gas may remain cheap for the foreseeable future, so plan on making the trip. The breakdown is usually \$60 to \$80 for gas, plan on \$350 for hotel, \$28 for the Hamvention ticket and bus fare, along with your meals and purchases.

I will need to know by the April club meeting so I can order tickets.

Training -

The unpredictable weather played havoc with the start of our latest class. The plan is to start a week later on March 10. Thanks to Roy, K4AXQ, our webmaster, for posting the announcement on the webpage with short notice to get the word out. At this time, the class is nearly full.

Contests -

March 14 and 15 – Louisiana QSO Party. Exchange is RST and your state.

March 14 and 15 – Idaho QSO Party. Exchange is RST and your state.

March 15 and 16 - Wisconsin QSO Party – Exchange is your State.

March 21 and 22 - Virginia QSO Party – Exchange is a serial number and your county or city.

March 21 and 22 - Oklahoma QSO Party – Exchange is your state.

March 28 and 29 – CQ Worldwide WPX Contest (SSB). Exchange is signal report and serial number.

April 4 and 5 – Missouri QSO Party – Exchange is signal report and a serial number.

April 4 and 5 – Mississippi QSO Party – Exchange is signal report and state.

April 4 and 5 – Montana QSO Party – Exchange is signal report and state.

Club Repeaters -

The Alexandria Radio Club owns more repeaters than other clubs in the area. We have repeaters on every ham radio band between 6 meters and 23 cm. Here is a great opportunity to try a new band. With the exception of the 23 cm repeater, all our repeaters are commercial grade equipment which should run for many years with minimal work. The 23 cm repeater is constructed from 2 Yaesu 23 cm mobile radios with a controller in between. All the repeaters provide good coverage in Alexandria and the surrounding area.

We also now have a 6 meter net on the club's 53.13 repeater starting at 7:30 PM on Thursday nights, right before the weekly 2 meter net. If you 6 meter FM equipment, be sure to join the group.

73,
Rich, KA4GFY

DX and HF operations

Many of our members join our club because we offer an in depth Technician Class. Rich, KA4GFY is our VE and Class committee chair and has done a great job for many years.

It is only natural that after a while on VHF there is the NEED to get up on HF and hear and talk to the greater world of Amateur Radio.

HF radios can be VERY expensive, but before you mortgage the homestead to get on HF, let me recommend you search for a good USED radio. Radios with digital tuning, computer interfaces have been out for over 25 years.

IMPORTANT factors in looking for a good used radio:

- 1 – Stay in your budget! Remember that the radio needs to receive and transmit, DSP is nice, but unless your going into contesting most of the moderately priced radios will work well.
- 2 – Relative RECIEVER performance (all transmitters meet FCC requirements). Look at SHERWOOD Engineering's website and you can see how well Rob Sherwood rates radios.
- 3 – Most radios are solid state and broad banded in design, so you don't need to TUNE the radio for each frequency you operate on.
- 4 – If you're going to work SSB DSP is nice but may not add much to your operating.
- 5 – QRP (less than 10 watts) can be fun, but it IS FISHING with light tackle. I recommend a 100 watt radio.
- 6 – Stay with the BIG manufacturers: ICOM, YEASU, KENWOOD, TEN-TEC. The Chinese are starting to sell gear and may start with HF soon. So far their VHF/UHF radios have been cheap in all aspects of the word.

The MOST important part of your HF station is the ANTENNA.

Some of our best operators use mobile whips which provide a good match. BUT, if you can get a LONG wire out in the trees, the more antennas the better you will hear the stations. Lots of homemade HF antennas will serve you well. If don't have room for a 75 meter antenna, then think of 20 meters (15 or 10 meters). This is where the DX is for the most part.

When shopping for a use radio, make sure you can test the radio and that if it does not work, you can return it and get your money back! It used to be that you could trust a ham to give you an honest deal, but lately not so much. If the answer is "it's from an estate sale and it worked before the ham passed" is NOT good enough unless you can test it on site. Ask one of the more experienced members of the club to help you with your search. A good radio will last for 20 plus years, but a sick radio is more of a problem.

ARES

Future Programs

The March program will be Bob Anderson and a lecture on the "SMITH CHART"
April is Craig, KK4INZ, on how FEMA can make use of Amateur Radio in times of an emergency.

May (tent.) Terry Hines on the ARRL antenna modeling course we will also start Field Day planning

June – Field Day

July – Show and Tell – GO KITS! Field Day lessons learned

August – Members share their insights on LOGGING and RADIO CONTROL programs.

September – Digital
October – Mobile HF
November – Club Elections
DECEMBER - Holiday party and club awards

We hope to have an update on use of some of the newest solar technology, use of the new microcomputers and I am trying to find someone to talk about converting our old XP laptops to use a version of Lenex.

If you have an idea for a program, please let Rick know and he will try to find someone to provide the program.

Social Events

Monday Night Half Price Burgers – There is a group that gets together at Shooter McGee's (Duke and Paxton Streets) on Monday evenings at 6:15 PM. A good burger and soft drink runs about \$11.00.

A few years ago, a bunch of us went to the Air and Space Museum at Dullas, is there an interest in another trip (Yes, I know it's not radio). We can also plan for a trip the antique radio and EW museums.