



# The Beacon

A monthly newsletter of the Albemarle Amateur Radio Club serving Central Virginia

**Celebrating our 51<sup>st</sup> Year**

April \_\_\_\_\_ 2014

Our next AARC meeting is set for April 8 at 7:30 pm. The meeting will convene at the NRAO and feature Ed Berkowitz, N3US, talking about contesting.

## President's Corner

By Jim Owen – K4CGY

Another Month has flown by and we have made it into a lovely spring during the month of March. Aside from that little "Ides of March" thing I warned everyone about it was a very nice month. There were no major problems for the club, and as far as I know, to the members. We had an excellent Jefferson Cup Race turnout. If you're reading this before the race then please turn out, and the effort was/is appreciated. Unfortunately the Kick Sat launch was scrubbed but will launch later so please watch your email for updates. The club needs your input on what we as a club should be doing. We are holding license classes so help out where you are able. We help with civic services such as the foot and bike races, but are there other things we should do? What would interest you the member? Do you desire construction classes such as antenna building, how to effectively hunt DX, or using the available software both in finding DX on the air or in logging? Let your appropriate committee directors hear from you on this and any other subject you might be interested in.

In thinking about antennas this morning it struck me how little some know about them. I have heard in the past—"I can only put up one antenna, what is the perfect one that will give me an efficiency of at least 80% on 160-10 meters without using a tuner and will have a flat 1:1 SWR over all the bands"? The answer of course is—there is none! Every antenna is a compromise of some kind, and while it may be great for a given purpose it will be poor for another. Take for example 75 meter antennas, a vertical will be great for DX over 700 miles or so but will be very poor for in state work. A low dipole will be an excellent antenna for local work up to around 300-400 miles but poor at DX. A high dipole on 75

meters (120' high or higher, few can do this) will be similar to a vertical for DX but not very good for local work. What is one to do? The answer is simple, put up whatever you can and accept the compromise. A low dipole will work for DX but it won't be efficient and will require more patience to work a given station at distances exceeding 500 miles or so. A good example is my 160 meter dipole; center is about 25' high ends up to 60' or so. It's much too low for anything more than in state stations. However, I have 43 states confirmed with it, so anything will work. Only the far western stations are the ones I need, plus Alaska and Hawaii of course. Another example: last night I could copy the W1AW/8 station in Ohio on 30 meters but I don't have a 30 meter antenna. What to do? Use the 40 meter antenna with the auto tuner even though the 40 meter antenna has a 6:1 SWR on 30 meters. Guess what W1AW/8 is in the log on 30 meters using 85 watts.

To make a long story short, use what you have, as long as it will accept the power.

A beautiful antenna array is a thing of beauty in my opinion, though I suppose some may see it differently. One of the most stunning I have seen that almost brought me to tears was not an Amateur Antenna. How many of you have seen the Modified Goliath at NSS, U.S. Navel Station Annapolis, MD. I bet Jim Crosby K4JEC has seen it. How many beside your president have toured the station to actually have been inside the pair of 500 KW transmitters? Sorry too late, the site is now history as the towers were destroyed by explosives in 1999. I would have liked to have had one of the 1200' towers! I had some beautiful pictures of the transmitters and site but alas they were on a hard drive that I hadn't backed up. Do we have any computer guru's that would like to try to recover them?

73 Jim K4CGY

## VP REPORT

By Joe Giovanelli, W2PVY

Greetings,

PRESENTATIONS Scheduled for the REMAINDER of the YEAR

April: Ed Berkowitz, N3US: about contesting.

May: Dave Damon, K4DND: about IRLP.  
 June: Field Day discussion.  
 July: Jim Crosby, K4JEC: about Echolink.  
 August or September (depending on picnic): Marty Wangberg, W4MBW: about magnetic loop antennnas.  
 November: ron Richey, K4RKA The history of the AARC.

I have thoughts about things to present next year. If future presentations are to reflect your interests, I need to hear from you. I prefer email because this gives me a written record of your thoughts, which I can then paste into my notes.

My email is: [joegio1@earthlink.net](mailto:joegio1@earthlink.net)

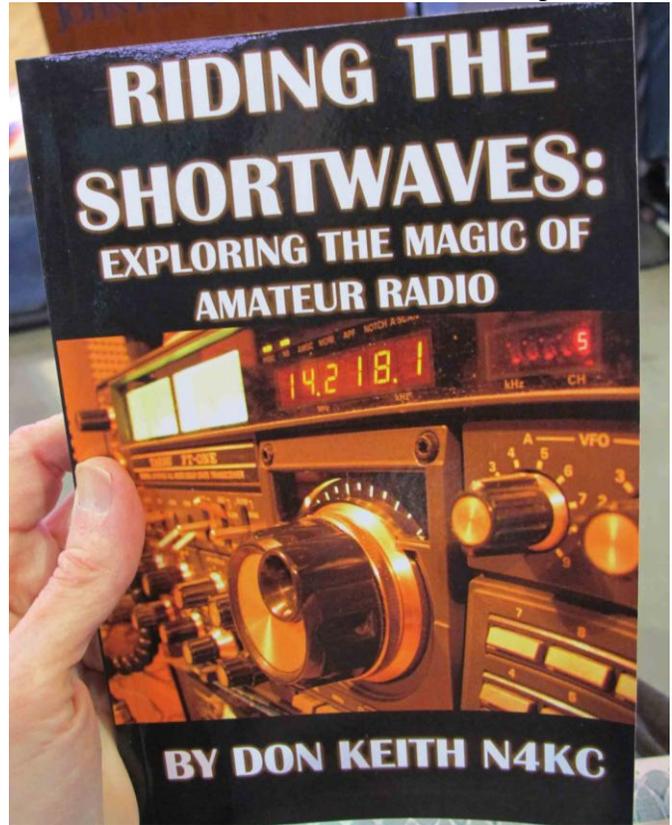
As I have confirmations from presenters, I'll publish them in the BEACON.



Bill Phillips, AD6JV, presented the AARC Science Fair Award to Samyuktha Mahadenvan who presented a cell phone jamming project to be installed in vehicles. (Photo by Jim Wilson, K4BAV)



Henry Muhlbauer was awarded our AARC award for his project *Cloaking* using metamaterials. Both winners were from the Earlysville area. (Photo by Jim Wilson, K4BAV)



This is the book presented to the AARC Science Fair winners along with our cash award of \$100 to each. (Photo by Jim Wilson, K4BAV)



Bob Patterson, W4DU, and Mike Gilmore, K8RVR, work on a 220 antenna off of Harry Danna's deck during a recover from winter antenna work party at Harry's, W2HD. (Photo by Jim Wilson, K4BAV)

**Minutes of the March meeting were not available prior to the deadline of this issue.**



**Mark Whitis, AK4OL, and Ed Berkowitz, N3US, replaced a broken Carolina Window at W2HD's home. (Photo by Jim Wilson, K4BAV)**



**Jim Wilson presented the program during the last meeting on the history of the telegraph. During his presentation, he introduced Hubert Jewell who worked on the FF&P railroad as a telegrapher, later as a train dispatcher, and then as a member of the National Transportation Safety Board investigating train wrecks. (Photo by Jim Wilson, K4BAV)**



**Jim Owen, K\$CGY and Dave Damon, K4DND caught conferring prior to last month's meeting. (Photo by Jim Wilson, K4BAV)**

## Technical news

By Bill Pond, N0WP

The AARC technical committee is working on a project to update the frequency used for linking our 3 main 2 meter repeaters. When originally implemented, we simply used the existing 444.000 repeater as the hub of the system at Marshall Manor. We installed Motorola radios at Buck's Elbow and Heard Mountain programmed like "user" radios for traffic to and from those sites. Controller programming was then updated to implement the linking functionality. Any 2 meter activity at the hub site would also be transmitted on 444.000, which would be "heard" at the other sites, and retransmitted on their 2 meter frequencies. Any 2 meter activity at one of the remote sites would be retransmitted on 449.000 and "heard" at Marshall Manor, and subsequently retransmitted on both 146.760 at Marshall Manor as well as 444.000 which would be "heard" at the other remote site for retransmission there.

This is a good plan, and has worked well in our initial testing and evaluation of linking the three sites. Unfortunately, even with using CTCSS tone encode and decode being used, we're still occasionally experiencing interference with the system from other repeater systems that use 444.000 as it's output frequency. In addition, we feel that we should really be using a frequency pair set aside and coordinated for actual linking purposes. To that end, we've requested and received coordination from SERA for 441.525/446.525 to replace the existing 444.000/449.000.

We will be adjusting the existing equipment to use the new frequency pair beginning very soon. We'll have to reconfigure the link radios at both Buck's Elbow (146.895 and 224.760 at this site), and at Heard Mountain (146.925 at this site). We'll also have to reconfigure the 444.000 repeater at Marshall Manor (146.760 at this site) to the new frequency pair, as well as re-tune the duplexers for the new pair. The frequency change to the repeater won't be a huge challenge, but retuning the duplexers is more time-consuming and intricate, so we plan to remove the hardware from the site for tuning in a more suitable environment (my shack). This will mean the linking will be either partially and/or completely unavailable for periods of time this spring. Actual dates will depend on weather and other conditions that affect our access to, primarily, Marshall Manor.

Other major updates include; The recent replacement of the 444.250 repeater at Martha Jefferson hospital recently which appears to be functioning very well. Ron Richey has indicated that the remote base has worked fine. He did have some problems with it one recent day, but since then, I believe all has been well.

We've finished the offsite work to replace the receiver on the 224.760 repeater. The repeater will be re-installed during our next visit to Buck's Elbow which should happen very soon, possibly by the time you are reading this. The service monitor indicates very good sensitivity with the new HamTronics "purpose built" receiver module, so I'm hoping it will make a substantial improvement in useability for that machine. We could consider making the ability to add or

remove the 224.760 repeater to the existing link if that's something the club would like to see.

Heathkt Harmonic Distortion Analyzer works needs cleaning \$20.00

# Classified Item Listing

To place an item in the Classified Listings just send an email to [k4rka@juno.com](mailto:k4rka@juno.com)

FOR SALE - W4RAE estate sale items contact Marty Wangberg at [marty\\_wangberg@yahoo.com](mailto:marty_wangberg@yahoo.com)

## NEW ITEMS & MOST RECENT LISTINGS as of 1/25/2014 ( No update available at this time)

FOR SALE: MA-40 US Tower 40 foot tower posted 11/30/2013  
US Tower MA-40 mast...two section  
US Tower Rotor plate and 6' long pipe that its into the top of the MA-40 Mast

Yaesu FT-901DM SSB HF Transceiver works 901 package \$350 tot W4MBW  
Yaesu FTV-901R VHF/UHF Transverter 901 package W4MBW  
Yaesu FV-901DM Scanning VFO 901 package W4MBW  
Yaesu Speaker w/901 package W4MBW  
Yaesu Mike (4 pin) w/901 package W4MBW

Two coax rings to hold the coax to the mast when raising/lowering and when raised.  
Approximately 6 Ft. Base unit with 1/2" steel plate to mount to a concrete foundation - with template  
12VDC winch and cables to raise and lower the entire mast which pivots down to the ground.  
Asking \$1000 on eBay or best offer....value to over \$3000 if purchased new.

FOR SALE - W4RAE estate sale items revised 1/25/2014 contact Ron Richey, K4RKA at [wb4rbw@embarqmail.com](mailto:wb4rbw@embarqmail.com)

Will consider any reasonable offer from a local ham.  
Weighs about 250# for the mast and another 50# for the base unit.  
Will deliver for \$1.50 per loaded mile.  
Thanks,  
Marty Wangberg <[marty\\_wangberg@yahoo.com](mailto:marty_wangberg@yahoo.com)>

Clough-Brengle 282A sweep audio generator works \$30.00 K4RKA  
Eico 324 RF signal generator w/400hz modulation works \$20.00 K4RKA  
GR Impedance Bridge type 1650-A w/manual, looks new. w/manual \$50  
HP 5226B counter, prob 50Mhz as a guess. seems to work ok. make offer.  
HP 5245L w/5253 50-500 MHz freq converter. needs a little mechanical work on prescaler knob & dial but basic counter seems to function. not sure about prescaler yet. make offer  
HP 1kHz - 150 MHz Amplifier model 461A. found on eBay from \$25-\$65. \$10  
Kepeco ABC 30-0.3 variable voltage, variable current limit power supply. works. \$20

FOR SALE - W4RAE estate sale items posted 11/27/3013 contact Bob Pattison, K4DU at [rep4@aol.com](mailto:rep4@aol.com)

Bird 611 vhf/uhf dummy load & watt meter (60/15w scales) 5w scale reads high \$50.00  
Conar model 211 VTVM works \$25.00  
Weller TC-202 Soldering Station works \$20.00

FOR SALE - W4RAE estate sale items contact Jim Owen, K4CGY at [k4cgy@yahoo.com](mailto:k4cgy@yahoo.com)

KLM 70CM SSB/CW Transceiver 432/435 only works 6w/3w on CW \$20.00  
Syntest Freq. Synthesizer .1-16Mhz Si-102/015 works square wave output \$20.00  
Eico 1100 Resistor Decade Box ok \$5.00  
HP Oscillator Model 200CD works \$25.00  
B&K Model 606 tube tester works w/chart \$50.00  
Industrial Instruments Model 1A resistor decade box works accurate \$7.00

## The Beacon

The Beacon is the official newsletter of the Albemarle Amateur Radio Club, Inc. It will strive to communicate with, enlighten, and entertain the members of the club in strict compliance with the official word of the club as set forth in the Articles of Incorporation and Bylaws. The newsletter shall be published monthly on or before the 1st day of the month of issue. The deadline for submissions shall be the 25th of the month preceding the month of publication. The primary role of the publication shall be to promote upcoming activities, report past activities and accomplishments of the club and its members, carry the minutes of the preceding month's meetings, as well as, become a recorded history of the club by the archival of all past issues.

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