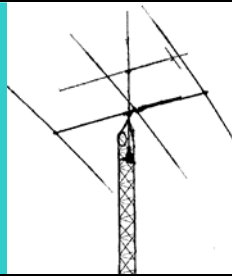


The AARC Beacon



*Serving radio enthusiasts
and communities in
Central Virginia –
The Radio Club for
Central Virginia*

Volume 2006, No. 4



April 2006

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Meeting Notice

The next regular AARC meeting will be held on **Tuesday, April 11 at 7:30 PM** at **the NRAO Building on the UVA campus**. The program will be presented by our own **Harry Dannals W2HD** and the topic will be **"Amateur Radio, Where Are We Going?"**. See you there!!

The President's Letter

Jay, K4AZV

Hello to all and thank you for being here for this edition of the Beacon. There will not be any April Fools jokes in this letter.....no siree.

I would like to thank Bill, AD6JV for volunteering to be the public service event person for our club. Please thank Bill when you see him as this is a vital exposure for the amateur radio community.

It has been decided at our last meeting that the 146.925 machine will stay on site at least until the time that Martha Jefferson Hospital moves to Pantops Mountain. We are currently working on the 224.760 machine and will be attempting to coordinate it at Sugarloaf. We will be attempting to coordinate the 440.250 machine at Heard's mountain with the secondary application at the 147.760 site at Brown's mountain. We will be looking at other sites to the north of Charlottesville/Albemarle County to help support communications to the north. This may involve the acquisition of another repeater and frequency pair to facilitate this necessity.

It was agreed upon during our last club meeting that we will return to Walnut Creek Park for Field Day 2006. Albemarle County has been very hospitable and with added volunteer support it is possible that in the future other sites in Albemarle will open up to be used for special events by the Albemarle Amateur Radio Club. The media action committee will be responsible for the faxing and mailing of public service announcements to all local media groups. I expect Field Day will be equally if not much more fun than last year

as John Turchi and I will be cooking up an awesome pork-pit BBQ for sustenance to nourish hungry, contesting HAMS and any other visitors who may happen to come by.

VHF/UHF propagation has been entirely dissatisfying but get ready because tropo-ducting is starting to rear its head and for 2 meters and above the ducting season is beginning. 6 meter propagation is..... well, uh - let's go on to HF propagation. Got a couple of new ones this month including: Andorra, Turkey, Egypt, Liberia, Ivory Coast, Sardinia and Gambia.

On a final note we have been encouraged to retake our meeting space at the Astronomy building by the staff at NRAO. It seems as though the methane gas detection system in the building has detected excessive amounts of methane present during each of our monthly meetings. Unfortunately, this methane gas is highly destructive to components at NRAO and due to the situation it seems as though we must move to our old location at UVA. Sorry for any inconvenience that this may cause.....*you sucker, you. Had to do it. :-)*

Looking forward to seeing all of you again soon.

73, Jay K4AZV

Veep Peeps

John, KI4DJT

Dear Friends -- I have not been too active this month as I had some work done on my arm and it's still a little sore. For the first two weeks the medicine I was taking made me dumb as an oyster. I'd rather be happy as a clam than dumb as an oyster but sometimes you just have to be the oyster! I didn't get to play at the Science Fair or the bike race and was even not at my best for the Virginia QSO party so I just listened. Pretty soon I'll be as good as new and get back to some of the fun in our great club and hobby.

The talk at the April meeting will be presented by our own **Harry Dannals W2HD** and the topic will be **Amateur Radio, Where Are We Going?** This is not written in stone but in May we're probably having a homebrew show and hot dog meeting and of course the June meeting will be devoted to Field Day. I have a couple of projects almost completed and hope to have an antenna set up at the meeting so we can play with them and see how much fun you can have with a soldering pencil and a bag of good junk, some wire and a battery

See you on the air. Take care and ...

73 de KI4DJT

Club Business

AARC Board Minutes March 14, 2006

Members Present: PRES Jay, K4AZV; Marty, AG4DN; Stephanie, K4BMM; John, N4SYH; Bill, AD6JV; Dennis, K4THE; Tim, KG4HOT. Members Absent: VEEP John, KI4DJT; TREAS Bob, K4DU.

Jay called the Board Meeting to order at 6:40 PM.

Jay turned to the first item of business, the **CLUB DIRECTORY**. He showed the Board a prototype of what had been developed. There are two distinct Sections; Section 1 listed club members; Section 2 covered all area amateur operators. Discussion followed on the methods of distribution, hard copy, web site or a mix. Consensus had it that all club members should receive a hard copy. Non-club members could purchase copies at a cost yet to be determined. The entire directory would be placed on the club web site. More will follow as the project progresses.

Jay announced that Bill had agreed to be the coordinator for public service events. He noted that three to four events would be well within the capacity of the club membership.

There followed a general discussion of the policies and purposes of all club repeaters to include 2 meters, 220 and 440. The employment of linkage with other repeaters in the valley, both north and south and Richmond was a key item of discussion. The question of movement of the 925 repeater at Martha Jefferson Hospital, Charlottesville was reviewed as well. The use of Heard's Mountain, Sugarloaf and other sites in order to get the best possible coverage for club members was a key consideration of placement. The pluses and minuses of linkage were covered. Jay pointed out that with linkage in the valley both individuals north and south could become familiar with the club and its activities particularly during such planned activities as the Information Net and the Northern Piedmont Emergency. On the other hand, linkage has the potential of tying up numerous repeaters by two individuals "Rag Chewing" for an extended period of time.

The need for policies governing the use of repeaters linked is essential for proper operation. The discussion of the 925 repeater at Martha Jefferson Hospital covered some very essential points. This repeater, although it does not have the coverage that would be ideal, has the 911 capability; it has been at the hospital for an extended period of time, the club has worked well with the hospital administration and there was little to gain and much to lose by movement. When Martha Jefferson moves to Pantops Mountain within the next six years the question of movement should be addressed.

Needless to say, the use, location and policies regarding repeaters covered at the Board Meeting will be addressed many times prior to hard decisions.

There being no further items of business a motion was made to close the Board Meeting at 7:25 PM, seconded and approved with no comment.

Submitted by: Marty Mait, AG4DN, Secretary

Regular Meeting March 14, 2006

Jay opened the General Membership Meeting at 7:40 PM. Jay requested that each individual present, in addition to giving their name and call sign, state what their current amateur activities are, their interests or anything that might be of interest to the group.

After the introduction of members and guests, Jay called for the approval of February 2006 Board and General Membership Minutes as they appeared in the March 2006 Beacon. A motion was made, seconded and approved with no comment.

Jay went on to remind those present that dues for 2006 are due. He went on to the meaning of club membership, the volunteer aspects of being an Amateur and the club's reliance on volunteers to keep its activities moving. He discussed the prototype club and regional amateur directory. The directory was circulated through the membership in order that they might see what was on the horizon. It contains 147 pages and covers a radius of about 100 miles from Charlottesville. The plan for distribution of the directory was also covered. (See Board Minutes 14 March)

Jay informed the membership that Bill has volunteered to be the public service event coordinator. Jay asked for a volunteer(s) to coordinate Field Day for 2006. There are potential volunteers but there was need for further discussion with Jay.

Bill took the floor and requested volunteers for the Jefferson Cup Races 26 March 2006. Location will be the Kluge Loop and start at the Walton School. The sign up clipboard was passed around the room. More instruction will be forthcoming prior to the race.

With the business portion of the meeting completed, Jay introduced Jim Condon, AD4YM, the principal speaker for the evening. Subject: Boat anchors!

Jim gave the membership a history of the progress, transitions and the technology of US amateur radio from its beginnings in the early 1900's through the 1960's. This period is the "Boat anchor" period of US Ham radio. Sets were large, heavy and technical improvements were by bits and starts over the time period. World War II brought in many improvements and much more reliable equipment that were incorporated into the Ham radio equipment and kit

building for amateurs after the conflict. Technology did not move forward until the late 1960's with such improvements as pass band tuning, etc. During the "Cold War" period of 1950-1960 military equipment and amateur radios were quite similar technically. The critical exception was that the amateur equipment was much lighter in weight and did not have to withstand the rigors of a military environment, high altitudes, extreme temperature, both high and low, humidity and rough handling. The US industry did not keep up with the Japanese as they made smaller lighter and technically advanced equipment. The period of the "Boat anchor" was over as the Japanese took over the world amateur radio market. (This quick and dirty review of Jim's presentation cannot come close to imparting the informative and valuable information he imparted.)

The membership gave Jim a well deserved round of applause and thanked him for an excellent presentation.

There were two short and interesting presentations that followed. Sam N4WJK is a Ham who restores primarily Philco radios from the 1930 and 1940's. This was a high point of home radio use in the US. He brought in for inspection a number of the Philco's he had restored to working order as well as refinished their wooden cases. Bud KB4JNI brought an antenna he made, explained material use and how well the items he made operated.

Jay thanked the group for their interesting and informative presentations.

With no further business or presentations, Jay called for a motion to adjourn. The motion was made, seconded and approved with no comment. The meeting adjourned at 9:00 PM.

Submitted by: Marty Mait, AG4DN, Secretary

The Design of Collinear Antennae from Rigid Aluminum Coax

Bud, KB4JNI

This type consists of vertically stacked half wave cylindrical elements above a ground plane. The basic data for this is found in Kraus* Fig. 9-12. "Resonant resistance of cylindrical stub antenna with ground plane as a function of the length-to-radius ratio." Since the length of an element is determined by the frequency. For this design the center of the 70cm FM band, 446 MHz will be used. This gives a half wave in air of $492/446 = 1.103'$ or 13.236". The diameter of the 7/8" poly coated 75 ohm cable with the poly removed is .815". This results in an l/a ratio of $13,236/.4075$ of 32.5. Allowing for the V_p of the coax and the approximate values shown on Fig. 9-12, the resonant resistance used for a half-wave element will be 300 ohms. To use the same coax for the 2

meter FM band, the l/a ratio will be 100 and the resonant resistance will be about 600 ohms.



The task at hand now is to match the resonant resistance to a 50 or 75 ohm feed line. For this the PUFF computer aided design program works quite well. It should be obvious that the lower the radiation resistance is, the wider the bandwidth of the antenna will be. Additional elements can be added with appropriate phase reversal to increase gain. The 70 cm antenna has 3 elements and should show about 6 db or better.

The photos are of the collinear 70 cm antenna made from 7/8" poly clad 75 ohm coax. The Vp of the cable was checked by measuring the inside diameter and center conductor and assuming 75 ohms. This gives a dielectric k of 1.260 and a Vp of 0.89. A 134.5" length of the cable was checked for resonant frequencies with a grid dipper. A VP of 0.85 was the result.



A Vp of 0.87 was used to calculate the lengths of the lines. Using a band center frequency of 446 MHz, gives a half wave in air of 13.24" .The lengths of the various elements in degrees are 30 for the shorted stub,70 for the match 90 for the top section and 180 for the half waves and 90 for the air top. Corresponding lengths in inches are: 1.91 4.48 5.76 11.52 6.62. Quarter wave ground plane wires are placed between the bottom half wave and the matching section. A sweep of the finished antenna showed a 20db or better return loss over the 70cm band.

**Antennas, J. D. Kraus, McGraw-Hill Book Company, Inc., 1950*

Contest Highlights - Upcoming

Bob, W4RQ

ARRL-Sponsored Contests

None

Complete info, rules and log forms for these events can be found online at the [ARRL Contest Calendar 2004](#) webpage.

Other Contests of Interest

Apr 8-9 Japan DX Contest CW

Apr 15 Holyland DX Contest

Apr 29-30 Helvetia Contest

The [SM3CER Contest Service - Contest Calendars](#) has info and rules for these contests and just about every contest that exists.

73, Bob W4RQ

My First Pileup!!!

Jay, K4AZV

I have to blame/credit this to Marty, AG4DN who spoke recently about the need to get involved with the Virginia QSO party. I've done some contesting which has been limited to search and pounce tactics in order to gain new DXCC entities or VUCC grids. **Search and pounce** means moving about in a band or number of bands with the hope of finding a "new one". When I started working the Virginia QSO party I decided that I would try something different. I had been informed that Nelson County was quite rare and during a contest there would most likely be many people wanting to make contact with a Nelson County station.

I started out the contest on 80 meters where I found an open frequency and began to call CQ. It wasn't long before I made a few contacts and then apparently I was spotted on a county hunters cluster and a tremendous pileup ensued. Never before had I been at the receiving end of calls from at least a half a dozen people at a time. So also was the case on 40 meters whereas 40 meters and 80 meter contacts were generally within the more local vicinity. I had a brief stint on 20 meters in the evening which yielded Colorado, New Mexico and California contacts including club member, K6OJ.

So, if you have the desire to participate in a contest where **you are the subject of the pileup**, work the Virginia QSO party. Work it stationary from your county, work as a mobile rover for serious point gains and hard core pileups and most of all, participate if you can next year in the Virginia QSO party. The fun is guaranteed, the cost is minimal and the rewards are great.

[Editor's Note: I can attest to this, as I had to wait in line a few calls to work Jay on 40 meters. I also worked in VAQP. I didn't make quite as many QSO's as Jay, though --- I guess Greene County isn't as rare as Nelson County --- HII!]

Who Discovered Radio?

From the QCWA Journal, Spring 2006. These gems are reprinted by permission of the author, John Johnston, W3BE.

WRONG!! "Who" did not discover radio. The true discoverer was my grandfather, R. A. Dio. Shortly before the dawn of the 20th century, Grandpa discovered the electromagnetic phenomenon that now bears the contraction of his name: "radio". This occurred in Dayton, Ohio. To celebrate this electrifying moment in history, our annual Hamvention is centered on the exact site of his discovery: Flea market spot number 1.

Q. Who was the first amateur operator?

A. Wrong again!! Our first licensed amateur operator was Hara Ham, also of Dayton; hence the term "ham". Ham was looking for a way to collect the 100 QSL cards necessary for DXCC. Upon finding a discarded HF transceiver in his junk box, he realized that radio offered the perfect solution to his quest: he could use amateur radio to solicit those QSL cards!

Although new to ether theory and spark technology, Ham guessed correctly the minimum 26-out-of-35 examination questions. He received the very first amateur license grant ever received. The callsign was "W", indicating that his station location, obviously, was on the East side of the Mad River.

Congressional analysts projected confidently that radio hobbyists would soon go away. So it granted Ham an amateur radio license and limited his operation to that vast ether wasteland above 1.5 MHz.

Q. Who made the first two-way amateur service QSO?

A. Wrong again!! Shortly after receiving his license grant, W began using his amateur station to transmit to the world our-first ever amateur service message. It was, of course, the immortal: "CQ DX --- NO LIDS --- NO KIDS --- NO SPACE CADETS DE W K".

This went on continuously for over one full year until the fateful day when W received his first reply. It was from the second amateur station ever authorized: "K", located, obviously, on the West side of the Mad River. They exchanged 599's, QTH's and handles.

With K's QSL card in hand, for W it was one down and 99 more to go. He was ecstatic.

[..... More next month.....]

Vanity Callsign Fee Poised To Drop Slightly Later This Year

From the ARRL Letter, March 31, 2006

The FCC wants to reduce the Fiscal Year 2006 regulatory fee to obtain an Amateur Radio vanity call sign by \$1.80 to \$20.10 for the 10-year license term. The current vanity call sign fee is \$21.90. The Commission proposed the new fee in a Notice of Proposed Rule Making (NPRM), "Assessment and Collection of Regulatory Fees for Fiscal Year 2006, in MD Docket 06-68, released March 27. If ordered as proposed, the new vanity fee would become effective in August or September. The FCC is obligated to collect nearly \$289 million in regulatory fees during FY 2006 to fund its operations.

"Consistent with our established practice, we plan to collect these regulatory fees in the August-September 2006 time frame in order to collect the required amount by the end of the fiscal year," the FCC said in its NPRM. Comments on the proposed fee schedule are due Friday, April 14. Reply comments are due Friday, April 21. The FCC has projected collecting \$171,188 in vanity call sign fee receipts from 8500 applications in FY 2006.

The vanity call sign fee has assumed somewhat greater significance this year as the renewal window is about to open for the first Amateur Radio vanity call sign licenses granted in 1996. Applicants wishing to keep their post-1995 vanity call signs must pay the regulatory fee in effect at the time the renewal application reaches the FCC, currently \$21.90. Any Amateur Radio renewal application may only be filed within 90 days of the license expiration date.

Vanity call sign holders are not obliged to keep their current call signs, however, and can request that it be changed to a sequentially assigned call sign.

Amateur Radio licensees holding vanity call signs granted prior to 1996 do **NOT** have to pay a regulatory fee when renewing. This is because Congress did not begin requiring the FCC to annually recover its regulatory costs until 1993. Additionally, such licensees are not specifically tagged as vanity call sign holders in the ULS.

To renew via the Universal Licensing System (ULS) <http://wireless.fcc.gov/uls/>, licensees should log into ULS License Manager Online Filing (click on "Log In") using their FCC Registration Number (FRN) and Commission Registration System (CORES) password. Anyone doing business with the FCC must supply an FRN on any application.

Licensees wishing to keep a vanity call sign should select "Renew" under the "Work on this License" option. Fees for electronically filed applications may be paid online or mailed to Federal Communications Commission, Regulatory Fees, PO Box 358835, Pittsburgh, PA 15251-5835.

The ARRL plans to inaugurate a vanity call sign renewal service for its members in the near future.

Solar Update de K7RA

From ARRL Propagation Bulletin ARLP013

Sunspots continue to be scarce, although numbers have risen the past couple of days. Several days this week had 0 spots (March 25-27), but then they rose over the next few days to 11, 31 and 35. Geomagnetic conditions have been nice and stable, and should continue until April 6.

Even last weekend when there were no sunspots, 10 meters was active during the WPX contest. Bill Hohnstein, KOHA of Seward, Nebraska said that A35RK in Tonga worked EA8TX in the Canary Islands, a path of nearly 11,000 miles. This was on March 26 around 2153z. Around that time Bill also worked both of these stations.

He worked many strong Central and South American stations on 10 meters, as well as ZD8Z on Ascension Island and AH6RF in Hawaii. Bill also copied the ZL2MHF beacon, which runs 10 watts to a vertical antenna, and his longest path was his QSO with ZL1ANJ, 7,709 miles, at 1957z on March 26.

If you would like to make a comment or have a tip for our readers, email the author at, k7ra@arrl.net.

For more information concerning radio propagation and an explanation of the numbers used in this bulletin see the ARRL Technical Information Service propagation page at, <http://www.arrl.org/tis/info/propagation.html>. An archive of past propagation bulletins is found at, <http://www.arrl.org/w1aw/prop/>.

Sunspot numbers for March 23 through 29 were 36, 44, 0, 0, 0, 11 and 31 with a mean of 17.4. 10.7 cm flux was 76.6, 75.8, 75.6, 73.6, 74.3, 79.3, and 81.7, with a mean of 76.7. Estimated planetary A indices were 5, 4, 7, 7, 9, 6 and 6 with a mean of 6.3. Estimated mid-latitude A indices were 2, 2, 4, 5, 8, 4 and 4, with a mean of 4.1.

AARC Public Service Schedule

None Reported

Area Hamfests

None reported

FCC Database Updates

New Calls

None Reported

Upgrades

None Reported

Vanity Calls

None Reported

VE Session Schedule - 2006

Date
Location

(ARRL VEC)

For other exam sessions in Virginia outside the AARC area, check the [ARRL Exam Session Search](#) web page.

For Sale Items

Quantum
Rechargeable Battery

Quantum ham radio rechargeable battery. 13.8 volts with a wall wart for charging and two outputs. This will run your handy talky all day and then some! Asking \$100. Contact Rick, KO4WQ at 434-245-1128.

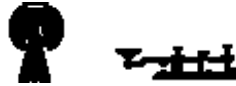
AARC Club Officers

President	Jay Rostow	K4AZV	k4azv@turing.org 434-263-5795
Vice President	John Turchi	KI4DJT	m51John@juno.com 540-543-2037
Secretary	Marty Mait	AG4DN	ag4dn@earthlink.net 434-589-2825
Treasurer	Bob Pattison	K4DU	rep4@aol.com 434-960-3344
Director	John	N4SYH	
Director	Tim	KG4HOT	
Director	Stephanie Rostow	K4BMM	434-263-5795
Director	Bill Phillips	AD6JV	billp1048@earthlink.net 434 872-0686
Director	Dennis Mennerich	K4THE	k4the@arrl.net 434 973-5407

Contest Calendars

ARRL Contest Calendar 2004	ARRL sponsored contests
SM3CER Contest Service - Calendar 2004	Contests all over the world! Also has links to online rules for most contests
Contesting Online	Just about everything contests!

Albemarle Amateur Radio Club
P.O. Box 6833
Charlottesville, VA 22906
<http://www.wa4tfz.org/index.htm>



THE AARC BEACON
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ISSUE DEADLINE - 23rd of each month

Contact Information
Daniel R. (Bob) Dorsey, Jr. W4RQ
PO Box 530
Ruckersville, VA 22968-0530
(434) 990-2659
W4RQ@yahoo.com

Next Club Meeting : April 11 - 7:30 PM NRAO Bldg at UVA

CLUB MEETINGS and NETS

REGULAR Meeting: Second Tuesday of each month at 7:30 PM
BOARD & TECHNICAL Meetings: Prior to regular meeting at 6:30 PM
Meetings are held at the NRAO building on Edgemont Road.
LUNCHEON: Wednesdays -- Area hams gather at the **Wood Grill Buffet** on Rte 29 North from 11 AM - 1 PM
Monday Night Information Net - Each Monday at 7:00 PM
Youth Net: Each Wednesday at 7:30 PM on 147.075
Northern Piedmont Emergency Net / Swap Net / Technical Session: Each Thursday at 8:00 PM
All Nets are held on the 146.760 repeater (except for the Youth Net)

AREA REPEATERS

WA4TFZ

<u>INPUT/OUTPUT</u>	<u>Tone Access (If needed)</u>
146.160/146.760	151.4 Hz
146.325/146.925	151.4 Hz
223.160/224.760	No Tone
449.250/444.250	151.4 Hz (If enabled)
145.030	MACHO Node
145.030	CHO Packet Bulletin Board

Other Area Repeaters

145.410 (-)	100 Hz Tone (if enabled) -- AF4CY (Madison)
442.075 (+)	151.4 Hz Tone -- KF4UCI

AARC CALENDAR OF EVENTS

DATE	EVENT
March 14	Regular Club Meeting
April 11	Regular Club Meeting
May 9	Regular Club Meeting
June 13	Regular Club Meeting
July 11	Regular Club Meeting
August 8	Annual Club Picnic and Hamfest
September 12	Regular Club Meeting
October 10	Regular Club Meeting
November 14	Regular Club Meeting

AARC - PUBLIC SERVICE SCHEDULE

DATE	EVENT
March 26	Jefferson Cup Bike Race

Please sign up at meetings as the SIGN UP CLIPBOARD is passed around. Contact Greg N4PGS indicating your interest in working particular events.

Membership application available in PDF format at <http://www.wa4tfz.org/images/AARCrenewalform2006.pdf>