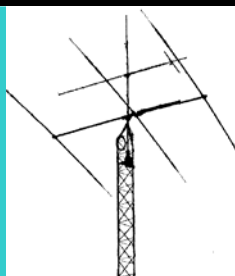


The AARC Beacon



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

Volume 2005, No. 3

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March 2005

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## Meeting Notice

The next regular AARC meeting will be held on **Tuesday, March 8 at 7:30 PM** at **the Astronomy Building on the UVA campus**. For the program, **Kevin K4BDR will be giving a presentation on Slow Scan TV** which should be quite interesting. See you there!!

## Dues are Due for 2005 !!

It's that time again, "**2005 Dues**." Members are reminded that dues should be paid as soon as possible for 2005. **This year as in last year all payments must be accompanied by an application**. Life and Youth members, while they are not required to pay annual dues should submit an application as well. This year all payments will go through the Secretary (Marty AG4DN). **There has been no increase in dues**. Family Membership \$25, Single Membership \$20, Life and Youth Memberships, no cost. **Payments can be given directly to Marty at the club meeting or mailed to the AARC, Post Office Box 6833, Charlottesville, VA 22906**. Applications can be downloaded from the club web site. Marty will have a limited number with him at the club meeting. Payments are requested in personal check or money order. Your

## The President's Letter

*Jay, K4AZV*

Hello and welcome to another fine edition of the Beacon.

Here's what was to be worked on the radio last month. On VHF/UHF the only openings heard preceded weather fronts on Feb 19<sup>th</sup> and 20<sup>th</sup>. On HF beginning the third week of January some of the notable entities worked included Trinidad, Antigua, Namibia, Asiatic Russia, Moldova, Iceland, Serbia, Falklands, Kenya, South Cook Island, Haiti and Bermuda. We also worked a couple of special event stations

## March 2005

(Eagles on the Mississippi and W5B the 45<sup>th</sup> anniversary of Buddy Holly's death) and received some nice QSL cards from them.

We have received materials from the ARRL, which will be at the next club meeting for presentation and distribution. These materials include Boy/Girl Scout related pamphlets, a small poster and two pamphlets which contain general information on ham radio, one for youth, and the other for adults. It would be beneficial to the club and its members to have a volunteer whose responsibility would be to store, make available and distribute these and other publicity items such as the Club banner, and other items to come. If you would enjoy doing this sort of thing please contact me at 434-263-5795.

The Frostfest was a fun time. It seems as though people were in a buying mood and everyone seemed quite busy. It was nice to see so many of our club members in attendance. Let us not forget how nice it is to pick up an item, examine it, and look the seller in the eye before making a purchase on used equipment. If you didn't make it to Richmond you don't want to miss the Berryville Hamfest, which is always the first Sunday in August. There you will find great food (world renowned BBQ!) and great fun.

There is still a **volunteer position open for a youth liaison**. This position should not occupy large amounts of ones time. A small amount of time would be helpful. Anyone? There's still a volunteer position available for another media liaison to work with W2EIU (Ernie).

Finally, I would like K4DND (Dave) to be recognized for his effort to bring back a sense of order and purpose to the Thursday night emergency net.

That's all for now.

73 -- Jay

## Veep Peeps

John, K14DJT

Dear Friends, here we are almost spring and some new things happening in our club. The main new thing is **our participation in the Piedmont Regional Science Fair**. We're donating a plaque and a "Now You're Talking" to a junior and senior student competing at the fair. A group of us will determine which folks deserve the AARC science award and book. If any are interested in participating we'll have a powwow at the March meeting and you can jump on. Also, if any would like to be a judge at the fair please get on the science fair web site and volunteer, they are begging for folks to help. I'll be judging either Earth science or space science and will hook up with the other club members at lunch. They provide breakfast and lunch for the folks that help out. I have already had the awards made at Jefferson

Engraving and will bring them to the March meeting for all to see. Jay K4AZV is getting the "Now You're Talking" books and Dennis K4THE wants to help with the judging.

The other new thing we're going to try is to set up a station at a school where Jackie Bailey, a friend of Harry's W2HD and a member of the astronomy club teaches. Jay and Steph want to be along too. What we'll probably do is build a simple antenna, get on the air and let the kids have a go at a little operating. Sounds like a lot of fun and a great way to promote our wonderful hobby to the younger generation, don't you think? More information will be posted when the event is scheduled.

I want to give a special thanks to Dave K4DND who bailed me out at the last meeting and had a very interesting presentation all set just in case there was a cancellation. I also thank **Kevin K4BDR, in advance, who is giving the March presentation on slow scan**. I know he has put a lot of work into his presentation so let's all make it to the March meeting and see what Kevin has for us.

Finally, I had a great time at Frostfest!! I picked up an antenna for the 440 HT, two cheap computers and a bunch of great junk for some crystal receiver experiments. It was nice to hang out for a while with the friends from the club and help out a little in getting things cleaned up at the end. I think Frostfest was much better this year than last but maybe it's just because I know a little more this year than last, I don't know.

Next month I'll have a story to tell about how an interest in radio saved the lives of some of my closest friends in World War 2. Take care and 73

*de John, K14DJT*

## Club Business

### AARC Board Minutes February 8, 2005

Members Present: Jay, K4AZV (Pres); John, K14DJT (Veep); Marty, AG4DN (Sec'y); Stephanie, K4BMM; Pete, W4PRT; Bill, AD6JV; Mike, W4XN; Dennis, K4THE. Members Absent: Bob, K4DU (Treas.).

Jay opened the meeting at 6:45 PM with a general discussion of the use of the funds set aside for packet activities. A number of ideas were placed before the Board, including the set up of an Echo Link by the club. With only \$75 earmarked for packet the options discussed were limited. Jay next noted that some clubs have a special membership status. These memberships would be open for individuals that did not want to participate in the general club activities but desired to make use of the club repeaters. A voluntary contribution to maintain the repeater could be solicited associated with a special membership status. Associated

with this idea the future problem of possibly having to find new repeater sites was raised. We maintain the 76 repeater on land that belongs to UVA. If at some future time they would ask us to remove the repeater there would be costs of moving, leasing or purchasing a site. Funds from this type of memberships could be used to defray some or all of these costs. Mike volunteered to work with Dave K4DND to explore the entire spectrum of repeater use, problems, maintenance, location, etc.

Jay now turned to the subject of having handouts, posters, and publicity for any public event that the club chooses to participate in. Professionally produced materials at these events will greatly enhance knowledge of the club and its activities. It was pointed out that a contact name, phone number and E-mail address should be prominently displayed on all such materials.

John informed the Board that the Piedmont Regional Science Fair will take place at the Omni Hotel, Charlottesville on March 14, 2005. This is an event for area youth. He felt that the club should present awards to two projects of note that could be related to an aspect of Amateur Radio. He pointed out the public awareness and notoriety that the club would receive would be well worth the dollar cost. The Board approved an amount not to exceed \$150.00 for these awards. John indicated he would follow up procuring the awards and indicated the need for club members to act as judges. Those interested were requested to contact him.

With no further business before the Board, a motion was made to close the meeting, second and approved with no comment at 7:30 PM.

*Submitted by Marty Mait AG4DN, Secy.*

### **Regular Meeting December 14, 2004**

Jay opened the meeting at 7:40 PM. This was followed by an introduction of members and guests. Jay called for the approval of the December 2004 Board and Club Minutes as they appeared in the January 2005 Beacon. There was discussion of some errors in the Beacon that did not relate to the minutes. Marty indicated he would take care to have them corrected. The Board and Club Minutes for December 2004 were approved with no changes.

Marty displayed a number of fliers he received from Amateur Radio clubs in the region. They all announced Hamfests, dates, location, etc. The fliers were placed on the table for those interested. He also announced the MS 150 is scheduled for June 11-12, 2005. The starting point will be Lynchburg to Smith Mountain Lake and return to Lynchburg. More information will be available as the dates approach.

Jay indicated the club's need to have membership cards, club awards in a number of categories, a bulletin that presents the club equipment and its availability for the membership.

Bob was not present, but he does have a club property list that could be easily made into a bulletin and distributed to the membership.

Mike indicated a need to have an up to date membership list available for club members. Discussion followed that the last time such a list was published was 2002. This publication listed all Amateurs in the region and was not limited to club members. It was agreed that this was a very useful tool for recruiting as well as general reference. The entire issue will be addressed at the next club meeting in March. Fund allocation for the publication will also be discussed. Mike agreed to contact Bob and work with him on this project.

Jay indicated a desire to have a liaison individual to schools and the Scouts. Tom Rae, W4RAE was mentioned as the proper individual for this purpose. Tom not being present the action was deferred. Harry, W2HD commented that the club had a very active outreach program at one time. The necessary publications were available presently to reactivate the program. The membership that had participated in the program and maintained the publications were requested to bring them to the March club meeting.

John reviewed the action taken by the Board regarding the Piedmont Science Fair. There was some concern regarding the criteria that will be used to judge the recipients for the club awards. It was pointed out that the judging would have to be very flexible in particular an exhibit's relationship to Amateur Radio.

The meeting turned to the evening's presentation. Dave K4DND covered the newly established Central Virginia Hospital Amateur Radio Emergency Network. The network linked 16 hospitals in Central Virginia by use of Amateur Radio repeaters. Dave noted that the system was a "hub and spoke" link up with repeaters in Petersburg, MCV and Chippenham Hospitals in Richmond and South Hill. He described the equipment located at each location. The equipment was purchased with a Homeland Security Grant of \$278,000 (Federal) and installed commercially. He also indicated that the net was open at all times and staffed by local Amateurs. Dave answered numerous questions that reflected the difficulties of staffing and maintaining such a net with Amateur operators. Dave pointed out that this particular arrangement was new to Amateur Radio. Under normal circumstances operators brought their own equipment to the emergency site and when the emergency was over, took the equipment home. Here we have an established network equipped and operating at all times. Whether this arrangement will be successful or not will be observed quite closely by the Amateur Community, governments and hospitals.

Jay and the membership thanked Dave for a very informative presentation.

## March 2005

Jay opened the floor for any further issues, comments or concerns of the membership.

Tommy Moore, WB5BNT informed the membership that the Albemarle County Sheriff's Department Search and Rescue Team are looking for volunteers with radio experience. The individuals would not be operating as Amateurs; they would be operating with the Department's equipment on their frequencies. Any one interested should contact Tommy.

Dennis, K4THE brought to the attention of the membership that Steve, KD4HBX has handled the refreshments month after month. He volunteered to bring the refreshments for March, but strongly believes the function should be rotated. The membership agreed; further action to be taken at the March meeting.

John desired to address net control rotation for the Northern Piedmont Emergency Net. Dave stated that this function would be addressed during the net and was not appropriate for a club meeting.

With no further business a motion was made to adjourn at 8:45PM, second, and approved with no comment.

*Submitted by Marty Mait AG4DN, Secy.*

## Contest Highlights - Upcoming

*Bob, W4RQ*

### ARRL-Sponsored Contests

**Mar 5-6** [ARRL International DX Contest \(SSB\)](#)

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

### Other Contests of Interest

**Mar 6** [DARC 10 M Digital Contest](#)

**Mar 19-20** [Russian DX Contest](#)

**Mar 19-21** [Virginia QSO Party!!](#)

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

*73, Bob W4RQ*

## 2005 Virginia QSO Party

*Tnx to Marty, AG4DN*

It's that time of year again!! This is the QSO Party in which the rest of the USA --- and a lot of DX stations, too --- are looking for **\*\*\*US\*\*\*** in Virginia!! The purpose is to promote ham activity in the 95 counties and 39 independent

cities in Virginia, and is sponsored by the Sterling Park ARC up north.

This year the VA QSO Party will be held from **1800 UTC Saturday March 19 through 0200 UTC Monday March 21**. Modes are SSB, CW, FM and the Digital modes.

More details can be obtained from the official VAQP website at [2005 VA QSO Party Rules](#).

So let's get on and put Central VA on the air that weekend. CU on the bands!!

## Charlottesville Hams Win QCWA SK Memorial Scholarships

*From the QCWA Journal, Winter 2004 Edition*

Under the auspices of the Foundation for Amateur Radio, Inc. (FARS), two young Charlottesville hams have been awarded QCWA Silent Key Memorial Scholarships, valued at \$1000 each.

**Matthew J. Dean, KE4UKY**, is currently a junior at UVA – Wise, majoring in accounting with a minor in business administration. In January 1995, at the age of ten, he earned his Novice license and had upgraded to Extra by age 13. Field Day is his favorite activity and he also enjoys DX'ing, special event station contacts and kit building.

**Michael J. Dean, KE4UKX**, is also a junior at UVA – Wise with a major in Economics. Just like Matthew, he earned his Novice in January 1995 at the age of 10 and upgraded to Extra by age 13. DX on 20 meters is his favorite activity. He also enjoys contesting, particularly the November Sweepstakes and Field Day.

**Congratulations to Matthew and Michael on winning these fine scholarships and best wishes for success in your studies!**

## Estate Sale Items

Tnx Ron, K4RKA

The following items are offered for sale from the estate of Bob, WB2MVA. If interested, please contact K4RKA, Ron Richey at 434-973-3640 evenings and weekends.

| Mfr         | Model      | Asking | Comment                             |
|-------------|------------|--------|-------------------------------------|
| Alpha Delta | DX-SWL     | 40     | sloper ant.                         |
| Daiwa       | CN-620     | 50     | pwr/swr                             |
| Daiwa       | CNA-1001A  | 150    | auto tuner                          |
| Daiwa       | CS-401     | 60     | 4 pos switch<br>(120 used at AEA)   |
| Daton       | FL3        | 80     | audio filter                        |
| ERC         | SL-56      | 25     | notch filter                        |
| GAP         | EAGLE      | 100    | hf vertical (nxn's)                 |
| Icom        | IC-R7100   | 500    | vhf/uhf rcvr<br>(900 used at AEA)   |
| Icom/NAV    | IC-A20     | 200    | airband xcvr (new \$400)            |
| Kenwood     | ac pwr 440 | pkg    |                                     |
| Kenwood     | TS-440     | 400    | package w/kenwood<br>PS / desk mike |
| Kenwood     |            | 100    | w/TS-440 xcvr                       |
| MAX System  |            | 15     | air-440 gnd pln antenna             |
| MFJ         | 1702       | 10     | 2 pos sw                            |
| MFJ         | cwf-2      | 5      | cw audio filter                     |
| Millen      | 90652      | 75     | grid dip                            |
| RF Concepts | RFC 2-417  | 160    | 2m amp/pre amp                      |
| Ten-Tec     | KR-50      | 30     | 2x keyer                            |
| UniRadio    | M-7000     | 150    | digital decoder                     |
| Van Gorden  | D-10       | 15     | 10M ant w/balun                     |
| Yaesu       | FT-727R    | 35     | 2 band/2 bat/no tone                |
| Yaesu       | FT-23R     | 35     | 2 xcvs, no tone                     |

## BPL Testing in Nelson County by AARC

Tnx to Bob, K4DU, et al.

**BPL Testing - Nelson County, VA**  
Conducted 8:30 am-1:00pm on 12/8/2004

### Introduction – Signals vs. Interference

To fully appreciate this report it is important to review a few terms. For the purpose of this report a **signal** is an intentional emission of intelligence using allocated spectrum in the radio frequencies. **Interference** at these frequencies

can be from natural sources or man made. When one signal makes it difficult for the other to be received, it is said to **interfere** with that signal. There are specific rules for dealing with interference. Frequency allocations are made by the Federal Communications Commission to licensed services. The Commission also has rules for secondary services and for “unlicensed” devices. The rules for unlicensed devices are referred to as Part 15. When a Part 15 device interferes with a licensed service, the Federal Communications Commission places the responsibility to resolve the interference problem on the Part 15 emitter.

It is important to note that the nature of the BPL signal is fundamentally different from the signals typically found within this portion of the radio spectrum. In the HF spectrum signals are normally discrete, that is they occupy a small portion of the spectrum and it is normally possible for an operator to avoid the interference by tuning away from the undesired signal. Where BPL signals are encountered this is not possible because they occupy a large portion of the spectrum with the exception of the pass bands where they are notched out.

In December 2004, the BPL committee of the Albemarle Amateur Radio Club conducted an initial test of the BPL system installed by IBEC at the Central Virginia Electric Cooperative (CVEC) in Nelson County, Virginia. IBEC's system employs a notching scheme intended to reduce BPL signal strength in the HF amateur radio bands. IBEC provided a copy of their spectral mask showing the location and depth of these notches, which is included as Appendix A. The test was designed by the BPL committee and conducted with the cooperation of IBEC and CVEC. The test had several objectives, namely:

1. To determine the effectiveness of IBEC's notching of the HF amateur radio bands.
2. To determine the level of potential interference to Short-wave Listening Bands, the low VHF public service frequencies, the frequencies used by the National Radio Astronomy Observatory and the frequencies used by the air traffic system.
3. To model the behavior of the system when the number of active users increases and traffic approaches saturation.
4. To determine the potential impact of amateur radio transmissions near the BPL system.

### Test Equipment Used:

**(K4AZV)** Kenwood TS480SAT w/Hamstick antennas, noise reduction and digital noise limiting.

**(KD4BMQ & WK4Y)** Icom IC-706 MKIIG with a Tar Heel antenna

**(AD6JV)** Elecraft K-2 with Hamsticks in Vertical and Horizontal polarization

**(KB1DOE)** Radio Shack mobile scanner for low band VHF

The testers assembled at various points along the BPL system. Two mobile units were at the site where the signal injector is located—one with a scanner and one with an HF radio. One mobile unit with an HF radio was positioned at the site of a regenerator unit that was close to an active BPL customer. One mobile unit was positioned at the site of a remote regenerator where there were no customers in the vicinity. It must be observed that the mobile stations using the Tarheel™ and Hamstick™ antennas in this initial test are not as sensitive as the equipment and antennas found in most home based amateur radio stations.

#### **Test observations as Follows:**

Throughout the system and noticed by all testers, including the chief engineer for IBEC who was accompanying one of the testers in a vehicle our observations were:

- There was no perceptible BPL signal received on the 160-meter 80-meter or 40-meter bands.
- On the 60-meter band, a considerable amount of "typewriter" type BPL signal from just above the noise floor to S6 interference levels.
- At the signal injector site, S9 BPL signal levels were heard just below the 20-meter band with readings at S1 to S3 in the band.
- In the 17-meter, 15-meter, 12-meter and 10-meter bands there was no BPL signal heard.
- There were S1 typewriter type BPL signal levels at 6-meters.
- On the SWL frequencies the testers heard BPL signals between S3 and 30 db over 9 noise levels depending on the position along the transmission line.
- There was no BPL signal heard around the 120 MHz airline band.
- The public service band between 38 MHz and 47 MHz experienced harmonic interference from the main signal.
- The WWV at 5 MHz, 15 MHz and 20 MHz experienced noise from S3 to 20 db over 9 depending on the receivers' position along the transmission line.

The strongest signals during the testing were in the 4 MHz, 5 MHz and 11-13 MHz areas. These signals stretched evenly through the bands. Relative signal strength received does

not change by tuning to different frequencies but rather by moving along the MV distribution line.

#### **Test Results - Conclusions vs. Objectives**

1. On this day of testing **we did detect BPL signals in the 60-meter, 20-meter and 6-meter** amateur bands while measuring directly underneath the power-lines. The BPL signal on the 6-meter and 20-meter bands diminished when one moved beyond a distance of 100-feet from the power-line. The BPL signal was also detected on short wave listening and WWV frequencies. No BPL signal was detected on the amateur 160-meter, 80-meter, 40-meter, 17-meter, 15-meter, 12-meter or 10-meter bands or the air traffic control bands.

No testing was performed on the amateur VHF above 54 MHz or UHF frequency bands.

**Harmonics of the BPL signal were received in the public service band and the 6-meter band** when parked directly under the power-line. These signals were detected up to 100 feet from the power-line. Amateur radio operators using the HF spectrum often operate using weak signal modes. It remains to be seen whether or not the 60-meter band will be effectively notched out by the second generation BPL equipment.

2. There was considerable BPL signal noted on the short wave listening (SWL) frequencies and on the WWV frequencies at proximity, however some SWL and WWV signals were readable. It is believed by those in the amateur community that a fully populated system makes listening annoying and difficult. **This level of interference is unacceptable for it renders these frequencies useless for anyone in close proximity to the lines and would obliterate any SWL signal or WWV signal.**

**The low VHF public service frequencies experienced detectable harmonics from the main BPL signal. This is unacceptable as several of the local fire and rescue organizations depend upon these frequencies for communications.** Because the regenerators act as packet relay devices, there is never more than one transmitting in a region at a time (within 1-1.5 miles). Because of this, radiation from the units will not combine to form a coordinated stronger signal than that produced from an individual device. The effect of a fully populated system here cannot be determined. We did not have the appropriate equipment to test with regard to the National Radio Astronomy Observatory frequencies. There was no noise detected during the test in the VHF air traffic band.

3. **The test was unable to determine the impact of a fully populated system.** At the time of the test, IBEC had upwards of 70 customers actively taking service utilizing the BPL system. IBEC did assist us by downloading several large

files during the test. The nature of the IBEC system is such that data transfer will always be "bursty" in nature and separated by periods of inactivity. These files proved to be inadequate to simulate a fully saturated system. A fully saturated system will fill in the spaces between the "typewriter" noise associated with BPL making it more of a constant static rather than a punctuated erratic signal. It is also believed that the effects of a fully populated system with relatively non-punctuated data will severely effect reception of SWL and WWV signals in the range of distance from the power line as specified in our testing. CVEC's planned future deployment in the Lake Monticello area of Fluvanna County will demonstrate the impact of density on the system as all of the residents of the community will be within 100 feet of the power lines or homes using the system.

#### 4. **Testing was inconclusive with regard to interference to BPL signals by amateur radio transmissions.**

From our understanding, according to what IBEC's chief engineer said, the only way to disable the BPL system would be to have a lineman from the power company disconnect power from each regenerator. The engineer stated that even with the power pulled to a single regenerator, other regenerators on the network will still "talk to each other."

The results reported above are representative of our findings during the test period. Given the nature of the system design and the dynamic nature of the way the IBEC's BPL system selects and uses frequencies (random algorithm), within the frequencies the system uses, the results of future tests are subject to change. Since there were BPL signals heard, this report will be generated and distributed to all parties who have an interest in these frequencies. We plan to conduct a second round of testing utilizing more sensitive testing equipment, which unfortunately was not available to us during this first test. The Nelson County Communications Director, the Nelson County Emergency Service Coordinator, a representative from Fluvanna County and reporters from the local media, will be invited to accompany us.

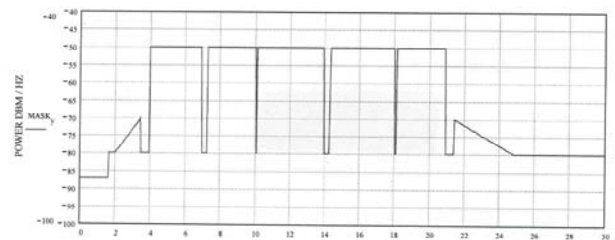
It is clear on the day of our test that **IBEC's notching scheme was not successful on the lower portion of the 20-meter band.** It was also clear that **the initial version of IBEC's notching scheme does not include the 60-meter amateur band.** IBEC has promised a "second generation regenerator" to be available some time in early 2005 which they believe will be effective in notching out interference from the 60-meter band and additional FCC "stay out" frequencies. After this second-generation equipment is installed, the second round of testing will be undertaken. IBEC displays a continued interest in making their product better and it seems would like very much to not interfere with amateur radio communications.

We would like to thank K4DU, K4AZV, K4BMM, AD6JV, KB1DOE, KD4BMQ and WK4Y for their participation in this testing. We would also like to thank KB4SL (from IBEC), the IBEC staff and the CVEC staff for their assistance in arranging and performing these tests.

As amateur radio operators, we pride ourselves in being at the forefront of communication developments. We hope the information in this report will provide beneficial information for all parties involved.

For the Albemarle Amateur Radio Club,

*Jay Rostow, K4AZV – President*



Transmit Spectrum Mask

# Test Data

| Band           | Listen From | Listen To  | Comments - Note Frequencies with BPL Signal and Signal Strength levels                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------|-------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 160            | 1.750 MHz   | 2.250 MHz  | Quiet (K4AZV) Rt 29 & ballfield at 50 and 100 feet from the line.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 80             | 3.475 MHz   | 4.025 MHz  | Quiet (K4AZV) Rt 29 & ballfield at 50 and 100 feet from the line.<br>(Beneath line) Substantial typewriter noise (hamstick vertical), 5.3 MHz typewriter noise above noise floor using horizontal polarization (AD6JV), (25 Ft from power company feed point) Quiet (Directly under Power Co. Feed point) typewriter noise strongest at the low end of 60 meter band. (K4AZV) Rte 739 at bridge BPL signal S5 to S6. (K4AZV) 29 & ballfield 4.6 MHz S7, 4.9 MHz S5, 5.3 MHz S6, 5,430 MHz S5 to S6. At 25 feet the signal reduces to S3. At 50 and 100 feet the signal is heard but does not move the S meter. |
| 60             | 5.30 MHz    | 5.430 MHz  | Quiet (K4AZV) Rt 29 & ballfield at 50 feet from the line. At 100 feet from the line an S3 signal is detected at 7.4 MHz.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 40             | 6.975 MHz   | 7.325 MHz  | (K4AZV) Rt 29 & ballfield barely audible "pops" at 13.175 MHz at 50 feet from the line.<br>(Beneath line) Substantial (S9) typewriter noise just below 14.000 (hamstick vertical) (AD6JV), No BPL signal discernable using horizontal polarization (AD6JV). (At 25 Feet) Typewriter noise S8-S9 13.89-13.95 MHz. (K4AZV), Rte 739 at bridge at 13.750 BPL signal S2. At Rt 29 & the ballfield an S7 BPL signal is detected at 14.472 MHz.                                                                                                                                                                      |
| 30             | 10.075 MHz  | 10.175 MHz |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 20             | 13.75 MHz   | 14.375 MHz | Quiet (AD6JV)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 17             | 18.043 MHz  | 18.192 MHz |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 15             | 20.975 MHz  | 21.475 MHz | Quiet (K4AZV) Rt 29 & ballfield at 50 feet from the line.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 12             | 24.640 MHz  | 25.14 MHz  | Quiet (K4AZV) Rt 29 & ballfield at 50 feet from the line.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 10             | 27.75 MHz   | 29.95 MHz  | Quiet (K4AZV) Rt 29 & ballfield at 50 feet from the line.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| WWV            |             |            | (K4AZV) 739 at bridge, 5 MHz, 15 MHz & 20 MHz BPL signal 10-20 db +9. (K4AZV) Rt 29 & ballfield BPL signal S3-S4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Public Service | 38.00 MHz   | 47 MHz     | (K4AZV) 739 at bridge - BPL signal detectable. (K4AZV) Rt 29 & ballfield 31.4 MHz to 38 MHz BPL signal harmonic detected also at 42.6 MHz, 44.7 MHz and 50 MHz. At 50 MHz the BPL signal reduces to S1 signal levels. (KB1DOE) at injection point detected BPL signal on numerous frequencies between 42 MHz and 47 MHz, strongest at the pole, diminishing to zero at 100 feet from the injection point.                                                                                                                                                                                                      |
| Aircraft       | 127.00 MHz  | 135.00 MHz | (KB1DOE) at injection point, no BPL signal heard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| NRAO           | 74.00 MHz   | 75.00 MHz  | <b>NO TEST CONDUCTED AT THESE FREQUENCIES</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| SWL            | 5.900 MHz   | 11.800 MHz | (K4AZV) 739 at bridge - BPL signal S7 under the line. (K4AZV) Rt 29 & ballfield at 50 feet from the line on 11.250 MHz the BPL signal is S7 to S9. At Rt 29 & the ballfield at a distance of 100 feet from the line the signal peaks at S3 in the range.                                                                                                                                                                                                                                                                                                                                                       |
|                | 12.00 MHz   | 24 MHz     | (K4AZV) 739 at bridge - 12 MHz and up BPL signal S9 under the line. (K4AZV) Rt 29 & ballfield at 25 feet from the line at 13 MHz the signal strength varies from S3 to 30 db over S9.                                                                                                                                                                                                                                                                                                                                                                                                                          |



| AARC Public Service Schedule |  |
|------------------------------|--|
| None reported                |  |

| Area Hamfests |  |
|---------------|--|
| None reported |  |

| FCC Database Updates |  |
|----------------------|--|
| <b>New Calls</b>     |  |
| None reported        |  |
| <b>Upgrades</b>      |  |
| None reported        |  |

| VE Session Schedule - 2004         |                                                                                                                         |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Date<br>Location<br><br>(ARRL VEC) | For other exam sessions in Virginia outside the AARC area, check the <a href="#">ARRL Exam Session Search</a> web page. |

| For Sale Items                                                                            |                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Offered by Dick, K4VY.<br>Contact Ron Richey, K4RKA at 434-973-3640 evenings and weekends | Alpha Delta 4 way coax switch with ARC plug. \$ 40<br>Kenwood TM231A (2 Meter) Transceiver w. manual \$ 125.<br>Optronics Mini Freq. Counter 3300 (1 meg to 2.8 Gig.) \$ 50<br>Autek Research RF Analyst RF1 \$ 85<br>Timewave DSP 599ZX \$ 275<br>Icom PCR 1000 Receiver \$ 250<br>Yaesu G800 Antenna Rotator \$ 325 |

| AARC Club Officers |                  |        |                                                                                      |
|--------------------|------------------|--------|--------------------------------------------------------------------------------------|
| President          | Jay Rostow       | K4AZV  | <a href="mailto:k4azv@turing.org">k4azv@turing.org</a><br>434-263-5795               |
| Vice President     | John Turchi      | KI4DJT | <a href="mailto:m51John@juno.com">m51John@juno.com</a><br>540-543-2037               |
| Secretary          | Marty Mait       | AG4DN  | <a href="mailto:ag4dn@earthlink.net">ag4dn@earthlink.net</a><br>434-589-2825         |
| Treasurer          | Bob Pattison     | K4DU   | <a href="mailto:rep4@aol.com">rep4@aol.com</a><br>434-960-3344                       |
| Director           | Pete Thorsen     | W4PRT  | <a href="mailto:w4prt@arrl.net">w4prt@arrl.net</a><br>434-982-4690                   |
| Director           | Mike DiGirolamo  | W4XN   | <a href="mailto:w4xn@arrl.net">w4xn@arrl.net</a><br>434 977-6377                     |
| Director           | Stephanie Rostow | K4BMM  | 434-263-5795                                                                         |
| Director           | Bill Phillips    | AD6JV  | <a href="mailto:billp1048@earthlink.net">billp1048@earthlink.net</a><br>434 872-0686 |
| Director           | Dennis Mennerich | K4THE  | <a href="mailto:k4the@arrl.net">k4the@arrl.net</a><br>434 973-5407                   |

| Contest Calendars                                      |                                                                               |
|--------------------------------------------------------|-------------------------------------------------------------------------------|
| <a href="#">ARRL Contest Calendar 2004</a>             | ARRL sponsored contests                                                       |
| <a href="#">SM3CER Contest Service - Calendar 2004</a> | Contests all over the world! Also has links to online rules for most contests |
| <a href="#">Contesting Online</a>                      | Just about everything contests!                                               |

**Albemarle Amateur Radio Club**  
**P.O. Box 6833**  
**Charlottesville, VA 22906**

<http://www.people.virginia.edu/~ejd4e/aarc/index.htm>



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**ISSUE DEADLINE - 23<sup>rd</sup> of each month**

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**Next Club Meeting : March 8 - 7:30 PM Astronomy Bldg - 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 UVA Astronomy building at 530 McCormick 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 8  | Regular Club Meeting |
| April 12 | Regular Club Meeting |
| May 10   | Regular Club Meeting |
| June 14  | Regular Club Meeting |

**AARC - PUBLIC SERVICE SCHEDULE**

| DATE       | EVENT |
|------------|-------|
| 2005 - TBA | TBA   |

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/2004\\_ap\\_form.pdf](http://www.wa4tfz.org/2004_ap_form.pdf)