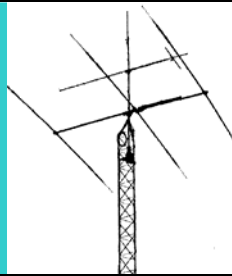


The AARC Beacon



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

Volume 2005, No. 1



January 2005

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Meeting Notice - Winter Dinner!

The next regular AARC meeting will be held on **Sunday, January 9 at 5:00 PM** at **the Ponderosa Steakhouse at Pantops**. The program will be simply to chow down, have fun and have pleasant eyeball QSO's with your fellow club members. 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 cooperation is requested.

**HAPPY NEW
YEAR!!**

AARC Officers for 2005

As elected at the October meeting, our club officers for 2005 are:

Officers

President	Jay K4AZV
VEEP	John KI4DJT
Secretary	Marty AG4DN
Treasurer	Bob K4DU

Board Members

Stephanie	K4BMM
Pete	W4PRT
Bill	AD6JV
Mike	W4XN
Dennis	K4THE

The President's Letter

Jay, K4AZV

Hello and welcome to another exciting chapter of the Albarle Amateur Radio Club. First a bit about me, I was born in 1963 and raised in Los Angeles. I was adopted when I was two days old by a Jewish couple in West Los Angeles. I constantly drove my parents batty, getting into everything I could, including a brief stint in CB radio at about age 12. Without an Elmer, my interest in radio faded. I won't bore you with the details of my teenage years, let it suffice to say that when I was 19 I came to Virginia to visit and I knew that shortly thereafter I would be leaving Los Angeles. That same year I met my maternal biological family, packed up all of my goodies and headed to Virginia. I feel that I have rooted myself quite firmly here. The life style and the genuine hospitality of this area are truly enjoyable. I had no interest in radio until the events of 9/11 occurred. At that point I decided that I wanted to hear news from many different sources included sources outside of the United States.

I consulted my longtime friend, Jon, K6OJ regarding short-wave radios. Jon tried to convince me to buy a transceiver and my response was – no thanks, I only want to listen. As you can see my thought process failed me and I have become miserably afflicted with this disease known as amateur radio. So thanks go to Jon, K6OJ, my most devoted mentor. I would also like to thank Bill Elliott, N4VUF for giving me the courage to do code and Tim, KG4HOT for all of

his equipment loans along with his true desire to have another person on the air; now onto the club.

I have many starry-eyed and idyllic aspirations for the Club. Realistically having to start somewhere I will concentrate on a few things at a time. Firstly to increase awareness of our club and raise the number of members; secondly, establish a new member package detailing the clubs resources; thirdly I will begin the search for a permanent home for the AARC. There will be surveys distributed. One will ask what you would like to see the club involved itself in. The second will ask what you are willing to do, as I will be looking for much help and commitment relating to the individual attributes of club members.

Our club exists primarily for the enjoyment and entertainment of its members. I feel that this aspect needs to be somewhat revived. The club is comprised of a wonderful, diverse group of people who are very intelligent and capable. We will use this to our advantage.

In closing, I am always available for discussion on any club issue. Thank you for electing me as your club president and having confidence in my abilities. I look forward to working well with all of you in making this an enjoyable and successful year for our radio club.

73 -- Jay

Veep Peeps

John, KI4DJT

The VP column is unavailable this month. Stay tuned next month!

73, John

Club Business

AARC Board Minutes December 14, 2004

Members Present: Pete W4PRT PRES; Bill AD6JV Acting VEEP; Marty AG4DN SECY; Ralph K4CFE TREAS; Steve KD4HBX; Bob K4DU. Members Absent: Howard W4UF; Jill KG4TFS; Ben KG4QVP.

The meeting was opened by Pete at 6:45 PM.

The first item on the agenda was a financial report by Ralph. This being his last meeting as Treasurer, he was thanked for his service to the club. The report for the period ending November 30, 2004 indicated in summary the following:

Total Revenues:	\$2,036.00
Total Expenses:	\$1,846.35

Excess Revenues:	\$189.65
AARC Fund:	\$3,954.18
Repeater Fund:	\$1,082.68
Packet Radio:	\$78.37
Total:	\$5,116.37

A full report will be attached to these minutes for the record. Those wishing to examine the full report may do so upon request to the Secretary.

Ralph pointed out that membership dues did not cover expenses. Contributions of \$600.00 during the year enabled the club to complete the year with excess revenue. Bob, Treasurer Elect, indicated that this would be monitored closely in 2005.

John K14DJT, VEEP Elect, reported on programs for 2005. We will have our Annual Banquet January 9, 2005, 5:00 PM at the Ponderosa Steak House, Pantops. In February we will have a presentation on generators by Dave WG4T. In March there will be a presentation on slow scan TV by Kevin K4BDR. Pete noted that he would continue booking our current meeting room for 2005. Bob believed that a greater effort should be made to notify members that have not been attending meetings of the place a date/time of meetings. Action deferred, pending further discussion. Jay, K4AZV, Pres. Elect, asked why the club must have a presentation arranged for each meeting. He indicated that some meetings should consist of open discussion of items of interest, club activities, problems, etc. This will be considered next year.

Bob noted that Bob Dorsey W4RQ will be stepping down as VE Coordinator and he will be replacing him. Bob noted that he would make an effort to coordinate exams with other clubs, in order that Amateurs in the area will have a monthly opportunity to take exams.

The Board thanked Steve KD4HBX as he left the Board for the outstanding way he handled refreshments for club meetings and special events. He will be missed. A replacement must be found for him. There will be a call for a replacement(s) at the general club meeting.

Pete and Jay discussed the preparations that must be made for Field Day in June 2005. Options for location of the event and other necessary arrangements will be covered and reported to the membership.

Marty covered a number of administrative items:

Annual Post Office fee

Name change of club insurer

Invitations to Founding Club Members for January 9 Banquet.

It was agreed that the following founding club members with guest would be invited:

Dick Florence K4VY

Bob Blodinger W4NPX

Bob Van Fossen K4DJG

Carter Field K4GPK

Frank Hayes W4NUK

Ron Richey K4RKA

Marty will write the invitations to these individuals.

From the floor Harry W2HD reminded the Board of a need to support the Amateur Radio NewsLine. A \$50.00 contribution was suggested and approved.

A general discussion followed addressing the need to raise funds during 2005 to preclude expenses out stripping income. Various methods were suggested and deferred to the new administration in 2005. A suggestion was made to combine the Packet Radio Fund with the Repeater Fund since no use has been made of the Packet Radio Fund for quite a while. Action was deferred.

With no further business a motion was made to close the Board Meeting at 7:10 PM, second and approved.

Submitted by Marty Mait AG4DN, Secy.

Regular Meeting December 14, 2004

Pete opened the meeting at 7:30 PM. He called for the introduction of members and guests.

The presentation for the evening was made by Nancy Simmons and David Kostelnik representing the regional office of the MS Society. They thanked the club for its support of the MS Walk and the MS 150 Bike Race. Nancy explained the nature of the disability, what is being done in the research field where and how contributions are distributed. Their region covers 51 Virginia Counties. Funds are spent on education of care givers, those with the disability, treatment, research, to name a few areas of support. Dave reviewed the events that took place in 2004. There were 14 locations for the MS Walk. They raised \$282,000 of which \$30,000 was raised locally. The bike events had 500 participants and 100 volunteers. Again, he thanked the club for the excellent communication that was provided. He pointed out that participants feel secure and safe when they see the communications team out in the field. Without this assurance many would not participate. He noted that again in 2005 MS would come to the AARC and request support for the MS Walk and MS 150. He assured all volunteers that they would be well housed and fed. There followed a question and answer period. Pete thanked Dave and Nancy for their excellent presentation.

Pete took this opportunity to apologize for the long delay in the arrival of the hats and jackets. He assured the club he was actively pursuing a resolution of the problem.

Pete reviewed the financial statement. (See Board minutes)

Pete called for a round of applause for Steve and the excellent job he did for the club this past year as Refreshments Chairman. He noted the need for some one to replace Steve.

John covered the programs for 2005. (See Board minutes)

Tom W4RAE reported for the Education Committee. He noted the number that showed up for the VE test on November 20 and the number that passed.

Dave K4DND reported for the Tech Committee. The major effort has been to solve the noise problem on the 76 Repeater. He noted that he, Jay, Ron K4RKA, Hein N4FWA, Elmer KF4UCI worked on the repeater this past Sunday. He went on to explain the workings of a repeater and the components that could be causing the problems. He indicated that the problem possibly could be in the tuner or the antenna. He requested the club authorize the purchase of an antenna. He noted the cost at about \$170.00. A motion was made to approve the purchase, seconded and approved with no comment.

Pete reported to the general membership on the plans for Field Day 2005. (See Board minutes)

Dave K4DND informed the club of the advantages of belonging to The Repeater Association. He distributed applications for individuals who desired to become members.

Bob K4DU reported on the BPL testing by the club and the Electric Cooperative in Nelson County. He thanked the many club members who assisted in the effort. He noted that there was interference on a number of bands. Some public safety bands were also impacted. The Electric Coop is working on many bands at this time and will continue testing its system. Jay indicated that this was a public awareness issue as well as a technical one. We must use a measured approach in the media as well as take a regional view involving the Emergency Coordinators from adjoining counties.

Pete called for approval of the November minutes as they appeared in the December Beacon. A motion was made, seconded and approved with no changes.

This concluded the business for the evening. Pete called for a motion to close the meeting. A motion was made, seconded and approved with no comment at 8:45 PM.

Submitted by Marty Mait AG4DN, Secy.

Contest Highlights - Upcoming

Bob, W4RQ

ARRL-Sponsored Contests

Jan 1 [ARRL Straight Key Night](#)

Jan 8-9 [ARRL RTTY Roundup](#)

Dec 11-12 [ARRL January VHF Sweepstakes](#)

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

Other Contests of Interest

Jan 9 [DARC 10 Meter Contest](#)

Jan 29-30 [CQ 160 Meter Contest](#)

Jan 29-30 [REF Contest \(France\) – CW](#)

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

73, Bob W4RQ

Packet Standards ... Revisited

Tnx to Bud, KB4JNI

1. **Deviation** is defined as the instantaneous change in frequency with a given input signal, or the peak value of the carrier departure from center. The FCC defines Narrow Band FM as 1.8 kHz deviation. This seems to correspond with my observations of on the air signals that are showing values of 3 to 4 kHz. p to p. Most of the transmitters that I have observed have their limiters set to about 2.0 to 2.5 kHz. The G.E. Royal Execs that are modified for the Ham bands are nominally set for 4.5 kHz with limiters at 5.0 kHz. This is compatible with the receiver's bandwidth of about 20 kHz. The discriminator is quite linear over this range and it is DC coupled through a 100k resistor to a test point and in the WA4TFZ 145.61/145.01 unit is available on a terminal strip. This is an excellent point to monitor with a scope since no de-emphasis is present. (use a low cap. probe). The transmitter audio is pre-emphasized the normal 6db per octave between 300 and 3000 Hz. The receiver audio is de-emphasized.

2. **Modulation Index and receiver bandwidth.**

Modulation Index is defined as Deviation divided by the modulating frequency. With the deviation set to 1.8 kHz, the index is 1.5 for the 1200 Hz low tone and 0.82 for the 2200 Hz high tone. Examination of the Bessel functions shows the need to include the 2nd order sidebands in the receiver's passband. This requires at least $4 \times 2.2 = 8.8$ kHz bandwidth. Most of the ham radios are at least this wide and some are

over 20 kHz. The need for the wider bandwidths is to accommodate the difference in frequency settings of both transmitters and receivers caused by aging and temperature on xtals. The compromise here is obvious. The higher sensitivity receiver usually has the narrower bandwidth and requires greater attention to frequency tolerance and deviation.

3. Pre-emphasis, De-emphasis:

The use of pre-emphasis of the transmitted audio stems from the desire to improve the S/N ratio of the high modulation frequencies by de-emphasis of the receiver discriminator output. This works with wide deviation fm and multiple tones. Neither is the case for packet and no improvement is provided.

4. Conclusions and Recommendations:

In view of all the above, it appears best to transmit equal deviation signals on the air. Local users and PBBS settings should keep deviation settings below the 1.8 kHz level. For Backbone systems, careful attention to frequency and higher deviations should be used to improve throughput seems to be a desirable goal.

5. Measurement of Deviation:

For those Hams who have access to Service Monitors or Spectrum Analyzers, checking deviation is easy. For those who do not, the task can be more difficult. A very good check can be done with the aid of an all mode receiver.

a. Set the packet transmitter to a locally unused frequency and set the TNC to CALIBRATE. Use a dummy load on the TX if possible.

b. Set the receiver in the CW mode and tune for an audible beat note of about 500-600 Hz with no modulation on the packet transmitter.

c. Turn on the high tone (2200 Hz) and adjust the tnc level until the beat note is minimized. The modulation index when the carrier is nulled is 2.4 (Bessel J0). With the 2200 Hz tone, this gives a deviation of $2.4 * 2.2 = 5.28$ kHz. Using the 1200 Hz tone and the same procedure, the deviation is 2.88 kHz. Do not forget to include the effect of pre-emphasis on the tx audio if present. Setting the deviation by backing off the 2200 tone amplitude to one half will give a deviation of less than 3.0 kHz, about right for local use.

73 --- Bud

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
			(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
			(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
			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

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.

FROSTFEST 2005

Central Virginia's Largest Indoor Electronic Flea Market

AMATEUR RADIO & COMPUTER SHOW
NATIONAL & LOCAL VENDORS

Sunday February 20, 2005

The Showplace in Richmond, VA 8:30am- 3:30pm

ARRL VIRGINIA SECTION CONVENTION

ORDER TICKETS ONLINE NOW
GET SPECIAL VIP TREATMENT

- **NO STANDING IN LINE FOR TICKETS**
- **EARLY ADMISSION BEFORE SHOW**
- **SEPARATE VIP ENTRANCE**
- **EXTRA SPECIAL SURPRISES**

www.frostfest.com
VIP TICKET SALES END 1/31/05

FORUMS * HOURLY SURPRISES * FREE PARKING

www.frostfest.com

(804) 545-0566 (opt. 4) Talk In 146.88 Repeater (PL: 74.4 Hz)

Sponsored by the Richmond Amateur Telecommunications Society

[Editor's Note]: I have received other flyers for FrostFest 2005 as well as registration forms in PDF format. If you would like any or all of them, please email me at w4rq@yahoo.com and I will email them to you.

AARC Public Service Schedule	
None reported	

Area Hamfests	
None Reported	

FCC Database Updates	
New Calls	
None reported	
Upgrades	
None reported	

VE Session Schedule - 2004	
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	
Offered by Dick, K4VY. Contact Ron Richey, K4RKA at 434-973-3640 evenings and weekends	Alpha Delta 4 way coax switch with ARC plug. \$ 40 Kenwood TM231A (2 Meter) Transceiver w. manual \$ 125. Optronics Mini Freq. Counter 3300 (1 meg to 2.8 Gig.) \$ 50 Autek Research RF Analyst RF1 \$ 85 Timewave DSP 599ZX \$ 275 Icom PCR 1000 Receiver \$ 250 Yaesu G800 Antenna Rotator \$ 325

AARC Club Officers			
President	Jay Rostow	K4AZV	k4azv@turing.org
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 434-985-4828
Director	Pete Thorsen	W4PRT	w4prt@arrl.net 434-842-1014
Director	Mike DiGirolamo	W4XN	w4xn@arrl.net 434 977-6377
Director	Stephanie Rostow	K4BMM	jrandersn@yahoo.com 540 xxx-xxxx
Director	Bill Phillips	AD6JV	billp1048@earthlink.net 434 872-0686
Director	Dennis Mennerich	K4THE	dnns0227@mennerich.org 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.people.virginia.edu/~ejd4e/aarc/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 : January 9 - 5:00 PM Ponderosa / Pantops

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
December 14	Regular Club Meeting
January 9	Annual Winter Dinner – Ponderosa/Pantops
February 8	Regular Club Meeting
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