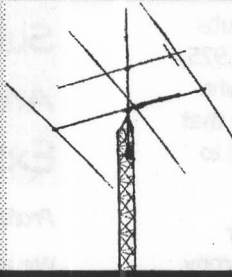


The AARC Beacon



*Amateur Radio News For
Charlottesville and
Albemarle County,
Virginia*

Volume 2002, No. 4

April 2002

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Meeting Notice

The next regular AARC meeting will be held on April ⁹~~8~~, 2002 at 7:30 PM at the NRAO building on the UVA campus. The April Program will be "Field Day 2002" it will be co-hosted by Bob, K4DU and Pete Thorsen, KG4JLL, our Field Day chairman for 2002. See you there!!

The President Speaks

Bob, K4DU

As Perhaps a better title this month might be "The President Rambles". I have several unrelated thoughts that I wish to share. So here goes. This month's program will be about Field Day. It is the beginning of our preparations for the event. We will reminisce about Field Days past, here and elsewhere, and begin the planning process for Field Day 2002. I do hope you will join us both for the meeting and for Field Day!

I happen to note that the American Institute for Public Service recognized three Central Virginians for "their outstanding volunteer work and commitment to helping others." As I read the article in the Sunday paper I couldn't help but think of the folks involved over the years in ARES, RACES and countless Public Service events. It seems to me that several of the folks I have had the honor of serving with over the years deserve recognition in much the same way.

Of course we are amateurs, by definition volunteers. Most who provide Public Service do so solely for the honor of serving and that is recognition enough. However, I might suggest that for too long now we have done our work in the shadows. It is time that we make a concentrated effort to be more visible within the community. I hope next year when the AIPS considers nominees for this award that it has several amateur radio volunteers from which to choose.

It is April and some publications at this time of year use editorial space to play April fools jokes on their readers. To the more serious minded amateur this can be an affront. To others it is a real joy. In this vein I had given thought to a

president's column announcing the sale of all of the clubs repeaters. Think of all that quiet time on 146.76, 146.925, 224.760 and 444.250 why not sell them to someone who would exercise them more? Upon reflection I thought that discretion was the better part of value. I did not want to face a lynch mob at the April meeting.

I am pleased to announce that this months' newsletter contains an article written by the elusive Professor Murphy. Professor Murphy has extensive operating experience and lives on Signal Hill north of town. Some say that he is the son of Jeeves, others say that he is related to "the old man". We hope that this will be the first of many columns by Professor Murphy. Who knows, perhaps we will be blessed by his appearance at an upcoming club meeting.

73 de K4DU

Veep Peeps

No VP column available at press time

Time To Say So Long For Now

Harry, W2HD

With those words, this column will bring to an end five or more years of never missing an issue of our club newsletter. It hasn't been an easy decision, but it seems to be the way to go. Topics for columns became harder to originate and it appeared that information was going to be repeated, repeated and repeated until you readers would shout for something new.

That didn't seem to be the way to go. The original concept was to bring you info that might not have been covered in the same manner in other publications... to bring you material that might help you in your enjoyment of Ham Radio. It is hoped that such has been the case.

There will probably be times down the road when a subject will be so interesting that it would be nice to share some views with you. Hopefully, that will happen. However, until that time, your writer is going to take leave of the word processing chore. To those who have enjoyed these attempts, my sincere thanks. It has been fun. Enjoy Ham Radio. It has been an important time in my life and it can be in yours, too.

73... /s/ Harry, W2HD

Subterranean Antennas - An Answer to the FCC's Failure to Extend PRB-1

Professor Murphy

We are all acquainted with the works of Hertz, Windom, Yagi and others that have written exhaustively on the subject of antennas. Great effort has been expended in antenna design to achieve a "low angle of radiation". In vertical antenna's this is often accomplished through the installation of a system of ground radials. On the low bands some have seen the performance on long wire arrays enhanced through the installation of massive amounts of copper in the ground below the radiating element.

I have noted that after having operated from the same QTH for more than fifteen years and installing many eight foot ground rods during that time that my signal reports now tend to be 59 now most of the time. Could it be that the most important part of an RF radiating system at HF is that which is beneath the ground as opposed to that which is above it?

My thoughts were driven by the notion that I could provide a new generation of antenna's for low band use. Motivated by the thought that I might just be able to offer my fellow amateurs a solution that could circumvent all of those nasty CCR's and Deed restrictions, it is my pleasure to share with you the details of the Subterranean 160 5/8's Wave Inverse Vertical antenna system installed here on Signal Hill. The planning alone has taken months.

The first step was to prepare the initial design for the array. Erecting a vertical above ground for 160 meters would present potential structural and regulatory issues. Since Signal Hill is within a few miles of the end of the runway here in Charlottesville, an above ground structure of this nature would have to be approved by the FAA. Supporting a vertical of this size would also require a massive investment in guy wires and screw anchors. To date my neighbors have adjusted to the glint of silver like antenna's high above the house on Signal Hill. (The HF array can be seen by folks three miles away!) Ah! Therein rests the beauty of the Subterranean design, no government approvals! No need to invest in expensive guying systems! No need to worry about the neighbors!

The calculations for the height (depth) of the antenna were quite simple. For flexibility the middle of the 160 meter band was chosen as the target resonant frequency 1.9 Mhz (1900 kc for those of you licensed before 1975). Rather than calculate the exact length it was decided to take Orr and Cowan's 5/8th wave calculations for 80 meters and double them. This seemed to be a reasonable decision due to the fact that 80 is one-half of 160 and $1900 \times 2 = 3800$.

These calculations yielded a length of 156 feet as the height (depth) for the 5/8 Wave vertical element.

Most verticals are constructed with tapered aluminum tubes. After spending some time considering the number of tubes required for a 156 foot structure and the diameter of the tubing required at the top it was decided to use cooper instead. The use of cooper increased the expense associated with the antenna, but it was determined that the chemical reaction between the clay soil and the cooper might permit the cooper antenna to last longer before needing to be replaced. The estimated lifespan of the cooper antenna is 15 years. The company contracted to drill the shaft suggested PVC pipe. This resulted in heated discussion with the contractor over the virtues of conductivity in components used in antenna work.

Drilling the shaft only cost \$30,000. Several delays were encountered when we discovered an undocumented section of the East Texas gas pipeline on the property. That was after we drilled through the base of the artesian well that provides water for the house and apparently several of our neighbors.

These delays resulted in the unanticipated expense of concrete casing for the 160 foot deep shaft.

The antenna was assembled using 20 foot sections of 1" cooper pipe. Each section was welded together. The top of the shaft was sealed and arrangements were then made to attach a coaxial feedline and an extensive system of 32 radials each 123 feet long. The end of each radial was secured with an 8 foot copper ground rod. A member of the Geology department at UVA has assured me that my property now contains almost as much cooper as the southernmost province of Bolivia.

Next month I will provide data on the signal reports received and the performance of the antenna to date. I am curious if any of you can guess the Z ohm, L uh or the C pf measurements for this antenna? Also, I am thinking of turning this design into a phased array. Are there any comments or suggestions to this notion?

So long from Signal Hill until next time!

Club Business

AARC Board Minutes February 5, 2002

Board Officers Present: Bob, K4DU, President; Joe Fritz, KD4RWX, [Substitute-Secretary]; Ralph Traylor, K4CFE, Treasurer. Directors Present: Steven Traylor, KF4ZGD; John Green, KX4P; Steve Clements, KD4HBX; Wil Seay, KJ4XZ. Absent: Josh Malone, KG4NGV, Vice President; Marty Mait-AG4DN, Secretary; Peter Thorsen, KG4JLL, Director.

Bob indicated that recently some equipment became available from a local Ham who was no longer able to operate. He suggested that perhaps a committee should be set up to handle such activities as they arise. He will mention it at the next club meeting.

Bob indicated that the next meeting's program will be from the Technical Committee with Elmer, KF4UCI leading the activities.

Bob indicated we need to appoint a person to communicate in a regular manner with the ARRL Section Manager, i.e., A Liaison person.

Ralph presented the current treasury balances and a proposed budget for 2002:

Balances:		
	AARC Fund	\$990.45
	Repeater Fund	\$1,052.68
	Packet Radio	\$78.51
		\$2121.64
Proposed Budget:		
Revenues:		
	Dues	\$1,700.00
	Donations	\$100.00
	Fundraising	
Total Revenues		\$1,800.00
Expenses:		
	Publications	\$750.00
	Activities	\$200.00
	Meetings	\$140.00
	Office	\$30.00
	Fees	\$45.00
	Repairs	\$200.00
	Insurance	\$320.00
Total Expenses		\$1,685.00
Excess Revenues		\$115.00

Joe, in response to equipment inventory comment, indicated that several attempts had been tried. Not always successful. Technical Committee should keep it and report the inventory to club.

Bob said he would check on cost of insurance.

Wil made a motion to present the 2002 Budget to club. Steve seconded it. The motion was approved. [Please find the

Budget proposed above in the Treasurer's report. This constitutes publishing it in the newsletter.]

Bob indicated that Tom, W4RAE of the Education Committee wants to get back to the schedule we formerly had of having at least two classes per year. Also, with several young Hams in the club, efforts should be made to get them involved. Consider the possibility of having a summer class when students are not in school.

Steve mentioned the possibility of setting up a station at some summer camp as an idea of getting more youth informed about Amateur Radio. Bob mentioned the possibility of working with Boy Scouts in their Radio Merit Badge program.

Joe suggested that teams of Hams could adopt local schools and provide some public relations/information programs about Amateur Radio. Steve suggested that school sites might be selected for Field Day locations.

Bob asked the Board Members to ponder this question. "How do we get better public relations to kids and to better market Amateur Radio in our area?" Joe suggested checking with the Albemarle County Community Education program. When they advertise their classes, they blanket much of the County households with the information about the classes offered.

Joe mentioned that there would be several new applications for membership presented at the regular meeting.

Meeting adjourned.

Regular Meeting February 12, 2002

Bob, K4DU, President presiding.

Program: Elmer, KF4UCI, Greg, N4PGS and Dave, K4DND presented some information related to repeaters. A commercial repeater was displayed and a portable repeater, which had been constructed using two radios and other equipment was demonstrated and tested. Additional discussion was regarding packet radio and its several uses, including APRS. Persons connected to the Internet can access APRS activity by connecting to

map.findyou.com/callsign-#

For example: map.findyou.com/n4pgs-7

It was noted that Chuck, KG4IJB, a local Ham was an important player in the APRS activities. He is located in the old Monticello Dairy building, near Preston Plaza.

A raffle was conducted and 4 prizes were awarded.

Greg, N4PGS reported on the following activities:

March 24 a Bike Race

April 7 The MS Walk

June 1-2 MS 150. This year it will be from Charlottesville to Farmville and return to Charlottesville.

Tom, W4RAE mentioned the desire to return to two classes per year at CATEC.

Harry, W2HD suggested an article in the newsletter would be appropriate to help advertise.

Joe proposed the following for membership.

- Sarah Hawrysko KG4OFX
- Debi Hawrysko KG4DCY
- Ben Mills KG4QVP
- Jeffrey Seay KG4QWR
- Matt Brownfield KG4OVD
- Walter Parsons KG4QIA
- Dan Shumard KG4OXX

Joe moved they be accepted; Rick, KO4WQ seconded. They were approved.

Meeting was adjourned at 8:22 PM

Submitted by Joseph D. Fritz, KD4RWX, Acting Secretary in place of absent Secretary Marty Mait, AG4DN

AARC Board Minutes March 5, 2002

Board Opened at 7:00 PM. Members Present: Bob K4DU, Pete KG4JLL, Steve Clements KD4HBX, Ralph K4CFE, Steve KF4ZGD, Will KJ4XZ, Marty AG4DN. Members Absent: John KX4P and Josh KG4NG.

Bob opened the meeting with a discussion of the donation of surplus equipment from Litton Marine Systems. Litton contributed four pallets of equipment they surplused for income tax at a value of \$35,000. (See attached letter Patterson to Niestrath). A list of equipment is being developed at present. Many of the items have no value, while others will lend themselves for sale at Hamfests and other such situations. The Club must now apply for a Federal tax ID as well as an application for Recognition of Exemption under Section 501 c (3) of the Internal Revenue Code. Bob is currently working with the assistance of counsel to file these documents. Bob requested and was given a resolution of support for his action by the Board in a unanimous vote. \$600.00 has already been derived from the sale of this equipment. All funds so derived are for the general fund and are not earmarked for any specific project.

Ralph presented the attached 2001 & 2002 Income Statements, FYTD Feb. 28, 2002. He noted that at present we are down in membership 24 from the same period last year. This equates to about \$500. It was decided that the Board would directly contact these individuals and determine if they desire to maintain their membership. If not, what are the causes for not maintaining membership?

The program for the March general meeting was next on the agenda. John Gray will present his experiences while working for the "Voice of America". A major effort is

underway to inform the membership and have a large turnout for the meeting.

It was noted that classes for the General and Technician license would begin the week of March 7th. An effort will be undertaken to inform the public of these classes.

Ralph raised the possibility of providing Technician classes for a youth group during the coming summer months. Bob will work with Ralph on this effort.

The use of a column in the Beacon each month to highlight various members of the club and their backgrounds was discussed and was favorably considered.

Field Day was the last item of business. Pete is coordinating the effort. Various incentives were discussed to reward attendance and efforts. Ordering of pins, T-shirts, etc., will be considered. Pete will be working on the site to use for Field Day. Pete indicated that Field Day would take place on June 22-23 this year.

There being no further business the meeting closed at 8:15 PM

Marty Mait AG4DN Secretary

Regular Meeting March 12, 2002

Bob, K4DU President opened the meeting at approximately 7:30 P.M.

As is the custom at all general membership meetings, introductions of those present was begun. Bob indicated that he desired each member in addition to name and call, indicate the year he/she obtained a license and what their major area of interest or activity in amateur radio was at present. A wide spectrum of interests was expressed by the membership, however all were a part of amateur radio activity.

John Gray, W6UZ next made a presentation covering his experiences while with the "Voice of America." He discussed the origins of the program, its political past and difficulties. He covered the extensive facilities used by the program both in the United States and overseas. He relayed a number of humorous stories and answered numerous questions from the membership. The presentation was well received and appreciated.

Will Seay, KJ4XZ was given the floor and explained the type of equipment donated by Sperry Marine to the club and how it was planned to sell and dispose of the property. Various items of equipment were raffled off and sold to the membership. All proceeds going to the general treasury of the club.

Greg Faust, N4PGS announced the following public service events:

March 24 Bike Races

April 7 MS Walk

June 1-2 MS 150

Greg requested volunteers for these events.

The start of a General Class of instruction was announced beginning March 13.

Rick Berman, KO4WQ requested the club look into an upgrade for the Martha Jefferson repeater. Bob indicated the suggestion would be examined as well as fund availability for the project.

Dave, K4DND made a motion that the club should make a contribution to the Waynesboro Repeater (147.075). Since so many of the club's younger members are beyond the range of the club repeater they make extensive use of the Waynesboro facility. A motion was made to contribute \$100.00 to the Waynesboro Club. The motion was second and passed by unanimous vote.

Joe Giovanelli, W2PVY on behalf of his wife June, KD4ATH sent greetings to all her friends in the club. Joe requested on her behalf that a \$50.00 contribution be made to the Amateur Radio Newsline. The motion was made, second and passed by unanimous vote of the membership.

The Treasurer will see these contributions are put in the mail as voted.

There being no further business, Bob closed the meeting at approximately 9:15 P.M.

Marty Mait AG4DN, Secretary

Member Profile - Bob, K4UVT

Bob, K4UVT

Bob was a Navy "war baby", born in November 1944 in Corpus Christi, TX. His father settled in Norfolk, VA in 1950 and Bob was there. He attended Virginia Tech and finally graduated with a BS degree in Physics in 1969 and a Masters degree in Physics in 1971 from Old Dominion University. While a member of the Boy Scouts, a Navy radioman (also a ham) visited a troop meeting with one of those old Navy paper tape machines used for teaching the Morse code. It was discovered at that particular meeting that Bob had a congenital interest in CW that could not be held back. A visit or two with this ham and he was hooked on ham radio. Bob obtained his Novice license in April 1960 with the call KN4UVT. An upgrade to General followed in 1961.

Visits with other local hams lead to an early interest in DX. "You mean I can talk to people in other countries without using a telephone?" And thus bit the DX bug. His first rig was a National NC-300 receiver and a kit-

built Eico 720 transmitter with a 6146 final that ran 75 watts. Bob managed to burn holes into the glass sides of several 6146's chasing DX. Much traffic handling was done in the early years on the CW nets. All operating was on CW until 1965 when Bob won his first SSB rig, a Hallicrafters SR-160 Xcvt. Antennas were a 40-meter dipole and then a small Telrex 2-element 20-meter mini-beam. With this setup, Bob obtained DXCC in 1961 and by 1967 had worked 225 countries with 75 watts. In 1979, after 6 tries at the written exam, Bob finally managed to earn his Extra ticket.

From 1967 to 1971, while attending college in Norfolk, he was very active in running phone patches, mostly with Guantanamo Bay and with ships home-ported in Norfolk at sea or on a Mediterranean cruise.

In 1972 he somehow wound up in the computer programming business and has been there ever since – and done just about every facet of the business. In 1980, while employed by Control Data Corporation, he was assigned to Tokyo, Japan for six months to help open a new data center there. Unfortunately, there was no reciprocal licensing with Japan then, so had to be content with a couple guest-op visits at local club stations.

Eleven years were spent in California in both Silicon Valley and the Mojave Desert near Edwards Air Force Base, where he supported the B-2 bomber flight test program. After many years stuck in apartments, Bob finally got back into DXing and contesting actively. While in W6-land, he was a member of the Northern California DC Club (still a member!) and the Northern California Contest Club. He was editor of the NCDXC DXer for two years and later editor of the Antelope Valley ARC *Short Circuit*. So Bob is not a newcomer when it comes to editing ham club newsletters. He was also a member of a small amateur Hawaiian and Polynesian dance group in San Jose with the stage name of Cousin Kimo – and we did shows in authentic costume for the VA Hospital in Palo Alto, county fairs, local festivals, senior citizens groups, etc! For many years, Bob also made an appearance as "The Great Kahuna" at the International DX Convention in Visalia. That is another story in itself...

Starting in 1985, several chances to operate overseas arose. He operated from Barbados in 1985 and 1986 using the call 8P9AJ (Eight Potato Nine Apple Juice), doing both the CQWW CW DX contests and "casual" DXing -- working down a pileup for 7-8 hours straight is casual??? But what a kick it was, operating from the "other" side of the pileup! In 1987 Bob went to Tahiti to fulfill a life-long dream of going there; while there,

he was able to do some operating with the call FO0DRD. Then starting in 1994, he began annual trips to the Cayman Islands for the CQWW CW DX contest and obtained the call ZF2RF.

Since 1994, Bob has operated with a Kenwood TS-940S and a Butternut vertical. Since the move to Charlottesville, he has worked 306 DXCC countries and operates in many contests as time permits. His current DXCC count is at 346 countries.

Bob is currently a Senior Consultant with Eiden Systems Corporation in C'ville, doing work mostly with Oracle database application development, web development and Microsoft application development – mostly for the National Ground Intelligence Center.



The Great Kahuna in action at show time ...

[Editor's Note: We should have a profile on an AARC member each month – get to know your fellow members better! Who wants to volunteer for the profile next month? Photo of you in your shack would be an added plus! All contributions welcome...]

W4PNT Repeater - Waynesboro

Gordon Batey, WA4FJC

The Waynesboro Repeater Association of Virginia (WRV), which sponsors the W4PNT, 147.075 2-meter repeater, in Waynesboro, Virginia has established a web site for users and local radio amateurs at <http://www.qsl.net/wrav>.

This site provides information about the repeater and its background. Several more items are scheduled to be added to the site in the near future. It is planned that this site will be updated frequently. Area amateurs are encouraged to visit the site on a regular basis.

73, Gordon

AARC Classified Ads

All items must be amateur radio related and surplus to the owners operation (i.e. no dealers or for profit). Price may be listed if desired. **Note:** Check also the WA4TFZ/AARC web page at <http://www.people.virginia.edu/~ejd4e/aarc/>. Use all small letters for this address. New Ads may be placed directly to the Editor: 434 990-2659 or via E-mail to the Editor at k4uvi@yahoo.com Please **let K4RKA know when items can be deleted from this file.**

02/28/02 WANTED: 50 Ft Tower	Cal Mike, K4MMR at 977-6377
03/14/02 WANTED: HF Rig	Jaime, KA3NXN, is looking for preferably an Icom IC-706 Mark II G (if not a Mark II will also do), reasonably priced. Will also consider another type of mobile HF rig if priced right. Call at home 434 979-7750
03/14/02 GIVEAWAY: Motorola Radios	KG4NGV, Josh has two Motorola 800 MHz radios free to the first caller at 434 760-0417
03/21/02 WANTED: Signal Generator	Joe, W2PVY, is interested in acquiring a solid state HF signal generator, small and stable. If you have something that could help Joe, call him at 434 589-1495.
01/24/02 FOR SALE: Yaesu Handheld	Bill, KD4TOR has for sale a Yaesu FT10 2m handheld with CTCSS, TT pad and manual. Call him at 434 971 5691 or email at KD4TOR@arrl.net

Area Hamfests

None this month

Birthdays This Month

Mar 1	W4DGN	Phil
Mar 2	W2EIU	Ernest
Mar 3	N4DGR	James
Mar 7	KJ3XZ	Wilfred
Mar 8	NM43R	Morris
Mar 8	KG4DIB	Herbert
Mar 11	KA3NXN	Jaime
Mar 14	KC4YLX	Ed
Mar 22	KJ4PE	Joseph
Mar 22	KF4TKJ	Matthew
Mar 23	KF4NOR	Alan
Mar 23	KS4NW	Charles
Mar 24	KD4CUJ	Kay
Mar 28	W4DO	Harrison
Mar 29	KG3BKD	Charles
Mar 31	AG4N	Ed
Apr 3	KX4P	John
Apr 6	KD4RWX	Joe
Apr 7	KF4AGT	Al
Apr 10	W2PVY	Joe
Apr 13	KG4OFX	Sarah
Apr 15	AD4YM	Jim
Apr 15	W2HD	Harry
Apr 17	N4FWA	Hein

FCC Database Updates

New Hams

KG4QJC	Richard Wardwell III
KG4QIR	Daniel Bateman
KG4QVP	Benjamin Mills
KG4QWR	Jeffrey Seay
KG4OVD	Matthew Brownfield
KG4SFX	Jimmy Rhodes

New Members

W2NJS	Thomas Donohoe
WB4AIO	Kevin Strom
KO4SD	Harold Klaser Jr.

Upgrades / New Calls

W4PRT	Peter Thorsen (ex KG4JLL)
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VE Session Schedule - 2002

April 13 Dayton (ARRL/VEC) VARA & MARA	Gerald E. Nauman (540) 434-0859 Email: kn4fm@arrl.net Talk-in on 145.130 9:00 AM (Walk-ins allowed) Woodmen of the World Bldg State Route 42 Dayton, VA 22821
April 21 Lynchburg (ARRL/VEC) AB4M	Charles L. Beard (434) 832-7651 1:30 PM (Walk-ins allowed) Central Va. Comm. College Room 2594 - Amherst Bldg. 3506 Wards Rd Lynchburg, VA 24502

April 2002

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 - 23rd of each month

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KA4JJD G 2002

CURRENT MEMBER: 2002

Michael F. Rein
109 Sturbridge Rd.
Charlottesville VA 22901

*** Next Club Meeting ⁹ April 12 - 7:30 PM UVA NRAO

CLUB MEETINGS and NETS

REGULAR Meeting: Second Tuesday of each month at 7:30 PM
BOARD & TECHNICAL Meetings: First Tuesday of each month at 7:30 PM
Meetings are held at the National Radio Astronomy Observatory (NRAO) building on Edgemont Road (UVA)
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
YL Net: First Monday of each month at 8:30 PM
Northern Piedmont Emergency Net / Swap Net / Technical Session: Each Thursday at 8:00 PM
All Nets are held on the 146.760 repeater

AREA REPEATERS

WA4TFZ

INPUT/OUTPUT	Tone Access (If needed)
146.160/146.760	151.4 Hz
146.325/146.925	88.5 Hz (if enabled)
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

AARC - PUBLIC SERVICE SCHEDULE

DATE	EVENT
April 12	Regular Club Meeting
May 12	Regular Club Meeting
June 9	Regular Club Meeting
July 9	Regular Club Meeting
August 9	Regular Club Meeting
September 9	Regular Club Meeting

DATE	EVENT
March 24	Bike Race
April 7	MS Walk
June 1-2	MS 150

Please sign up at meetings when the SIGN UP CLIPBOARD is passed around. You can also send an email to Greg (N4PGS) indicating your interest in working particular events.