

January 2005 Vol. 59, No. 1

The MODULATOR

Newsletter of the Baltimore Amateur Radio Club

Bluetooth

*photo courtesy arrl.org,
used with permission*



**Riley Hollingsworth, K4ZDH, FCC
Special Counsel for Law Enforcement:
See page 7 and call to reserve your seat!**

The MODULATOR

published by *The Baltimore Amateur Radio Club*

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Items for *The Modulator* should be sent by the 5th of the previous month, to:

Editor

The Modulator

3607 Klausmier Rd

Baltimore, MD 21236

or email to *modulator at baltarc.com*.

The club meets at 7:30 pm. the first and third Wednesday of every month in the club facility at 12360 Owings Mills Blvd., 3/10 mile south of Bond Ave. See ADC map page 16-D8. Complete directions web page <http://www.baltarc.com/directions.htm> or call the Club Facility at 410-526-4263.

VE Testing: First weekend of each month. Contact Rusty, N3WKE at arrl.net

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Table of Contents

The President's Corner4

FAR Scholarship 2005-20066

Upcoming BARC Programs7

Annual BARC Awards Banquet8

Ham Radio Presentation to Girl Scouts.....9

Where's That Signal Now Or Real DX.....12

Bluetooth14

Club Adopts Advertising Rates Schedule17

For Sale18

VE Report - December 2004.....19

NOTICE TO ALL MEMBERS

The Executive Board will meet on the following schedule. Club members are welcome, and will be able to speak up. All meetings will be held at the club meeting and training facility.

January 27, 2005 @ 7:00PM March 24, 2005 @ 7:00PM
May 26, 2005 @ 7:00PM July 28, 2005 @ 7:00PM
September 29, 2005 @ 7:00PM

The President's Corner

I hope this letter finds everyone in good health as the New Year brings us new ventures, new opportunities and challenges. The Hamfest is our big event for 2005, but there are other exciting things happening at BARC. We will have our first ever program meeting in January and our guest speaker will be none other than the FCC's champion of Amateur Radio, Riley Hollingsworth, please contact Tom, N3IJ (*n3ij at comcast.net*) if you plan to attend the January 19 meeting. On the 26 of January, The BARC - It's FREE!!! Minifest will be held in the Home Arts building at the state fair grounds in Timonium. It's time to clean out the shack, sell off some equipment and pick up those one of a kind items you have always been looking for but could never find.

We are making steady progress and have already completed most of the short-term objectives presented to the membership in September. The network is in place, the PC's have been upgraded, the Echolink software is installed and the internet connection is operational. Our program schedule through May is finalized and will be published in next month's **Modulator**. However, we still have a long way to go towards the completion of our long-term objectives, more on that next month. In response to some club members concerns about membership levels, I have asked Don, W3QYL and he has stepped up to the challenge of initially spearheading a Membership Retention Committee whose task will be to contact members who have not renewed their membership since 2001. We will publish the results of his and other's efforts in future editions of **The Modulator**.

GBH&C is right around the corner and it is not too early to contact **Robin, AA3SB** and let her know you are available to lend a hand. Ever club member who volunteers, even if it is only for a few hours, is one less person that we have to pay to perform a task. The Hamfest is our primary source of income; it supports our public service activities, the scholarship fund, the repeater

network, publication of the Modulator, it subsidizes your membership and keeps our dues at the lowest level of any club in the area. So please, support the club, come out, lend a hand, and have fun, contact Robin, *AA3AB at arrl.net* for an assignment.

I want to thank all those members who have contacted me over the last few months and remind them that Rome was not built in a day. That's all for now, and I hope to see you at the January business meeting, the program meeting, the mini-feast or at this month's Breakfast with the President. Until then?

Remember, this club exists because of you and it cannot exist without you!

Joe Kryzstoforski, AJ3X
President BARC
AJ3X at arrl.net

Committee Members Needed!

April 2-3
2005

THE GREATER BALTIMORE
HAMBOREE AND **COMPUTERFEST**

We need committee members to help prepare:

- **upcoming vendor mailings**
- **make calls**
- **find vendors from advertising and internet searches**
- **help to plan and operate the event.**

Contact, Robin, AA3SB at 410-247-0578.

*BARC sponsors four scholarships. In addition, we administer the investments for another, the Mullen Scholarship. We have also been asked to manage the investments for another in memory of **K3FT, Chuck**, who was a long time member and friend of the club.*

PRESS RELEASE:

THE FOUNDATION FOR AMATEUR RADIO, INC., a non-profit organization with headquarters in Washington, D.C., plans to administer fifty-five (55) scholarships for the academic year 2005 - 2006 to assist licensed Radio Amateurs. The Foundation, composed of over seventy-five local area Amateur Radio Clubs, fully funds three of these scholarships. Ten are funded with the income from grants. The remaining forty-two (42) are administered by the Foundation without cost to the various donors.

Licensed Radio Amateurs may compete for these awards if they plan to pursue a full-time course of studies beyond high school and are enrolled in or have been accepted for enrollment at an accredited university, college or technical school. The awards range from \$500 to \$2500 with preference given in some cases to residents of specified geographical areas or the pursuit of certain study programs. Clubs, especially those in **Delaware, Florida, Maryland, Ohio, Pennsylvania, Texas, Virginia and Wisconsin**, are encouraged to announce these opportunities at their meetings, in their club newsletters, during training classes, on their nets and on their world wide web home pages.


Additional information and an application form may be requested by letter or QSL card, postmarked prior to April 30, 2005 from:

FAR Scholarships
Post Office Box 831
Riverdale, MD 20738

Upcoming BARC Programs

January: Riley Hollingsworth, K4ZDH, FCC Special Counsel for Enforcement. It's possible that the number of members and guests who want to hear Riley could exceed the capacity of the clubhouse. I'd like to get a count of those who plan to attend so that if it exceeds our seating capacity, we can get a larger room. Please send e-mail to n3ij@comcast.net as soon as possible (and by January 12 at the latest) if you intend to come. If the number of potential attendees exceeds the capacity of the club meeting facility by January 12, we'll move the meeting to a larger room and notify all those who said they would attend. If e-mail is inconvenient, call 410-933-9344. Either way, please let me know as soon as possible.

February: Steve Uhrig, W3SWS, is an expert on electronic surveillance. He'll discuss his experiences writing part of "Enemy of the State," and acting in it with Gene Hackman and Will Smith. Steve also knows a lot about Minox cameras and many other topics. See his bio on qrz.com.

March: Homebrew projects by club members. Will you have a homebrew project working by spring? It doesn't have to be elaborate, like those multi-part articles that used to appear in QST. It just has to be useful, or fun, and working, or nearly working, and small enough to fit through the clubhouse door. Inexpensive projects are more interesting. Call **Tom, N3IJ** at 410-933-9344 well before February 6 to sign up for one of the three spots on the March program, or just to talk about your idea. 

Besides talking and listening, there are other things we can do with electricity. www.emanator.demon.co.uk/bigclive/makendo.htm describes projects for looking and sniffing, and ends with one that gave me the shivers.

-N3IJ

Have you discovered a website you'd like to share? Send an e-mail containing two sentences like the ones above to modulator at Baltarc.com with "Modulator" in the subject line. When space becomes available, you'll see your suggestion and your callsign in print.



Annual BARC Awards Banquet

The annual BARC Awards banquet was held on Saturday, December 11th at the American Legion in Towson. **Doug, N3VEJ** MC'd the event. Our member, **Tom Conner, N3VOO**, is also a member of the Catonsville Celebration Committee. Tom, and another fireworks shooter, Rose, came and presented the club with a plaque to thank BARC for our support of the parade and fireworks celebration. **Hale, N3NYC**, BARC VP, accepted. **Robin, AA3SB**, past president, (*photo shows Robin with a mic, last photo we'll get like that for a LONG while*) reported the Year In Review. Finally, **Gary Pearce, KN4AQ**, the PIO of the NC Section and editor of the SERA Journal, turned up on our doorstep. Actually, he was on I-95 heading for Allentown PA. Gary is a friend of Doug's, N3VEJ. In fact, Doug bought a car from Gary once. Anyway, Gary was heavily involved in providing the empirical evidence to the FCC that helped slow down BPL testing in Raleigh. He talked a bit about that, and then ended our program with a recitation of his now famous poem, "A Ham's Night Before Christmas". Since his travel clothes consisted of jeans and a public

service t-shirt, he borrowed a jacket and tie to make the presentation. Music and ham chat followed for the rest of the evening.



Ham Radio Presentation to Girl Scouts

A month or so ago, my neighbor asked me if I could do a presentation to her daughter's Girl Scout troop, on ham radio and emergency preparedness.



Since I am not very active any more, I sought out someone who is, and would be willing to do this.

I contacted **Doug N3VEJ**, who referred me to **Robin AA3SB**. My initial reason for contacting Robin was to ask if she knew of anyone that would be good to have done this, or if she would like to.



Well, Robin said she would like to do it, especially since it was the girl scouts, and she likes to show that ham radio is “Not Just a Boy’s Hobby!”

So, on Sunday 12/12/04 Robin met me at the meeting place of Cadets Troop 729 of Girl Scouts of Central Maryland Community 42, This

turned out to be the home of their leader which turned out to be almost in my back yard.

We had 5 scouts present, (one stayed at home as she was sick, but her Mother who is my neighbor came.) We also had 3 leaders present.

Robin did a very good job presenting how we hams communicate. She also talked about how we stay prepared and keep our “Tactical Communications” skills up to date, by participating in drills, and public service events. As their

“We talk about formal messages, and wrote one together that I have taken to the nets. We hope that there will be some responses from the recipients. We talked about net operations and training materials and licensing, so the girls would realize that we are structured and trained, not jumping in until we are asked, etc.”—88, Robin




continued on page 12 (Girl Scouts)

Upcoming Public Service & Events

Apr 2-3, 2005 - Greater Baltimore Hamboree and Computerfest

January 2005


Upcoming Contests

Feb 14-19 -  School Club Roundup
 Feb 19-20 -  Int'l DX Contest (CW)
 Mar 5-6 -  Int'l DX Contest (Phone)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 New Years Day  Straight Key Night 0000-2400 UTC
2 VE Testing— Registration: 1 p.m. Testing begins: 2 p.m.  Kid's Day 1800-2400 UTC	3	4	5 Club Meeting 7:30 p.m.	6	7	8  RTTY Round-Up 1800 Sat - 2400 Sun UTC
9	10 Deadline— Feb. Issue of <i>The Modulator</i>	11	12 Hamboree Committee 7:30 p.m.	13	14	15
16	17	18	19 Club Meeting 7:30 p.m.	20	21	22  Jan VHF Sweepstakes 1900 Sat - 0400 Mon UTC
23/30	24/31 Deadline— Feature Articles for Mar. Issue of <i>The Modulator</i>	25	26 BARC-It's FREE!! Minifest, Home Arts building	27	28	Phases of the Moon: 01/03 Last Quarter 01/10 New Moon 01/17 First Quarter 01/25 Full Moon

Girl Scouts (from page 9)

leader, Dana put it, “The girls really learned a lot today and we really enjoyed hearing more about other ways to communicate in an emergency!” “The troop has all ready started earning their Emergency Preparedness Interest Award in tandem with our Silver Project. They just finished collecting 222 lbs. of relief items for the hurricane victims in Florida. Learning about some roles that Ham Radio played in the aftermath really helped us to put into perspective how the community pulls together to help each other out.”

To Robin: Again my sincere thanks for your assist, and a job well done. 

73, Kurt Fritsch WA3TOY

Where's That Signal Now Or Real DX

by Frank Stone AC3P

A radio signal will continue to move through space in a straight line unless it is absorbed, reflected or refracted. Even today signals from NASA and ESA space probes are sending back data via radio. The Pioneers X has send back telemetry from outside our Solar System with only 10 Watts.

Of course the Law on Inverse Square dictates that the signals from the space probes come back to Earth barely detectable, but with a large antenna array they can be detected.

But what about the other way?

Back in the 1970's signals were beamed from the giant antenna at Aricebo, Puerto Rico with the hope that intelligent life out there might pick up the signal. So to, since the beginning of radio itself signals have been leaking through the ionosphere and traveling in all directions through space.

Marconi's first transmissions may be leading the pack, followed by the faint S.O.S. and CQD from the Titanic, then perhaps KDKA's first commercial broadcast, the entire Golden Age of Radio and the beginnings of Television and so on. Hidden in that great array of electromagnetic travelers are countless CQ's, Field Days, DX Contests and the shaky fists of many a Novice.

Where are all those QSO's now?

If you want to know who may be listening in on your first QSO, check your old log and get a date and time. For a general mental exercise, all you need is

a month and year. Subtract the year of that QSO from the current year. That will give you how many light years that QSO will have traveled.

Check a table of nearby stars that are above the horizon for the month and you will have probable candidates for the extra-terrestrial shortwave listener.

Here is a list of nearby stars and what they are listening to now.

Star Name	Distance from Earth in Light Years	Station Heard
Alpha Centari	4.5	W3PGA Aero Nets
Barnard's Star	6	Baltimore Traffic Net
Procyon	11	Field Day 1993
Altair	16	CQ WW DX 1988
Fomalhaut	22	VHF Contest 1982
Capella	41	KN3VZG/3 on 21.125 mhz
Castor	49	W1AW Code Practice
Alphard	95	Marconi Transmissions

This author's first Novice QSOs were in 1962, so my first signals left my antenna about 42 years ago. Checking the chart I found that the star Capella is about 41 light-years from earth and if there is a planet with hams or swls around that star, a Capellan SWL could now be deciphering KN3VZG.

I will let everyone know when I get an ALIEN E-QSL in 2045.



Reprinted from the January Aero Aerial with permission.

NOTICE TO ALL MEMBERS

The Baltimore Amateur Radio Club is currently conducting an inventory of all club equipment. There are several pieces of equipment currently out on loan. In order to obtain an accurate accounting of all equipment, it would be greatly appreciated if anyone who has equipment out would let us know your name, the type of equipment and the tag number of the equipment on loan. The person to contact is Norman Lorenzen. He can be reached at 410-683-1985 or email *normjlorenzen@aol.com*

Bluetooth

by *Charlie Voelkel, W3ROO*

In an earlier article I wrote about spread spectrum communications and how it can present communication that is private and relatively free of interference. This is a follow up to that article.

Recently I had to connect several things associated with a new TV set. There was the digital receiver, the VCR, the AM/FM receiver, CD player and the DVD player. Each had its set of cables and the end result was a maze of wires. Bluetooth is a completely different way to form these connections. Bluetooth is wireless and automatic, and has a number of interesting features.

Why is it called Bluetooth you ask? Harald Bluetooth was king of Denmark in the late 900s. He managed to unite Denmark and part of Norway into a single kingdom. Choosing this name for the standard indicates how important companies from the Baltic region (nations including Denmark, Sweden, Norway and Finland) are to the communications industry, even if it says little about the way the technology works.

Most of us who have tried connecting the various electronic devices that need to interface with one another, can see that a better way for all these electronic parts to talk to each other is needed. That's where Bluetooth comes in.

Bluetooth is a standard developed by a group of electronics manufacturers that allows any sort of electronic equipment—from computers and cell phones to keyboards and headphones—to make its own connections, without wires, cables or any direct action from a user. Bluetooth is intended to be a standard that works at two levels by providing agreement at the physical level—Bluetooth is a radio-frequency standard. It also provides agreement at the next level up, where products have to agree on when bits are sent, how many will be sent at a time and how the parties in a conversation can be sure that the message received is the same as the message sent. The companies belonging to the Bluetooth Special Interest Group, and there are more than 1,000 of them, want to let Bluetooth's radio communications take the place of wires for connecting peripherals, telephones and computers.

Today we have the infrared controllers for our TV sets and other devices and this is one way of wireless communication.

Bluetooth is intended to get around the problems that come with both infra-

red and cable synchronizing systems. The hardware vendors, which include Siemens, Intel, Toshiba, Motorola and Ericsson, have developed a specification for a very small radio module to be built into computer, telephone and entertainment equipment. From the user's point of view, there are three important features to Bluetooth:

- **It's wireless.** When you travel, you don't have to worry about keeping track of a briefcase full of cables to attach all of your components, and you can design your office without wondering where all the wires will go.
- **It's inexpensive.**
- **You don't have to think about it.** Bluetooth doesn't require you to do anything special to make it work. The devices find one another and strike up a conversation without any user input at all.

Bluetooth communicates on a frequency of **2.45 gigahertz**, which has been set aside by international agreement for the use of industrial, scientific and medical devices (ISM). A number of devices already in use take advantage of this same radio-frequency band. Baby monitors, garage-door openers and the newest generation of cordless phones all make use of frequencies in the ISM band. Making sure that Bluetooth and these other devices don't interfere with one another has been a crucial part of the design process.

One of the ways Bluetooth devices avoid interfering with other systems is by using weak signals in the range of 1 milliwatt., much less than most cell phones. The low power limits the range of a Bluetooth device to about **10 meters**, cutting the chances of interference between your computer system and your portable telephone or television.

Bluetooth uses a technique called frequency hopping spread-spectrum. In this technique, a device will use 79 individual, randomly chosen frequencies within a designated range, changing from one to another on a regular basis. In the case of Bluetooth, the transmitters change frequencies 1,600 times every second, meaning that more devices can make full use of a limited slice of the radio spectrum. Since every Bluetooth transmitter uses spread-spectrum transmitting automatically, it's unlikely that two transmitters could be on the same frequency at the same time. This same technique minimizes the risk that portable phones or baby monitors will disrupt Bluetooth devices, since any interference on a particular frequency will last only a tiny fraction of a second.

When Bluetooth-capable devices come within range of one another, an elec-

tronic conversation takes place to determine whether they have data to share or whether one needs to control the other. The user doesn't have to press a button or give a command—the electronic conversation happens automatically. Once the conversation has occurred, the devices—whether they're part of a computer system or a stereo—form a network. Bluetooth systems create a personal-area network (PAN), or piconet, that may fill a room or may encompass no more distance than that between the cell phone on a belt-clip and the headset on your head. Once a piconet is established, the members randomly hop frequencies in unison so they stay in touch with one another and avoid other piconets that may be operating in the same room.

This is how the Bluetooth frequency hopping and personal-area network keep systems from becoming confused. For example consider a typical modern living room. There's an entertainment system with a stereo, a DVD player, a satellite TV receiver and a television; there's a cordless telephone and a personal computer. If each of these systems uses Bluetooth, each forms its own piconet to talk between main unit and peripheral.

The cordless telephone has one Bluetooth transmitter in the base and another in the handset. The manufacturer has programmed each unit with an **address** that falls into a range of addresses it has established for a particular type of device. When the base is first turned on, it sends radio signals asking for a response from any units with an address in a particular range. Because the handset has an address in the range, it responds, and a tiny **network** is formed. Now, even if one of these devices should receive a signal from another system, it will ignore it since it's not from within the network. The computer and entertainment system go through similar routines, establishing networks among addresses in ranges established by manufacturers. Once the networks are established, the systems begin talking among themselves. Each piconet hops randomly through the available frequencies, so all of the piconets are completely separated from one another.

If you are interested in more details, go to the Bluetooth Web site for specifications. (<http://www.bluetooth.com>)



Club Adopts Advertising Rates Schedule

At the December business meeting, the club membership adopted a rate schedule for CERTAIN advertising for The Modulator. This DOES NOT apply to members who advertise their own used equipment for one or two months in a row. It also does NOT apply to estate sales being handled by club members, again, when posted no more than two months in a row. It does apply to commercial advertising and for sales from non-club members. The rates cover the costs of production and mailing. Payment may be made by check or by Paypal to paypal at gbhc.org.

Non-members and commercial ads are:

\$25/page

\$15/half

\$10/quarter

\$5 for a 1/8th page.

Sizes are rounded after paste-up is complete, to determine price. Please direct any questions to the editor at 443-794-0735.

The BARC - It's FREE!!! Minifest

This year's minifest will be on Wednesday, January 26th in the Home Arts building of the fairgrounds. We hope to have access to the building by mid-afternoon. Everyone is gone by 9:30 PM, but we have about four or five good hamfest hours. The rules are the same as usual:

- Get a table from the stack, and put it back to exhibit
- Do NOT leave any "merchandise", junque, trash or anything else behind.
- No handbills may be posted on walls
- ALL VEHICLES MUST BE OUT OF THE BUILDING except for unloading and loading
- No charge for tables or admission

For Sale

Kenwood TS820 HF Rig

Includes extra finals and mic

Contact **Tom** at [tlpcs @ cs.com](mailto:tlpcs@cs.com) or 410-944-2106

Yaesu FT209RH handheld 2 meter transceiver

- 5-7 watts out
- new battery (12v.1100 ma. NiMH), NC18B wall charger
- PA3 automobile 12v.DC to DC power supply/charger
- NC15 quick charger/power supply, 2 FNB4 batt.
- vox earphone with mike
- cases, manual, more. - \$150 or OBO

Diawa CS401

- heavy duty antenna coaxial switch (1 input,4 outs) \$25
- 2 new CO alarm monitors and AC power supplies \$ 20.ea. OBO

Alinco ALR206T mobile/base 2 meter transceiver

- 5 watt with mag mount and Larsen antenna, manual
- programmable mike - \$195. OBO; HTA20

VHF amplifier with Rx preamp.

- helical Rx filter
- 5 watts in and 30 watts out, \$70. OBO

TrippLite precision regulated power supply

- 13.8 v.out (model PR15a, 15 amps)

contact **Gerald Rose KB4QGJ**, 703 370 1880 (Alexandria, VA), [gerrose @ comcast.net](mailto:gerrose@comcast.net)

WANTED: OLD Callbooks

I am in need of old US Callbooks between 1977 and 2000. I am doing a project of identifying holders of some old call signs for the 3905 Century Club, where I am the Awards Secretary. Anybody who has Old US Callbooks that would like to get rid of them, I would appreciate it. At the end of this project, I will place all the Callbook's into the BARC Library. Anybody having these can either bring them to the BARC facility or contact me via e-mail at [n3wd @ arrl.net](mailto:n3wd@arrl.net) or phone at 410-526-2154 to arrange a pick-up.

Bill Dobson, N3WD

VE Report - December 2004

A Laurel ARC Volunteer Examiner Coordinator (LARC VEC) affiliated testing session was held at the BARC Meeting and Training Facility in Owings Mills, MD, on Saturday, December 4. Five people took exams for either their initial ham license or to upgrade their license and one person applied for an address change.

The examinees achieved the following:

Upgraded to General Class licensee

- Joseph Tracey KB3LNM
- John King W3ADC
- Michael Braun KB3LNT

Passed Element 4 to earn HF privileges

- William Kinne [reactivating KA2BYU]

Overall, five tests were passed out of eighteen administered:

- Element 1 (5 WPM CW): 100%
- Element 2 (Technician Written): N/A%
- Element 3 (General Written): 100%
- Element 4 (Extra Written): 33%

Thanks to the Volunteer Examiners who made the session possible:

Hale Adams N3NYC	Ed Kriston K3CAV	Tom Hendricks KB3CVS
Lee Benson W3FQE	Alan Markham WA3WRT	Robin Schaefer AA3SB
Don Friedmann W3QYL	Jerry Matthews N3XWT	Rusty Schaefer N3WKE
Russ Kaufman N3YI		

First testing session of 2005 at the BARC facility is Sunday, January 2, 2005. February test session will be on Saturday, February 5. Registration for all testing opens at 1:00 PM and testing starts at 2:00 PM. To preregister for the exam session, please send email to *n3wke at arrl.net* (or call Rusty Schaefer 410-247-0578).

73, Rusty N3WKE

VE Team Leader

The **MODULATOR**

The Baltimore Amateur Radio Club, Inc.
P.O. Box 120
Reisterstown, MD 21136-0120

The Baltimore Amateur Radio Club
Repeater System **W3FT**

Frequency	PL
146.07/146.67	107.2
222.64/224.24	107.2
444.625/449.625	107.2

simplex: 146.55

web: <http://www.baltarc.com>

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