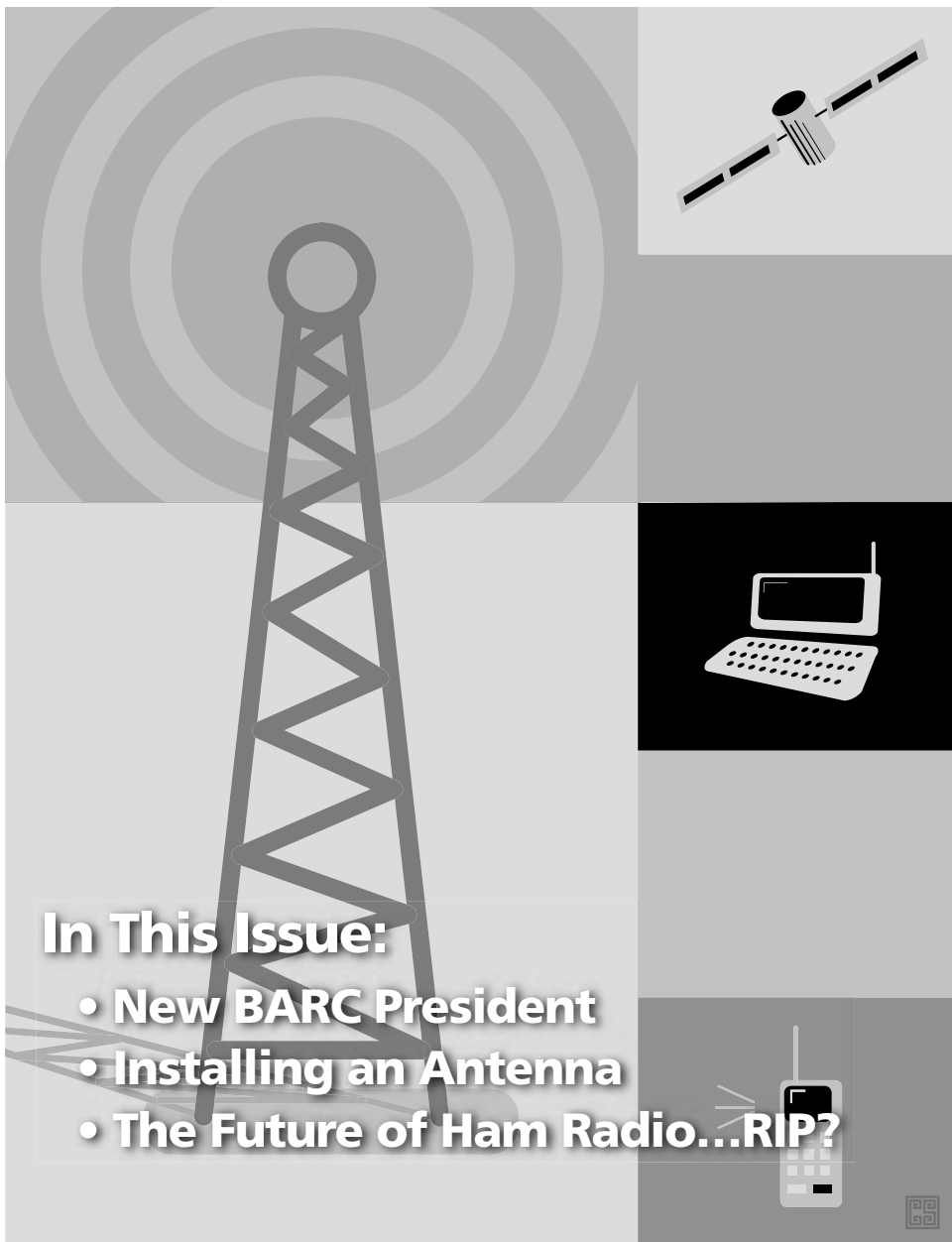


The **MODULATOR**

September 2004 Vol. 57, No. 9

Newsletter of the Baltimore Amateur Radio Club



In This Issue:

- **New BARC President**
- **Installing an Antenna**
- **The Future of Ham Radio...RIP?**



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:

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Baltimore, MD 21236
or email to modulator@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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HELP NEEDED!!!

Ticket sellers needed to help BARC operate a gate at FARFEST Sept 11-12. Get free admission. Call Doug, 410-256-0257. We NEED YOU.

President's Message

Greetings!

Thanks to **Jim Green**, **Jim Cundiff**, and **Rusty Schaefer** for helping me in the Hadassah Run Sunday August 1st. We only got a little wet, certainly no sunburn!, and we all finished in time for Church. Public Service events such as these put Amateur Radio in peoples minds as a "good thing". If the public only has contact with us when someone is causing interference they will only think of us as a problem! The next two events are in the MS Challenge Walk October 1st through 3rd and the ??? November 27th, the Saturday after Thanksgiving. We need your support and please don't make an already busy person call you-*volunteer!*

This past Saturday the BARC VE team held a testing session that was very well attended. One person who was there now holds the "prize" for the longest travel to a BARC testing session, he flew in from Costa Rica the previous day. Everyone was impressed by our site and we should be proud of what we have accomplished.

The GBHC is getting into the swing of things for the next show, please contact me to help out. We have long and short term jobs and it really does take all of us to put the show on. This is our only fund raiser for the year so please consider helping.

The FAR Scholarship winners have been announced, and two of our club members are winners! Congratulations to **Chris Hebert** and **Ian Riden** for winning scholarships, and best of luck in your new schools! Chris won a scholarship supported by a nearby club, and Ian won one of ours.

I want to thank everyone for the support and help you have given me these past three years. I have had a wonderful time and it is truly a privilege to be a BARC President. I have promised Joe that I will continue to support BARC by supporting him, and I hope you will do the same. Some things will be different- but not that different, it will be okay. (It will be different for me to sit down during a meeting! And to not talk!) I will be around and will help in any way that I can for a smooth transition. Please consider your role in the club and rally to support our new leadership.

The very best to all of you!

88, Robin

Editor's Note: My apologies to Bruce Packham. He sent this to us back in April, and it should have been used in the June issue. I have no excuse; I dropped the ball. Bruce has written many interesting articles over the years, and deserves better treatment from an editor than this. Bruce, I'm very sorry we skipped this one.

Doug N3VEJ

Amateur Radio... Wither (Whither Goest) Thou?

I wasn't going to write this, but it's been inside of me for sometime now and this is as good a time as any to vent my spleen. Besides, of all of you who received a copy of the *Modulator* in March, only ONE person (and he was not a close friend) bothered to mention that he had read my article on AM radio. So what am I worried about? Only a handful will skim THIS article, then dismiss it and not bother me with comment one way or the other.

Before I comment on the future of Amateur Radio as I see it, I'd like to review briefly where we've been.

In the beginning, Marconi, with the help and active encouragement of his mother and her money from Jameson Irish Whiskey (that was her family) devined that communications via radio waves could save lives aboard ships in distress at sea. Later he expanded the idea to land communications and to giving telegraph companies something to worry about. Marconi's father did little to help him other than give him a big estate in which to play with his son's foolish notion.

At this stage (late 1800's and early 1900's) everybody was an amateur. Radio wasn't even a word...all this kind of stuff was called wireless. It took a surprising time before anybody bothered to think of synergy (resonant tuning) so that stations could be separated. Then came WWI and wireless had matured to the point that even some aircraft were experimentally equipped with it so they could report enemy positions. An Army Major experimented successfully with radio waves to detect large groups of

ships at sea at distances up to 50 miles or so. That Major went on to invent the regenerative receiver, the super regen, the superheterodyne, and FM radio. He was, of course, Major Edwin Armstrong and all this took place in the first 25 years of the 1900's. He was cheated out of his rights to FM by RCA led by David Sarnoff, yes the same David Sarnoff who years earlier copied for the newspapers, at the tender age of 17 years, the list of survivors of the Titanic being brought home by the rescue ship. No such luck for Edwin however. He was driven to suicide by all the legal entanglements involved in his quest for rights to his FM.

We now began to enter the age of enlightenment. My movie actress-girlfriend Heddy Lamar patented spread spectrum radio, TV (albeit scanning disc) began during this time, crystal control came into vogue and a host of radio inventions came into play. Terms such as Pentaflex, Oscillodyne, Twinplex, and Neutrodyne made their way into the radio jargon of the time. Well into the 30's the regenerative receiver was still the most popular detection scheme. There was talk in some circles as to when our bodies would not be heated by conventional radiant heat but by diathermy radiators placed here and there throughout our houses. There was also some talk about using an observed result that brain activity was stimulated by such radiation. (And I'll bet it was!). Expansion of knowledge with some major contributions in radio electronics were being made by amateurs and went on well into the 30's. But an industry based on electronics had a considerable toehold by this time as well. Well trained and educated people were now being hired by these companies and paid to invent and develop the art and science. But the radio amateur was far from antiquated. It was the time of magazines like Hugo Gernsback's Radio Craft (I cut my teeth on this mag...almost everything I built from it worked.) which was a spin-off of his Short Wave Craft which in turn, was a son of his The Electrical Experimenter.

It was the golden age of radio. There were books like Morgan's The Boy Electrician which described how to build a facsimile setup using two pet milk cans, some threaded rod, and a solution made from some Iodine crystals from the local Pharmacist. It worked!! (Try that on your Pharmacist these days!!). The book told how to make a microphone from a Ketchup bottle top, some tin foil, and the crushed center rod of a flashlight battery (This worked pretty well). Also a microphone made from two razor blades, a block of wood, a piece of pencil lead, a battery, and a headphone that could easily turn the foot steps of a fly into a surprising loud stomp. (I'm going to make one of these with my three grandsons some time again very soon). Also Morgan showed

us how to build an electric motor, a scanning TV setup, a wireless loop communicator between houses, a motor speed control using a mayonnaise jar and a Sal Ammoniac solution and a host of other things which young people could build that really worked! It was the golden age, no mistake.

But then along came WWII and suddenly all our lives took on a new light. Our innocence was gone in the blink of an eye and suddenly there was only time for serious work to get our lives back. Now Radio Amateurs were sorely needed. They formed a large pool of electronic technicians that were fairly well versed. And talk about a large pool of skilled radio operators! We were it!! Morse was still very much in vogue and we knew that stuff cold! However, the age of amateurs tinkering in the basement and coming up with something of value was pretty much over. I can't think of anything that came from the concentrated technical war effort that originated that way. Can anyone out there? But I maintain that the experimental nature of the ham had to have been of great help during this period. The tinker-and-try school had its value and for that matter still has some place today. But serious progress in Microwaves, Radar, and the other electronic fields were made by well trained and educated professionals. The war ended as all wars eventually do. But emerging industry realized that in order to maintain a position in industry, trained professionals were needed. After the war, many Hams went on to get that training under the GI bill.

Following the war, a grateful nation let radio amateurs resume operation that was curtailed during the war and I doubt if anyone with any political moxie would have dared at that time to think seriously of taking away ham radio spectrum needed for other communication services. For one thing, what other services?? It took years of a blossoming and burgeoning communication industry to produce that pressure. That combined with the increasing complexity of well designed ham radio equipment and therefore the rapid demise of our technical prowess has pretty much changed the entire complexion of Amateur Radio of today.

We are no longer needed to serve as technicians in an industry which we no longer understand without special training. Look inside the innards of any transceiver of the past ten years and tell me you wouldn't mind fixing it!! Morse Code is no longer utilized in communications except among special military services such as the Seals, Special Services, etc. Morse is no longer a requirement for a ham radio operator's license. Advanced mathematical error correcting algorithms have made dependable communications via digital

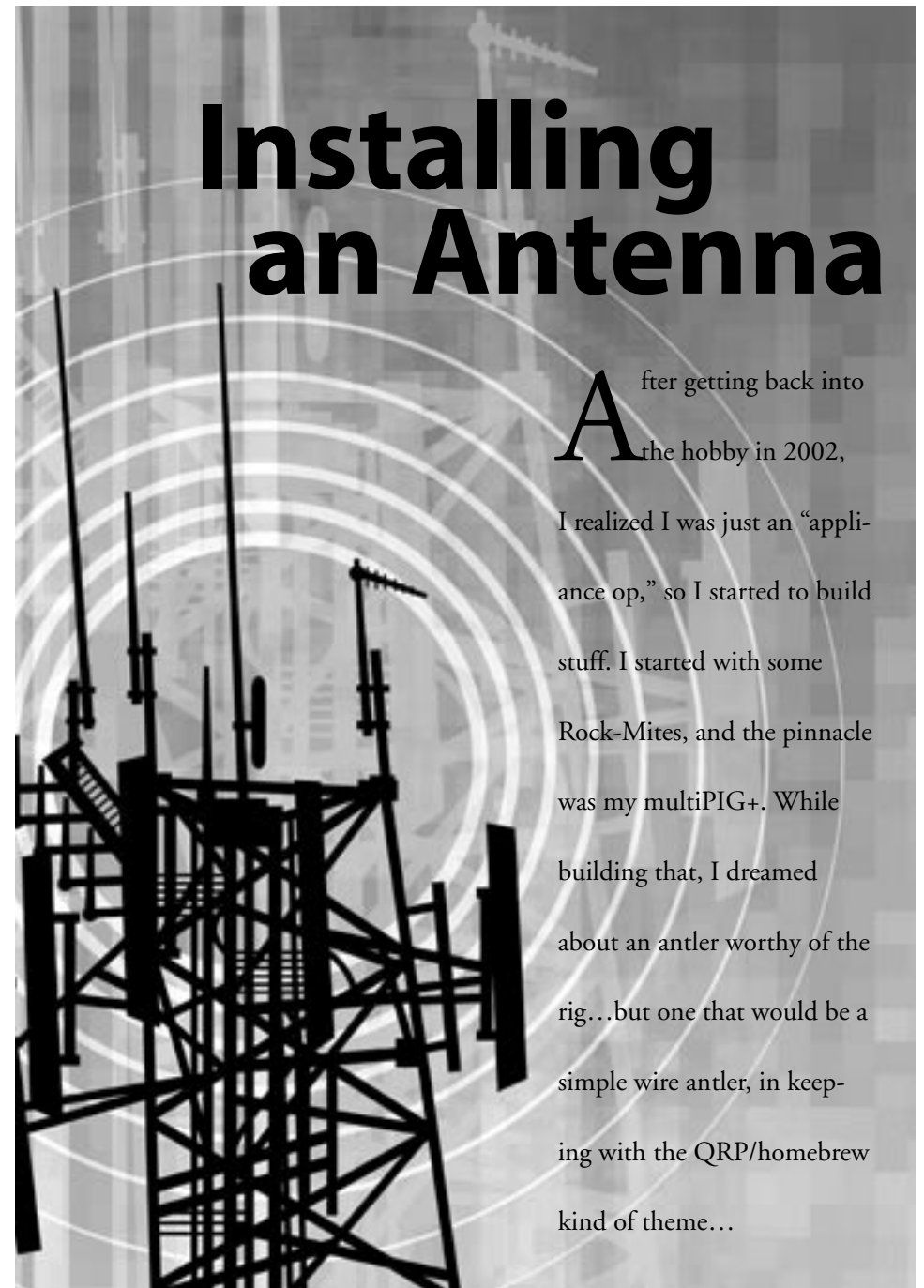
techniques so readily attainable that for necessary communications to go any other way would be foolish.

It seems to me that we (ham radio) have become a large body of button pushers of well designed Japanese electronic appliances. We welcome the opportunity to make ourselves useful by providing communication during long foot or bicycle races. When disaster strikes we tell ourselves that we made a valuable contribution even though many times the authorities ask us politely to setup "somewhere over there".

Is this our future? Are we to go the way of the Dodo Bird? Certainly the wonder that I experienced as a young man when I experienced the thrill of talking to someone halfway around the world using equipment that I built with my own hands, is long gone. I have a haunting suspicion that we are in the midst of an insidious erosion of the amateur service and there's not much we can do about that trend. I don't believe we serve a needed and useful purpose anymore. Cell Phones, e-mail, and the increasing complexity of equipment whose design and understanding is well beyond all but the designers have lead us to this point. When we are discovered for the spectrum consumers that we are, I believe we can expect more and more nibbling away of our spectrum and our privileges. We already have so much less to "fight" with than we did 50 years ago. Surely the next 50 years will see us reduced to little more than a citizen's band type of hobby. I don't see how the present trend can be turned around. Look at our own club. Other than our occasional public service, which can easily be furnished by other means, what contribution do we make to justify our consumption of spectrum? We cannot forget license free citizen's band equipment (460 MHz) available at Radio Shack. It's made by Motorola and it works very well. My wife and I used it when we traveled north in separate cars. The ham gear was packed away and in the hands of the movers.

In summary, I have decided that until we are "found out", I'm going to continue to enjoy the privileges we have and to contribute where possible, but I do not see much future for the present button pusher gang. I count myself among that group.

Bruce W3UWV



Installing an Antenna

After getting back into the hobby in 2002, I realized I was just an "appliance op," so I started to build stuff. I started with some Rock-Mites, and the pinnacle was my multiPIG+. While building that, I dreamed about an antler worthy of the rig...but one that would be a simple wire antler, in keeping with the QRP/homebrew kind of theme...

("Antenna" continued on page 12)

Upcoming Public Service & Misc. Events

Oct 1-3 - MS Challenge Walk
 Nov 27 - ???

September 2004

Upcoming Contests/ Events

Nov 6-8 - ♦ November Sweepstakes (CW)
 Nov 20-22 - ♦ November Sweepstakes (Phone)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 Club Meeting 7:30 p.m.	2	3	4
5 VE Session	6	7 CW Class 7 p.m. (Clubhouse)	8	9	10	11 ♦ VHF QSO Party (1800 UTC Sat - 0300 UTC Mon.) FARFest - Gaithersburg
12 ♦ VHF QSO Party (1800 UTC Sat - 0300 UTC Mon.) FARFest - Gaithersburg	13 Deadline— Oct. Issue of <i>The Modulator</i>	14 CW Class 7 p.m. (Clubhouse)	15 Club Meeting 7:30 p.m.	16	17	18 ♦ 10 GHz and Up Contest (6:00 am local Sat. - Midnight local Sun.)
19 ♦ 10 GHz and Up Contest (6:00 am local Sat. - Midnight local Sun.)	20	21	22	23	24	25
26	27 Deadline— Feature Articles for Nov. Issue of <i>The Modulator</i>	28	29	30		Phases of the Moon: 09/06 Last Quarter 09/14 New Moon 09/21 First Quarter 09/28 Full Moon

("Antenna" from page 9)

Well, **Diz, W8DIZ**, used a "hawgwahr loop," and he, and others I worked with loops, always had a really good signal. The writeup in the Handbook on the big loop was short but sweet, saying, essentially, that it was a cool radiator, for sure. And most importantly of all, when considering such an undertaking I had the space and the trees for support.

My aunt Enna at the time was a longwire. This was gonna be a great change! Very exciting. I walked around the yard, looking up at the trees and planning my next move. How to do this thing? I hadn't a clue. I thought and thought, invited a local ham to come over and look at the trees with me. We hadn't a clue.

Months passed. Every so often, I'd go out back, pace around, looking up. Some hazy ideas began to take shape: I'd send a Dacron rope up as high as I could into each support tree six trees would be good I'd get a rounder loop that way. When the rope was up there, I'd bring it down, making a loop. On the loop, I'd put a pulley. Through this pulley, I'd run another rope-the rope that was gonna be attached to the loop itself.

Once all six of these were in place, I'd build the loop, attaching the six support ropes around it, and thread them through the pulleys. Then, I'd run the pulleys up to the top, then pull each support rope up through the pulleys, raising the loop, and I'd hang a weight on the ends, to allow for the trees to move in the wind.

Great idea! I sent my order to The Wireman: I got 1K' of 3/16" black braided Dacron rope, about 400' of thin steel copperclad wahr, the pulleys, some thimbles to thread the loop through and allow for movement, some 300 ohm window line for a feedline, and some insulators.

Then I went outside and stood around, looking up. I realized that my idea was a good one if the trees had been bare poles, with no branches.

If I had tried to raise this loop up that way, it'd get as far off the ground as the bottom of the bottom branches. I had put up the first support rope, by setting up half a fishing rod behind me, with the bail open on a spinning reel, and shot a one-ounce bass casting sinker up about 50' into the tree nearest my shack. I had to do it from a little way away from the tree, so the weight would clear the branches on the way up, but it came down just as I had intended straight down next to the tree. I was happy with that, because I planned to raise the antenna up near the tree - duh.

Months passed, but no solution came. In the meantime, I put up a simple 40M dipole, using 450 ohm ladder line, with a ladder-lock, which was good, but not great, at about 45'. After asking for opinions on improving it, I decided to add an 11' piece to each end, making it a 20M EDZ...then it became great. Still is. But the dream of the hawgwahr loop persisted.

After more months, and a lot more pacing around the yard looking up, it finally came to me! I could hoist the loop with the original rope I put up, by using the part that went over the branches to attach the loop, and hauling down on the part that came down next to the tree! Simple and elegant!

I decided to use just four supports, and put up three more ropes, each one shot up there over all the branches, then coming down near the tree. Then I built the loop on the ground...for the feedline, I stripped the two ends of the window line, folded it over an insulator, and secured it with a bolt, some lock washers and a nut, such that there was no stress on the ends that were soldered to the antenna wire itself...it was only on the heavy coated part of the feedline, and I coated the whole affair with Goop. I used four insulators to attach the four ropes to the loop, leaving them free to move around.

I managed to hoist this thing up there by myself, since I could raise it partway and tie off the ropes, then grab the antler wire and horse it up and over the branches it got hung up on. I got it up, decided it was not as big as the space allowed, lowered it, and added another piece, bringing it from about 280' to 302'.

Now it's been up there for about seven months, and it works really well. I used a bungee cord on one end of the EDZ to allow for tree movement in the wind, but with the loop, the fact that the ropes go over a lot of branches on their way up makes for natural movement-absorbers. They've withstood some pretty high winds so far, with no apparent damage. When one of the support ropes breaks, as will surely happen some day, it should be relatively easy to snake a replacement up there. I guess the moral of this story is that if you got the trees, it's easy to put up a great antler!

Lloyd K3ESE

Volunteers Needed for MS Walk

To: Any and All Interested Amateur Radio Operators, especially in the Anne Arundel County and Baltimore City and County area

I have volunteered to coordinate amateur radio communications for the Maryland Chapter of the National MS Society's Chesapeake Bay Challenge Walk, a 3 day, 50 mile walk from Annapolis to Baltimore, being held Friday, Saturday, and Sunday, September 10, 11, and 12, 2004.

This walk should not be confused with the walk being put on by the National Capitol Chapter, which will be held October 1-3 which is being coordinated by **Howard Gordon W3CQH** from PG County to Washington D.C.

A large portion of the walk will take place in the Anne Arundel County area. On Day 1, Friday, we will be in the Annapolis area with walkers going as far north as the B&A Trail Ranger Station in Severna Park. Most of Day 2, Saturday, will be in the southern part of the county, with walkers moving from North Beach in Calvert County, North to Southern High School. Day 3, Sunday, will be held in Baltimore City.

Seeing that the event is only about 5 weeks away I'll need a good number of operators to make this event run smoothly, so, I won't turn anybody away and I'm sure I can find a place for anyone who wants to help.

The MS Staff will provide meals and T-shirts for all volunteers.

Anyone wishing to help out should contact me as soon as possible. I can be reached by the following means: E-Mail: *drollhauser at comcast.net*, telephone: (443) 623-4550 or I usually monitor the *MMARC 146.805 Repeater* in Millersville mornings and evenings.

I will need for now at least the following basic contact information from all:

- Full name
- Amateur Radio Call-sign (if applicable)
- Full mailing address (include City, State and Zip)
- E-Mail address
- Telephone number(s)
- Date(s) and time(s) you think you'll be available to help
- Preference of fixed or mobile operation (I will try to accommodate preferences as best I can based on needs and availability)

- Preferred t-shirt size
- Which radio club(s) are you a member of?

Anyone planning to do all 3 days or just 2 days, please let me know if you will need a place to stay overnight so I can let the MS staff know and they will make arrangements, they are providing overnight accommodations for the walkers and volunteers.

Once I get this info., I will try to get back to all with more information as soon as I can.

Please pass this information on to any Ham's you think may be interested in helping out.

Thanks in advance for your help and 73's,

Dave Rollhauser KB3CJT

Communications Coordinator for 2004 MS Challenge Walk



ARE YOU READY?

contact Jim, KB3GFC
on 146.67
daily at 6:30 pm
to join ARES.

For more information check out

www.bccecom.org

For Sale

Contact: **W. McKenney**

2012 Phillips Mill Road

Forest Hill 410-557-7785

Price Description

\$25	Ferris 16C: standard signal generator, AM, 50kHz-28 MHz
\$25	Ferris 16C: standard signal generator, AM, 50kHz-28 MHz
Free	Ferris 16C: standard signal generator, AM, 50kHz-28 MHz
\$25	Ferris 14C: standard signal generator, range unknown, no power supply
\$25	Measurements 188; FM band signal generator
\$150	H.P. 202H; FM/AM signal generator, 54-216 MHz
\$10	H.P. 207E; Univerter, extends 202H range to 0.1-54 MHz
\$25	S.G.-85/URM 250; signal generator, 30kHz-50 MHz
Free	R28/ARC 5: receiver, 100-156 MHz, 4 channel, crystal
Free	R23/ARC 5: reciever, 190-550 kHz
Free	R26/ARC 5: receiver, 3-6 MHz
Free	R7/ARC 5: receiver, 6-9.1 MHz
\$10	BC-603; receiver, 10 P.B., 20-28 MHz, FM
Free	BC-733: receiver
Free	BC-603; receiver, 10 P.B., 20-28 MHz, FM
Free	BC-923A: receiver, 4 channel, FM, 27-39 MHz
\$50	BC-639A: receiver, 100-155 MHz, AM (King George)
\$10	Bendix MN26C; receiver, radio compass, 150 kHz-1500 kHz
\$10	Aircraft Radio DZ-1; receiver, direction finder, 15 kHz-1500 kHz
Free	BC-1033-B: receiver, one frequency, signaling
\$50	Hammarlund BC-779A: receiver, 100 kHz-20MHz, AM
\$50	BC-312M: receiver, AM, 1.5 MHz-18 MHz
Free	T-21/ARC5: transmitter, 5.3-7 MHz
Free	T-20/ARC5: transmitter, 4-5.3 MHz
Free	TU-10B: transmitter tuning unit
\$50	H.P.-330B: Audio distortion meter
\$15	H.P.-200AB: Audio oscillator
\$25	H.P.-200CD: Audio oscillator,5Hz-600 kHz
\$25	H.P.-200CD: Audio oscillator,5Hz-600 kHz

\$25	H.P.-200CD: Audio oscillator,5Hz-600 kHz
\$5	Lambda LM-B2B: D.C. power supply, 28VDC@1.3A
\$25	H.P.-200 CDR: Ausio oscillator, 5Hz-600 kHz, 19" rack mtg.
Free	Tektronic 511: oscilloscope
Free	Tektronic 511A: oscilloscope
\$25	Tektronic 531A: oscilloscope
\$50	Tektronic 341: oscilloscope, w/h plug in
Free	Dumont 304A: oscilloscope, transformer shorted
Free	Dumont 304A: oscilloscope, transformer shorted
Free	Heathkit 5": oscilloscope
\$50	H.P.-410B: VTVM, high frequency R.F. probe
\$10	Ballantine 300: A.C. VTVM, audio
\$10	Ballantine 300: A.C. VTVM, audio
\$50	Ballantine 300H: A.C. VTVM, .001-300 VAC
\$50	Ballantine 300H: A.C. VTVM, .001-300 VAC
\$50	Ballantine 314: A.C. VTVM, high frequency
Free	Ballantine 314: broken meter case
\$10	General Radio 583A: audio power meter, 0-5 watts
\$25	General Radio 783A: audio power meter, 1mW-100 W
\$25	General Radio 783A: audio power meter, 1mW-100 W
\$50	Boonton 160A: Q meter, 50 kHz-50MHz
Free	Telonic SV-14: FM band sweep generator
Free	Telonic SV-14: FM band sweep generator
\$25	G.R. 102K: resistance standard 0.1-1000 ohms
\$10	Scott 830: multiplex stereo generator
\$10	Sorenson Q18-4A: D.C. power supply, 0-18VDC@4A
Free	Bogen DB20DF: audio power amplifier, 2 6L6 output
Free	RCA; TV sweep generator
\$25	19" rack cabinet: 30" high, 18" deep, closed steel, w/fan
Free	Oscillator: gold plated cavity, 250 MHz?
Free	BC-906-D: frequency meter

Professional Test Equipment for Sale

This equipment is located in Timonium, four blocks from the Fairgrounds. All equipment is in excellent working condition.

Spectrum Analyzer with manuals, cart and spare "RF Box"

HP8551B/851B works fine 10 to 12,000 MHz
(Probably higher but, I can't generate higher than 12,000) \$250

Signal Generators

HP606A with manual - 50 KHz to 65 MHz..... \$50
HP608E with manual - 10 to 480 MHz (have two) \$50ea
HP612A with manual - 450 to 1200 Mhz. \$50
HP616A - 1800 to 4000 Mhz..... \$50
HP3200 - 10 to 500 MHz (Po to 100mw+)..... \$50

Impedance/VSWR Measuring Equipment

HP803A VHF Bridge (with reproducible Z/theta chart)
HP417A VHF Detector, works with Bridge above.
Bridge and Detector are good from 10 to 500MHz.....both for \$50
Wayne-Kerr VHF Admittance Bridge B801B
1Mhz to 100 MHz. with manual.....\$50
Boonton Q Meter 160A, 50 KHz to 50 MHz..... \$30
Boonton Q Meter 190A, 20 MHz to 260 MHz
I have two. One manual and some coils..... \$30ea, \$50 for both

Misc. HP Equipment

Power Meter HP431 with two Thermistor Mounts and manual..... \$100
VTVM HP400H with manual..... \$10
Audio Oscillator HP 200CD, 5 HZ to 600 Khz \$30

Oscilloscopes

Ramsey 2200 Dual Channel, DC to 20 Mhz with manual..... \$75
Kenwood CS6040 Readout 'Scope. Dual Channel
DC to 150 MHz. With all manuals and probes..... \$800

RF Step Attenuators

HP and Narda. These are precision units, power handling no more than 1/2 watt.
HP's DC to 500 MHz 0 to 12 dB and 0 to 120 dB (I have several)..... \$20ea
Narda DC to 12.4 Ghz 0 to 69 dB. I have one..... \$50

To see this equipment in operation, turn the knobs and kick the tires call
George Hoffmann N3ESO 410-252-2049

For Sale - from Ted W3OWN

Heathkit MOD. CO-1015 w/inverter..... \$75
Heathkit Security Sentinel Mod.GD.3810 \$20
AUTEK Research QF-1A SSB/CW/AM Filter \$40
D104 mic \$ G-stand original boxes..... \$45
Tektronix Mod.604/mod 716M X-Y scope \$50
WWII Hi Power Ant.Tuner, Vac Variables, Roller Inductor..... \$120
Azden DM10 headphones, new, in box..... \$15
Telex C-1320 Head Phones..... \$15
Clevite/Brush headphones..... \$15
Panoramic Adaptor, Mod BC-1031C..... \$45
Tektronix type 105 square wave generator \$25
Power Supply 13.8VDC at 20 amps..... \$40
Power Supply 13.8VDC at 35 amps..... \$50
Table mount rack cabinet, 5 1/4 panel \$5
Complete UHF repeater system includes
2 motorola handhelds and 1 mobile xcvr \$150
W2IHY 8 band audio equalizer and noise gate..... \$175
Kenwood TS930SAT Needs service..... \$150

Call **Ted, W3OWN** at 410-668-5580. Please leave a message if you get the answering machine.

For Sale - from Sid Root

Pyramid Regulated Power Supply, 6-15VDC, max 25 amp, Front panel contains: overload lamp, illuminated switch, terminals, Voltage and Current meters. \$50

call **Sid Root, 410-686-1866**

For Sale - from Russ N3YI

I have two rigs for sale. I'm selling my very dependable ADI AR-146, 2-meter mobile rig. I have a mounting bracket, and have spliced a cigarette plug adapter on the end, so it's easy to move from vehicle to vehicle. Also including a magmount antenna. All for \$125 or best offer.

I'm also selling a dualband HT for a friend who was just deployed. He said that it was his backup rig for his public service activities, and was rarely used. It looks like it's in new condition. Anyway, it's a YAESU FT-50R dual 2 meter/440. The FT-50R also has scanning capability beginning at 76Mhz, and goes up to 999Mhz (less cellular).

He's throwing in an extra battery, a charger, a ear/throat mic, and a shoulder strap. He said that the equipment cost \$330, he's asking \$275 or best offer.

Thanks very much. If anyone is interested, emails to *n3yi at yahoo.com*.

73-Russ

VE Report - July 2004

No VE testing this month due to the holiday.

The next testing session will be August 7. Registration at 1 PM, testing begins at 2 PM. Please bring photo ID and original of any license as well as any Certificates of Successful Completion with you. Questions, or to register, call **Rusty N3WKE**, 410-247-0578.

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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