

May 2002

The HARC Spark

The Official Newsletter of the
Holmesburg Amateur Radio Club
P.O. Box 6253 Philadelphia, PA 19136
WA3AOP/R 146.685 Mhz Repeater
K3FI CLUB CALLS WM3PEN
Web Site <http://www.harcnet.org>



Editor: WA3PZO

Important Issues & Events

Throughout the newsletter you will read stories of upcoming events and some issues which will have some direct impact on you.

Even though it's summer, HARC is still on the go. Look at the list below and you'll see HARC will participate in Field Day, have interesting meetings, be at a hamfest, tour a battleship and have a picnic.

Each event takes planning and provides ways for you to participate in various HARC events.

Two other decisions will influence what you listen to and possibly your repeater operation.

The HARC Board has been discussing for some time changing the HARC repeater callsign. With no clear consensus, the Board decided to ask you, the membership, for your opinion. See the article for more information.

Finally the Area Repeater Coordination Council has said that all repeaters must start using PL on their systems. This means that many older radios that do not have PL capability will not be able to be used in Eastern PA or Southern New Jersey. We know this will cost the club over \$500 to make the upgrades. We're interested in how this will impact you. See the complete story inside.

Take the time to fill out the questionnaire on page 7 and return it to the Club PO Box or email your answers to the Club Secretary WA3PZO@HARCNET.ORG.

UPCOMING MEETINGS/EVENTS

You may be thinking about summer, but HARC is on the move.

June 22-23 Field Day

June 27 - HARC Meeting - DX with an HT

July 14 - MARC Hamfest - Kimberton. HARC will have a table there

July 27- Battleship New Jersey operating & tour - see inside for details.

August 18 - Picnic - Pennypack Park - Rhawn St. entrance

September 19- CQ Editor Rich Moseson, W2VU

October 24 - QRP Homebrewing John, KE3S, will be bringing some of his homebrew creations and talk about this growing part of the hobby

CQ Field Day de K3FI

FIELD DAY - THIS WEEKEND! JUNE 22 & 23

The time has come to brush off the radio, tune up the vocal chords, and get ready to have a good time. Field Day promises to be bigger and better than ever this year as HARC. HARC members and guests will be calling CQ Field Day de K3FI from Alverthorpe Park in Jenkintown.

Field Day is an annual operating event, designed to test operating capabilities of radio amateurs under simulated emergency conditions. The event has a number of objectives, particularly for our club. In addition to making as many contacts during the Field Day period as possible, it will provide an opportunity for members to experience HF operating conditions, and to publicize the value of amateur radio to local government officials and media. This year, it takes place on the weekend of June 22-23, 2002. If done right, it should also be FUN!

We'll begin setting up around 9 AM on Saturday. This is an all day and all night event. We do need day AND night time operators. Operations will continue until 2 pm Sunday.

If you haven't been on the air for some time or this is your first Field Day we'll make sure you get on the air and do some operating. Members of the news media have been invited to the site.

LOCATION will be the same as last year. Alverthorpe Park, Jenkintown Rd., Jenkintown.

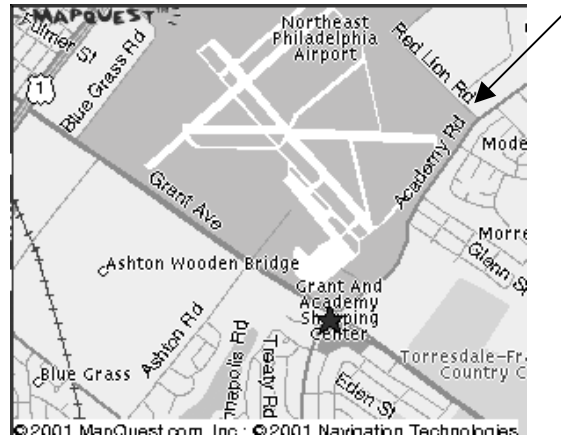
From Rt. 73 (Township Line Rd) take Jenkintown Rd just past Fisher Rd. A gated entrance to the park will be on the right. Give a call on .685 and someone will unlock the gate.

Parking will be on the left as you enter the park. If you are unloading you can drive to the site.



H.A.R.C. Board Of Directors 2002
President : N3LXN : Mike Wurgley
Vice Pres: N3ZZN: Frank Flanagan
Treasurer : W3KZA : Sid Kalos
Secretary : WA3PZO : Bob Josuweit
Trustee : KB3SM : Bob Brocklehurst
Trustee : KB3EBG : Peter Santiago
Trustee : K3CJ : Charlye Johnson
Tech Committee : K3RJC : Ron Cardullo
Newsletter Editor : WA3PZO: Bob Josuweit

H.A.R.C. Maintains a Web Page @www.harcnet.org
All members online can be emailed via theircallsign @harcnet.org. Articles, pictures etc. submitted for the newsletter should be in standard ASCII or MS Word, .jpg or .gif formats and E-mailed to the Editor no later than the 2nd Saturday of month to be included in the next edition! **Send info to [WA3PZO @ Harcnet.org](mailto:WA3PZO@Harcnet.org)**
H.A.R.C. Nets meet on 146.685 weekly
The Chaverim Net: Tuesday @ 9:00 PM
CW Practice: Wednesday @ 7:30 PM
Members net: Wednesday @ 8:00 PM you can listen to the Amateur Newline & ARRL audio reports.
SSB Net on 28.450 +- mhz Sundays @ 9:00 AM
H.A.R.C. Monthly Meetings - The Board of Directors meets on the 2nd Thursday @ 8:00 PM. General meetings are held the last Thursday @8:00 PM.
8th District Police Station,
Red Lion & Academy Rd. Phila PA



H.A.R.C maintains the 146.685 repeater located @ Univ. of PA., Phila PA with inputs in Abington, N.E. Phila, and Cherry Hill, NJ; More Club Information & Member Applications can be had by contacting any of the Directors via E-mail. Info@harcnet.org, the web page <http://www.harcnet.org> or writing to HARC PO Box 6253, Philadelphia, PA 19136.



**HARC is an
ARRL Special Service Club.**

POSTAGE GOING UP!

First class postage will go up to 37 cents on June 30. This means that postage costs will eat more out of treasury. Printing costs also went up in the past year. This all adds up to money the club can't spend on other services and activities, or save for a rainy day.

HARC Spark is a major expense. The more we can distribute these materials as PDF files via the Internet, the more effectively we can control printing and postage expenses. Let's look at some numbers: In 2001, a typical issue of the *HARC SPARK* cost about 36 cents to print and 34 cents to mail. That's .70 cents per copy. We print 12 issues per year, adding up \$8.40 per member annually . . . more than 1/3 of a member's \$20 dues. Assuming printing costs stay the same, the postage increase will raise the cost of a paper newsletter to \$8.76 per member in 2002.

For every member who can accept the newsletter electronically, the effect is to add more than \$8 to the treasury. For those that are getting it via email - Thank You! We've added 2 additional pages of news to the E-Mail version.

Of course, not everyone who is on e-mail can accept club publications electronically. For these members, and for members who choose not to be on the Internet at all, we will continue to publish paper documents as long as necessary.

There may be some lack of information about what's involved in receiving the newsletter electronically.

Is the electronic edition a plain text file without the paper Edition's formatting? No, the electronic edition is in Adobe

Portable Document Format (PDF). It looks exactly like the paper edition . except that the electronic edition sometimes has bits of color here and there.

Do I have to read it on the computer screen? If you choose to read it on the screen, you can zoom to a larger print size to make things easier on the eyes. You can also print it on paper for reading, filing away, or swatting gnats. You can save the electronic edition on a disk, if you like to keep the back issues.

Is the Adobe Acrobat software expensive? Acrobat is a free download from the Adobe web site (www.adobe.com).

Many people already have it on their computers because a lot of software packages now use it for instruction manuals.

Is Acrobat hard to use? On a Windows computer, you just double-click on the *HARC SPARK* file attachment icon to start Acrobat and begin reading the newsletter.

Does the newsletter take a long time to download? It is kept under 300k so it can be received in a reasonable length of time by those of us who have dial-up Internet connections. Some clubs send out newsletters that are over a megabyte. HARC does not and will not do that!

If you have e-mail but have been receiving the newsletter on paper, please consider trying the electronic edition. You need the Acrobat Reader software (version 3 or later), which you can download from the web. You need an Internet provider that allows file attachments. Then ask WA3PZO for a sample issue of the newsletter, so you can see what it looks like and how long it takes to download.

(Thanks to MARC's REMARCS for original story)

HARC VISITS BB-62

HARC members and their guests will have the opportunity to visit the Battleship New Jersey on Saturday, July 27th. Licensed radio amateurs will have the opportunity to operate NJ2BB. Up to 5 guest operators will have the opportunity to just work from NJ2BB. These do not include the tour of the Battleship. Others may take the 2 hour tour and operate after the tour. If you wish to operate you must bring a copy of your amateur radio license. Visitors should remember there is no food available on the ship.

COSTS:

\$10.00 for adults \$7.00 for children under 12

(For some individuals, it may be difficult to climb safely between upper and lower decks using the ship's original ladders. A climate-controlled indoor viewing area with the complete tour presented on video is available.)

\$7.00 senior citizens and veterans with valid identification

**Active members of the military in uniform will be admitted free of charge

\$6.00 Parking per car

INFO:

The parking lot is quite a distance from the ship and it takes about 5 minutes or so to walk to the ship. There is a shuttle bus that runs most days that picks up people at the parking lot and drops them off close to the ship. At the present time there is no handicap access to the ship, entry is by sloped gangways – so be sure all those coming are capable of the long walk to the ship and climbing aboard. We will let you know when the elevators for access to the ship are put into service. There is limited Handicap Parking available.

DIRECTIONS:

From Benjamin Franklin Bridge Take I676 South to Mickle Blvd exit. Take Mickle Blvd. East toward the river. (Mickle Blvd becomes known as Martin Luther King Blvd.) Follow until you come to break in the median where there is a "Welcome to Camden County, Proud Home of USS New Jersey" sign. Turn left before the sign into the parking complex. Proceed straight into Lot # 1. Park as close to the Tweeter Center as possible. You will then walk toward the Tweeter center entrance and counter clockwise around the Tweeter Center to the waterfront, then south on the Promenade to the ship.

WHAT DO I NEED TO DO?

We'll be planning to arrive at the Battleship around 9 AM. We would like to know if you are interested in going? Are you interested in operating NJ2BB? How many people will be in your group? Do you need a ride? Are you willing to drive? **Fill out our survey on page 7.**

Northeast Input Update

The Northeast Input transmitter continues to be worked on. Frank, N3ZZN, and Ron, K3RJC, It is currently being worked on and may be back into service by the end of the month.

Repeater Council Adopts Mandatory PL Policy

(The following information comes from the ARCC News for June 2002.)

"In recent years many coordination councils have adopted "mandatory PL" policies, requiring all repeaters to utilize PL on their receivers. ARCC has been considering enacting a similar policy. This was discussed again at the most recent ARCC Executive Board Meeting. A motion was made and seconded, and passed unanimously that requires that:

1. All new coordinated operations will require a means of access control on the receiver which shall be used at all times.
2. All modifications to existing coordinations that currently do not have a means of access control will require such access control be added as a condition to the approval of the modification.
3. All repeater and auxiliary links that are currently coordinated for carrier squelch access must coordinate a means of access control within the next three years in order to maintain coordination."

The ARCC goes on to remind everyone that "CTCSS" does not indicate a "closed repeater" system and that since it has been about twenty years since CTCSS capable radios were introduced into the Amateur Radio market the percentage of radios being used today that are not CTCSS capable is very small. The use of DTMF may greatly lessen any problems in this area. Some helpful suggestions that ARCC include are that CTCSS on multiple Amateur repeaters within a given municipal area may want to use the same CTCSS. Also, the ARCC requires that a repeater not utilize the same CTCSS tone as any other co-channel or adjacent-channel repeaters on record in order to minimize interference from distant repeaters' users. See the complete story at:

<http://www.arcc-inc.org/MandatoryPLPolicy.html>

ARCC Policy Hits HARC \$\$

In order for HARC to become compliant with the policy it will require the Club to spend over \$500(more than 1/4 of it's treasury) for PL units for all of the repeater inputs, links, and main transmitter.

In addition there is a possibility that this will impact HARC member's equipment. One club member has already said that it will make some perfectly good older radios useless, some will require a PL unit installed at \$30 each, and drop the value of radios at a hamfest.

Let us know what impact this will have on your ham radio equipment



Screen capture of the Echolink control panel.

Echolink is one of several Voice over IP systems currently being used by ham radio operators.

Others include IRLP, ILINK, and WIRES.

Come to the June Club meeting to here more about this new HARC feature.

iLink, Echolink H.A.R.C. ??

by Bob, KB3SM

What is iLink, Echolink, Suffice it to say it is software that allows voice over the internet connections to others stations around the world. What is the difference between iLink, and EchoLink? Basically the iLink software is written for use on LINUX operating systems and Echolink and others and written for Win9xxx operation. One other major difference is iLink has no individual user interface and Echolink does.

A short explanation I guess is needed. I will keep it simple as I can. To get on iLink you need first to be running LINUX OS and have a required hardware interface board / software and recommended high speed DSL/Cable internet connection and a dedicated connection to a repeater. No one other than the designated closed circuit repeaters can get into the system from outside. Echolink on the other hand has individual user interface software and only needs a Win9xxx OS to run on, the big difference here is any one can get on to the system from either the internet connection side using their dial up 56k, or from any repeater that is set up to allow connections into the internet. This leaves the door open for some possible boot legging some people say, but if controlled it should not become a problem.

There are a few different software packages you can download as to your preference. We are recommending and using ECHOLINK. It can be used in all modes and downloaded from <http://www.k1rfd.com>. We won't get into any details here. It is technical and far beyond needing an explanation as to how it works.

If you are a member of H.A.R.C. and use the repeater system then you have already heard it on the air. We have been beta testing it for many weeks and are now full time operational daily 9:00 AM thru 11:00 PM. H.A.R.C. at this time will not allow members interfacing using codes to bring it online. In other words it will be online and activated only by the control operators until further evaluation is made. If members would like to make contacts call for a control OP and there should be someone who will activate the internet linking connections for you. Anyone is welcome to participate. We will generally be making random out going calls to non-specific repeaters or links to other net connections. Connections around the world have been made already. However any stations on the internet link may connect to us at any time we are online from the internet side. This we hope will bring in some regular contacts from around the world. ECHOLINK is already using the ID WM3PEN-Link. If you hear it come online and say connected this means someone on the internet has dialed in, maybe just to listen or maybe to say hello. Be patient with your Mic key ups there is a delay both on the internet and on many repeater hang tails. If you jump on your key up you will never allow anyone a chance to get in from the internet. We are recommending you let the local repeater carrier drop out and wait a couple seconds before you pick it back up to listen for any one on the internet side to check in. If you hear the repeater WM3PEN-Link connected and no one is talking call out they may just be waiting to hear some one QRZ is there some one on the Link? It may take a little time to get used to slowing down on the Key. We all have that bad habit but to be successful on the internet connections it is a MUST DO. We may make a change in repeater operations to compensate for it as we work out any bugs. Stay tuned in and be aware of the ID calls and you may make many contacts around the world... ECHOLINK DE KB3SM... Bob KB3SM Bob and KB3EBG Peter currently control Ops for ECHOLINK H.A.R.C.

Repeater Call Sign Change?

Since 1976 the HARC Repeater has been identified by the callsign WA3AOP. For those that are new to the Club WA3AOP is one of the founding members of the Club.

For the past couple of years HARC has had the Club call WM3PEN. William Penn has long been identified with Philadelphia and switching the call would allow William Penn not only to look out from City Hall, but have his voice heard, courtesy of WM3PEN, over the city as well.

The HARC Board has decided to let the membership decide what call they would like to hear on the repeater. Fill out the survey and let the Board know what you think.

Sightless ham tells story about ham radio in the Philadelphia area!

(This is the tenth of a series of articles by T. A. Benham W3DD, who lives in suburban Philadelphia. The articles are from the Handi-Hams email newsletter.)

The Civil Defense Club

A year or two after the end of World War II, the amateur branch of the Civil defense group was formed. This was a network of Hams operating on two meters, the frequency for local communications. The net held drills once a week and even had mock emergency situations with all the fixings. I was often chosen as the central operator, keeping track of where the mobile units were located, handling messages, etc. These drills were held in conjunction with the local authorities, police, fire, and medical. We would have as many as ten amateur-equipped mobile units in the field. Mock messages and emergencies were handled. It was fun trying to keep everything running smoothly, pretending it was real. It was practice for the day it might be real.

The First Satellite

October 4, 1957 was the beginning of one of the most exciting periods in my life. On this date the first satellite was put in orbit by the Russians: Sputnik I. I learned it was transmitting signals on 20.005 MHz and since this was a frequency I could receive on my Ham radio, I looked for it from time to time. Of course, I could only hear it when it was above the horizon from our house. On October 6, at about 7 pm I found it. It was sending the Morse code letter F, dit dit dah dit. As time went on, day after day, when I heard it, the letter changed from F to L, dit dah dit dit. Later I discovered the change related to the temperature inside the satellite. Each day I heard the satellite three times about 95 minutes apart. It made 15 orbits daily but came above the horizon on only three of them. I was beside myself with the excitement of being in on the beginning of such a tremendous achievement. Sputnik I stayed up for about two weeks. The orbit was so low, between 90 and 100 miles, that air molecular drag caused it to lose a little height each revolution. It finally burned up in the denser atmosphere. The next bit of excitement was Sputnik II. This was the one

that carried a dog named Leika. The transmitter sent a signal that included the heartbeat of the dog, who lived for about a week. After that, I could receive the signal, but the beat was missing. There followed a series of American satellites with varying signals and measuring various quantities. I made recordings of as many of these as I could. For the American satellites, I had to build special equipment because they used a much higher frequency.

Voices of the Satellites

One day in mid-1958 a friend suggested I make a tape recording of the various signals and accompany them with a narrative to explain what they were. I did so, producing a half-hour recording on a five-inch reel of tape and I called it "Voices of the Satellites." We advertised the tape and sold quite a lot. Later I got the idea we might do better if the recording were on a disk since the tape recorder was not widely used at that time. RCA agreed to make a run of 300 disks at a dollar each, so we had them made, designed a jacket, and advertised them. This also was reasonably successful, sufficiently so that we had more runs made. I still have about 50 of the disks left. I should acknowledge here the help that was provided by Peter Arnow and Dan Clemson, two students who contributed the cost of getting the jacket designed and printed. Then I contacted Folkway Records, a company that put out unusual recordings. They wanted me to make a special disk, which I did, and they signed a contract which went on for two or three years. When I received the first royalty check, I thought, "Wow, my first check from Folkways. Maybe I can take a trip. I've wanted to go to California." When the amount was read to me I realized I'd have to settle for Camden. The check was for \$30.

Help from Industry

Note that all of the satellite activities to this point were from my little shack in my house. This went on until about August, 1959, when a big change was made. I owe a lot to an engineer from Gerald Electronics, Ken Simmons, who heard of our activities and offered to help with equipment we needed. When the US launched its first satellite in January of 1958, the frequency that I had to use was 108 MHz which was a frequency I was not equipped to receive. Ken brought me a unit he had built, helped me set up a suitable three-element beam antenna on the telephone pole in our back yard and get the control cable into the house, about 75 feet away. The cable had to go under the drive behind the houses, which fortunately was a dirt road. I had controls on my desk in the shack so I could keep track of which way the beam was pointing and rotate it. Ken was also of considerable help later when things became more formal and larger. I last heard from him in 1992. After the US got going, I had help from Beltsville, Md., through Phil Carbaugh of NASA. Corlies and I went to Beltsville in March of '58 and met him. He agreed he would somehow let me know when a launching was to take place. I would get a call from him saying something like, "There is going to be a party at 5:30 tomorrow. I hope you can attend." "The

birthday candles are to be lit at 4 pm on Thursday. Please don't forget." We got a kick out of the various ways he relayed the information. We were able to listen for the launch of every satellite of a nonmilitary nature for several years. To be continued.

Planning to Go for your Extra?

(ARRL) New Extra class question pool effective July 1: Starting July 1, a new Amateur Extra class (Element 4) question pool goes into effect for examinations given on or after that date. The new pool contains more than 800 questions--up from the present 685. There is no change in the number of questions or the passing grade for examinations derived from the new question pool, however, and no other examination elements are affected. A representative from ARRL VEC sits on the Question Pool Committee, which is composed of representatives of four of the nation's Volunteer Examiner Coordinator organizations. Question pools are revised and updated on a timetable determined by the QPC, which is soliciting candidate questions based on the recently released Technician (Element 2) syllabus. All current question pools are available on the ARRL Amateur Exam Question Pools Web site <<http://www.arrl.org/arrlvec/pools.html>>.

FRANKLIN INSTITUTE STATION TO GO QRT

W3AA will be closed by the end of the year. According to the Philmont Mobile Radio Club's newsletter **The Blurb**, the Franklin Institute has informed the Club that the long anticipated demolition of the forth floor will begin in January. The entire floor will be converted to offices. A space for the ham radio exhibit would not be available until 2005. Ham Radio has been on exhibit for over 51 years. The Philmont Board of Directors felt the proposed location was too small and too far from the antennas.

Philmont's Association with the Institute began in 1945 when Dr. Wynn Laurence LePage, W3QCV, was vice president of the Institute. Since it's beginning, the Philmont volunteers have told the public about amateur radio. The station started with one transmitter and one receiver. It had a \$50,000 overhaul in 1991.

NVIS Employed Chester County Bike Tour

The Cancer Center at Chester Co Hospital ran their annual Challenge for Cancer Scenic Bike Tour on Sunday May 19th. Several looped courses were provided for riders of various levels and skills; 5-mile / 10-mile / 25-mile / and 50-mile tours. Chester County ARES/RACES provided communications support for the 25- and 50-mile events.

Three weeks before the event, we are asked to provide operators to help cover the course, and to provide communications support. Other volunteers had previously been employed using cellphones and FRS radios. While these tools had proven valuable for the short courses, they

were unsuitable for the longer tours. The FRS radios lacked the range. And the cellphones had only one number to call in order to pass information; as course length increased, the number of cell users increased. This created a log-jamb at the event control cellphone.

Curt Lambert, W3HQ, had met some of the organizers through his work at the hospital, and he got the ball rolling. Curt explained that ham radio could cover the entire course, and that the local chapter had considerable experience providing comm support to March of Dimes walks, and other similar events.

We geared up quickly, and marshalled the volunteers. Bill, N3LRA, and Lor, W3QA, did an RF survey of the course (lots of deep valleys and ravines along the Brandywine Creek part of the course; stretched over about 20 miles end-to-end). We solicited dual-band "loaner" rigs and mag mounts for those with HT-only shacks; and we decided to give NVIS a try.

In three weeks time, we lined up 15 operators, and had a presentation by the Bike Event coordinator at our May Tech Rally at the EOC. Several pieces of "loaner" gear were secured. NVIS gear was deployed. The weather was beautiful, and the CCAR crew performed splendidly.

Four operators were mobile in the bike event (support and sweep) vehicles, one operator was aboard the ambulance, and the rest of us were spread around the course at checkpoints and rest stops. Four stations (KE3HG Rich, W3QA Lor, W3WA Jim, and N3LRA Bill) operated NVIS on 75 and 40 meters. Our experience with local walk, bike and canoe events meant that we could provide knowledgeable and experienced personnel. The event ran smoothly. NVIS (Near Vertical Incidence Skywave) operations were quite interesting. Early morning attempts to use 40m fone proved to be ineffective. We then moved to 75 meters. As the sun climbed in the sky, and the MUF increased, we returned to 40 with much better results. Firm analyses were hard to draw from our experience owing to the many different antenna types in use, and to the multi-band, multi-mode operations to support the bike event. Communications were confirmed as skywave by QSB on most of the signals; varying between S-5 and S-9, and dynamically rippling with the convolutions in the ionosphere. Only two stations were predominantly groundwave; their locations being approximately three miles distant. It was generally agreed that further experimentation was warranted in regard to NVIS for local area HF coverage.

The event honchos were extremely complimentary as they wrapped up from the event. They specifically mentioned their ability to follow events in "real-time"; to pass traffic between the event HQ and the coordinator as he circled the course, to hear the calls for bike and rider pick-ups; and the tracking of the last stragglers to inform the sweep vehicles. (Story Courtesy of William Taylor N3LRA and the ARRL EPA Web site)

HARC HAS QUESTIONS YOU HAVE THE ANSWER!

Throughout the newsletter you have read about a lot of activities pertaining to the club. In many cases the HARC Board of Directors needs comments and answers. The questionnaire below can either be mailed to the Club - PO Box 6253, Philadelphia, 19136 or emailed to the Club Secretary WA3PZO@HARCNET.ORG. We would appreciate comments by July 15th. Since there is no meeting in July, a final decision on the repeater callsign will be announced in August.
MAKE SURE YOU INCLUDE YOUR NAME AND CALL.

Battleship New Jersey Visit July 27th

HARC Members will be visiting the BB62. Visitors will have the opportunity to tour the ship and operate NJ2BB.

1. Will you be going to the BB62 with HARC?
(Yes/No)
2. Will you be touring the ship? (Yes/No)
3. Do you want to operate NJ2BB?
4. Will you be bringing any guests? (Yes/No)
5. If so how many? ____
6. Will you be driving? (Yes/No)
7. Can you take someone who needs a ride?
8. Do you need a ride? (Yes/No)

Repeater Callsign

**What callsign would you like to see on the
HARC 146.685 Repeater?**

- a) WA3AOP ____
b) WM3PEN ____

AUGUST HARC PICNIC Pennypack Park

**Are you planning to attend? (yes/no)
How many guests?**

REPEATERS GOING PL

ARCC has said all repeaters must go to PL in the next 3 years.

- 1) Does your current equipment come with PL capability?
2 Meter (Yes/No/Don't have) 222 Mhz (Yes/No/Don't have)
440 Mhz (Yes/No/Don't have) 6 Meters (Yes/No/Don't have)
- 2) Will any equipment become obsolete once PL becomes mandatory? (Yes/No)
- 3) If any of your equipment has an optional pl board - Will you be able to add the PL board? (Yes/No)
How much will it cost? _____
- 4) Do you have equipment that you were planning on selling that you feel will lose value based on this ruling?
(Yes/No)



HOLMESBURG AMATEUR RADIO CLUB
P.O. Box 6253 Philadelphia, PA 19136
“Serving the Community Through Ham Radio”

SEE YOU AT THE NEXT CLUB MEETING JUNE 27TH
DXING WITH AN HT
MEETING: 8TH DISTRICT POLICE STATION

DATE: **JUNE 27, 2002**

TIME: **8:00 PM**

LOCATION: **8TH DISTRICT POLICE STATION**

TOPIC: **ILINK/ECHOLINK**