

October 2012

The HARC Spark

The Official Newsletter of the Holmesburg Amateur Radio Club WM3PEN 146.685 Mhz Repeater K3RJC 444.9 Mhz Repeater K3FI CLUB CALLS WM3PEN Web Site http://www.harcnet.org



HARC IS RADIO ACTIVE!

Have you ever seen a standing wave? Come to the October 25th meeting!

HARC Supports Northeast Philly Run

Ten members of the Holmesburg Amateur Radio Club provided safety communications for the 9th annual Northeast Philly 5 mile Run. Assisting with the event were AB3EO, KB3WLN,N3ZZK, N3LXN, NY3Z, K3CJ, N3UBY, KB3PNM, KB3UWJ, and WA3PZO. Club members assisted with parking, traffic control, water stop, and at several turns along the route which runs along the Northeast Airport.

Members were on site by 7 AM and finished by 11:00 AM. Members efforts were appreciated by run officials including run sponsor Phila Council at Large Member Dennis O'Brien. Besides being mentioned in the run booklet, the Club was mentioned at least 12 times on the public address system at the airport.

9th Annual Northeast Philly 5 Mile Run 2 Mile Walk October 14, 2012



Hosted by City Councilman At-Large

Dennis M. O'Brien

To Benefit the

Northeast Philadelphia Youth Alliance
At the Northeast Philadelphia Airport

Standing Up for Standing Waves

Have you ever wondered what a standing wave is? At this month's HARC meeting we'll see a world class antenna and transmission line demonstration. The presentation was originally presented to the Southeastern Repeater Association. Come on out and learn about dipoles, dummy loads, and of course standing waves.



We'll also have the various awards WM3PEN has won so far.

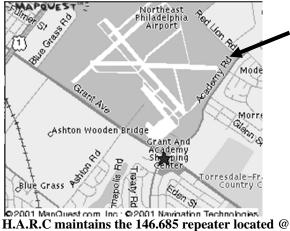
HARC September Meeting 8th District Police Station Thursday, Oct 25th 8 PM

Topic: Standing Up for Standing Waves

HARC Board of Directors

President - Mike Wurgley, N3LXN
Treasurer - Bob Josuweit, WA3PZO
Membership - Charley Johnson, K3CJ
Technical - Ron Cardullo, K3RJC
Member-at-Large - Sol Volen, N3UBY
Webmaster - Rich Shivers, AB3EO
UPARC Rep - Mike Feeley, KB3NDC
Newsletter Editor - Bob Josuweit, WA3PZO
WM3PEN @ AOL.COM

H.A.R.C. Monthly Meetings - The Board of Directors meets on the 2nd Thursday @ 7:30 PM (Odd number months). General meetings are held the 4th. Thursday @ 8:00 PM. 8th District Police Station, Red Lion & Academy Rd. Phila PA. No meeting in August.



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.

WM3PEN@arrl.org, the web page http://www.harcnet.org or writing to HARC 3341 Sheffield Ave, Philadelphia, PA 19136.

HF AWARDS MANAGER

Are you getting close to having all 50 states confirmed for the Worked All States award or working enough grid squares for to qualify for the VUCC Award? As a HARC service you can now have your QSL cards verified by Bob, WA3PZO, and not have to ship the cards to ARRL Headquarters. You must be an ARRL member to qualify for the awards. Additional information and links can be found on the HARC website (www.harcnet.org)

HARC Bulletin Schedule Bulletin Station K3CJ

Wed 2000L Amateur Radio News Line
ARRL Audio News
The RAIN Report
Contests / Special Events / Hamfests
Sun 1000L This Week In Amateur Radio
Gate Way 160
Handy Hams
Contests / Special Events / Hamfests

PHILA ARES INFORMATION

All amateurs interested in participating should check into the Phila ARES Net, Sunday's at 9:00 PM, hosted on the Phil-Mont Repeater System; 147.030 MHz (+offset 91.5 PL);444.80 MHz (+offset 186.2 PL) When control operators are available, Echolink node 29742, WU3I-L, is on the repeater. Backup link is KB3IV-L.

All interested amateurs are welcomed and encouraged to check in for more information. There is always a different topic of interest to the amateur community discussed with an informal round table of comments and suggestions.

Look forward to having all check in on Sunday nights @ 9:00 pm. See web site for more information.

- Visit the Philadelphia ARES web site http://www.harcnet.org/aresindex.html



VE SESSIONS

PhilMont Mobile Radio Club has testing in Ambler, PA on the 4th Thursday of every month. Exams, 1414 E. Butler Pike in Ambler, PA.

Registration begins at 7pm.

Warminster Amateur Radio Club has testing the last Wednesday evening of each month except August and December. The sessions are at the Warminster Recreational and Educational Center on Little Lane, and start promptly at 7:00 PM (registration 6:45 PM).

Bryn Mawr - quarterly on a Saturday. Contact Bob Lees, W3ZQN, rjlees@aol.com

Keep up on the latest HARC news by checking out the Club website www.HARCNET.org

Upcoming Events

Next Club Meeting: October 25th No meeting in November – Happy Thanksgiving

Old Words – New Meanings

I was recently at a conference where the electric utility smart grid was a topic of discussion. One of the presenters was talking about the use of sensors and said that the word "sensor" wasn't even in use before the 1960s. I hadn't really thought about it, but later looked it up:

http://dictionary.reference.com/browse/sensor?s=t

This actually says the earliest use was 1958, but it is still interesting that a word that is so much a part of the industry I'm in is just a few years older than I am.

Then this morning I was driving to work and noticed a Spanish language billboard that was talking about a local television station and used the word "canal" for "channel". Referring to a frequency makes sense, but it made me wonder when the term "channel" came into use. So again, I looked it up:

http://dictionary.reference.com/browse/channel?s=t

Down the page a ways it says, "Meaning 'circuit for telegraph communication' (1848) probably led to that of 'band of frequency for radio or TV signals' (1928)." It is interesting that the word channel was first used for land-line telegraphy before being used in the context of radio and television in the late-1920s.

Another interesting word is "battery". I couldn't find a date it was first used in the context we tend to think of it in (when it comes to electronics), but the word itself is interesting. A "battery" typically is the aggregation of smaller components. So early on it probably made sense to talk about a "battery" of "storage cells", but now the word battery had probably replaced the word "cell" for most people. (Although I guess most batteries still have multiple cells, but things like a "AA battery" are, I believe, only a single cell.)

No doubt all of this falls into the category of trivia, but it has made me start to look a bit closer at some of the words we use as part of our hobby and think about why they were chosen and where they came from.

73 de Jim W4JBM



New K3FI QSL card. Photo sculpture garden near the museum of art.

With Veteran's Day just a few weeks we take a look at how amateur radio operators supported the war effort. The following is from a Yahoo group on the War Emergency Radio Service.

The War Emergency Radio Service (WERS), the Civilian Defense radio service of WWII. The group contains photos of my current WERS station along with files, schematics, ads and pics of vintage WWII WERS equipment. I am also posting each month during the several years a post, "Amateur radio 70 years ago this month". I think you will find it interesting.

At the start of the Second World War the United States Congress had suspended all amateur radio activity throughout the country. WERS was established by the Federal Communications Commission in May of 1942 at the insistence of the American Radio Relay League. WERS would remain in operation in through the end of the Second World War in 1945. The FCC allowed only operation on the VHF/UHF pre-WWII ham radio bands. The standard was the old 2 1/2 meter, 112-116 Mc band with backup on the 224-230 and 400-401 Mc bands, max power 25 watts. The CAP and civilian state guard operated on 115.2-116 Mc. The WERS was terminated November 15, 1945 at 3AM Eastern Time.

War Emergency Radio Service (WERS) authorized by Defense Communications Board for Civilian Defense, Civil Air Patrol, and State guard systems, to permit licensing for defense purposes limited number of amateur shortwave stations, all of which had been closed the first of the year for security reasons. By end of 1944, 250 licenses (covering 5,213 radio transmitters) were issued to civilian defense stations. WERS was to provide communications in

connection with air raid protection, and communications during times of natural disaster and operated under very strict military like rules and regulations.

WERS station licenses were given to communities and not individuals. One of the requirements to participate in the WERS was to hold any class FCC license or permit and be a US citizen. Sam W8KBF



70 years ago this month

As of the fist of October 1942, only two WERS Civilian Defense station licenses have been issued by the Federal Communications Commission, Akron Ohio and Lawrence, Mass. Several applications are pending at the FCC but a few are missing the required radio area coverage maps.

The Oct 1942 issue of OST, a monthly amateur radio magazine, ran the following story (edited) on the WERS operators shortage: "Since tens of thousands of amateurs are now serving in the military or will be, it can be said that no community Civilian Defense group that is planning a WERS unit has a sufficient number of already-licensed amateurs to man the the stations necessary to provide enough two-way emergency channels. A third class radiotelephone permit is the most easily obtained operating authorization available from the FCC by simply passing the exam of Element One, covering commercial rules a regulations. The certificate obtained is sufficient "technical" qualification to secure the WERS operator's permit. The story goes on to tell how to set up a six hour class for those wishing to join the WERS as operators. The FCC has allowed "resident" exams for the Third Class permit. Once the Third Class permit is aguired, the local WERS radio aid must submit a birth certificate, two full face 2 1/2" by 2 1/2" photos and a fingerprint card for each applicant for the WERS operators permit. The FCC will not permit resident exams for the Third Class permit until the local Civilian Defense organization has applied for a WERS station license."

The following full page ad appeared in OST highlighting the WERS and shortages: "Right now there's a job to be done on the Home Front...for hams who are still at home. It's War Emergency Radio Service, and it's a job the amateur knows how to do. No, you won't be operating your home station with your own call letters, and you won't be able to get much in the way of new apparatus...you have to build from parts knocking around, old broadcast band radios and yes, even tomato cans. But you will be there, with your gear and talents, serving your country. When it's all over you can go back to hamming with your old signals and old gang, the new amateur radio gear will be waiting for you. You can do a lot with tomato cans, besides pack tomatoes. And don't forget, the fellows in the military service haven't stopped tinkering, either. The same goes for the manufacturers; they may be busy with war production, but out in the lab, engineers are putting ingenuity and wartime experience together... developing new and better gear for radio amateur operators after Victory...equipment like the which you old timers have never seen. So while you're giving services for the civilian defense emergency communications, keep in mind, during the silent hours, that there's a great day coming. And ISOLANTITE with it's unusual combination of properties, high strength, dimensional precision, electrical efficiency, non absorption of moisture...will be there to help you get the most out of your new rig, too, when that day comes." (ISOLANTITE manufactures high quality ceramic insulators)

"Amateur Radio 70 Years Ago this Month" is a monthly feature during the 70th anniversary years of WWII and past monthly posts can be found on my W.E.R.S Yahoo group at:

http://groups.yahoo.com/group/war emergency radio service

Members Recognized

Jim, WA3ERQ, earned his DXCC via LoTW. He got it after a station in Israel confirming a contact he had earlier this month.

Bob, WA3PZO, earned his second Worked All Continents (WAC). This one was on phone.

Congrats!!



WM3PEN was on the air introducing young people to amateur radio and teaching a bit of Philadelphia and Pennsylvania history involving William Penn. The 5-day School Club round up is held twice each year in April and October. The event is geared towards amateur radio stations in elementary, junior/senior high, and college stations. There are entry classes for individuals and clubs. Some of the schools WM3PEN made contact with include Dubose Middle School, Dorchester, SC, Bloomington High School South, Monroe, IN, Emporia State University, Lyon, KS, and University of Missouri – Rolla in Phelps, MO. Logs have been submitted for WM3PEN as a club station.

Here's a report from W0EEE at the University of Missouri. Notice the Club contact. Hello All.

School club roundup has came to a close. The following is our "daily dispatch" created by the logging program:

SCHOOL CLUB ROUNDUP DAILY DISPATCH W0EEE - Missouri S&T Amateur Radio Club 7:59 PM, Friday, October 19, 2012

Operating Hours: 7.79

Phone Contacts: 155 Digital Contacts: 0

Current Claimed Score: 18,445

31 States Contacted:

ALABAMA, ARIZONA, CALIFORNIA, COLORADO, CONNECTICUT, DELAWARE, FLORIDA, GEORGIA, LOUISIANA, MARYLAND & DC, MASSACHUSETTS, MICHIGAN, MINNESOTA, MISSISSIPPI, MISSOURI, NEW HAMPSHIRE, NEW JERSEY, NEW MEXICO, NEW YORK, NORTH CAROLINA, OHIO, OKLAHOMA, PENNSYLVANIA, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, TEXAS, VIRGINIA, WASHINGTON, WEST VIRGINIA, WISCONSIN

5 Provinces/Territories Contacted: MANITOBA, NEW BRUNSWICK, NOVA SCOTIA, ONTARIO, QUEBEC

4 Countries Contacted: ANTARCTICA, EL SALVADOR, IRELAND, US VIRGIN IS

2 Radio Clubs Contacted: W8NP WM3PEN

15 School Clubs Contacted: K3NHC K4DMS K4PCC K5LBJ K5LSU KB3BRT KB3CVD KD8NOM N4HVH W1MX W4CHS W4FOS W5TC WA8CHS WB4HS

Thanks & 73!

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Sterling Coffey
Electrical Engineering Junior at Missouri S&T
President, Missouri S&T Amateur Radio Club
ARRL Youth Editor



Riley Hollingsworth, K4ZDH, to Speak at November MARC Meeting

Riley Hollingsworth, CQ Columnist and former administrator of the FCC's enforcement program in the Amateur Radio Service will be the guest speaker at the November 20, 2012 Mid Atlantic Amateur Radio Club meeting. MARC meets in the Council Room at the Tredyffrin Township Building, 1100 DuPortail Road, Berwyn, PA 19312-1079 off of Rt. 202. (GPS: N40° 3.9768', W075° 28.1653). Additional information about MARC can be found at www.marc-radio.org All invited.

ARRL Atlantic Division Convention – November 10

The Atlantic Division Leadership is turning the traditional convention model on its head! This year, through the use of multi-media, we will be bringing the convention to our Atlantic Division ARRL Affiliated clubs on Saturday, November 10th. (8:30 – 5 PM)

We are excited to have Kay Craigie N3KN, ARRL President and past Atlantic Division Director, as our 2012 Atlantic Division Convention keynote speaker! Mike, N33LXN, will be hosting the event from his home. Contact Mike if you would like to attend.

More in 2013

2013 marks the 35th Anniversary of HARC. How are we going to celebrate the event? That's up to you. If you have any ideas contact Bob, WA3PZO.

January 2013 HARC Meeting

Fun with the SDR FUNcube Dennis Silage, K3DS, Professor Electrical and Computer Engineering

The FUNcube Dongle is a software defined radio (SDR) that fits into a 'USB key' and is part of AMSAT-UK's FUNcube satellite project. The

FUNcube Dongle allows anyone to try their hand at reception of satellites like the FUNcube, due for launch in November 2012, as part of a global educational collaboration project collecting information from space.

The FUNcube Dongle has a requency range of 64 MHz to 1.7 GHz (there is a gap between 1.1 GHz and 1.27 GHz) and with the PC decoding software can receive narrow band signals including AM, FM and SSB. The FUNcube Dongle will be demonstrated for a 'hands-on' experiences. For more information, see: www.funcubedongle.com and http://funcube.org.uk

Pennsylvania "67" Challenge Award

Amateur Radio operators around the world have the opportunity to participate in the Pennsylvania "67" Challenge. The Challenge, sponsored by the Holmesburg Amateur Radio Club, is to make contact with all 67 Pennsylvania Counties.

The Challenge is open to all amateur radio operators regardless of individual station capabilities. All contacts must be 2-way communications made in real time. These contacts may be on any Amateur Radio band/mode.

Contacts made using repeating devices such as FM repeaters, Amateur satellites, moon-bounce, and keyboard-to-keyboard contacts through digipeaters/nodes are valid, because these QSOs are made in real or near-real time. Contacts using IRLP, Echolink, or D-Star are valid as long as a radio is being used by both operators. All contacts must be made from the same county.

As an incentive Pennsylvania "67" Challenge certificates may be earned by working stations in 20, 40, 60, or all 67 Counties. Paper or electronic QSLs are acceptable. The contacts can be verified by a local club officer or mailed to the Holmesburg Amateur Radio Club.

HARC Award Manager Bob Josuweit, WA3PZO said there was a need to have a County Challenge in Pennsylvania that was within the reach of most hams in Pennsylvania. When other state awards lost their sponsorship it was an opportunity for the Holmesburg Amateur Radio Club to fill the void.

Complete rules will be posted on the HARC website. Questions on the Award can be directed to HARC at WM3PEN@ARRL.NET.

FCC Seeks to Change Amateur Radio Licensing Rules via the ARRL Letter

On October 2, the FCC released a Notice of Proposed Rulemaking (NPRM) in WT Docket No. 12-283 that seeks to change the Amateur Radio licensing rules, especially as they concern former licensees. Acting upon an April 2011 Petition for Rulemaking **filed by the Anchorage VEC** to give permanent credit to radio amateurs for examination elements they have successfully passed, the FCC proposes to revise Section 97.505 to require that Volunteer Examiners (VEs) give examination credit to an applicant who can demonstrate that he or she formerly held a particular class of license. In addition, the Commission seeks to shorten the grace period during which an expired amateur license may be renewed and to reduce the number of VEs needed to administer an amateur license examination. In response to a Petition for Rulemaking filed by the **ARRL in March 2011**, the FCC looks to amend the Amateur Service rules to allow amateur stations to transmit additional emission types in order to permit Time Division Multiple Access (TDMA) in the Amateur Service. But in doing so, it denied the League's request for a blanket waiver pending the resolution of the rulemaking proceeding.

Comments on these proposed rules changes will be accepted until 60 days after the *NPRM* is published in the *Federal Register* (this

can take up to six weeks after release of the *NPRM*). Reply comments will be accepted until 90 days after publication in the *Federal Register*.

Licensing Issues

Examination Credit

To be issued a new or upgraded amateur operator license, a person must pass an examination or otherwise receive credit for the examination element(s) required to qualify for the relevant license class.

Applications for new or upgraded licenses must be filed through a volunteer-examiner coordinator (VEC), which obtains the applicant information from VEs, who in turn administer examination sessions and issue a certificate of successful completion of an examination (CSCE) to an examinee who scores a passing grade on an examination element. A person also receives credit for an examination element if he or she presents either a CSCE for that element that was issued within the previous 365 days or an unexpired (or expired but within the grace period for renewal) amateur operator license for a license of a class that required passage of that element.

In its *Petition*, the Anchorage VEC asserted that it was unfair that after the grace period for renewal of an Amateur Radio license ends. a former licensee "loses all credit for any elements passed, and must start all over if they want to continue their Amateur Radio activities. Does the passage of time somehow invalidate a person's knowledge? We think not. We believe that any applicant who can demonstrate that they have passed certain elements at some previous date or who have held a license grant for a particular class of license, again on or before various applicable dates, should not have to be re-examined on those elements before a new license can be granted. It seems unfair to allow some applicants to claim element credit for items previously passed and not others."

The FCC stated in the *NPRM* that it recognized that the rules treat a former licensee differently than a licensee who passed the same examination(s) but who continuously renewed his or her license: "We also agree with Anchorage VEC that the fact that an individual allowed his or her license to expire more than two years ago does not necessarily mean that the person no longer possess [*sic*] adequate knowledge of the subject. That a license was continuously renewed does not establish that the licensee remained active in the Amateur Service, for amateur licensees are not required to operate their stations in order to remain licensed."

In 1997, the FCC addressed a similar proposal. At that time, commenters generally opposed allowing examination credit for expired licenses, and the FCC declined to take action. "The Commission noted [in 1997] the opposition to the proposal to allow examination credit for expired licenses, and concluded that requiring licensees to either renew their licenses or retest before they may reenter the Amateur Service does not impose a hardship," it stated in the *NPRM*. "While we continue to believe that requiring licensees to either file a timely renewal application or retake the necessary examination before they can be relicensed does not impose an unreasonable burden, we are skeptical that it is actually necessary to require former licensees to retest."

With this in mind, the FCC is proposing to revise Section 97.505 to require that VEs give examination credit to an applicant who can demonstrate that he or she formerly held a particular class of license: "We believe [amending Section 97.505] will encourage former amateur operators to become involved again in the technical self-training and public service communications opportunities provided by the Amateur Service. It also could reduce costs (in time as well as money) incurred by former licensees seeking to reenter the Amateur Service. We ask commenters to address these costs and benefits."

With one narrow exception -- expired Technician Class operator licenses granted before March 21, 1987 -- element credit is not given for an Amateur Operator license that has expired and is beyond the grace period for renewal. The grace period for renewal of an Amateur Operator license is two years, which is also the period of time after which the call sign associated with an expired Amateur Operator license becomes available for reassignment through the vanity call sign system. "We seek comment on whether we should retain this rule," the FCC stated. "While we are not reconsidering the Commission's conclusion that those former licensees should receive credit for the written examination required for a General Class license, we question whether the rule still has any practical effect. That is, are there any remaining holders of expired pre-1987 Technician Class licenses who intend to seek General or Amateur Extra Class licenses, or can we streamline the rule by deleting this provision as obsolete? Similarly, we seek comment on whether Section 97.505, as proposed to be amended in this proceeding, should make provision for expired Conditional Class licenses, which were phased out by renewing them as General Class licenses beginning in 1976."

The FCC is also seeking to eliminate the element credit distinction between a person who passed an examination and kept his or her license current, and a person who passed the same examination but let his or her license expire. "Arguably, we should also eliminate the element credit distinction between a person who passed an examination and applied for a license within a year and a person who passed the same examination but did not apply for a license in that time, on the grounds that the passage of a year does not substantial [sic] affect the latter examinee's knowledge," the FCC maintained. "We note, however, that a CSCE also provides temporary authority for an upgrading licensee to exercise the rights and privileges of the higher operator class until disposition of the upgrade application or 365 days, whichever comes first. We are concerned that it may be

anomalous or confusing to create a difference between the period during which a CSCE provides temporary operating authority and the period during which a CSCE provides element credit."

Reduction of Two Year Grace Period
Section 97.21(b) provides that a person
whose amateur station license grant has
expired may still apply for renewal of the
license during a two year grace period.
According to the FCC, this allows individuals
who forget to renew, or experience
unforeseen difficulties in renewing their
license, a period of time during which they
may renew. The FCC noted that a principal
reason for providing this grace period "is to
allow amateur licensees to restore their
operating privileges without sitting for
reexamination."

Given that the FCC is proposing to amend the rules to give former licensees examination credit for the element or elements they passed to obtain their expired licenses, it stated that that a two year grace period may no longer be necessary and proposed to reduce the grace period for renewal to six months (180 days), "which we believe is a sufficient period of time for individuals who forget to renew or experience unforeseen difficulties when renewing their licenses. Licensees who do not renew during the grace period would be able to obtain a new license under the rule changes proposed above and could then request their former call sign through the vanity call sign system if the call sign had not already been assigned to another licensee under the vanity call sign system."

The FCC also wondered whether instead of amending the rules to allow element credit for expired licenses, it "should simply extend the renewal grace period for a substantial length of time (such as a 10 year grace period). Extending the grace period would provide former licensees with the same relief -- permitting them to reenter the Amateur Service without retesting -- with fewer administrative burdens on former licensees,

VEs and VECs; however, extending the grace period could affect the vanity call sign system (see below)."

Reduction in Waiting Period for Vanity Call Signs

When the vanity call sign system was implemented, the FCC concluded that call signs should not be available for reassignment for two years following the death of a licensee, or expiration or termination of the license for that call sign; close relatives of a deceased licensee are exempt from this rule, following the licensee's death. The FCC stated in the NPRM that it set the waiting period at two years "in part because it corresponds with the renewal grace period. Because we propose above to shorten the grace period to six months, we also propose to reduce the time before a call sign becomes available for reassignment to six months."

The FCC also noted that correspondence with the grace period was not the only reason identified by the Commission for a two year waiting period: "Other reasons were 'to avoid confusion in over-the-air station identification, to maintain accuracy in the licensee data base, and to accommodate QSL bureaus' and to 'preclude trafficking in licenses,' where a licensee, in exchange for some type of consideration, vacates a desirable call sign so that another licensee could immediately apply for it before its assignability becomes known generally." In addition, the FCC pointed out that the two year waiting period "provides ample time for a close relative of a deceased licensee to obtain the same class of license as the deceased held, in order to be eligible to hold the deceased's former call sign. While the vanity waiting period should not be shorter than the renewal grace period due to the possibility of conflicting license grants, there is no practical reason why the waiting period could not be longer than the grace period."

More info can be found on the ARRL Website.



HOLMESBURG AMATEUR RADIO CLUB 3341 Sheffield Ave., Philadelphia, PA 19136 "Serving the Community Through Ham Radio"

Club meeting: October 25



HOLMESBURG AMATEUR RADIO CLUB 2012 MEMBERSHIP FORM

HARC, 3341 Sheffield Ave, PHILADELPHIA, PA 19136 http://www.harcnet.org WM3PEN/K3FI



All members in good standing are eligible to vote and hold a board office. Dues are \$20.00/year. Make checks payable to H.A.R.C. and mail to 3341 Sheffield Ave, Philadelphia, PA 19136.

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Telephone #E-mail	Would you be willing to receive the newsletter via email?
Are you an ARRL member? YES NO Membership Expires (mm/yy)	