



November 2016

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 Meeting – November 17

HARC Dinner – December 15

Wishing to Vote for a Ham

By Caryn, KD2GUT, *The Compass*, GSBARC

If I could have done it on Nov. 8 – Election Day - I would have voted for KB2GSD. Once known as the “most trusted man in America,” the anchorman Walter Cronkite, a Silent Key since 2009, had the character and demeanor that could restore faith even in born skeptics. It wasn't any magic; it was simply the professionalism of straight talk and hard work.

Suddenly right before Election Day itself, some of us found KB2GSD on the air with us once again for a few brief days. He was not on CBS this time but on HF. In his honor, the Metro DX Club of South Suburban Chicago was calling CQ as Special Event Station W9C and celebrating the legendary anchor. The most cantankerous of presidential elections just happened to be unfolding at the same time these hams were marking the 100th birthday of broadcast news' “Uncle Walter.” The Metro DX hams wanted an appropriate way to honor him and the answer came during those 7 busy days of operation as W9C.



The Nov. 4 birthday may have belonged to Cronkite but the birthday gift was intended for us, a nation stressed by an array of combative debates and poison rhetoric. Here was our fortunate position as amateur radio operators: As a community, we got to opt out of all that for a bit and play in radio's equivalent of the mosh pit – the pileup. We could jump in and acknowledge this journalist and, in turn, be acknowledged with a simple signal report and a 73. Special Event stations have the power to do this: such commemorative events teach us history, science and, in this instance, they can give us a respite from the world's meanness and insanity and restore our perspective.

Anyone who, like Cronkite, could end each night's newscast with the easy phrase “and that's the way it is” surely had the kind of grip on reality we can only envy. 73 for now KB2GSD. This is KD2GUT, all clear. _____

Making Holiday Plans

Whether your looking through a HRO catalogue so you can prepare a ‘wish list’ for your wife or getting busy with other activities in December, make sure you put December 15 on your calendar. HARC will have its' annual holiday dinner on December 15 at the Pub 2900, 2900 Street Rd, Bensalem, PA 19020. Time is 6:30 PM. Friends and family invited. Ordering will be off of the menu. RSVP to WM3PEN at aol.com.

HARC Board of Directors

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WM3PEN @ AOL.COM

H.A.R.C. Monthly Meetings - The Board of Directors meets on the 1st Thursday @ 7:30 PM (Odd number months). General meetings are held the 3rd. Thursday @8:00 PM. Pathway Bldg, Philadelphia Protestant Home, 6401 Martins Mill Road at Tabor Rd . Phila PA. Picnic in August. Holiday Dinner in December.

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>



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.



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

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)

Keep up on the latest HARC news by checking out the Club website

www.HARCNET.org

Upcoming Events

HARC Meeting – November 18

HARC Dinner – December 15

HARC Meeting – January 19

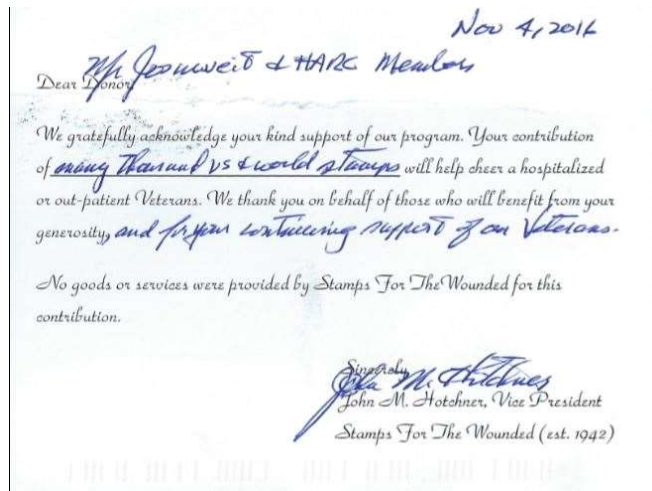
Stamps, Stamps, and More Stamps for SFTW

Following local publicity on KYW radio, stories on Amateur Radio Newline and the FISTS cw club, stamps started to roll into HARC for the Stamps for the Wounded Program. The KYW story generated several large donations and 2 inquiries about starting a local program. Thanks to the story on KYW radio programs have started at the Montgomery County Vet Center and the Media Presbyterian Church. We had 2 large donations of stamps coming in. The combined weight of all of the stamps came to 18 lbs! That's almost 29000 stamps!



The Delaware (OH) Amateur Radio Association recently ran a story on HARC and SFTW. We have indications that more stamps will be coming in.

A November Thank You from the SFTW program said "We gratefully acknowledge your kind support of our program. Your contribution of many thousand US and world stamps will help cheer a hospitalized or outpatient veteran. We thank you on behalf of those who will benefit from your generosity and for your continuing support of our Veterans."



NE Phila Youth Run Sunday, October 16 NE Philadelphia Airport

A big thanks to HARC members, K3UJ, N3LXN, K3CJ, N3UBY, KB3UWJ, and WA3PZO for assisting with communications for the NE Philadelphia Youth Run.



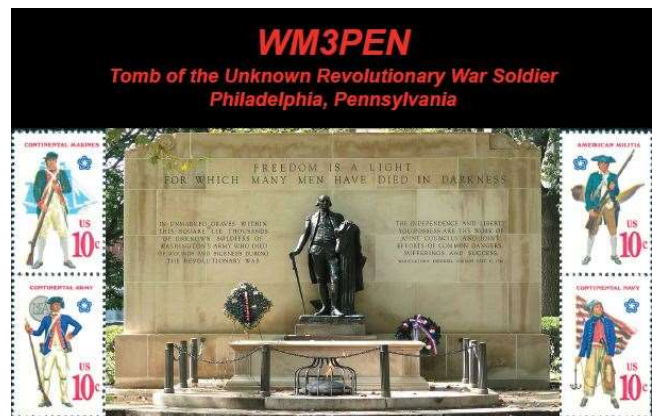
QSLs continue to Come in for the 13 Colonies Operation

QSL card requests continue to trickle in following the July 13 Colonies Special Event. In addition EQSLs and LOTW confirmations continue to climb.

LOTW shows 3311 QSOs confirmed. 48 States, 5 continents, and 41 countries.

EQSLs show 2028 QSOs confirmed.

There have been no details released on the 2017 13 Colonies event which will be held around July 4.



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.



Congratulations for
making a confirmed contact with
amateur radio operators in:

Pennsylvania 67 Challenge



Presented by the Holmesburg Amateur Radio Club, WM3PEN,
Philadelphia, PA

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.

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

Ham Radio Hits the TV Screen

If you been to busy to watch tv this Fall, you may have missed ham radio on several stations. Probably the most familiar is ABC's Last Man Standing. Tim Allen plays Mike Baxter, KA0XTT. Of course, Tim is a ham. His call is KK6OTD.



Frequency is an American drama television series that airs on The CW. Inspired by the 2000 [Gregory Hoblit](#) film of the same name, *Frequency* is developed by Jeremy Carver.

In 2016, NYPD Detective Raimy Sullivan discovers that she is able to speak to her deceased father Frank Sullivan in 1996 via his old ham radio. Her attempts to save his life trigger the "butterfly effect", changing the present in unforeseen ways. To fix the damage, she must work with her father across time to solve a decades-old murder case.



Peyton List (Photo: Bettina Strauss/The CW)

Amateur Radio got a big boost this week when the **National Geographic Channel** announced it would be airing a new mini-series called **Mars**, which involved the first colonization of the red planet, in the not-too-distant future. Nat Geo posted a prequel to the series on their website, **BeforeMars**, which takes place in 2016. Ham radio plays a major part in the prequel, which

involves a young girl communicating with an Astronaut on the ISS; that experience leads her to pursue science and end up on the Mars mission. Nat Geo also put up a page **explaining ham radio** to people interested in the series.



National Geographic Channels/Scott Gries

A still from Before MARS: Hana Seung is determined to talk to an astronaut aboard the ISS with the old ham radio she found in her attic.

New Russian Over-the-Horizon Radars Set for 2017 Startup

According to media accounts, more long-range, new over-the-horizon (OTH) radars that can identify aerial and sea targets hundreds of miles away are scheduled to begin operation next year in the Russian Arctic. It's doubtful, however, that the news heralds the return of interference on the level of that generated by the so-called "Russian Woodpecker" OTH radar, which plagued Amateur Radio HF bands in the 1970s and 1980s.



A screenshot of the Russian OTH radar "Konteyner." The signal is FM CW at a sweep rate of 50/second on a center frequency of 14.127 MHz. [Image courtesy of Wolfgang Hadel, DK2OM]

Over the past couple of years, OTH radars, sans woodpecker, have become increasingly commonplace intruders on Amateur Radio bands, according to the International Amateur Radio Union Region 1

(IARU R1) Monitoring System (IARUMS), which has noted OTH radars in Russia, China, Cyprus, Iran, and Turkey. The Russian systems-intelligence "Konteyner RLS" OTH radar, transmitting from the Nizhny Novgorod region, is frequently spotted on 20 meters. While no woodpecker, it transmits a broad, frequency-modulated CW signal at 50 sweeps per second with a bandwidth of 80 kHz or greater, accompanied by signal splatter, IARUMS Coordinator Wolfgang Hadel, DK2OM, reported recently. *Sputnik*, a Russian government-controlled radio service, [cited](#) a *Rossiiskaya Gazeta* newspaper report that six OTH radar installations will operate in the region. Deputy Defense Minister Dmitry Buklgakov, who visited the construction site, said a runway capable of handling all types of combat aircraft was simultaneously being reconstructed nearby, the report continued. Other reports have indicated that similar systems will be deployed in the far east in 2018. (Credit: *The ARRL Letter* and The American Radio Relay League.)



The Konteyner receiving site southeast of Moscow.

Stay Connected!

The HARC Club net meets every Wednesday night at 8 PM on the Club repeater. Check in and see what's going on. HARC has a Facebook page. Sign up today. Follow HARC on the web at www.harcnet.org and via the HARC Spark.



Amateur Radio "Uniquely Situated" to be at Leading Edge Again, Conferees Told

The dawn of so-called "smart" -- or cognitive -- radio has presented Amateur Radio with an opportunity to regain the leading edge in radio technology in the near future. It will also alter our view of spectrum as a limited resource.



Those points and others were part of a forward-looking, tag-team Sunday Seminar presentation, "Spectrum (It's the frequency crunch for real)," by Michelle Thompson, W5NYV, and Bob McGwier, N4HY, at the 2016 ARRL and TAPR Digital Communications Conference (DCC), September 16-18 in St. Petersburg, Florida. Thompson heads the AMSAT Ground Terminal Team, a component of the Phase 4B geosynchronous satellite project. McGwier is chief scientist at the Hume Center for National Security and Technology at Virginia Tech.

"If you put the smarts in the radio, what can possibly go wrong?" quipped Thompson, pointing to an example that demonstrated how sufficiently complicated technology is



Michelle Thompson, W5NYV, at the ARRL and TAPR Digital Communications Conference. [Photo courtesy of HamRadioNow]

also more likely to fail.

Thompson said cognitive radio technology will alter the paradigm of treating spectrum as if it were land. "Spectrum is immediately reusable," she said, "and land is not." Regulation and spectrum allocation have been necessary to manage interference among services, but smart radios can avoid collisions among users, she said.

"[I]t hasn't been until fairly recently that we've been able to inexpensively and quickly reconfigure a radio," she said. Thompson's Phase 4B project will take maximum advantage of cognitive radio technology, which can -- among other things -- determine an optimal clear frequency, mode, and path on the fly, transparently, and without human intervention.

McGwier called the computer "the tidal wave that has swept over Amateur Radio." And, he predicted, "It is going to bring us back to becoming technical innovators." He said radio amateurs "are uniquely situated to be the leading edge in radio again."

McGwier said the innovation needed in Amateur Radio will come about through what he called "Amateur Radio freedom," that encourages experimentation and thinking outside the box. "It's the ultimate democratic assignment of frequencies in the world," he said.

He painted a picture of intelligent radio technology that will operate like the human brain. "It's going to design the radio on the fly, from



Bob McGwier, N4HY, at the ARRL and TAPR DCC. [Courtesy of HamRadioNow]

scratch, without a subject-matter expert involved," he said. "The radio will be done by artificial intelligence, from beginning to end. The object becomes not the radio, but the activity it allows. "Responding to a question, McGwier conceded that today's hams may balk at this sort of paradigm shift, since it's far removed from how most Amateur Radio communication takes place today. But he said embracing smart radio technology is what will attract a younger generation of new hams. "We need to not limit what these kids can do with Amateur Radio," he maintained. "They are going to outdo us, if we only allow them. We can't limit them, because this is a fundamental paradigm shift." Predicted McGwier: "You will not recognize your world in 10 years." (Credit: [The ARRL Letter](#) and [The American Radio Relay League](#).)

Naval Academy Students Planning CubeSat with HF Uplink

Students at the US Naval Academy in Annapolis, Maryland, are planning an Amateur Radio CubeSat -- dubbed [HFSAT](#) -- that would carry an HF transponder as a primary payload as well as 2-meter APRS as a secondary mission when power is available. The 1.5 U CubeSat will have a linear uplink at 21.4 MHz and a downlink at 29.42 MHz.

"*HFSAT* is a small 1.5 U CubeSat that will demonstrate the viability of HF satellite communications as a back-up communication system using existing ubiquitous HF radios that are often a part of every amateur station," said USNA Instructor Bob Bruninga, WB4APR, who developed APRS. Bruninga said *HFSAT* would be similar to the 1990s-era RS-12/13 Russian Amateur Radio satellite.

"*HFSAT* will continue the long tradition of small amateur satellites designed by students and hams at the US Naval Academy," Bruninga told ARRL. The uplink will be at 21.4 MHz and downlink at 29.42 MHz, similar to [earlier] Mode K HF satellites. No launch has yet been identified." Bruninga said *HFSAT* would be gravity gradient-stabilized by its full-sized, 10-meter, thin-wire, half-wave dipole.

Other unique features of *HFSAT* include its APRS telemetry command-and-control capability. "For VHF the students have modified a popular Byonics.com MTT4B all-in-one APRS Tiny-Track4 module for telemetry, command, and control to fit on a single 3.4-inch square card inside the CubeSat, that they will use for this and for future CubeSats," Bruninga said. The students are working with Bill Ress, N6GHZ, on the HF transponder card, which will provide a bandwidth of 30 kHz, employing an inverting transponder to minimize Doppler. Todd Bruner, WB1HAI, will be the *HFSAT* control operator.

Bruninga said the HF transponder is a follow-on from the USNA's existing *PSAT* 10-meter PSK31 transponder, still operational. *HFSAT*'s telemetry downlink will be captured via stations in the worldwide ground-station network. The packet link is a secondary mission compared to the HF transponder on this spacecraft.

Once *HFSAT* is in space, Bruninga recommended using a vertical HF antenna, because it would match well with the antenna patterns and geometry of Low Earth Orbit (LEO) satellites. "When low on the horizon, both the satellite and the user antennas are in their main lobes, providing maximum gain at the distant horizons," Bruninga said. "At the higher elevations, the satellite is 6 dB to 10 dB closer, significantly making up for the reduced antenna pattern geometry." He said hams would be able to use "simple, manual" pass-prediction tools, much as they used the old Oscar Locator in the early years of Amateur Radio satellites.

Amateur Radio

A

Contact Sport

HOLMESBURG AMATEUR RADIO CLUB

3341 Sheffield Ave., Philadelphia, PA 19136

“Serving the Community Through Ham Radio”

November 17 Club meeting



**HOLMESBURG AMATEUR RADIO CLUB
2016 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.

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