November 2014

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

The Enigma and Other Historic Cipher Machines

November 20, 2014

The Enigma and Other Historic Cipher Machines

An **Enigma machine** was any of a family of related electro-mechanical rotor cipher machines used in the twentieth century for enciphering and deciphering secret messages. Enigma was invented by the German engineer Arthur Scherbius at the end of World War I. The exact influence of Ultra on the course of the war is debated; an oft-repeated assessment is that decryption of German ciphers advanced the end of the European war by two years. Winston Churchill told the United Kingdom's King George VI after World War II: "It was thanks to Ultra that we won the war."

(www.w1tp.com/enigma Museum)

Learn more at the November HARC meeting as Enigma expert Tom Perera, W1TP, tells us about these machines.

HARC to Apply for IRS Tax Exempt Status

The Internal Revenue Service recently introduced a new, shorter application form to help small charities apply for 501(c)(3) tax-exempt status more easily.

"This is a common-sense approach that will help reduce lengthy processing delays for small tax-exempt groups and ultimately larger organizations as well," said IRS Commissioner John Koskinen. Most small organizations, including as many as 70 percent of all applicants, qualify to use the new streamlined form. Most organizations with gross receipts of $50,000 or less and assets of $250,000 or less are eligible.

One of the primary benefits of being tax-exempt under IRC Section 501(c)(3) is the ability to accept contributions and donations that are tax-deductible to the donor. Additional benefits include, but are not limited to:

* Exemption from federal and/or state corporate income taxes
* Possible exemption from state sales and property taxes (varies by state)
* Ability to apply for grants and other public or private allocations available only to IRS-recognized, 501(c)(3) organizations
* The public legitimacy of IRS recognition
* Discounts on US Postal bulk-mail rates for over 250 identical pieces of mail and other services. (cont. pg. 3)

HARC Board of Directors

President/Treasurer - Bob Josuweit, WA3PZO
Vice President - Greg Malone, WA3GM
Secretary - Charley Johnson, K3CJ
Technical - Ron Cardullo, K3RJC
Member-at-Large - Sol Volen, N3UBY
Mike Wurgley, N3LXN
Webmaster - Rich Shivers, AB3EO
Newsletter Editor - Bob Josuweit, WA3PZO
WM3PEN @ AOL.COM
H.A.R.C. Monthly Meetings - The Board of Directors meets on the 1st Thursday @ 7:30 PM (Even 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.

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.

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

Upcoming Events

HARC Holiday Dinner
December 11th
Andy's Diner
2224 Lincoln Highway (Rt1) Trevose, PA
6:30 PM

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

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)

Tax Exempt Status (cont.)

In order to comply with IRS regulations a few changes had to be made to the Club constitution. The major changes involved adding language to the Club purpose and the dissolution of the club.

Added to the purpose of the Club: "The organization is organized exclusively for charitable, educational, and scientific purposes under Section 501(c)(3) of the Internal Revenue Code, including, for such purposes, the making of distributions to organizations that qualify as exempt organizations under Section 501(c)(3) of the Code, or corresponding section of any future federal tax code."

Upon dissolution of the organization all cash and remaining assets after payments of liability, shall be distributed to a 501(c)(3) charitable organization approved by the general membership that is within the Internal Revenue Code. No part of net income or assets of the organization shall transfer to the benefit or any officer or member.

A committee of WA3PZO, WA3GM, and K3RJC reviewed and updated the Constitution. The HARC Board will review and vote on the changes at the November Board meeting. The changes will be presented at the November Club meeting.

NE Phila Youth Run
Sunday, October 19
NE Philadelphia Airport

HARC members came out to support the Northeast Philadelphia Youth Alliance Run at the NE Philly Airport. HARC members helped provide route and safety communications in the area. This was HARC's 11th year to support the 5 mile run and 2 mile walk. The walk started at 8:15 and the run at 9:00 am. HARC members providing communication included AB3EO, N3ZZK, N3LXN, KB3UWJ, and WA3PZO. The event organizers are very appreciative of our efforts. Each year HARC is mentioned in the program booklet and receives several plugs by the public address announcer.

Sid Kalos, W3KZA, SK
1919-2014

Longtime HARC member W3KZA became a silent key on September 28. Sid served the Club in many ways including HARC Treasurer. Sid was always someone's Elmer. He would always be there to help teach someone something new. First licensed in 1946, W3KZA was active on HF and VHF until his move to Delaire Landing.

ARRL Centennial Challenge

ARRL has sponsored the Centennial Challenge during 2014. The Centennial QSO Party is made-up of two main activities: (1) W1AW operating

portable in each state, the District of Columbia and most territories; and (2) The Centennial Points Challenge which is the accumulation of points from qualifying contacts made throughout 2014. The final point levels for the QSO Party Awards have been set and both K3FI and WM3PEN will qualify for an award. K3FI will earn the First Level Award with 1500 points. WM3PEN will earn the Top Level Award with 18,842 points so far. The point levels are as follows (First level 1000, Second Level 3000, Third Level 7500 and Top Level 15000). K3FI earned points during Field Day and WM3PEN earned points primarily during the 13 Colonies Special Event. With over a month left in the Centennial Year there is still plenty of time to rack-up points. The final point totals will be figured out in January.

How does WM3PEN stand in the Centennial Challenge? (as of 11/1)

Entry class	Ranking	Total Entries
All	736	31530
DX (K)	437	15557
WAZ (5)	164	6254
State (PA)	18	597

Are knobs and buttons toast?
By Dan Romanchik, KB6NU

In a recent column on EETimes (http://www.eetimes.com/author.asp?doc_id=1324283), an old colleague of mine, Martin Rowe, says, “Knobs and buttons are slowly on their way out. Get used to it.” He’s referring to the controls on oscilloscopes, but if he were a ham, he might just as well be talking about amateur radio transceivers, too.

We already see this happening in amateur radio. FlexRadio, and a couple of other companies, already make transceivers with no front panel controls. You must have a computer to use them.

Might we even start to see this with handheld and portable equipment? For example, how much cheaper could they make a Baofeng if to use it, you had to also have an Android or iPhone app to act as the human interface?

To be honest, I haven’t really thought about this much myself. I’m enough of a dinosaur to still prefer buttons and knobs, but having to use on-screen controls certainly doesn't turn me off. Rowe claims, however, that “as the old-timers retire (or in our case as older hams become SKs), younger engineers (or young hams) will expect every user interface to function like a phone or tablet. Don’t believe me? Just wait.”

I got several interesting replies to this idea on my blog. Bill, AD8BC says, "What would be fun would be an open-source mobile radio. I picture an RF deck with a Raspberry Pi and touch screen for control, the Pi would simply tell the RF deck where to tune and handle the interface and scanning functions, it would ship with a stock app, but you could make your own. Built in support for SDR stuff, packet, APRS, remote operation…."

Most commenters, however, even the younger guys, still seem to prefer analog controls. Lucien, DH7LM, says, "I’m a newly licensed ham and I like both – experimenting with advanced computer stuff like SDRs and the great feeling a real radio provides!" Grant, KJ6ZZD, says, "Knobs perform some tasks better than a screen can. Knobs provide some tactile feedback that a screen just can’t."

So, what do you think? Are knobs and buttons toast, or do you think there's still some life left in analog controls?

When not twiddling the knobs on his HF transceiver or relatively ancient Tek 2213 analog oscilloscope, you'll find KB6NU working on updates to his "No Nonsense" study guides or blogging about amateur radio at www.kb6nu.com.

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.

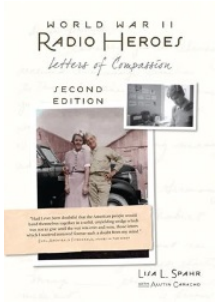
Complete rules are posted on the HARC website. Questions on the Award can be directed to HARC at WM3PEN@ARRL.NET.

Pennsylvania 67 Challenge

Congratulations to
Larry Campi, WA5TRX
For making a confirmed contact with amateur radio operators in:
Special Endorsement: HF SSB

60 PA Counties

Presented by the Holmesburg Amateur Radio Club, WM3PEN, January 24, 2012



World War II Radio Heroes
Letters of Compassion
Second Edition Lisa Spahr
List: 19.95

Just $15.00 Contact: WM3PEN@AOL.com or Bob, WA3PZO

Great gift idea for someone interested in communications or WWII.

WA3PZO Helps Document 1980 Winter Olympic Torch Relay for Lake Placid Olympic Museum

On a recent visit to Lake Placid, NY, home of the 1932 and 1980 Winter Olympics, Bob, WA3PZO met with the curator of the Lake Placid Olympic Museum. The museum has an exhibit on the Olympic Torch Run over the years. There is a video playing of ABC Sports coverage of the Opening Ceremonies and the 1980 Torch Run. WA3PZO, a member of the Torch Relay Team can be seen in the video for a brief appearance. It was the first time Bob had seen the video.

1980 Torch Run uniform and Olympic Torches

Bob will be working with the Museum on digitizing his slides from the event. Some of the slides document amateur radio's role during the event.

A Century of Amateur Radio and the ARRL

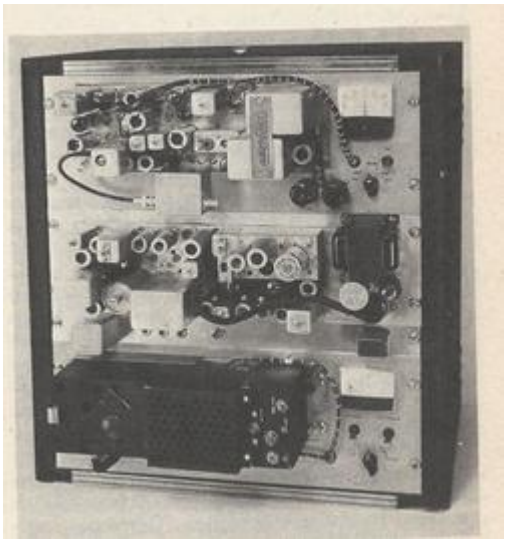
(From the ARRL Letter. By *Al Brogdon, W1AB)*

The FCC made numerous rules changes during the 1970s -- some major, and many minor. The Commission had to work hard to keep up with rapidly advancing technology as well as with call sign matters.

Major changes included relaxed logging requirements, which had always been stringent. The first rules governing repeaters were released. Novices were allowed to use VFOs, not just crystal control. The 2 meter sub-band for Technicians was expanded, allowing operation between 145 and 148 MHz. Phone allocations on the HF bands were widened.

In 1973, the FCC reduced to 1 year the time you had to have been licensed before applying for the Amateur Extra class license. As repeaters became more popular and more common, the FCC started issuing WR-prefix call signs for repeater stations (these were phased out in the 1980s). In 1976 and 1977, the FCC, in steps, began allowing Amateur Extras to apply for specific 1 × 2 call signs. The first Extras allowed to apply were those licensed the longest. This system preceded the current vanity call sign system and was purely a bonus for hams who had reached the top rung of the licensing ladder.

In 1977 the FCC dropped the mobile and portable operation ID requirements and further expanded Technician privileges on 2 meters to permit operation from 144.5 to 148 MHz. Technicians also gained privileges on the Novice sub-bands. Novices were allowed to run up to 250 W, and even higher-class licensees were limited to that power while operating in the Novice segments. As the ham radio population grew, the pool of available call signs became shallow, and the FCC started issuing 2 × 2 call signs (beginning with W) to Amateur Extra licensees.



A typical 2 meter repeater in the 1970s often employed surplus commercial repeater equipment. This one uses GE Prog Line transmitter and receiver decks. Those curious metal cylinders are vacuum tube shields. [*The Radio Amateur's Handbook*, 55th ed, 1978]

In 1978, Novice licenses became renewable, with a 5-year term. The FCC eliminated the Conditional license; those licensees became Generals. Technician licensees gained all amateur privileges above 50 MHz. Because so many CB operators were using linear amplifiers to "enhance" their 5 W signals, the FCC outlawed commercially manufactured amplifiers that could operate between 24 and 35 MHz. The FCC also dropped the requirement to obtain a new call district-appropriate call sign when moving from one district to another.

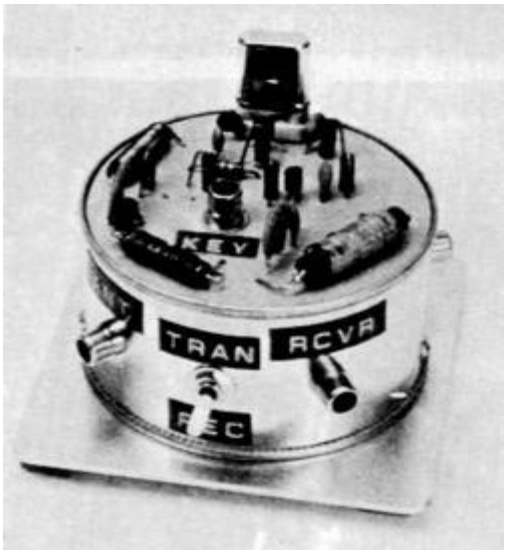
During the late 1970s, the FCC had to work hard to keep up with ham radio!

A comprehensive and fascinating article on long-delayed echoes (LDEs) appeared in the February 1970 *QST*. LDEs are signals that have been transmitted, go away somewhere, and then are heard -- at low signal levels but often with good readability -- 10 or more seconds later. They were first heard on the ham bands in 1927. An article in the May 1969 *QST* described them and asked for reports from readers who had heard them. The 1970 follow-up article summarized more than 40

reports. A May 1971 *QST* article later reported on more than 90 observed LDE events.

The effort to get more amateurs on the VHF and UHF bands continued, with *QST* publishing articles on 432 MHz transmitters, 220 MHz kilowatt amplifiers, state-of-the-art low-noise receiver preamplifiers, new propagation modes and how to use them, portable beams for 2 meter mountain-topping, and more.

The number of hams using very low power -- QRP -- also continued to grow, with equipment and portable HF antennas featured in *QST* articles, as well as reports of QRP use by hikers and mountain-climbing hams.



A May 1976 *QST* article by Doug DeMaw, W1CER, described how to build the Tuna-Tin 2 QRP transmitter for 40 meters.

Repeaters for 2 meter FM operation were becoming very popular, and their numbers were growing rapidly. *QST* described how to build repeater duplexers, control equipment, antennas, and control links, and it kept repeater control operators informed of relevant FCC rules as they were developed.

Amateur Radio satellites continued to attract more and more attention. *QST* articles provided information to encourage and help hams get up and running on the satellites. Topics covered in those many articles included how to plot satellite orbits, build beams that could be rotated in both azimuth and elevation, construct circularly polarized beams, determine when you can use the satellites for contacts over a given path, along with other tips and information. As each new OSCAR was built and launched, *QST* carried announcements and information on how to use it.

A nice article on "The $22,000,000.00 Ham Shack" appeared in the April 1970 *QST*. No, it wasn't an April Fool's article. It told of the first flight of the new Boeing 747, with WA7IBL using one of the aircraft's radios to make HF SSB contacts.

As the 1970s rolled along, many homeowners purchased hi-fi and stereo audio equipment. Most consumer electronic equipment was not built to reject interference from ham transmitters, however. Articles in *QST* during the 1970s told hams how to deal with those interference issues.

In 1970, the much-anticipated Heath SB-220 HF kilowatt linear amplifier came on the market, with a selling price of $350.

As transistors' performance continued to improve, homebrew solid-state equipment became progressively more popular. *QST* reported on many interesting projects that used transistors, including VFOs, QRP rigs, receivers and receiver preamplifiers, transmitting linear amplifiers, and accessories.

Continuing through the 1970s, *QST* articles written by Lew McCoy, W1ICP, helped Novice licensees and other new hams by describing various transmitters, amplifiers, antennas, and station accessories, as well as coaching newcomers on general radio knowledge and techniques.

The first two-way Amateur Radio laser contact (at 475 THz) took place in 1971 between WA8WEJ and W4UDS, operating inside a building of the US Air Force Academy.

Over the years, many other radio services tried to take 220 MHz away from the Amateur Service. In 1971, the Electronic Industries Association

petitioned the FCC to reallocate approximately one-half of the band to the Citizens Radio Service. The effort failed.

John Troster, W6ISQ, continued his fine humorous articles and spoofs in *QST* during the 1970s, amusing us greatly. His "fictional" tales often reminded us of real experiences we had along the same lines.

Slow-Scan TV on HF was gaining in popularity in the 1970s. [*The Radio Amateur's Handbook* 1974]

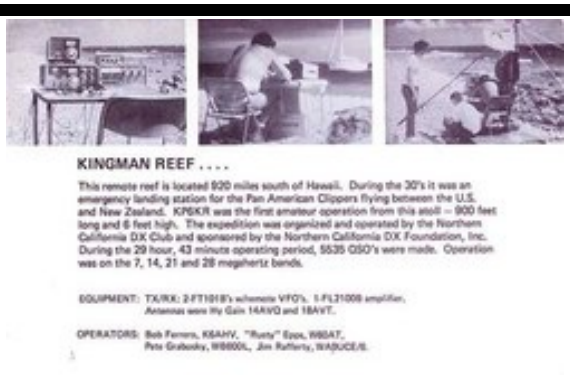
A May 1972 *QST* article introduced readers to a new device that was beginning to have a few practical applications -- the light-emitting diode (LED).

As the Apollo space missions began, W4HHK and K2RIW developed receiving systems to listen in on the 2287.5 MHz signals from the program's spacecraft, as reported in June 1972 *QST*.

During the 1970s, interest continued in electronic keyers, and many articles on the topic appeared in *QST*. New developments included automatic character and word spacing and solid-state memories for repeating often-used messages such as CQs and contest exchanges.

In late 1973, after discussions that spanned many years, the ARRL Board of Directors voted to establish the ARRL Foundation.

The log-periodic dipole array and its great utility in amateur use were described by K4EWG in the November 1973 *QST*.


KINGMAN REEF ....

This remote reef is located 920 miles south of Hawaii. During the 30's it was an emergency landing station for the Pan American Clippers flying between the U.S. and New Zealand. KP6KR was the first amateur operation from this atoll -- 900 feet long and 6 feet high. The expedition was organized and operated by the Northern California DX Club and sponsored by the Northern California DX Foundation, Inc. During the 29 hour, 43 minute operating period, 5535 QSO's were made. Operation was on the 7, 14, 21 and 28 megahertz bands.

EQUIPMENT: TX/RX: 2-FT101B's w/remote VFO's. 1-FL2100B amplifier. Antennas were Hy Gain 14AVQ and 18AVT.

OPERATORS: Bob Ferrera, K6AHV, "Rusty" Epps, W6DAT, Pete Grabosky, W6BGK, Jim Rafferty, WA6UCE/6.

The back side of the KP6KR QSL card from the 1874 DXpedition to the Pacific atoll. [Tom Roscoe, K8CX, hamgallery.com collection]

Amateur DXpeditions increased in popularity during the 1970s. These ranged from casual "holiday" operation by businessmen or tourists to stand-out expeditions, such as the KP6KR Kingman Reef operation in 1974. That adventure included a two-day search to find the island, 5535 contacts in just under 30 hours of operation, and a white-knuckle departure during gale-force winds.

QST articles in the 1970s often reported on the progress of both amateur TV (ATV) on the UHF bands and slow-scan TV (SSTV) on the HF bands, as well as showing station equipment and setups.

Radio contesting started to become more automated during the 1970s. In the February 1975 *QST*, WA4HQW presented "The Contester," a semi-automatic contest station controller that sent CW, checked dupe sheets, recorded the time, filled in the log, and kept a running contact count. One of WA4HQW's observations has been overtaken by events: "There are things that no machine can do, such as copy two or three CW signals at once, which will leave the human operator king for a long time to come."

By 1974, *QST* was publishing reports of the League's preparations -- already in progress -- for the 1979 World Administrative Radio Conference (WARC) to address the allocation of the limited radio spectrum among radio amateurs and other users. WARC-1979 had a very positive outcome for the Amateur Service.

In January 1976, *QST* expanded to an 8-1/2 × 11 format! The new size would reduce the printing cost by $100,000 a year. The old, smaller format had remained in place for years, because it was the size of the press the local printer had in those early days.

Following the fall of South Vietnam, thousands of refugees from that country poured into the US. The State Department provided housing in unused military bases, but there was a need for communication to help reunite families. US State Department employee Jim Bullington, K4LSD, saw that ham radio would be ideal for the task and proposed the idea to the ARRL Board of Directors (which happened to be in session at the time). The Board supported the idea, and hams entered a new area of public service that provided humanitarian aid -- again showing the public what our operators could do. See "Operation Vietnamese Refugee" by George Hart, W1NJM, in the February 1976 *QST* for a full description of the effort.

Art Smith, W6INI, discusses refugee message handling with interpreter Sharon Truong at the Camp Pendleton Amateur Radio station. [WB6AKR photo from Feb 1976 *QST*]

By the mid-1970s, Citizens Band radio had become hugely popular, which led to a major crime wave of mobile CB radio thefts. Criminals typically are not noted for their superior intellect, so occasionally 2 meter ham gear was purloined and even used, with the thief believing he was on CB. In some cases, hams were able to identify the pirate for the police to investigate.

The League began encouraging clubs to recruit CB operators into Amateur Radio. Many CB operators rose to the challenge, as they came up against the limitations of CB operation. As a result, the number of new licensees rose sharply.

QST published a series of articles called "Learning to Work with Integrated Circuits," to help hams keep up with that new technology.

The state of the art in power transistors continued to improve, and *QST* articles appeared, detailing the construction of solid-state kilowatt amplifiers for the ham.

During the latter half of the 1970s, articles and editorials in *QST* reported on the League's work in preparation for defending our amateur allocations at World Administrative Radio Conference 1979 (WARC-79).

Hidden transmitter hunts, also known as radio foxhunting, had been very popular in Europe for some time, and the sport started catching on in the US, mostly involving the use of 2 meter FM.

The September 1976 issue of QST announced that Al, K2UYH, had succeeded at Worked All Continents (WAC) on 432 MHz -- via moonbounce!

Amateur Radio was well represented at the 1976 grand opening of the Smithsonian National Air and Space Museum. A backup OSCAR 1 satellite -- the world's first non-government satellite -- was on display, and a battery-powered station was set up to make contacts via OSCARs 6 and 7.

After 12 years in pursuit of 2 meter Worked All States (WAS) using meteor scatter, auroral, tropospheric, and moonbounce propagation, K0MQS finally turned the trick in early 1976! Showing that there are always new adventures in ham radio, W9JA in 1976 earned a 5-band WAS for working *only* hams with 1 × 2 call signs!

By 1977, plans had begun for the Phase III Amateur Radio satellite, which would be far

more sophisticated and capable than any AMSAT "birds" to date.

Articles began appearing in *QST* in the late 1970s that reported on hams building alternative power systems using solar and wind power.

During the late 1970s, more and more 2 meter repeaters were put on the air, mostly by ham clubs. Sorting out new rules and regulations for them turned into a major undertaking for the FCC, including dealing with phone patches and autopatches via repeaters. *QST* responded with articles and notes to report the rules changes.

On March 20, 1978, the FCC banned 10 meter amplifiers, because of the large-scale misuse of them on Citizens Band. This happened, despite the efforts of ARRL and many individual hams and ham clubs to leave the hams alone and to go after errant CBers instead. A guest editorial by Dave Bell, W6AQ, in the May 1978 *QST* is a splendid

fable mirroring the FCC decision.

By the late 1970s, attention began to be focused on the potential dangers to hams of RF radiation.

A *QST* article in September 1978 described the experiences of Naomi Uemura, JG1QFW, as the first solo explorer to reach the North Pole. Hams set up an emergency circuit for his support, and tracked his dog sledge via reports relayed through the *Nimbus 6* satellite.

During the late 1970s, considerable attention was given to the new concept of narrowband voice modulation (NBVM). The new technique of frequency-compressed SSB was reported in the December 1977 *QST*, and the editorial in the September 1978 issue announced that W1AW would soon begin test transmissions, together with instructions as to how the signal can be tuned in (with reduced intelligibility) using normal SSB receivers. NBVM never caught on, however.

Two new annual contests began in 1978 -- the ARRL EME Competition and the ARRL UHF Contest. An article in October 1978 *QST* reported on a newly discovered mode of VHF propagation -- Equatorial FAI (transequatorial propagation enhanced by magnetic-field-aligned irregularities).

When the 1979 World Administrative Radio Conference (WARC-79) concluded, Amateur Radio had gained new bands at 10, 18, and 24 MHz. Those bands would become available to US hams later, after the FCC had done its work to put them in place. The term "WARC bands" for 30, 17, and 12 meters persists to this day. Also in 1979, the FCC issued a *Notice of Inquiry* on the subject of radio frequency interference (RFI). The great expansion of consumer electronic gear that was susceptible to RFI had led an increase in complaints of interference from hams, largely through no fault of the hams or their equipment.

The 1979 World Administrative Radio Conference (WARC-79) in Geneva remains one of the most significant conferences in International Telecommunication Union (ITU) history. The ground-breaking decisions at WARC-79 remain important to this day. [Photo courtesy of the ITU]

In the March 1980 issue of *QST*, VE2AEJ's article, "Observance of Long-Delayed Echoes on 28 MHz" concluded that long-delayed echoes are a result of transmitted signals getting into a natural duct, probably between the E and F layers of the ionosphere, and circling the globe many

times before re-emerging. After the explanation of LDEs was set forth, scientists asked for hams to help with reports of their LDE experiences, to better understand the details of the propagation.

As *QST* articles in the 1980s reflected, the main topics of interest to the amateur community were new antenna ideas -- from simple and inexpensive to large, complex, and *very* expensive -- the use of new solid state technology in the ham shack, VHF/UHF/microwave equipment and activities, 2 meter FM and repeaters, DXing, contesting, and moonbounce communication.

When microprocessors and microcomputers emerged in the early 1980s, hams began putting them to work. Later, stand alone computers began to be integrated into the stations of hams who were pushing the state of the art. Another area where digital technology helped amateurs was the construction of frequency synthesizers.

In the late 1970s, the Soviet Union's "woodpecker" over-the-horizon (ionospheric) radar had started its strong and annoying *peck-peck-peck* that slowly swept through the HF amateur bands as well as the allocations of other radio services.

In 1980 the ARRL Board of Directors established a Long-Range Planning Committee, to look far into the future and plan for Amateur Radio to remain strong enough to weather the efforts of other radio services to chip away at our frequency allocations. The LRPC was also tasked to find ways to strengthen the cooperation between Amateur Radio and governmental agencies at all levels.

The Amateur Radio space effort suffered a huge disappointment in May 1980, when the first attempt to launch a Phase 3 (OSCAR 9) satellite was unsuccessful. The *Ariane* launch vehicle failed right after liftoff, and Phase 3 landed in the Atlantic Ocean. The AMSAT-OSCAR community regrouped and went to work building another Phase 3 unit. The ARRL Foundation launched a fund-raising drive for building the new Phase 3 satellite that was highly successful.

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.

13 Colonies Event Update

The 2014 13 Colonies Special Event is starting to wind down. At the end of October WM3PEN received 566 QSL cards and 1539 EQSLs. As time permits qsl records will be checked to see if we can apply for additional levels of the US County Hunters award and the CQ Worked All Prefix (WPX) award.

"Don'ts"

An amateur wireless operator's guide cut from a magazine and found in a stack of papers, C. 1925
From The Telegraph Office Web Page by Neal McEwen, K5RW, Courtesy of Jacque Gosselin, N3ZEL

Don't try to transmit without a license.
Don't connect the lightning-switch to an inside ground.
Don't forget that tube sets are far more efficient than crystal sets.
Don't use iron for an aerial.
Don't handle the crystals of your set.
Don't forget to keep the aerial & lead-in insulated from all other objects.
Don't try to get a fine adjustment while touching the detector with bare hands.
Don't expect to get good results with an aerial less than 100 feet long or low down among other buildings.
Don't fail to make good connections.
Don't run your aerial parallel with electrical wires, elevated tracks or steel bridges.
Don't forget to scrape off the insulation and have wires bright before making connections.
Don't forget that a good ground is necessary.
Don't try to use your instruments just before, just after, or during a thunder storm.

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HOLMESBURG AMATEUR RADIO CLUB
2014 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. Membership year begins May 1.

NAME _____ CALL_____

ADDRESS _____

City, State, Zip _____

Telephone # _____ Would you be willing to receive the newsletter via email? ___
E-mail _____

Are you an ARRL member? YES NO Membership Expires (mm/yy) _____