August 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

Field Day/13 Colonies Report

August HARC Picnic
August 24, 2014

HR 4969 – The Amateur Radio Parity Act of 2014

A Commonsense Solution to Provide Equality in Land Use Regulation

On June 25th, Representative Adam Kinzinger (R-IL -16th), with Representative Joe Courtney (DCT-02) as cosponsor, introduced in the 113th US Congress "***The Amateur Radio Parity Act of 2014***". If passed by Congress and signed into law, Representative Kinzinger's bill would require the FCC, within 120 days of the Bill's enactment, to amend the Part 97 Amateur Service rules to apply its Amateur Radio limited preemption policy to all types of land use regulations including homeowners' association regulations and deed restrictions, often referred to as "covenants, conditions, and restrictions" (CC&Rs). Presently, the policy only applies to state and local zoning laws and ordinances.

HR 4969 is the ARRL's plan to secure reasonable accommodation for the thousands of licensed Amateur Radio operators who are denied effective antennas at their residences due to private land use regulations that are either part of their property deeds of purchase or are imposed by their local homeowner's associations. CC&Rs typically preclude licensed Amateurs residing in deed-restricted communities from conducting public service or emergency preparedness communications.

The number of communities that have such restrictions is increasing at exponential rates. In a 2012 report to Congress, mandated by the "***Middle Class Tax Relief and Job Creation Act of 2012"***, the FCC concluded that "should Congress see fit to enact a statutory directive mandating the expansion of its limited preemption policy [PRB-1] to include more than state and local regulations, it would expeditiously act to fulfill its obligation…". ARRL Regulatory Information Manager Dan Henderson, N1ND, says, "The purpose of HR 4969 is to provide the FCC with that directive." Bipartisan support for HR 4969 is the key to its success.

How can I help to get HR 4969 passed?-The first step in this process is to garner support among members of the US House of Representatives. Each ARRL member needs to contact their member of the US House to state their support for HR 4969 and to ask their Representative to please sign on as a co-sponsor for the bill. If you have an existing relationship with your Congressperson, try to arrange a meeting with them (usually at their district offices) to express your support for HR 4969. For more information on HR 4969 please visit: http://www.arrl.org/hr-4969 (Info from the July ARRL Legislative Update.)

HARC Board of Directors

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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 (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.

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 Picnic – August 24

Shortwave Listening in the 21st Century – September 18th

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

WELCOME NEW MEMBERS

Rick, ND3B

Robert, AB3UU

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)

Philadelphia area Ham Radio operators celebrated July 4th holiday with 13 Colonies Special Event

Amateur radio stations operating from the 13 original U.S. colonies were joined by members of several Philadelphia area amateur radio clubs to celebrate Independence Day from the city where independence was declared, Philadelphia, PA.

The six day event allowed amateur radio operators around the world to learn about the original 13 colonies and the city where independence began. This was the fourth year members of the Holmesburg Amateur Radio Club (HARC) participated. Also participating were members of the Philmont Mobile, Drexel University, and University of Pennsylvania Amateur Radio Clubs along with the Philadelphia Digital Radio Association.

The theme for the 2014 event was Colonial Currency. Each of the original 13 colonies were represented by a special event amateur radio station, K2A-K2M. The Philadelphia group, used WM3PEN, and offered a special QSL card featuring the First Bank of the United States. W3FT was on from Baltimore, MD celebrating the 200th anniversary of the writing of the Star Spangled Banner. In all you could collect 15 QSL cards during the 6 day event and earn a nice certificate.

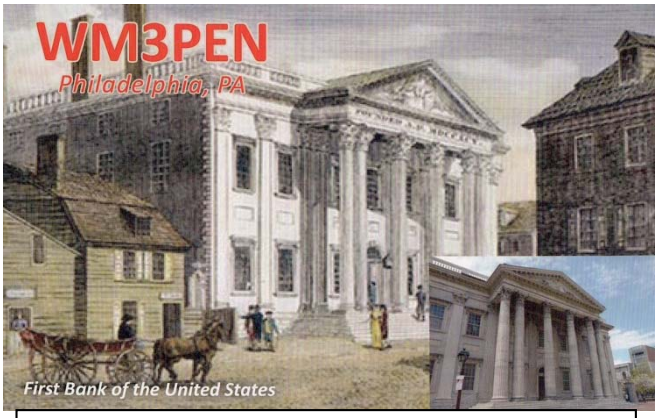
There were several new aspects to this year's event. QRP or low power stations were operating from each of the 13 Colonies. Members of the Philadelphia Digital Radio Association, put WM3PEN on D-STAR for the first time.

Have you been working W1AW portable?

W1AW will be on the air from every state and most territories, and it will be easy to work WAS working only W1AW portable operations. 464 Pennsylvania hams have uploaded their logs to LOTW. WA3GM is in the top 45 for working W1AW and WA3PZO is in the top 110.WM3PEN is in the top 175.Complete info on this special event can be found at:

http://www.arrl.org/centennial-qso-party .

One of the side benefits of operating the special event station for the 13 Colonies was that WM3PEN is now 6th in Pennsylvania for overall Centennial Challenge points; 186 out of 13,747 in the U.S. and 365 out of 27, 605 in the world. WM3PEN is worth 2 points in the Challenge. (7/27/14)

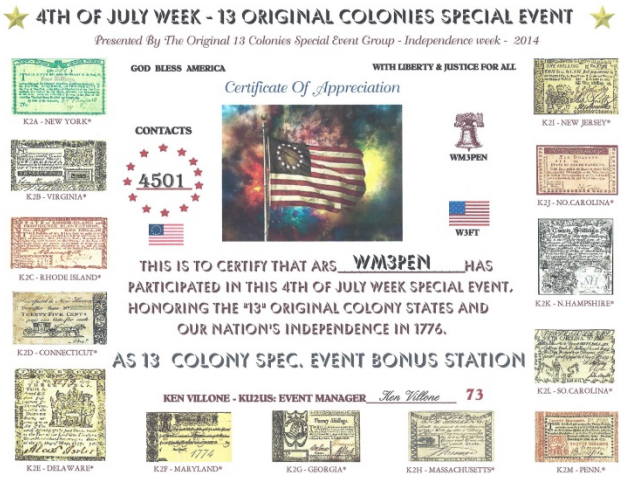


13 Colony Events Stats
Total QSOs – 108,858 (+27, 717- 2013)
Total WM3PEN QSOs 4501 (+1185 – 2013)
Worked 49 States (missed Wyoming)
54 Countries - 1004 Counties - 633 Prefixes
As of July 30, 2014 the following confirmations have been received
488+ QSL cards - 1301 EQSLs – 1855 LOTW
2014 Participants – HF Ops included WA3GM, WA3PZO, WU3I, WA3FRP, W3WHK, AB3EO, KC3JV, KB3WLN, KB3BUT. DSTAR ops were WA3BXH, WA3QVU, NS3K, KC3BRA, N3FKE

STAMPS FOR THE WOUNDED

HARC put out a call on the WM3PEN QRZ.com page asking those sending qsl cards to include stamps that we could pass onto the Stamps For the Wounded program. Stamps for the Wounded serves thousands of in- and outpatients through clubs and occupational therapy programs in veterans hospitals and convalescent centers nationwide.

The Lions Club has received letters over the years from veterans and hospital officials attesting to the therapeutic impact of the hobby on wounded veterans. "Stamps help veterans occupy their time productively," he said, "and help to develop goals that keep up interest in the hobby and in life itself." ***Stamps for the Wounded,*** founded in 1942, accepts any U.S. or foreign stamps that are not torn or damaged. Many responded to the request. In fact many included extra stamps in their envelopes. Some indicated they served in the military. We thank all who participated. It's just a small way we can give back to the troops through the 13 Colonies Special Event.

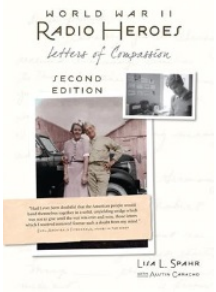


WM3PEN was awarded the top certificate for participating as the Bonus Station for the 13 Colonies event. The certificate below was earned for working 12 Colony Stations as well as W3FT.

13 Colonies QSL Cards from Delaware, Maryland, and North Carolina.

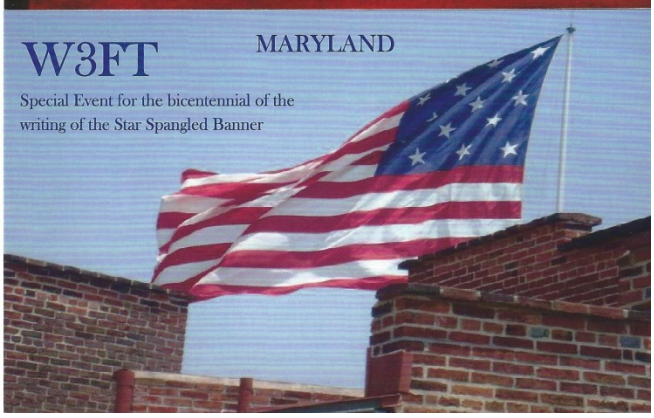
QSL Card Party

WM3PEN ops and HARC members gathered in July to answer about 400 QSL card requests from the 13 Colonies operation. Those participating included N3UBY, K3CJ, N3TAJ, AB3EO, WA3QVU, KC3JV, N3LXN, WA3GM, WU3I, KB3UWJ, W3WHK, and WA3PZO



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



13 Colonies qsl cards from Georgia, Pennsylvania, and the other bonus station in Baltimore, W3FT.

3 Watts to Philly!

Three watts and a dipole make for challenging QRP especially when you're rock bound on 7030 but I finally did it! I actually had a whole QSO with Saul running a special event 13 Colonies station WM3PEN from Philadelphia PA where American independence was declared.

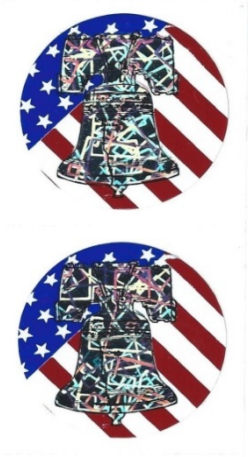
How cool is that? And happy Independence Day to our American cousins.

Saul was running an old IC-730 (which was one of my first rigs way back when) and I was running my CRK-10A CW transceiver.

Saul, BTW, is a pretty good operator. Due to QRM which I couldn't move away from due to being crystal controlled signals were okay but QRM was louder. We started the QQO with neither of us getting the other guy's callsign straight and I missed Saul's name the first time around. But like I said, Saul seems to be a pretty good op and we pieced our information together. I've been running CW for years in contests and I can copy pretty well but I can't send with a darn anymore. You see when contesting we use the software logging program to send the reports by pushing a button. I'm real good at button pushing but not so good with a set of paddles. Thus the emphasis on ragchewing with the QRP rig to get my sending back. Thanks Saul for putting up with my bad fist. It will get better and happy 4th of July OM.

http://ve3hg.wordpress.com/2014/07/02/3-watts-of-joy/

HARC Picnic – August 24th
Pennypack Park
Rhawn Street Entrance
11 am - ?
Family invited
RSVP: WM3PEN@AOL.COM



Liberty Bell Stickers Donated

Each year a little surprise comes our way. This year we heard from Ron, K9RON. Ron manufactures custom holographic stickers. Ron emailed WM3PEN during the event. He said in part; "Thank you all for doing such a great job on this event every year. This was the very first year that I have been able to participate in your event and I hope I can do it again next year." He got a clean sweep. Ron donated 4000 stickers to WM3PEN. In appreciation for the donation Bob, WA3PZO, sent Ron a thank you letter along with a complete set of WM3PEN QSL cards.

A FUN EVENT

WM3PEN received numerous comments about how much fun the event was. Here is one posting from N0UJJ on his experience.

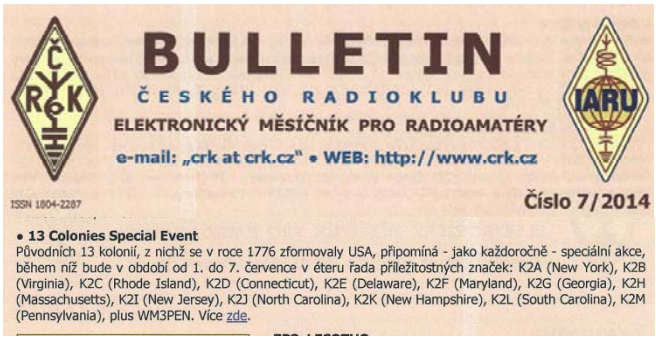
This special event starts on July 1st and ends on July 6th and I totally forgot about it until the last day. Last year I accomplished a clean sweep and the year before only missed one station so when I realized I missed the first five days wasn't sure about a possible clean sweep. The weather up here was hot and muggy so at least time spent in the basement would be a relief and I wouldn't feel like I was neglecting any chores. I did accomplish a few outside activities between contacts on the radio. Conditions seemed good and all bands had some activity so I started on 10m and watched the spotting networks for the K2A-M stations being spotted. Turns out the most contacts for me were on 20m but had several on 10 and 15m too.
About supper time I had most stations for a clean sweep including the WM3PEN and W3FT station which both had excellent signals in Minnesota. Fact is most of the stations were loud .After supper I heard one of the last two needed- K2A from New York but he was running a little different than normal. He would ask for stations to call and make a list then tell everyone to stop and ask for the copied stations He called back one at a time. Ate up a lot of time but- hey- He obviously felt more comfortable with this than by the numbers or running split. Unfortunately for me- this meant a very difficult time getting thru--eventually i gave up when I saw K2B spotted on 20m too. His signal was not a strong and was mostly looking for DX! Bummer! I really needed to finish a few chores so decided to throw in the towel although I still had a few hours to try. Figured I did OK with 11 contacts plus the two extra stations but no clean sweep. I'll still send away for a certificate. This is a very fun event and I applaud all the operators who devote so much time to make it happen!!
Nice looking certificates too!!
73---Tim

DSTAR – First Year

Even though things weren't finalized until June, and had limited publicity, we were pleased with the results. We had 5 operators from the Philadelphia Digital Radio Association operating from 7 – 11 PM all nights. The local K3PDR repeater was connected to Reflector 63D in Pennsylvania. The repeater lost internet connectivity during a thunderstorm, but the group recovered by switching to another DSTAR repeater in the area. Our goal was to give people a chance to participate who did not have hf capability. There were 95 contacts involving 25 states, 4 countries or 4 continents. We introduced many people to the 13 Colonies event. We introduced many on how to qsl. Many were excited that we brought this popular event to DSTAR. We were surprised as to how many people had been working the 13 colonies on hf and wanted to add a DSTAR contact to the log.

International Press

Word of the 13 Colonies Special Event spread around the world. Here's a sample from a bulletin in the Czech Republic.



BULLETIN

ČESKÉHO RADIOKLUBU

ELEKTRONICKÝ MĚSÍČNÍK PRO RADIOAMATÉRY

e-mail: „crk at crk.cz" • WEB: http://www.crk.cz

ISSN 1804-2287

Číslo 7/2014

• 13 Colonies Special Event

Původních 13 kolonií, z nichž se v roce 1776 zformovaly USA, připomíná - jako každoročně - speciální akce, během níž bude v období od 1. do 7. července v éteru řada příležitostných značek: K2A (New York), K2B (Virginia), K2C (Rhode Island), K2D (Connecticut), K2E (Delaware), K2F (Maryland), K2G (Georgia), K2H (Massachusetts), K2I (New Jersey), K2J (North Carolina), K2K (New Hampshire), K2L (South Carolina), K2M (Pennsylvania), plus WM3PEN. Více zde.

Looking Forward to 2015

Plans are already being made for the 2015 – 13 Colonies Special Event. In the Philadelphia area this has grown into one of the largest multi-club member events.

The 2015 Certificate will feature Founders and Patriots of the Republic.

Ideas are being gathered for the 2015 WM3PEN special qsl card. If you have one contact WA3PZO.

The DSTAR activity was a pilot this year. We're hoping the event organizers allow us to continue with this new mode. We have also asked about using IRLP, Echolink, Fusion, and WIRES since they all involve internet connectivity similar to DSTAR.
We're also looking at expanding our VHF/UHF simplex presence.

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.

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.

Field Day - 2014

Part of the early Field Day setup crowd at K3FI. Pictured AB3EO, KC3JV, KB3AKK, NY3Z, and N3ZZK. N3LZN is behind the camera. Results 219 cw and 165 phone qsos. 2442 points+ 850 bonus points.

Feature: A Century of Amateur Radio and the ARRL

At the end of World War II, US soldiers and sailors were deployed all over the world, as were the troops of other nations. Among them were radio amateurs, itching to get back on the air. At their military radio stations, they could hear hams from countries around the world, as those governments allowed them back on the air again.

But US servicemen and servicewomen in other countries faced a problem. To get on the legally was a bureaucratic nightmare that involved both US military officialdom and the government of the host country. Many hams solved the problem simply by going on the air.

In the late 1940s *QST* carried a number of articles written by those overseas hams. In many cases, the hams were enlisted men, and they might have to go through one or two or three echelons of command to get military permission to operate. But once they got that permission, they usually had high-power transmitters and good antennas, and they made themselves heard in the US and around the world. Yes, ham radio came back with a bang!

NEW! BC-348 COMMUNICATIONS RECEIVER $69.50

It's the best surplus communications receiver value in the world, in our opinion, and you may never have another opportunity to get a brand new BC-348 at this extremely low price. Guaranteed absolutely new and unused, they are shipped you in the original, unopened, wood cases in which the AAF received them. Complete with built-in dynamotor, crystal filter, full set of tubes, and detailed technical manual . . . at the low price of only $69.50.

DON'T WAIT—ORDER YOUR BC-348 TODAY!

Shpg. wt. 61 lbs.; size, packed 3 cu. ft.

Kit for conversion to 110 volt a.c. operation, with full instructions $6.50

Transformer for 220 volt stepdown to 110 volts, 60 cycles $6.50

The BC-348 military receiver was a popular surplus item among hams. This ad appeared in the November 1947 *QST*.

Meanwhile, back in the US, as the HF ham bands were reopened, hams began getting back on the air. The old faithful brands of ham equipment reappeared in catalogs and stores -- now much improved and with better operating characteristics and circuitry, including built-in VFOs, something not common in the 1930s.

In addition to the well-known manufacturers shifting their production lines from military equipment back to ham gear, a large number of smaller, new companies were formed to build ham equipment. These new companies mostly built transmitters, which could be put into production quickly and built at low cost, using military surplus parts. In many cases, hams could buy equipment that had been assembled and tested, or -- for considerably less money -- buy a kit of parts and put the gear together themselves. This started the trend for a growing percentage of hams to buy commercial HF transmitters, in kit form or ready-made, rather than building them from scratch, as most hams did in the 1930s.

Many hams bought military surplus transmitters, either to cannibalize for parts or to modify for ham band use. Many military surplus HF receivers could be used with few or no modifications.

As a result of new technology, as well as the availability of inexpensive military surplus equipment, the 1940s and 1950s became high-rolling times for amateurs. It was possible for hams licensed before the war as and newly licensed hams to get on the air with pretty good equipment at low cost.

Then, in the 1950s, new FCC rules gave Amateur Radio a shot in the arm by bringing thousands of ham wannabes to the FCC examination table and then on the air.

Feature: A Century of Amateur Radio and the ARRL

I've always enjoyed reading about the history of Amateur Radio, ever since I was first licensed as a Novice in 1952. Up to this point in this series, I've recounted events I'd only read or heard about from the old timers of my youth. From now on, I'll be reporting about the exciting times I lived through as a young ham and, later, as an old timer.

During World War II, manufacturing processes were developed to inexpensively manufacture flexible coaxial cable. Thousands of miles of coaxial cable showed up on the military surplus market after the war, and hams fell into the then-new habit of using coax to feed their antennas. With the advent of TV, inexpensive 300 W "twin lead" became common, and hams also used that for feed line. But TV's arrival certainly had a darker side for Amateur Radio -- television interference (TVI)!

WM3PEN

Was first used as a special event call for the 1976 ARRL Atlantic Division Convention in Philadelphia.

An example of TVI on VHF channel 2. [*The Radio Amateur's Handbook* - 1972]

Much early TV broadcasting was on the lower VHF channels -- low enough in frequency to be affected by harmonics (and other radiation) from HF ham transmitters, in addition to fundamental overload of the TV's front end by a strong ham signal. The 15 meter amateur band opened in May 1952, and some early TV receivers used a *21 MHz* IF!

Although most TVI problems were a result of poor interference rejection of the TV receivers, all the neighbor knew was that we hams were ruining his newfound, precious entertainment medium, for which he had paid big bucks.

Phil Rand, W1DBM, worked with the ARRL to develop TVI-reduction techniques and methods, and he authored many *QST* articles on the subject during the 1950s. As part of the League's efforts to help hams reduce TVI, ARRL staff member Lew McCoy, W1ICP, took his "TVI show" on the road to ham clubs and community meetings around the country, explaining and demonstrating the problem and showing how hams could reduce their neighbors' -- and perhaps their own -- TVI. It was a long time before this problem was under control, but the League's efforts were a major factor in turning the tide.

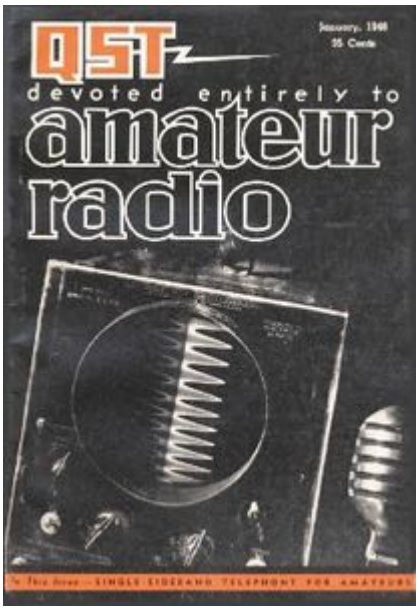
What is this thing called "*single sideband?*"

A Century of Amateur Radio and the ARRL

You may have read about the dispute starting in 1919 and running well into the 1920s, about spark versus CW on the amateur bands. Although CW

was easily proven to be better than spark, some real diehard hams held down the spark camp. Before the inevitable changeover, many an ugly insult was hurled back and forth between those two opposing camps.

A similar situation developed when single sideband started pushing aside good ol' AM phone, with its double sideband plus carrier. It was a long time before most of the intransigent AMers gave up and went to SSB. Before reaching Amateur Radio, single sideband had been used successfully in commercial transoceanic telephony circuits as early as 1927. But, it proved both difficult and expensive to build transmitting equipment using the components and techniques available at the time. In Amateur Radio, the number of hams prior to World War II was small enough to be accommodated within our frequency allocations, so there was little interest in SSB and its narrower bandwidth; they didn't need it.



Advances in radio technology during WW II yielded two important improvements that enabled post-war hams to get on SSB fairly easily and at reasonable cost: Stable VFOs and mechanical filters. A small number of hams started building SSB exciters. Many of them didn't convert their amplifiers from their former Class C function to a linear class of operation, however, so they made merry with 15 or 20 W, showing the AM operators what SSB could do, even with low power.

The cover of *QST* for January 1948 showed an oscilloscope presentation of SSB at work, with the editorial and three articles in that issue introducing "s.s.s.c." (single sideband, suppressed carrier) to the amateur community. And then, the problems started.

Most SSB operators tried friendly persuasion on their AM ham brethren, as they demonstrated the advantages of SSB. Many of these discussions became heated, however, often escalating to intentional interference wars. It was not pretty, and it was a downright embarrassment to the ham community.

Most phone operators eventually came to realize, however, that SSB was truly better then AM phone, and they migrated to the new communication mode. To this day, though, many AM proponents pride themselves on their excellent on-the-air signals. Some are pursuing nostalgia; others enjoy the engineering challenge of tweaking older gear to obtain the best-sounding full-carrier AM signals.

Soon after SSB was introduced to Amateur Radio, transmitter kits became available from manufacturers, notably from Heathkit, which many of us remember fondly. Manufacturers also started offering ready-made SSB transmitters, as well as receivers designed for good SSB reception. Throughout this changeover period, the ARRL, via many articles in *QST*, encouraged hams to use SSB.

Next week, we'll continue our look at some of the events of the SSB-changeover years. -- *Al Brogdon, W1AB*

A Century of Amateur Radio and the ARRL

Continuing our look at amateur SSB during its early years, there was one major human obstacle: Teaching phone operators how to operate their receivers for SSB reception. For AM reception, operators were in the habit of setting RF gain to maximum and adjusted the audio gain to control the speaker level. It was difficult to convince operators that, for SSB reception, they needed to turn up the audio gain and back off the RF gain, so the incoming SSB signal level would be at the level the receiver needed for the BFO to insert a

"carrier" signal. Operators soon learned how to tune in SSB signals.

Also, back in those days of analog frequency control, receiver frequency drift was a problem, and the frequency (or the BFO frequency) would have to be tweaked occasionally to keep the SSB signal properly tuned. That problem disappeared, as the oscillators in newer receivers became more stable.

Gen Curtis LeMay, W6EZV (ex-K3JUY, K4RFA, and K0GRL).

In July 1948, *QST* began publishing the monthly column, "On the Air with Single Sideband," by By Goodman, W1DX, which continued until March 1954. By the early 1950s, some AM operators still looked at "that Donald Duck talk" with disdain, but most hams realized the value of SSB, and the changeover to SSB proceeded. By April 1953, there were at least 300 active SSB stations in the US. The first SSB DXCC was awarded in 1955, and the first WAS and WAC awards were made in 1956.

One very interesting SSB-related happening took place 1956. Air Force General Curtis LeMay had been assigned in 1948 to head the Strategic Air Command in. LeMay was well known on the ham bands as Curt, W6EZV. By virtue of SAC's mission, extremely reliable, long-haul communication was necessary. Separate radio operators were being eliminated from bomber crews, and the first thought was that SAC would communicate using HF AM radios. Because of his Amateur Radio background, LeMay had become aware of the value of SSB. So, he had Amateur Radio SSB gear installed in a SAC test aircraft that made two flights from SAC HQ in Offutt AFB, Nebraska -- one to Greenland and one to Okinawa -- while making SSB contacts all along the way on the ham bands! In addition to LeMay as an operator, two civilian operators were on board -- Art Collins, W0CXX (Collins Radio), and Leo I. Myerson, W0GFQ (World Radio Labs). A lot of hams around the world received treasured QSL cards from contacts made with that rare aeronautical mobile.

Soon thereafter, SAC announced its decision to install HF SSB equipment on its bombers and other aircraft. As you can see, Amateur Radio lent a helping hand to SAC and our nation's defense posture, back in the day when the Cold War was getting *very* chilly.

Next week we'll leave early SSB and move on to another subject.

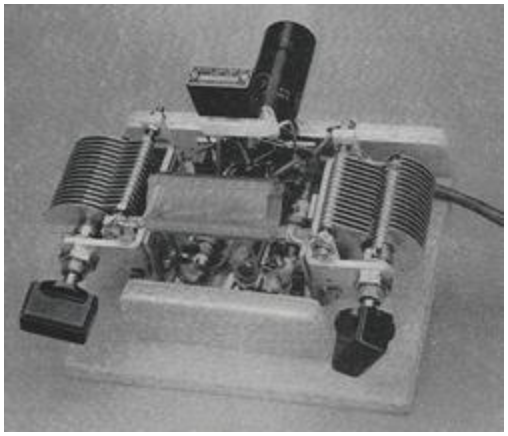
A Century of Amateur Radio and the ARRL

For many years, there had been talk about creating an entry-level ham license, first between the ARRL and the FCC, and later within the amateur community. Many who wanted to become hams viewed the 13 WPM Morse code test as an insurmountable obstacle. After much deliberation, the FCC decided to create a new "Novice" license class.The Commission began issuing Novice tickets on July 1, 1951.

In those early years, Novice licensees were allowed to operate CW on sub-bands in 80, 11 (yes, 11!), and 2 meters, and AM voice on a segment of 2 meters. Novices were restricted to crystal-controlled operation at an input power of 75 W.

Novice applicants had to pass a 5 WPM code test -- both sending and receiving. At first, the receiving test was made up of only 5-character words, making it an ever easier test. Early examinations consisted of 25 multiple-choice questions; the FCC would mail the test materials in a sealed envelope, and a local General or higher

class licensee would administer the written and code exams to the applicant.



A lot of early Novices built their own gear. The 1952 edition of *The ARRL Handbook* included instructions on how to build this one-tube, crystal-controlled transmitter for the Novice.

The original Novice license had a 1-year, nonrenewable term, since it was anticipated that Novices could get their code speed up to 13 WPM and acquire the technical knowledge required to pass the General exam within that period. Earlier Novice call signs included an "N" after the W or K prefix. Upgrading to General often was referred to as "dropping the N." Later Novice designators included a "V" after the prefix, which became an "A" after the holder upgraded. The FCC eventually did away with special Novice call signs altogether.

One amusing aspect of that early Novice 80 meter operation: World War II crystals were abundant and inexpensive. Wartime military operation had been channelized, mostly using crystal control, and one surplus crystal frequency fell within the 80 meter Novice band -- 3735 kHz. As you tuned across the 80 meter Novice band back then, it sounded like a full-blown DX pileup, 24 hours a day, when you reached 3735 kHz (known in that era as "kc").

In later years Novice licenses were issued for 2-year non-renewable terms, and later still for 5-year renewable terms. More questions were added to the written exam. Other sub-bands were opened for Novices on 40 and 15 meters, 2 meter Novice operation was eliminated, and 11 meters was turned over to the Citizens Band. The FCC eventually allowed Novices to use VFOs.

On April 15, 2000, the FCC stopped issuing the Novice license. The Novice era had come to a close. A small number of Novices remain, but most upgraded long ago.

The aim of the Novice license had been accomplished: Opening access for more people to become part of the Amateur Radio community.

The Technician ticket arrives. -- *Al Brogdon, W1AB*

A VHF-and-above ham license had been discussed and debated for years. When the FCC changed the Amateur Radio license structure on July 1, 1951, it established the Technician class license. It required passing a Morse code test of 5 WPM; the written exam was the same as the General class test.

The purpose of the Technician license was to allow electronics-minded people to get on the air easily to experiment on 220 MHz and higher frequencies, at a time when major advances were taking place on those amateur bands. As it turned out, the number of experimenters in the Technician ranks was fairly small; most Technician licensees wanted to be communicators. The FCC responded to this fact by progressively granting additional operating privileges to Techs.

In 1955, Technicians got privileges on 6 meters; in 1959, they obtained privileges on 145 to 147 MHz; in 1972, 145 to 148 MHz; in 1978, *all* privileges above 50 MHz, and in 1987, a small subband for 10 meter SSB. In 2000, Technicians who had passed a 5 WPM code test were allowed to operate CW on the Novice segments of 80, 40, and 15 meters, and to use all modes on 10 meters.

Experimentation and advances in the state of the Amateur Radio art on VHF-and-above remained, for the most part, the domain of higher-class licensees, although a fair percentage of Technicians contributed too.

As communicators, Technician licensees have proven to be a great asset to Amateur Radio during disasters and emergencies, for which the

ARRL Life Member Jim Pickett, K5LAD, got his Technician ticket not long after his Novice, holding both licenses simultaneously. The FCC cancelled his Tech license after he upgraded to General. Some Novices who had trouble passing the 13 WPM Morse test got Technician licenses to "hold" their call signs beyond the 1-year Novice term. [From K5LAD - 50+ Years of Ham Radio Memories]

VHF/UHF bands have become primary. The proliferation of mobile stations on VHF and above also has played an important role in providing public service and emergency communication support.

As the FCC intended, both Technician and Novice licensees spurred the growth of Amateur Radio in the US. In 1950 there were about 90,000 hams; by 1956, there were more than 140,000; by 1963, more than 250,000, and today there are some 723,000 licensees.

Joe Speroni, AH0A, has compiled ham radio licensing statistics from June 1997 to the present. --- This series of articles are by *Al Brogdon, W1AB.* Credit: ***The ARRL Letter*** and The American Radio Relay League.

Before the days of regular radio broadcasting, lights flashed as signals from the Pagoda on Mt. Penn to the people of Reading, PA. The Morse Code was something used to direct firemen. On other occasions, signals were given to further fundraising campaigns and inform the public of the most recent developments in the drive for funds. They were also used to give results of sporting events, such as prize fights and World Series.

The Morse Code was based on light signals, instead of sound signals, so a few adjustments were made. A white light represented a dash, while a red light was a dot. A white steady light meant the station was not occupied. A white and red light meant the station was open and prepared to operate. If both lights flickered, a message was about to be sent. If there was a white steady light and a flickering red light, an error was made and the message

was being corrected. A steady red light and a flickering white light meant that urgent action was needed for the subject being broadcast by the lights. (http://www.pagodaskyline.org/pagoda/)

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