



Mid-Atlantic Amateur Radio Club

www.marc-radio.org

P.O. BOX 557
EAGLEVILLE, PA
19408

REMARCS

Next Meeting: July 21, 2015 at 7:30 PM

July/August 2015

Letter from the MARC President

As I write this letter, I'm reflecting on Field Day which concluded just a few hours ago. This was the rainiest field day that I can remember but we still managed to string up a couple of G5RV's and make quite a few contacts. Many thanks to our Field Day Captain Jim Smith (K3RTU) and all the folks who came out to help set up, take down and operate. Big kudos to those brave folks who stayed through the night and braved the weather. Once again, we held a Radio Merit Badge session and 18 scouts earned the badge. Several of the scouts were able to get on the air and a number of contacts were made. Thanks to all the club members who assisted to make this a successful event. In an effort to get a head start on Field Day for 2016, Jeff DeKonty (AB3WM) and Jim Foster (W3NJF) have agreed to be co-chairs. Please think about joining their team so that we have another successful field day.

We currently have 91 paid members of MARC so we remain a vibrant club. Thanks to Dennis Silage (K3DS) for keeping our repeaters on the air. Replacement of the antenna for the 147.06 repeater continues to await a professional tower climber but I'm hopeful this can happen soon. Traffic on the nets continues to be low but this seems to be universally true. I will soon be sending out an e-mail asking if folks would prefer a different day or time with the hope that this might encourage additional participation.

Please let me know if you have thoughts about presentation topics for future club meetings or if you have any suggestions for making our club even better.

73/Steve Werner – KD3WK
MARC President

VOX

REMINDER: MARC's Tuna Tin Build A Thon is on October 20th. If you want to build this classic QRP transmitter and/or receiver kit, payments must be made by the club meeting on August 18! The transmitter kit is \$30 and the receiver kit is \$40. All tools will be supplied at the meeting but please bring your own tools if you have them. For more info, contact Rich Russo, KB3VZL at kb3vzl@verizon.net or visit www.qrpme.com.

Jim (ex-N3DAS) is now W3JNF.

Check out this great ad for ham radio and The International Space Station:

<http://www.issfanclub.com/node/39142>

You might also enjoy some of the many ham radio related parody songs performed by The Spurious Emissions (out of the Band, who regularly perform at The Dayton Hamvention. Here's two:

<https://www.youtube.com/watch?v=g1lI5iG1Tko>
<https://www.youtube.com/watch?v=nB7ongAKjBU>

Tom Andersen, OZ1AA from Denmark, is riding his bicycle around the world solo on a 30,000 plus mile adventure. He has been on the road for nearly 5 years, has been in 34 countries so far and has ridden over 22,000 miles! Check out his website and blog, where you can also sign up to receive by e-mail, Tom's amazing photos and commentary, several times a week. Most recently, Tom has been biking through south and central America and is headed north. He will be riding up the east coast of the US later this summer and plans stop off to rest and visit Mike, KF3CD, sometime in August. If the timing is right, you may meet him at a MARC meeting or breakfast. Tom's website is <http://www.cyclingtheglobe.com>.

Photo below: Tom OZ1AA (left) visiting your editor's friend Juan, TG9AJR in Guatemala in mid-June.



Inside this issue of REMARCS:

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HAMFEST SAT JULY 11TH!

Sustaining our annual hamfest has become a challenge in recent years. Shrinking attendance and profits for regional hamfests is the trend everywhere in the US. This trend is evident especially with commercial vendors. Many commercial vendors just simply are no longer doing the hamfest circuit or now limit themselves to attending the larger events or those close to their homes. In addition, several commercial vendors that have attended the MARC hamfest for many years have recently retired, gone out of business or are no longer able to attend for health reasons.

We still expect a great turnout of buyers and sellers this year and as always, we need lots of help to make this event run smoothly, starting with set up on Friday evening at 5 PM. We especially need help during the early hours of Saturday morning because some folks start to roll in before the sun is up, as early as 5:30 to 6 AM! We need help to collect admission fees, to direct cars to park, to staff the club table and to help clean up afterwards. The hamfest is over around 12 noon and we are usually all cleaned up and done by about 2 PM.

If you have any ham radio related items to sell, you can place them on the club table for sale. Please be sure to clearly mark your price and callsign on your items. The club keeps a commission of 10%, with a maximum commission of \$10.

Bill Dobson, N3WD, from the W3 Incoming QSL Bureau, will have an indoor table at the hamfest again this year. Bill can verify ARRL awards for DXCC (the only restriction is that he can't verify DXCC for 160 meters), WAS, WAC and VUCC so bring your QSL cards if you need these awards and you won't have to mail them to ARRL. Bill will also be selling envelopes for the incoming bureau.

If you can help at the hamfest and have not already signed up to do so, please contact Mike, KF3CD at kf3cd@arri.net.

Note that Rt. 23 is closed to reconstruct the bridge at the waterfall, between Valley Forge Park and Phoenixville. The official Penndot detour takes travelers far out of their way, out on to Rt. 422 and back on to Rt. 29 in Collegeville. If you usually use this route to get to and from the hamfest, there's a multitude of other shorter ways to get to there. A simple set of detour directions is on our hamfest flyer, which is posted on the MARC website.

73 and hope to see you at the hamfest!

Mike, KF3CD
MARC Hamfest Chairman

MARC Info

wb3joe@marc-radio.org
<http://www.marc-radio.org>

MEMBERSHIP MEETINGS:

3rd Tuesdays of the month, 7:30 PM (Doors open at 7:00 PM) Community Meeting Room (in the front) of the Tredyffrin Township Municipal Building, 1100 DuPortail Road, Berwyn, PA 19312-1079.
Guests Welcome, Smoke Free, Handicapped-accessible.

BOARD MEETINGS:

2nd Tuesdays of even months, 7:00 PM
Paoli Hospital, Willistown Meeting Room, Paoli, PA.
Members may attend as observers.

WB3JOE REPEATERS:

(CTCSS or PL = 131.8 hz)
145.130 - / 147.060 + / 147.360 + / 224.420 - / 224.5 -
/ 445.675 - / 444.050 -
The 145.13 and 147.06 2-meter repeaters are linked. The 147.36 MHz, the 224.50 MHz and the 444.050 MHz repeaters are linked.

WEBMASTER:

Dennis Silage K3DS
k3ds@marc-radio.org
610-353-4829

2-METER NETS:

Club Net, Wednesdays, 8:30 PM

These nets occur on linked 145.13 - / 147.06 + Repeaters

NET MANAGER: Open

NET CONTROL OPS:

Miguel KC2HMG, Yak N3MQM, Alan K3WWT, Bob N3JIZ,
Rob KB3WIR, Mike WB2UQV and Bob WB3T

DUES:

Payable at the March Meeting
\$15 Full (licensed Amateurs)
\$5 Associate (unlicensed persons)
Family rate \$5/ham - after first member pays full dues

NEWSLETTER:

The REMARCS editor is Mike, KF3CD. Do you have something to contribute to REMARCS? Please let Mike know by sending an e-mail to kf3cd@arri.net.

MARC MEMBERS PROVIDE COMMUNICATION SERVICES AT RADNOR TOWNSHIP MEMORIAL DAY PARADE

Thank you to the following MARC members that helped to provide communication services during Radnor Township's Memorial Day Parade!

Rich KB3VZL, Jim K3RTU, Bob N3JIZ, Denise KB3ANO, Andrew KA2DDO, Doug NE3U, Mike, N3OMR, Floyd KA3OXA, Beth KA3GKI, Dieter K3DK, and Jim W3JNF (ex-N3DAS).



MARC Board of Directors 2014-2015

PRESIDENT

Steven Werner KD3WK

kd3wk@marc-radio.org 610-574-6836

VICE PRESIDENT

Jeremy Carlo N2ZLQ

n2zql@marc-radio.org 917-612-2163

SECRETARY

Sal Marandola NC3U

nc3u@marc-radio.org 610-306-2817

TREASURER

Lou Ruh WX3I

wx3i@marc-radio.org 610-630-9146

PUBLIC SERVICE

Bob Palin N3JIZ

n3jiz@marc-radio.org 610-687-4587

TECHNICAL SERVICE

Dennis Silage K3DS

k3ds@marc-radio.org 610-353-4829

MEMBERSHIP SERVICES CHAIRMAN

Chris Ruhl N3GBJ

n3gbj@marc-radio.org 484-494-7572

PUBLIC RELATIONS CHAIRMAN

Jim Biddle W3DCL

w3dcl@marc-radio.org 610-353-0880

PROGRAM CHAIRMAN

Richard Russo KB3VZL

kb3vzl@marc-radio.org 610-539-2999

MEMBERS-AT-LARGE

To 9/30/2016 -

Doug Wilkens NE3U

ne3u@marc-radio.org 610-692-6819

To 9/30/2015 -

Jim Smith K3RTU

k3rtu@marc-radio.org 610-494-5897

CALLSIGN TRUSTEES

- WB3JOE

Dennis Silage K3DS

k3ds@marc-radio.org 610-353-4829

- W3NWA

Dieter Hauer K3DK

k3dk@marc-radio.org 610-489-1920

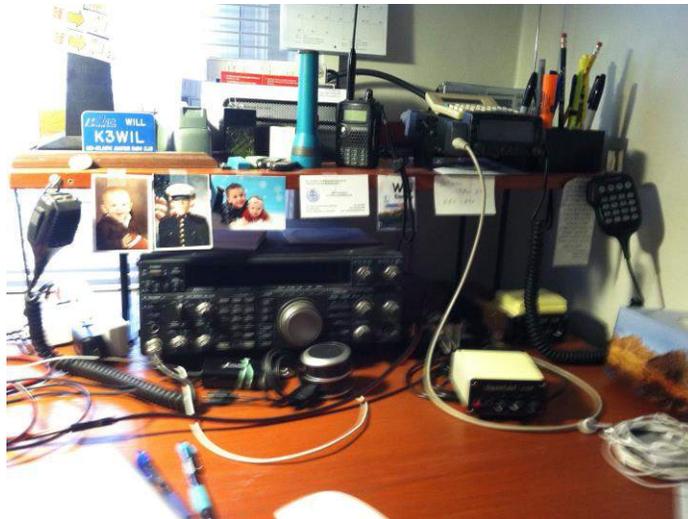
How I Became a “HAM” by Will Emmons, W3WIL

I'm a newbie to Ham Radio compared to many of the old-timers in MARC. In my teenage years I was most interested in learning how to fly; a passion that took most of my time and money. But I did organize a CB group among my high school buddies. This was back in the days before CB was 'discovered' by truckers and everyone else. We installed radios in our (parents') cars and had great fun talking as we drove around. We even installed a CB rig in the airplane I rented and did a few airborne QSOs.

Jumping forward to 2002, my wife suggested I find a hobby – ie. get off the couch. I learned that I could obtain a Ham license without a code test (a hurdle that had encouraged procrastination) and got on the air in West Chester as technician KB3IEL. My first radio was a Kenwood TH-F6 – still have it, a great little HT. Then over the next several years I acquired a Kenwood TS-850S, a TM-G707 and a couple of other dual-band mobile rigs and finally last summer a Baofang UV-5R. I also upgraded my license to General after the code requirement was dropped and changed my call sign to K3WIL.

I joined both MARC and Chester County ARES RACES (CCAR) in 2002 and got involved with public service and emergency response. These activities combining Ham radio with face-to-face interaction have become my primary operating focus. Last November the CCAR Steering Committee asked me to take a turn as Emergency Coordinator for the county and I'm currently involved in this 2-year assignment.

The photo below shows my little desk-corner shack. I live in an apartment now and so I need to be compact with my equipment. I hope to see you all at the Hamfest and Kimberton Fair this summer, and of course if I can help anybody with ARRL issues please give me a call or drop me an email: will@emmons.org. -73-K3WIL



MARC VE TEST RESULTS FROM MAY 2nd- by Dick Stewart, K3ITH

Technician earned = 3
General earned = 1
Extra earned = 1
Passed an element but did not upgrade = 0
Did not pass an element = 0
Total candidates served = 5
Total elements administered = 9



The following successful candidates gave permission for their names to be published in REMARCS:

Todd Tew	K1TEW	Chester County	Extra
Nick Grimmig	N/A	Phoenixville	General
David Burton	N/A	Lower Pottsgrove	Technician
Jeffrey L Rhoads (father)	N/A	Downingtown	Technician
Jeffrey C Rhoads (son)	N/A	Downingtown	Technician

The following VE's took part in this session: W3ZQN, W3ZV, WQ3E, K3DS, AA3BK, AB3WM
No MARC members were given a free test session.

The next MARC VE session will be Saturday, July 11, 2015 at the MARC Hamfest at the Kimberton Fire Company Fairgrounds in Kimberton, PA.

I would like to thank Bob W3ZQN for filling in for me during this test session while I was called out of town. In addition, I would like to welcome and thank Brian AA3BK and Jeff AB3WM as new MARC VE's to our VE team.

Thank you and 73,
Dick Stewart, K3ITH
MARC VE Liaison
k3ith@verizon.net

VE Testing

The next MARC VE test will be during the hamfest on July 11th. VE tests are also scheduled for August 1 and November 7. Contact Dick, K3ITH at k3ith@arrl.net to reserve your spot and remember, as a MARC membership benefit, club members get one free VE test per year!



STAMPS FOR THE WOUNDED

If you are a “DX'er” and often receive QSL cards direct from foreign countries, don't throw away the stamps you receive on the envelopes with your DX QSL cards! Save them and send them to Stamps For The Wounded!

Stamps for the Wounded is a little-publicized volunteer group that collects millions of stamps and related materials for wounded veterans. The organization, now completing its 73rd year, accepts donations of stamps, covers, albums, catalogs, stock books, trade journals, magnifiers, tongs and gauges. "We need material throughout the year, but it is especially welcomed as fall is followed by holiday time," said John Hotchner, vice president for Stamps for the Wounded. Stamps for the Wounded serves thousands of in- and outpatients through clubs and occupational therapy programs in veterans hospitals and convalescent centers nationwide.

Hotchner 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." Millions of stamps have been collected by the Lions International Stamp Club, the sponsoring organization. Along with other material, the stamps are distributed to 12 veterans hospitals. At one time, Stamps for the Wounded served more than 50 veterans hospitals.

Stamps for the Wounded was founded in 1942 by Ernie Kehr, collector and author, at the request of a friend from a Staten Island, N.Y., veterans hospital for some activity for the veterans. Kehr responded, even taking stamps from his collections as a start, and enlisted the support of President Franklin D. Roosevelt, a collector since childhood.

Simply cut the stamp or stamps off the envelope and try to leave at least a ¼" border around the stamp. Put them in an envelope and send them to Stamps for the Wounded, Box 1125, Falls Church, Va., 22041. Contributions are tax-deductible, and receipts will be granted on request.



How would YOU like to write a ham radio related article for a future issue of REMARCS? Do you operate contests or digital modes? Chase satellites or The International Space Station? Operate portable from parks, mountain tops or DX locations? Do you like to build things or operate remote HF via internet networks? Do you participate in nets such as The County Hunters Net or belong to SKCC, FISTS or to any of the many popular QRP groups? Please consider sharing your experiences, your fellow club members would love to hear from you! I am also seeking members to share their stories about how they became a ham. If you have something to share, drop me a note at kf3cd@arrl.net.



FIELD DAY RECAP by Dieter Hauer, K3DK

The weather was rainy from the start for Field Day 2015. MARC members showed up at The Lower Providence Fire Co. in Eagleville at 9 AM and quickly got the antennas up before the heavy rain and high winds set in. Jim K3RTU, Ron W3ZV, Jeremy N2ZLQ, Doug NE3U, Bob N3JIZ, Steve KD3WK, Dennis K3DS, Dieter K3DK, Dave K3DMH, Jim KJ3P, John K3JH, Yak N3MQM, Jesse W2WTP, Lou WX3I, Chris N3GBJ, Yak N3MQM, Jeff AB3WM, Bob N3JIZ, Denise KB3ANO and Rich KB3VZL were some of the members that helped set up, take down and operated during the weekend (sorry if I missed anyone!).

Yak N3MQM supplied a 2 KW generator and MARC operated as W3NWA, with a 2A station configuration (a total of two HF stations and a free VHF station). Lou WX3I provided two notebook PCs for logging the contacts. We used a Kenwood TS-570S and a beautiful new Yaesu FT-991 that was brought by Jeff DeKonty, AB3WM.

Since the rain had made things wet and became worse as we got deeper into the event, it was decided that the club would not put up the three element 6 Meter yagi or the three element HF tri-bander because it was risky to walk on the wet roof. Instead, MARC members put up a G5RV between two old towers on the fairgrounds and then put up a 20 meter Inverted vee on a 35 ft push up mast that was strapped to the pavilion. Those two antennas enabled us to operate on 10-80 meters. There were various operators on HF SSB (Dennis K3DS, Jeremy N2ZLQ, Jim K3RTU, and others). Dieter K3DK operated HF CW. Yak, N3MQM brought food to the Field Day event and Jim K3RTU brought refreshments.

We also had a six element, dual-band yagi for 2 meters/70 cm (three elements for 2 M and three elements for 70 cm). That yagi was fairly compact and was bolted onto a 5 ft PVC pipe which was then strapped onto a 12 ft ladder with bungee cords and setup for horizontal polarization. No QSOs were able to be made on 70 cm. but we made several QSOs on 2 Meters on both FM and SSB modes (VHF ops were K3DS, N2LJZ, K3DK and N3JIZ). One SSB contact was with VA3HD, in Ontario, Canada approximately 300 miles away! Dennis K3DS loaned his power supply and Icom IC-706 for the VHF station (50 watts out on 2 meters).

There was also a Field Day GOTA station (using WB3JOE as a separate call sign) that was setup for the Boy Scouts to operate and Dieter K3DK helped some of them to get on-the-air and make several SSB HF contacts. Others demonstrated CW on another station as well. A radio merit badge class was given to the Boy Scouts in the firehouse class rooms. Assisting with the Boy Scout merit badge session were Doug NE3U, Dennis K3DS, Steve KD3WK, Bob N3JIZ, Denise KB3ANO, Rich KB3VZL and Jeremy N2ZLQ.

Several members stayed overnight and continued to operate during the cold weather that consisted of heavy, non-stop pouring rain and extremely high winds that tore apart some of the bungee cords that were straining to holdup the tarps that were put up as wind barriers. There was no lightning, so operations continued and the HF bands (20, 40 and 80 meters) were pretty active. The 10 & 15 meter HF bands opened up much later in the morning at around 7 AM EST. Some contacts were made on those bands before MARC ceased operations at around 11 AM on Sunday.

FUN AT FIELD DAY 2015!

A BIG THANK YOU to Field Day Captain Jim Smith, K3RTU and to Lou WX3I and Ron W3ZV for coordinating the use of the fire company's facilities!



Above: Jeremy Carlo, N2ZLQ and Rich Russo, KB3VZL working with Boy Scouts on their Radio Merit Badges







UPCOMING MARC MEETINGS AND EVENTS:

JULY 10- HAMFEST SETUP AT 5 PM
JULY 11- HAMFEST
JULY 21 - RICH RUSSO, KB3VZL - SOLDERING, CONSTRUCTION & KIT BUILDING
JULY 23, 24 AND 25: KIMBERTON FAIR
AUGUST 1: MARC VE TESTS
AUGUST 8: MONTHLY MARC BREAKFAST MEETING
AUGUST 11: MARC BOARD MEETING
AUGUST 18- HOME BREW NIGHT
SEPTEMBER 15 - TIM ELBERSON, C.E.R.T. PREPARIDNESS MONTH
OCTOBER 10- MONTHLY MARC BREAKFAST MEETING
OCTOBER 13- MARC BOARD MEETING
OCTOBER 20 - MARC TUNA TIN BUILD-A-THON
NOVEMBER 7- MARC VE TESTS
NOVEMBER 14- MONTHLY MARC BREAKFAST MEETING
NOVEMBER 17- RON BELLAMY, KC3ACL- RADIATION
DECEMBER 12- MARC HOLIDAY PARTY



KIMBERTON FAIR VOLUNTEERS NEEDED!

Below is the MARC schedule for the Kimberton Fair. We need 4 volunteers for each job and shift. As you can see, we still have a lot of open spots to fill! Providing volunteers for the fair allows MARC to use the hamfest site for free, which saves our club \$900! If you can help, contact Mike, KF3CD at kf3cd@arrl.net as soon as possible.

Thursday, July 23, 5 to 9 PM- Collect Parking Donations: Allan Glaser AB3FN

Sell Ride Tickets:

Friday, July 24, 5 to 9 PM- Collect Parking Donations:

Sell Ride Tickets: Chris Ruhl, N3GBJ and XYL, Doug NE3U

Saturday, July 25, 1 to 5 PM- Collect Parking Donations: Mike Pilotti, KF3CD

Sell Ride Tickets: Susan Pope,

Saturday, July 25, 5 to 9 PM- Collect Parking Donations:

Sell Ride Tickets: Stever Werner KD3WK, Lou Ruh WX3I,

MARC BOARD MEETING MINUTES: June 9, 2015

Officers Present

K3RTU – Jim
NE3U – Doug
KB3VZL – Rich
N3JIZ – Bob
K3DS – Dennis

W3DCL – Jim
NC3U – Sal
N2ZLQ – Jeremy
WX3I - Lou
KD3WK – Steve

Officers Excused

K3DK- Dieter
N3GBJ - Chris

Meeting Started at 7:00 PM

- 1) Approval of minutes of April 14, 2015 Board Meeting—Unanimously accepted
- 2) Treasurer's Report
 - a. Current account balance—12,559.21
 - b. Paid membership status -- 91
 - c. Annual Audit – additional items to be included—No Discussion
 - d. Establishing financial controls for cash and ticket sales at Hamfest—Money belts will be tallied at regular intervals and deposited at the club table. Lou will advise. All items left at club table to be sold will be assessed a 10% fee that goes to MARC
- 3) Upcoming General Meeting Programs
 - a. Presentations scheduled through remainder of year
 - b. George Riveria (Oscilloscopes – to be rescheduled)-----Programs scheduled to end of year
- 4) Old Business
 - a. Net Control Manager Position remains open – options?—still open
 - b. MARC Bylaws
 - i. Board sub-committee to redraft Bylaws (KD3WK, WX3I, KB3VZL)--- The Board sub-committee has reported on its recommended changes to the bylaws and the revisions will soon be reported to the club membership.
 - c. Business Cards for Board Members
 - i. Agreement on contact information (phone, email, address)---a template will be sent via email and approved
 - d. MARC Brochure
 - i. Brochure drafted and approved, printing of 1,000 authorized @\$250, printing in progress---printing is completed and Mike will have them at Field Day
 - e. Revisions to Annual Treasurer's Report---No discussion
- 5) New Business
 - a. Preparing for Field Day and Boy Scout JOTA
 - i. Confirmation that all equipment (radios and antennas) are in working order – completed—It was confirmed that all antennas and radios are in working order
 - ii. What additional operator training should be provided?—a quick orientation will be held before field Day operations start. Lou will provide laptops for the event. Computers will be powered by A/C. set-up will begin at 0900 Saturday and break down will be around 1200 on Sunday. Email will be sent out by Sal about meeting and field day.
 - b. Public service events
 - i. Need to confirm that sponsors have valid safety plan—If no safety plan is in place MARC will not work the event. Bob is making up a form to have the event planners fill out before hand.
 - c. Review of membership list regarding non-renewals—No Discussion
 - d. Boy Scouts – new child protection requirements
 - i. Compliance required of all members in contact with children—It is understood that club members who are currently certified under the Boy Scout Child Protection Policy will retain their certification through the end of 2015; however, they will need to be recertified under the new guidelines for 2016 and beyond
 - ii. Should MARC reimburse members for cost? ---The Board agreed that the club would not reimburse members who seek certification under the new provisions. It should be noted that following the Board meeting, Governor Wolf agreed to waive certification fees for volunteers.
- 6) 2015 Board Meeting Schedule
 - a. August 11
 - b. October 13
 - c. December – prior to Holiday Party

Meeting adjourned at 20:30



Hedy Lamarr – Hollywood Actress and Inventor

Hedy Lamarr was a star of silver screen during the 1930s and 1940s. What many people don't know is that in 1942, she invented an electronic guidance system called "frequency hopping", which helped make cell phones and other wireless technology possible. If you are a serious buff of old Hollywood films, you are sure to remember this actress but Hedy Lamarr is today becoming more known for her technological invention of more than 70 years ago than for her movies. This math-based creation (which she co-developed with American composer George Antheil in 1942) later paved the way for the use of spread spectrum including Smartphones and other wireless technology, and was born from her desire to help the U.S. Navy thwart Nazi submarine attacks during World War II. The invention was also used in the Cuban Missile Crisis in 1962.

Hedy Lamarr was born Hedwig Eva Maria Kiesler in Vienna, Austria-Hungary in 1914 of Jewish parents-- her mother was a pianist and her father, a successful bank director. (Her father died before the Holocaust, and later Hedy, through her influence as an actress, was able to rescue her mother from this plight.) In the late 1920's, Hedy was discovered as an actress and brought to Berlin by producer Max Reinhardt. Following her training in the theater, she returned to Vienna where she began to work in the film industry, first as a script girl, and soon as an actress. In 1933 she married Max Mandl, a wealthy Austrian military arms merchant. Hedy would often accompany him to business meetings where he conferred with scientists and other professionals involved in military technology. These conferences became her introduction to the field of applied science and the ground that nurtured her latent talent in the scientific field.

As World War II loomed, Hedy's acting career took her to Hollywood where she soon became a naturalized U.S. citizen. At the beginning of the war, she was told that she could better help the war effort by using her celebrity status to sell War Bonds, which she did with great success. But she wanted to do more, particularly by using her interest in science to aid in the defeat of Nazism. This desire only intensified as Hitler continued his relentless attacks on Europe. When German submarines began torpedoing passenger liners, she said at one point, "I've got to invent something that will put a stop to that." This desire would give rise to the invention for which she would become famous many years later.

In her attempt to come up with an electronics radio system that would enable torpedoes from American and other Allied submarine forces to be launched more successfully without having their torpedo signals jammed by the enemy, she developed "frequency hopping" -- a technology which would later help make cell phones, Wi-Fi and other wireless developments possible.

Her idea involved making a radio signal "hop around from radio frequency to radio frequency" to interfere with signal jamming. Thus, a torpedo could be radio-guided with less fear of having the signal jammed. To transform her idea into reality she teamed up with the American avant-garde composer George Antheil of "ballet mécanique" fame, and together they constructed a device that would enable such radio signals to be synchronized. Antheil laid out a system based on 88 frequencies, corresponding to the number of keys on a piano, using perforated paper rolls which would turn in sync with one another, transmitting and receiving ever-changing frequencies, preventing interception and jamming. Calling their invention the "Secret Communication System", the creation was patented in 1942.

Though the U.S. government did not deploy the "secret communication system" during World War II, the US Navy commissioned a project to acoustically detect submarines using sonar buoys remote-controlled from airplanes employing "frequency hopping" in the 1950s. Twenty years after its conceptualization, during the 1962 Cuban missile crisis, the first instance of large-scale military deployment of Hedy's and Antheil's frequency hopping technology was implemented-- not for the remote-controlled guidance of torpedoes, but to provide secure communications among the ships involved in the naval blockade. In the 1980s, Lamarr and Antheil's invention took on new significance. Instead of "frequency hopping," today's term is "spread spectrum" but the basic idea is the same. The FCC has allotted a special section of the radio spectrum for the development of Wi-Fi network connections, and for use in cell phones and other wireless devices to make communication more secure. For her invention, Hedy was honored in 1997 by the Electronic Frontier Foundation. In addition, her technological contributions have been featured on the Science Channel and the Discovery Channel.

NEW MARC PROMOTIONAL BROCHURE

MARC has a new brochure to promote our club to prospective new members. This brochure will be distributed to new hams in the area and at VE Tests and Boy Scout Radio Merit Badge events. It will also be available to visitors at our monthly club meetings, Field Day and Hamfest.

History of MARC

On November 17, 1976, the first board meeting of what was then known as the Keystone ARC, took place to turn the users of the '06 repeater into an Amateur Radio club. The first club meeting took place on December 10, 1976. An early order of business was to choose another club name, since there already was (and still is) a Keystone ARC in the Philadelphia area. The Radnor Repeater Group name had given way to the Mid-Atlantic Radio Club by February, 1977, and in June of that year the "Amateur" had come into the club's title in order to qualify for a club call sign. The club call sign WB3JOE came to us in 1978 but the '06 repeater used WR3AKR, whose trustee was Phil WA3VCS.

In 2012, MARC merged with The Delaware County Amateur Radio Association. Although the MARC and the former DCARA repeater systems are not linked, the coverage of DCARA's former system complements that of the MARC repeater system, extending north to Chester, Montgomery and Bucks Counties and into central and southern New Jersey, while the MARC repeater system extends into Delaware, Chester and Montgomery Counties and into the state of Delaware. MARC members are invited to use both repeater systems.

MARC has evolved and grown over the years and is today one of the largest general interest amateur radio clubs in the Philadelphia area.



**THE MID-ATLANTIC
AMATEUR RADIO CLUB
INVITES YOU TO JOIN US!**

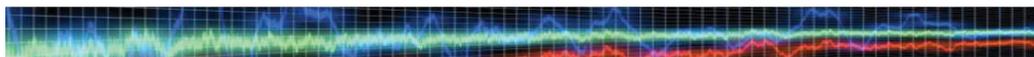


WB3JOE/R

145.13 <-> 147.06 <-> 445.675 MHz PL 131.8 Hz
Linked Repeater System in Pool
and Newtown Square, PA.
224.42 MHz PL 131.8 Hz in Bryn Mawr, PA
147.36 <-> 224.50 <-> 444.050 MHz PL 131.8
Linked Repeater System in Darby, PA.

The Mid-Atlantic Amateur Radio Club
P.O. Box 557
Eagleville, PA. 19408

marc-radio.org



What is MARC?

The Mid-Atlantic Amateur Radio Club (MARC) is a general interest ham radio club that welcomes old-timers and newcomers alike, all ages and all license classes. MARC is also a Special Service Club (SSC) of the American Radio Relay League (ARRL). As an SSC, MARC is recognized as a positive force to improve the visibility of Amateur Radio in the community, to assist in emergencies, to encourage training and to provide activities for the betterment of the membership and the Amateur Radio Service.

You Are Invited To Join MARC!

MARC welcomes new members to its Amateur Radio fraternity! The MARC membership year begins on March 1. Membership dues paid by new members between January 1 and March 1 are credited through March 1 of the following year. MARC does not accept dues for more than one year at a time. Current yearly MARC dues are \$15 for a Full Member who is a licensed Amateur Radio operator, \$5 for an unlicensed individual as an Associate Member and \$5 for a family member of a Full Member who is also licensed.

To join MARC as a new member, print the membership form on our website or use the form in this brochure, fill it out and mail it with your check, for the proper amount made payable to MARC, to the address on the front of this brochure. If you are new to ham radio, MARC members are eager to answer your questions and to help you get started in this great hobby!

If you'd like more information about MARC, visit: marc-radio.org or send an e-mail to: membership@marc-radio.org.

Activities and Benefits of MARC Membership

- Seven FM voice repeaters providing wide coverage of Southeastern Pennsylvania, Southern New Jersey and Northern Delaware
- Repeater Nets
- Monthly club meetings with informative guest speakers
- Monthly Breakfast Meetings
- Field Day in June
- Hamfest in July
- Holiday Party
- REMARCS newsletter, published 6 times a year
- "Elmer" Program
- Equipment Loaner Program
- E-mail news updates and meeting reminders
- Public service communication events in the western Main Line area
- License exams four times a year (membership benefit is one free exam session per year)

Attend a MARC Meeting!

MARC hosts monthly club meetings featuring speakers with informative and interesting programs. The meetings are open to the public and are held on the third Tuesday of the month at the Tredyffrin Township Building near the Chesterbrook development in Wayne/Berwyn. The doors open at 7 PM and the meetings begin at 7:30 PM. The room is smoke-free and handicapped accessible and there's ample free parking. Directions are posted on the club website.

Join MARC today!

Mail your check to the address on the front of this brochure!

\$15: Licensed Amateur, Full Membership
\$5: Unlicensed, Associate Membership
\$5: Family Member of Full Member who is also licensed

Name: _____

Call sign: _____

Address: _____

E-mail: _____

Phone #: _____

OK to publish your e-mail address and phone # in our club directory?

Yes No

Are you a current ARRL Member? Yes No

License class:

Technician General Advanced
 Extra Not Licensed