THE RICHMOND HAM

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December 2019

THE RICHMOND AMATEUR RADIO CLUB will meet Friday, December 13th 2019, 7:00PM, at the Bon Air United Methodist Church, 1645 Buford Road.

Coming Events:

RARC VE testing session January 10th

This Month's Program:

Annual holiday meeting! Bring and share your favorite goody treat!

Richmond Amateur Radio Club

Meeting Minutes

November 8, 2019

The regular meeting of the Richmond Amateur Radio Club was called to order at 19:00 on November 8th, 2019 at King's Korner restaurant by President John DeMajo, (K5HTZ).

Members Present

All present signed RARC Log Book

Last month's Minutes – Approved unanimously by voice vote

Treasurer's Report

1) Ken Leidner, (WV0L) gave the Treasurer's Report. We had an ending balance of $13,122.05 The Report was approved unanimously.

2) Larry Tadlock (K4CW) was presened for RARC membership and approved unanimously.

Adjournment

Meeting was adjourned by voice vote.

Program

Dr. Marcella Fierro,retired Chief Medical Examiner for the Commonwealth of Virginia gave a talk on her life experiences .

The next general meeting will be our Christmas Meet and Greet, 19:00 on December 13th, 2019 at Bon Air United Methodist Church

Minutes respectfully submitted by:David F. Robinson ,(KJ4LHP), Secretary

From The Prez

On behalf of the officers and directors, I want to thank everyone for allowing the present chapter leadership to serve you for another term. I think I speak for the entire board in saying that if there are any suggestions for improving and building the club, we are always happy and willing to hear your suggestions, and to try our best to implement them. In the coming year, we will be attempting to set up an outreach to the area middle and high schools with the mission of promoting Ham radio. It is also important that we present informative and interesting educational programs to our members and guests at monthly meetings. There is a wealth of knowledge and experience held among our members, so these meeting programs are an excellent chance for sharing that knowledge. Beginning this month, I will be scheduling presentations for future meetings, so please request a meeting date to offer a presentation. Don't be concerned that people would not be interested in what you have to say. Everyone has something to offer, so please come forward and share your knowledge and experience. I also remind our members that we will be represented again this year at FrostFest. If you would be willing to help with our chapter information table, please contact our treasurer, Ken Leidner, and let him know that you are available.

There will be more info to come in the next few weeks, so please stay tuned. In closing, I want to wish each and every one a wonderful holiday season.

73

John DeMajo K5HTZ

RARC VE News
FCC EXAMS EVERY OTHER MONTH

RARC offers VE Testing Sessions on the second Saturday of odd months except June to cover Field Day instead of July.

The January testing session will be on the 10th at the Bon Air United Methodist Church, 9 AM.

If you have questions about a session, please see our website, ***www.rarclub.net*** or contact Allan, WA3J, at 804-399-8724, or ve@rarclub.net

Club Info...

RARC meets on the second Friday of each month at 7:00 PM, at the Bon Air United Methodist Church, 1645 Buford Road.

We offer 10-week license prep classes in September and March with exams following. Members provide VE testing sessions on odd-months during the year.

Join the Richmond Amateur Radio Club.

You don't have to have a ham license, just have a genuine interest in the hobby.

Annual Dues are:

80 and over	$0
Regular Membership	$20.00

Lots of information about the Club and our activities is available on our website, www.rarclub.net.

Nets

RARC has the first and only D-STAR digital repeater in the area. 147.255 (+ 600), 443.7125 (+ 5) and now 1284.0000 (-20). In addition to our Wednesday local D Star net (below), we link the D Star VHF module for the National Capital Region D Star Net on Wednesday nights at 9pm. On Tuesday nights at 9pm, we link our VHF module to the North Carolina D Star Net, and on Sunday nights at 9pm to the South Eastern D Star Weather Net.

Beginning on March 5, 2014, the RARC D Star Net which meets on Wednesday nights at 8:00pm will be accessible on our three D Star modules, all of which will be linked.

You can use any of the three frequencies, 2 meters, 70 cm or 23 cm, and you should hear and be heard by everyone.

If you participate in the net via DVAP or DV Dongle, you must link your device to Ref 062D rather than to any of our modules. Since the W4FJ stack will all be linked to Ref 062D, anyone linked to that reflector will be connected to the net.

Sunday	7:00 pm	50.135	USB
	7:30 pm	52.525	FM
Wednesday	7:00 pm	28.475	USB
	8:00 pm	147.255	D-Star Rptr
	8:15 pm	145.730	Packet

MRA

Interested in information or support of the **Metropolitan Repeater Association (MRA)?**
Call Ed, KG4SNK, at 804-513-1947. The sole business of the MRA is to own, operate and maintain the 145.430 repeater.

Show and Tell!

If you have an item, idea, latest and greatest, or whatever gizmo; please bring it to the RARC meeting. We have a table (usually) set up near the front where you can place your item and share/discuss it with others as they arrive. We also have a section of the agenda set aside for members to discuss their "Show and Tell" item(s). No need to be tentative; we are INTERESTED in what you are doing, how you are doing it and, in true Ham fashion, how much it costs!

Virginia QSO Party !

Never too early to plan ahead. The Virginia QSO Party will be on the weekend of March 21-22. Details can be found here,
https://www.qsl.net/sterling/VA_QSO_Party/2020_VQP/2020_VQP_Main.html

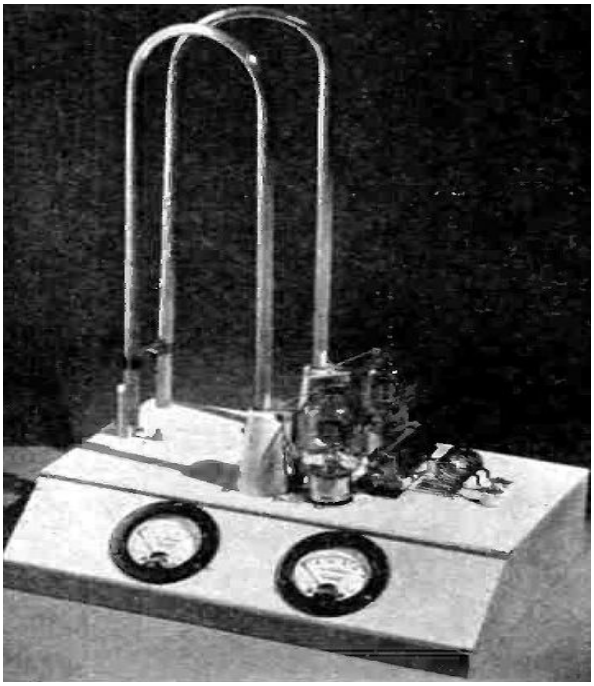
THE ROAD TO VHF

by John DeMajo, K5HTZ

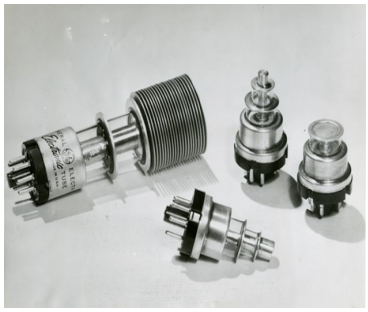
While we take for granted the technologies available to us today when it comes to VHF and UHF band operations, it wasn't that long ago that frequencies above 30Mhz represented a new and unexplored frontier that required the operator to be an engineer as well as a plumber. As I think back to my early days in Ham radio, my ELMER, who was a teacher and the radio club moderator at my high school, was obsessed with being able to operate on 6 meter AM. As a retired military colonel from WW-II, as well as a Catholic priest, he had called for help from several of his former military contacts in trying to design a 6 meter transmitter. It then became a club project to construct the rig, and we spent quite a bit of meeting time working through high frequency tank circuits, frequency multipliers and such, finally coming up with a 30 watt rig that was based around a 2E26 final. When the rig was completed, we all gathered one evening at the school's unused photography dark room that had been assigned to him as his ham shack, anticipating the first contact on 6 meters. It wasn't long before disappointment overtook the group when we discovered that 6 meter operation was impractical in our town because it resulted in TVI on the area's primary television station TV channel 2.

Looking back, it was not a lost exercise however, because there were valuable skills that were learned in designing and constructing that transmitter. A few weeks ago, while scanning the listings on Ebay, I came across an AM era VHF transmitter that strongly resembled the one I remembered from 1960. I was successful in purchasing it, so it's now a part of the historic radio collection. In realizing how far we have come since then, I wanted to give those of you who are too young to remember those pioneer days of VHF, a look at what we were up against when it came to opening up those new vistas.

VHF actually became of interest to hams in the 1930s. The big road block to expanding into those frequencies was the available tubes. It was not until World War II, and the military need for short-range VHF communications, that higher frequency capable tubes and components were developed. To give you an idea, the first photo below illustrates what a VHF transmitter would have looked like prior to the war. While it appears to be something that was built by a plumber who needed some "busy work" it was actually a working attempt at creating an oscillator that could generate RF at high frequencies. Interestingly, the frequency design was 112 Mhz which was a frequncy available to Hams at the time. It wasn't until after the war, and the advent of commercial FM radio, that 5 meters was removed from the Ham spectrum.



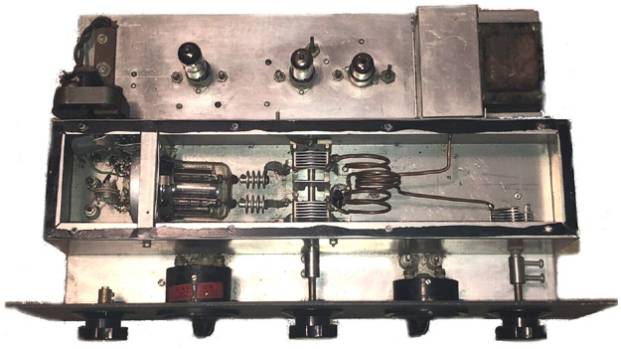
The war opened the door for new tube development. With the development of Radar, we began to see tubes like the Hytron HY-615, the twin-beam pentode 829, and UHF tubes known as "lighthouse" tubes.



The 829 above at left, along with "lighthouse" tubes, developed for UHF use by General Electric, that were available toward the end of the war. Below is the Hytron HY-615 which was a pre-war development first used in early VHF oscillators.

By the 1950s, VHF had come of age. The Civil Defense program brought about the need for short-range AM transceivers that were reliable. Variable tuned oscillators were now deemed illegal by the FCC, and crystal controlled circuits, employing frequency multipliers, were the order of the day. One popular offering, used by many Civil Defense, MARS and ham operators was the Heathkit line of transceivers including the "Sixer" and the "Twoer" (shown below).

Above: the popular Heathkit “twoer” from the late 1950s, along with the recently purchased VHF transmitter that is similar to the one we built in high school in 1960.



overhead view of vhf rig

Shortly thereafter, it became apparent that FM, noted for its low noise characteristics, was superior for use in the VHF and UHF bands. Not long thereafter, Midland, Motorola, Heathkit, and a number of manufacturers began to manufacture FM 2 meter transceivers. This opened the door for devices like repeaters, auto-patches, and ultimately the digital and Internet integrated devices that we enjoy today. Yes, VHF and UHF communications have come a long way since those 1930s plumbing experiments, and as with many of radio's technical advances, hams have been responsible for opening the door to development.

Speaking of Tubes

Can you identify this mystery tube or device? It was made by RCA and has a number 1960 etched on the glass as what would appear to be a tube number. I have checked, and the RCA industrial tube manuals from the past list a type 1950 as a vacuum gauge tube, but there is no mention of a type 1960. If anyone can identify this device, please contact John DeMajo, K5HTZ at jdemajo@demajo.net

An Ode To the Code

In days of old, when ops were bold,
And sideband had not been invented,
Words were passed by pounding brass,
And all were quite contented.

Unknown

From The Radio MakerFest

The SWAP SHOP

Club members may list their wares in the newsletter. Send descriptive information to Armand at wa1uqo@arrl.net, or call me at 508-838-8353. The Swap Shop is presented in the newsletter as a benefit to our members. RARC takes no responsibility for items sold or traded in this newsletter. The ad will appear three times unless extended. Interested parties will contact you directly. ***You must be an RARC member to place an ad.***

Wanted

Wanted: one (1) Arduino UNO main board. Will buy or trade.
Contact Alex Sahhar KN4QGQ at agsahhar@gmail.com

A donation of an older 2 meter rig (base or mobile, it doesn't matter) that doesn't do the CTCSS (PL) tones. I want to try creating my own tone generator to make these old radios work with the local repeaters. If successful, I will share the schematics and code with the group. The radio needs to be in working condition. Thank you. Please call Dan (w4erf) 540-872-5946 or email chronobot2001@gmail.com

For Sale: Kenwood TS430s, PS430 power supply and AT250 antenna tuner for sale $950 plus shipping in US. It passed all the tests, USB, LSB, CW & AM on the Ham bands. Bought new in the box, 1984. call Bruce Haynes at brucehaynes@comcast.net

Cushcraft A4S 20-15-10 Beam Antenna https://www.cushcraftamateur.com/Product.php?productid=A-4S. A4S is the true, high performance tribander for 2-15-10. Precisely tuned high-power traps, carefully selected element lengths, and proper spacing combine to make the A4S the preferred antenna for your HF work! This is the premium antenna with all the features that you want. High gain, low SWR, and wide bandwidth keep the contacts coming in. All U-bolts, clamps and hardware are stainless steel. A4S has pinned boom sections and formed aluminum brackets to keep elements straight in all conditions. Our solid construction keeps the A4S on the tower! The antenna is only 2-years old and is ready for immediate pick up at my QTH. I am asking $450.00 . Please contact me at 804-730-0221 or e-mail me at kj4it.jw@gmail.com 73, Jerry KJ4IT

2225 Tektronix Analog Oscilloscope: The Model 2225 is a 50 MHz analog oscilloscope from Tektronix. Measure voltage or current signals over time in an electronic ciruit or component to display amplitude, frequency and rise times, etc. Applications include troubleshooting, production test, and design.This scope comes with an operating manual, and 10:1 Scope Probe. I am asking $275.00 . Please contact me at 804-730-0221 or e-mail me at at kj4it.jw@gmail.com 73, Jerry KJ4IT

I am selling a GE MVS 40w 2 meter radio with APRS cable mod, Garmin marine GPS, TinyTrak3 interface module and home built MVS programmer / tinytrak programmer. This is a complete functioning system; just connect to an antenna, plug it into a cigarette lighter and it's on the air.
It is currently programmed with my call sign; I could tell you how to reprogram it with yours. $150. Call John Harlow @ 804 464 8248.

Thought For The Day

Opportunity is missed by most people because it is dressed in overalls and looks like work.

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Dave Robinson	**KJ4LHP**	**Secretary**		
Ken Leidner	**WV0L**	**Treasurer**		