



# THE RICHMOND HAM

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October 2018

**THE RICHMOND AMATEUR RADIO CLUB** will meet Friday, October 12th 2018, 7:00PM, at the Bon Air United Methodist Church, 1645 Buford Road.

### Coming Events:

RARC VE Testing Session. November 10<sup>th</sup>.

### This Month's Program:

Bruce MacAlister, W4BRU will be doing a presentation on Hams involvement in the propagation experiments during the last solar eclipse.

### September 2018 RARC Meeting Minutes

Thanks to hurricane Florence the September meeting was canceled. No Minutes!

#### Cliff McDaniel, KD4MNA SK

Cliff was a long time member of RARC. His service schedule can be found here [http://www.manningfh.com/memsol.cgi?user\\_id=2140496](http://www.manningfh.com/memsol.cgi?user_id=2140496).

### From The Prez

October 2018

How about that hurricane that wasn't? Or at least wasn't HERE. It's a strange time when school systems decide to close school out of an "abundance of caution" and we don't even get an inch of rain. I don't understand Chesterfield County's decision to close school on Friday when there was about 0% chance we were going to receive much of anything from hurricane Florence; but I guess it is what it is... Perhaps we need a "thorough" FBI investigation to get to the bottom of it :)

I suppose it's time for me to move beyond melancholy and wax poetic about time "served" as your soon to be "Past President".

I am so appreciative of the RARC Board - they

have been a great group of Hams and very supportive of all the programs, initiatives, and projects we've undertaken over these past two years! Big round of applause for all those who have volunteered their time, talents and energy serving the RARC members!!!

We've hosted some neat programs; heard from a variety of speakers with topics ranging from: Solar Energy, World Class DX contesters, Remote Amateur Radio systems, and much more! We've also increased our RARC membership roster - it would seem to me that Amateur Radio is alive and well in the central Virginia area! The RARC school is helping hams learn all about Amateur Radio, Antenna Modeling, E-Comm, CW, D-Star, and helping Hams "upgrade" their license.

We have also seen a tremendous increase in our member's activities in Amateur Radio activity - that means that folks are getting involved! What else could you ask for?

In my first "Letter from the President" I reminded the members of the **RARC Vision Statement:**

Supports the awareness and growth of Amateur Radio worldwide;  
Strives for every member to get involved, get active, and get on the air;  
Encourages radio experimentation and, through its members, advances radio technology and education; and  
Organizes and trains volunteers to serve their communities by providing public service and emergency communications

I hope you found that RARC did it's best to accomplish these objectives! It has truly been my pleasure serving the RARC members and I thank you for your support. It's been awesome seeing what we can accomplish together when we set goals and work together!

Don't forget, RARC will hold our annual election this month - please show up and vote!  
73 de K8OI / QRT

**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: Bon Air United Methodist Church, 9 AM.

The November 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](http://www.rarclub.net) or contact Allan, WA3J, at 804-399-8724, or [ve@rarclub.net](mailto: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.

**RSS – a quick summary of RARC news**

Look near the top of the club web site, <http://rarclub.net/>, and on the left you see an icon that looks like something radiating a signal. Actually it is a quick way to check on new entries on the website called an "RSS feed." Click it and you get a summary of the last few posts. You can have it put as a link in your on the browser list as you see in yellow. So each day or four you click the that link and you get a quick list of the most recent posts. If one looks interesting, click it in the list and it takes you directly to it. If everything looks boring, just go back to what you were doing.

Reported by Bruce MacAlister, W4BRU

**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](http://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.

<b>Sunday</b>	7:00 pm	50.135	USB
	7:30 pm	52.525	FM
<b>Wednesday</b>	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!

**RADIO 101, #16**

**By John DeMajo, K5HTZ**

With this issue, we are nearing the end of our journey through the history of radio. In our final installment of the series next month, we will look at some landmark amateur radio developments over the years, through historic QST articles.

This month, we are taking a look at the history of Allied Radio Corporation and their offerings in the line of Knight-Kit products of interest to Hams. Allied Radio Corporation (now known as Allied Electronics) is a company with a long history. The company was started in 1928 by Simon "Sy" Wexler who was 31 at the time. Wexler was a noted philanthropist who, among other accomplishments, founded one of Chicago's first mental health clinics.

Allied Radio's first location was at 711 West Lake Street, an address which it shared with Columbia Radio Corporation, the company's first major customer. In 1932, Allied branched out into the mail order business, and relocated to 833 West Jackson Boulevard, where they remained through the Depression and World War II years. Prior to the war, the company established its own brands under the Allied and Knight labels. As the war came, the company shifted its focus to government sales. As a

result of Wexler's wartime experience in industrial electronics sales to the government, Allied has remained a major industrial supplier even today.

In 1953, the company had outgrown its West Jackson Boulevard facilities, at which time it moved into a two-million dollar warehouse and manufacturing facility at 100 North Western Avenue in Chicago. In that same early 1960s era, Wexler founded Allied Electronics as a wholly owned subsidiary of his original company. This move reflected on the fact that much of Allied's product line included not only "radio" but also television, military, industrial and space exploration technology which was coming of age.

The Knight division began to offer experimenter and short-wave kits as early as the mid 1930s. Their original "Ocean Hopper" regenerative short wave kit, was one of the first kits offered to the amateur radio market. Following the war, and seeing the increasing success of the Benton Harbor HeathKit Company, Allied began to offer a limited line of high fidelity audio kits as well as amateur radio transmitters and receivers in kit form. Their first transmitter offering was the Knight-Kit T-50 novice transmitter which was direct competition to HeathKit's AT-1, also their first amateur transmitter offering. Later, as Heathkit released new amateur products, Allied followed with such products as the T-60 which was comparable to the Heathkit DX-40 and DX-60; the T-150 which compared to Heath's DX-100 high end transmitter, along with VFOs, test instruments, educational products, and other products which were almost identical in features with the HeathKits of that same period.

The kit manufacturing business was important in the success of Allied. Many customers, who had no real need for industrial electronics parts, were drawn into Allied's customer base as clients of their consumer based radio, audio and test instrument kits. The success of both Allied and Heath, in this respect, is credited with forcing other manufacturers, such as National Radio, Hallicrafters and Eico, to also begin offering their radios in kit form.

The company remained highly successful through the 1950s and 60s. By 1970, they had opened branch warehouses in numerous locations around the country. Averaging over \$40 Million in annual sales, Allied purchased Texas based Radio Shack, also a mail order parts company, for \$30 Million and relocated their headquarters to Fort Worth, Texas. In 1997, Allied was sold to ADVET Company, and in 1999, they were purchased by Electrocomponents, a holding company based in the United Kingdom.

Today Allied Electronics remains in the market as a catalog order house for industrial and computer parts

and supplies. The heyday of the Knight-Kit business has since passed, due mainly to the introduction of complex devices which could not reasonably be sold in kit form. Those Knight-Kits that have managed to survive a landfill fate, are often seen at flea markets and Ham Fests, having become sought after by a niche of collectors of 1950s and 60s radio nostalgia. Likewise, original copies of Allied's mail order catalogs through the years, have also become valuable collectors items.

*In addition to several examples of Knight-Kits, the Museum of Yesterday library contains a set of all available Allied catalogs ranging from 1929 through 1970, along with books, tables and other technical aids published by the company over the years.*



### RARC Elections of New Officers for 2019

RARC By-Laws require that there be an election each October to choose new Officers for the following year. To accomplish this, a Nominating Committee is appointed by the President which then nominates a candidate for each elected office. At the October meeting additional nominations for each elected office may be made from the floor by any member in good standing. The vote is then held and newly elected officers are installed at the November meeting.

Members of the Nominating Committee this year are the following:

Jim Bates, K8OI, RARC President and Ex-Officio member  
Mac McNeer, K4YEF, Chair  
Win Grant, W4WIN  
Bruce MacAlister, W4BRU  
Allan, Johnson, WA3J  
Tom Flippin, KD4CMK

Committee nominations for RARC officers for 2019 are:

President, John DeMajo, K5HTZ  
Vice President, Allan Johnson, WA3J  
Secretary, Dave Robinson, KJ4LHP  
Treasurer, Ken Leidner, WVOL  
Director, Win Grant, W4WIN  
Director, Chris Pohlad-Thomas, KC1E

Non elected appointed Board members and activity Heads:

Director, Immediate Past President, Jim Bates, K8OI  
Director, to be appointed by the incoming President  
Director, Registered Agent, Mac McNeer, K4YEF  
Editor, Newsletter, Armand Hamel, WA1UQO  
Chair, D-Star Repeater Committee, Win Grant, W4WIN  
Head, Radio School and Webmaster, Bruce MacAlister, W4BRU  
Head, Volunteer Examiner Team, Allan Johnson, WA3J  
Head, Builder's Group, Ken Zutavern, K4ZUT  
Facilities Liaison and Club Property Custodian, Tom Flippin, KD4CMK  
Trustee, W4FJ, Mike Owens, K4RKO  
Trustee, W4ZA, Mac McNeer, K4YEF  
Questions and Comments may be directed to Jim Bates, K8OI

### Annual Banquet!!

Come join us for the RARC Annual Banquet / installation of officers meeting. As always, spouse and non-members are welcome. The Banquet is a replacement for the November meeting on November 9, 2018, 7:00 PM. This year we are having it at a different location, but one we used a few years ago, Kings Korner at the Chesterfield airport. The cost is \$18.00 per person and includes a buffet of BBQ Pork, BBQ Chicken, coleslaw, bake beans, desert and coffee, iced tea or water. A cash bar is being provided.

### Wall Street Tries Shortwave Radio

HF for a stockbroker? Apparently so. This report from the IEEE magazine *Spectrum* told the story. With the

death of any meaningful long term capital gains tax benefits, stock trading companies have taken to doing millions of stock and bond buys and sell a day. If you think a security is going up and you can buy and then sell it quickly you can make a few pennies. Do that a few million times and it becomes money you'd notice. As reported in the July 2018 issue of *Spectrum*, in 2010 a company spent \$300-million putting in a dedicated fiber-optic cable between Chicago and New York to shave a few milliseconds off the transaction. Then another noted that signals travel faster in air than in glass fiber so they put in a dedicated microwave link shaving off a little more time. Doing trades over the oceans is tougher with microwaves not traveling that far and under-sea fiber being much more expensive.

The story came from a software engineer named Bob Van Valzah who saw what looked to him like a classic ham radio Yagi-Uda beam antenna on a commercial building in Chicago. He dug through the FCC database to find a trail leading to the same company that did the microwave link. The challenges mentioned in the article are all familiar to hams: the vagaries of the Ionosphere and a low data-rate compared to fiber or microwave. Still, a few milliseconds advantage when the band is open could lead to pennies and that to real money.

**Bruce MacAlister, W4BRU**

### Spray-On Antennas Could Be the Wave of the Future, University Researchers Believe

Researchers at Drexel University's College of Engineering [report](#) a breakthrough in nanomaterials technology that promises to make installing an antenna as easy as applying sunblock or bug spray. The University reported the research in a *Drexel/NOW* article, "Drexel's Spray-On Antennas Could Be the Tech Connector of the Future." The advance could mean wearable and invisible antennas that could find their place in the next generation of the Internet of Things (IoT), and even have Amateur Radio applications.

"The ability to spray an antenna on a flexible substrate or make it optically transparent means that we could have a lot of new places to set up networks," said Drexel Wireless Systems Laboratory Director and engineering professor Kapil Dandekar, a co-author of the research published recently in *Science Advances*.

"This technology could enable the truly seamless integration of antennas with everyday objects, which

will be critical for the emerging Internet of things," Dandekar said.

In their paper, Dandekar and his colleagues laid out a method for spraying invisibly thin antennas made from a type of two-dimensional metallic material called MXene -- a conductive, two-dimensional titanium carbide material -- which can be dissolved in water to create an ink or paint. They said the exceptional conductivity of the material enables it to be employed as an RF radiator, even when applied in a very thin, nearly invisible coating. The MXene antennas perform as well as those now being used in mobile devices, wireless routers, and other devices, the Drexel researchers said. In addition, the MXene materials were shown to be 50 times better than graphene and 300 times better than silver ink antennas in terms of preserving the quality of RF transmission.

"Current fabrication methods of metals cannot make antennas thin enough and applicable to any surface, in spite of decades of research and development to improve the performance of metal antennas," said Yury Gogotsi, Ph.D., director of the A.J. Drexel Nanomaterials Institute, who initiated and led the project. "We were looking for two-dimensional nanomaterials, which have sheet thickness about 100,000 times thinner than a human hair; just a few atoms across, and can self-assemble into conductive films upon deposition on any surface. Therefore, we selected MXene as a candidate for ultra-thin antennas."

"The MXene antenna not only outperformed the macro and micro world of metal antennas, we went beyond the performance of available nanomaterial antennas, while keeping the antenna thickness very low," said Babak Anasori, a research assistant professor in the A.J. Drexel Nanomaterials Institute. "The thinnest antenna was as thin as 62 nanometers -- about a thousand times thinner than a sheet of paper -- and it was almost transparent."

Unlike existing nanomaterial fabrication methods that require several steps, the Drexel research team's spray-on antennas can be fabricated in a single step by airbrush spraying a water-based MXene ink, Anasori said. -- *Thanks to DrexelNow*

(ARRL Newsletter)

### MakerFest 2018!!

Lots of folks interested in Ham Radio!!  
Thanks to all the club members that made the day a great success.



**The SWAP SHOP**

Club members may list their wares in the newsletter. Send descriptive information to Armand at [wa1uqo@arrl.net](mailto: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.**

**FOR SALE**

**YAESU FT-450D** HF RADIO Never used, kept covered in non-smoking home.

On-line price is \$749.95 but your price is \$599.00.

**MFJ-939Y3 AUTOMATIC ANTENNA TUNER** Never used, kept covered in non-smoking home

On-line price is \$159.95 but your price is \$60.00.

Slightly weathered but NEVER USED **SteppIR 80m Vertical Antenna** CrankIR, 80m Adjustable Radial, Pole Extension, Quick Clamp Kits and Travel Bag On-line price is \$615.00 but your price is \$300.00.

**Call Patrick Boland KE4BUO 804-594-6627 [bolandpatrick55@yahoo.com](mailto:bolandpatrick55@yahoo.com)**

***Thought For The Day!***

***Everything will be O.K. in the end. If it's not O.K. it's not the end!***

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<b>Ken Leidner</b>	<b>WV0L</b>	<b>Treasurer</b>		