



# THE RICHMOND HAM

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October 2023

## THE RICHMOND AMATEUR RADIO CLUB RARC Meeting in person!

Our monthly meeting is on Friday October 13th, 2023, 7:00PM, at the Bon Air United Methodist Church, 1645 Buford Road. This month's meeting will be in-person and also on Zoom.

<https://us02web.zoom.us/j/88518058584>

### QR Code for Zoom Link



### This Month's Program: Tour of the sBitX Transceiver

The October program is a review of the latest offering from HF Signals of Hyderabad, India. A few years ago electrical engineer Ashhar Farhan, VU2ESE, gathered an international crew of hams as advisors and designed a ham transceiver semi-kit aimed at third-world hams who could not afford the usual transceiver prices. The BitX series started with an open design and morphed into a product, the BitX20, an SSB-CW transceiver for 20m. Richmond hams gathered as the "builders group" built several of these including the BitX40, and the uBitX multi-band transceiver that went through 6 versions. They were semi-kits with the main board populated with surface mounted components (happy days!) and wound toroids (happy again!). We just built

the case, mounted the controls, and applied modifications and fixes as hams smarter than us developed them.

Now there's the SDR-like sBitX. It combines the evolved design of the uBitX with a Raspberry Pi computer to give a hybrid SDR transceiver. It is no longer designed to be cheap for third-world hams, the Chinese have that market. It's now for those of us that like to "fiddle" with our radios.

Bruce MacAlister, W4BRU, and several others bought this new transceiver. Bruce will give a tour of it and, the propagation cooperating, a demonstration.

### Richmond Amateur Radio Club September 8th Meeting Minutes

The September meeting was called to order at 19:00 by President Rick Waller, KA4OHM.

**Business Mtg:** Minutes of the August meeting were approved unanimously.

**Treasurer's Report:** The club had a balance of \$2,484.91.

One new member was voted in. Andrew Olsson, K4AVM. Welcome Andrew!

**Club School:** Bruce Mac Alister, W4BRU reported that there were NO students for this semester.

**Club Elections:** Mac Mc Neer, K4YEF, reminded us that the elections would be next month at the October meeting and installation of officers at the November meeting.

**Remote Station:** Darrell Basinger, WW4F, called for volunteers to assist in the replacement of the antennas for the remote station. Give Darrell a call if you can help.

**Richmond Marathon:** Dan Bryant, N4DOB, spoke for Jim Rubin, W4PKR, who is looking for help with the Richmond Marathon (Nov. 11<sup>th</sup>).

Interested volunteers can contact Jim at [W4PKR@arri.net](mailto:W4PKR@arri.net).

The business meeting was closed at 19:17

**Show and Tell:** Dan Brown, W4ERF, Gave a detailed description of his homebrew frequency converter – Shortwave to AM radio.

John De Majo, K5HTZ, showed his latest Museum aqisition, a devise that converted railroad type code (click & clack) to tone type code to accommodate radio operators that were used to tone type code.

**Meeting Presentation:** “Antennas and Systems for International Broadcasting” by Gerhard Straub, K6XH.

Meeting Closed at 20:31.

Submitted by Armand, WA1UQQ

### From The Prez

Greetings, RARC members. I will be out of town for the October meeting so vice president Darrell Basinger, WW4F will be presiding over the meeting.

Tom, Flippin, KD4CMK, brought to my attention the fact that RARC had been making modest financial donations to Bon Air United Methodist Church. In addition to providing us with a nice meeting space at no charge, the church also provides Internet access, use of a large screen television and a storage space for club property. Additionally, the church allows us to put antennas on their building. During the peak of the COVID-19 epidemic when we did not have in person meetings no contributions were made. I discussed the idea with the board and we have agreed to contribute \$600.00 to the church for 2023. This adds up to \$50 a month which I believe is very reasonable .RARC is very fortunate to have a place to meet. I would like to continue making this contribution on an annual basis if appropriate.

John DeMajo, K5HTZ has informed me that ,due to his health status, he cannot be counted on to attend meetings. John was instrumental in designing and building a special cart that we have been using successfully for our zoom meetings. John has been running this equipment for us. John has printed instructions which are attached to the cart. We need three or four members to step up to be zoom operators. John is willing to try to teach those operators. If not, we will no longer be able to provide the zoom portion of our meeting. Meetings will be recorded and available online as they have been previously.

Finally, I would like to thank Win Grant ,W4WIN for the time and effort he has put in to obtaining and installing state of the art D-star repeaters for the club.

73, Rick, KA4OHM

### RARC VE News

We have two different groups that provide testing.

One is free, but only offers testing sessions on the second Saturday of odd months except June (Field Day) replaces July. The next session will be on Saturday November 11<sup>th</sup> 2023 at

Chesterfield Library Bon Air Branch  
9103 Rattlesnake Rd  
North Chesterfield, VA 23235

The other one cost \$15.00, but offers testing sessions on the 1st Saturday of every month.

RARC offers Free VE Testing Sessions on the second Saturday of odd months except June (Field Day) replaces July. Currently all testing starts at 10:00 AM and is at: Chesterfield Library Bon Air Branch 9103 Rattlesnake Rd North Chesterfield, VA 23235.

Pre-registration Required. Walk-ins Accepted. Pre-Registration required for Techs and for special needs applicants. Anyone taking the Tech exam needs a FRN from the FCC (Google obtaining a FCC FRN) and bring that info to the session. 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)

KC4TS Cats Vet (Cats Volunteer Examination Team) offers VE Testing Sessions that cost \$15.00 on the 1st Saturday of every month. Currently all testing starts at 10:00 AM and is at: Gospel Light Church 2109 Anderson Hey Powhatan VA. Check-in is between 10am and 12pm and we stay as long as needed to finish all the exams. Walk-in candidates are welcome! You just need a valid ID, an individual FCC FRN, and the testing fee of \$15 which goes directly to the ARRL (cash or check made payable to "ARRL VEC"). We can provide pencils and a very simple calculator or you can bring your own. See <http://kc4ts.org/> for more information.

### 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 \$22.00

Lots of information about the Club and our activities is available on our website, [www.rarclub.net](http://www.rarclub.net).

**QR Code to RARC Website**



**Nets**

RARC has the first and only D-STAR digital repeater in the area: 147.255 (+ 600), 443.7125 (+ 5) and 1284.0000 (-20). In addition to our Wednesday local D Star net (below), we link Module C (VHF) on Tuesday nights at 9pm, to REF 054C for the North Carolina D Star Net.

The RARC D Star Net meets on Wednesday nights at 8:00pm and is accessible on our three D Star modules, all of which will be linked together via REF 097B. So if you are in RF range of the repeater, you can join the net on any of the three RF modules and be heard by everyone.

If you participate in the net via DVAP, DV Dongle or a Hotspot (such as Pi Star), you should link your device to REF 097B rather than to any of our modules which will allow you to be heard by everyone.

Any questions, contact Win – W4WIN at wingrant@gmail.com

<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
<b>Thursday</b>	8:00 pm	52.525	FM

**MRA**

**Interested in information or support of the Metropolitan Repeater Association (MRA)?**

The sole business of the MRA is to own, operate and maintain the 145.430 repeater. For information please visit our website at <https://sites.google.com/view/kg4mra/>.

**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!

**Articles Requested!**

Everyone has a story to share. Your first rig, your first contact, your most memorable QSO? How about a description of your shack with a picture? Old to the hobby – New to the hobby, there are lots of interesting stories out there to share. Consider writing an article for the newsletter. Any topic, any length any format, all will be welcomed. Any questions, send me an email at wa1uqo@gmail.com or call @ 508-838-8353. Thanks!

**Volunteer for the Richmond Marathon!**

Dear Fellow Hams,

The Richmond, VA Marathon is on November 11th, 2023. We will be needing up to 40 operators of varying skill sets. You do not have to be experienced at operating events for some of the positions, as you will be trained. If you are interested and available on Nov. 11th, please email: Jim Rubin, W4PKR at: [W4PKR@ARRL.NET](mailto:W4PKR@ARRL.NET).

In the subject line, please include "2023 Richmond Marathon".

In the body of the email, please include the following:

- Your name and call sign
- Your cell phone number
- Your tee-shirt size (I'm not 100% sure there will be tees for a November event, but just in case!)
- What, if any, experience you may have operating at events, including ARES events and especially if you have experience as a Net Control Operator for local nets or in any other capacity.
- What portable equipment you have available.

I will follow up with you and let you know I have received your email and you will be included in all updates regarding the race, as well as any information needed to attend. Operating events as a volunteer is fun and a great way to serve the public, as well as to show people what hams can do. It's also a good experience for anyone at all interested in emergency operating, as we follow net control protocols similar to what would go on in an emergency setting, as opposed to an average weekly discussion net.

Thank you all in advance for taking part in this event!  
73,

Jim Rubin, W4PKR

Lead Amateur Radio Coordinator

2023 Richmond Marathon

646-528-6280

## Club Elections

RARC election of Officers for 2024 will be held at the October meeting. The Nominating Committee has endorsed the following:

President	Rich Waller, KA4OHM
Vice President	Darrell Basinger, WW4F
Secretary.	Dave Robinson, KJ4LHP
Treasurer.	Ken Leitner, WV0L
Director.	Lauren Ware, WD4FMG
Director.	Armand Hamel, WA1UQU

Additional nominations may be made from the floor and Zoom at the October meeting.  
Newly elected Officers will be installed at the November meeting.

## RCA 4-A-1

In the very early days of commercial broadcasting, the microphones in use were modified “candle stick” telephones, supplied without the customary ear pieces and phone system magnetics. Although the condenser microphone had been invented in 1916 by Edward Christopher Wente of Western Electric, this type of microphone only found its way into commercial broadcasting when noiseless vacuum tubes became available to provide the amplification needed for the weak signals that the condenser elements generated. By the late 1920s, radio broadcasting had become more than the simple experimental interludes of instrumental solos or poetry reading of the very early pioneering era. Demand was on for a microphone that could reasonably reproduce the sounds of symphony and large studio orchestras, opera singers, as well as dialogue and sound effects associated with large scale plays and musicals being produced for radio. The answer to this need was the RCA 4-A-1 amplified condenser microphone. Often dubbed “the box camera microphone” because of its similar appearance to Kodak's popular “snapshot” camera of that same era. First introduced in 1928, the 4-A-1 soon became the staple of networks as well as some better equipped local stations. It consisted of a condenser element, along with a three stage vacuum tube amplifier, internal in a cast steel enclosure. The 6 x 6” square head sat atop a combination iron and turned wooden stand, with the top of the unit standing 14-1/2” above the surface on which it sat. A second type of stand adapter permitted mounting on a floor stand.

As mentioned, the development which made this microphone possible was the introduction of noise-free vacuum tubes. A filament voltage of six volts DC is employed, along with a 180 volt DC supply which provided not only excitation to the condenser element, but also was reduced internally to 90 volts, via resistors, to supply the amplifier tube plates. A six conductor, rubber and cloth insulated cable connected the microphone to the power supply and amplifier.

While hundreds of these microphones were manufactured in the late 1920s, remaining 4-A-1 microphones are extremely rare. Most current examples remain in the Smithsonian and a few major broadcast museums, The Museum Of Yesterday was fortunate to locate an example, in still excellent condition. The surprisingly good quality of the audio produced by these microphones can be heard on a rare remaining audio file of The Eddie Cantor Show from 1932, which can be streamed or downloaded at

[http://www.demajo.net/museum/page8\\_graphics/eddie\\_cantor\\_10\\_20\\_1932.mp3](http://www.demajo.net/museum/page8_graphics/eddie_cantor_10_20_1932.mp3)

In general use from its introduction in 1928 until the introduction of the much superior RCA Model 44 ribbon microphone in 1933, the 4-A-1 was broadcasting's first real attempt to offer reasonable fidelity audio to listeners.

By John DeMajo, K5HTZ





## W4FJ New D Star Repeater Installed

On September 26, we replaced the W4FJ D Star repeater with Icom's latest G3 hardware. The original VHF D Star repeater went on the air in 2008 and in subsequent years we added UHF and 23 cm modules after the repeater was moved to a rooftop location near Capitol Square in downtown Richmond. The new repeater has a "mix mode" feature where it will switch to analog FM mode if it hears an analog signal. (Note: it will not convert an analog signal to digital.) To use the FM mode, your radio must be set to transmit a subaudible 74.4 Hz tone, the same subaudible tone used on all Richmond area FM repeaters. You do not need a D Star radio to use the W4FJ repeater, but the linking features that make D Star so useful only work if you are in digital mode.

A few months ago Mike Owens, K4RKO, refurbished the VHF and UHF power amplifiers and replaced the cooling fans. The thermistors which controlled the fans had also failed in both amplifiers and replacements were unavailable, so we used thermostatic control modules to configure the fans to run only when needed. The control modules are the devices with the digital displays in the photo below. We took the occasion of the repeater hardware replacement to upgrade to an Astron 35 amp power supply to which Mike added a cooling fan.

Jim Bates, K8OI, who has been our repeater network administrator for years, recently moved to northern Virginia, but has continued to manage the IT side of D Star remotely. Jim has set up a Virginia D Star reflector which we link to full time and hope that eventually more Virginia D Star repeaters will link to REF097 to create a virtual wide area D Star repeater. Jim recently shared an interesting statistic: we have registered 378 D Star users through W4FJ. That puts us 56 out of 2,625 D Star repeater registrations worldwide. Many of these hams have never used the W4FJ repeater, but because users register with the closest D Star repeater to their QTH, it gives us an idea of how many D Star users are in our general area.

Armand, WA1UQO, is the net control for RARC's weekly D Star net at 8:00 pm on Wednesday nights. We link all three modules to REF097B so if you are in radio range of the repeaters, you can participate in the net on any of our radio modules. If you can't connect via radio, you can link your hotspot to REF097B and participate from anywhere. I have checked in from Tahiti and Vietnam using my D Star HT and hotspot.

The repeater replacement was timed to take advantage of a generous rebate from Icom. We anticipate many more years of great digital (and now analog) service from the W4FJ repeaters.

Win - W4WIN





### RARC renewal time!

Hi RARC member, it is that time of year again, your dues are due.

Please complete the Required fields; Name, Call Sign (if None, enter None), Year of Birth, and Email address on the renewal form. Plus any of the optional fields if your information has changed. The [form is located on our website here](#). Select your choice of Payment options and press the Submit button at the bottom of the form.

Submitting, emails the form to us and transfers you to one of two pages depending on the Payment option you selected.

Cash or Check - A page that describes how to send a check. You do not have to send the form with the check as we will already have that information. You can put a blank piece of paper around the check if you want.

PayPal or Credit/Debit card - To a page at PayPal that allows you to pay by your PayPal account or if you don't have one as a Guest of PayPal and just use your Credit or Debit card.

Thanks for being a member of the Richmond Amateur Radio Club (RARC)

The form is DUE to be returned by November 1, 2023.



### Calling All Youth Amateur Operators!

Dear club members,

My name is McKenzie Denton, and I am thrilled to introduce myself as the incoming Virginia Section Youth Coordinator. In my new role, I am dedicated to fostering a vibrant and engaged community of young Amateur operators, and I am reaching out to you for your assistance.

I am excited to share that the Intrepid-DX Group, a US-based 501 C (3) nonprofit organization passionate about promoting Amateur Radio activities worldwide, is launching its 4th Annual Youth "Dream Rig" Essay Contest. This initiative is of great importance in recognizing youth who are unquestionably the future of our beloved hobby.

Here's a brief overview of the contest:

**Contest Theme:** "What attracted you to amateur radio?"

**Prizes:**

1. First Place: ICOM IC-7300
2. Second Place: ICOM ID5100AD dual band mobile radio with D-Star
3. Third Place: ICOM ID52A dual band handy talkie with D-Star

**Contest Rules:**

1. Two-page essay addressing the contest theme.
2. Contestants must hold a USA or Canadian Amateur Radio License and be aged 19 or younger.
3. Commitment to keep the radio for at least one year and use it on the air.
4. Essays can be submitted in plain text, PDF, or MS Word format to [intrepiddxgroup@gmail.com](mailto:intrepiddxgroup@gmail.com) by November 30, 2023. Alternatively, physical submissions can be mailed to The Intrepid-DX Group, 3052 Wetmore Dr, San Jose, CA 95148, USA (must be postmarked by November 30, 2022).

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5. Previous contestants are welcome to participate, provided all other criteria are met.

The winners will be announced on their Website and Facebook page on December 15, 2023. They will also be asked to provide a photo with their prize.

We would be immensely grateful if you could assist us in spreading the word about this exciting contest by sharing the attached flyer in your club's newsletter or through any other means that reach the youth amateur radio operators in your area.

While membership in the ARRL is not a requirement for entry, we understand that many youths are affiliated with local clubs and may not come across our announcement on other platforms.

For any questions or clarifications, please feel free to reach out to [intrepiddxgroup@gmail.com](mailto:intrepiddxgroup@gmail.com).

Thank you for your support, and I look forward to working with you.

73,

McKenzie Denton

KO4GLN

Virginia Section Youth Coordinator

[KO4GLN@arrl.net](mailto:KO4GLN@arrl.net)

(757) 560 3901

### **The SWAP SHOP**

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

Comet CX-333 tri-band antenna. Used 3 years, still in very good condition and had a low SWR on all bands when decommissioned.

SPECS: Coverage: 2M, 1.25M, 70cm, VSWR: 1.5:1 or less, Max Power: 120 watts, Length: 10' 4", Weight: 3 lbs 8 oz , Connector: SO-239.

Construction: Heavy-duty Fiberglass, 2 sections

Asking \$90. Contact Dave White, W4IIA for information.

804-501-8857

**For Sale:** Icom IC-2820H mobile or base transceiver. FM analog and D Star digital, VHF-UHF, 50 watts, 500 memory channels, detachable control head. Includes GPS/D Star option. Dual receivers. Wide coverage receiver covers 220 MHz and 900 MHz bands. Diversity receive function. \$225. Win Grant, W4WIN. [wingrant@gmail.com](mailto:wingrant@gmail.com)

#### **For Sale:**

Cushcraft 215WB – 2M 15 element Broadband Boomer \$160

KLM 432-20LBX – 70cm 20 element \$140

Kenwood TM-441A - 70cm FM mobile - \$125

Stainless steel mast - 21' heavy duty seamless tube - 1 7/8" O.D. , 1 1/2" I.D. 3/16" wall thickness, no holes have been drilled in it - \$550

Hygain CD-45II rotator with control. New rheostat and stainless terminal strip in rotator. Cleaned and re-lubricated. - \$275

Rohn TB3 thrust bearing - \$95

16 QTY - 4' Standard stackable aluminum tubing mast sections (not the light duty ribbed ones) with 3 guy plates - \$325

Contact Ronnie Bolton, WU4G 804-651-3504 [wu4g@arrl.net](mailto:wu4g@arrl.net)



### Thought For The Day

*My bed is a magical place where I suddenly remember everything I forgot to do.*

Rick Waller	KA4OHM	President	(804) 971-5815	<a href="mailto:president@rarclub.net">president@rarclub.net</a>
Darrell Basinger	WW4F	Vice President	(804) 672-7928	<a href="mailto:vicepresident@rarclub.net">vicepresident@rarclub.net</a>
Dave Robinson	KJ4LHP	Secretary		
Ken Leidner	WV0L	Treasurer		

