



THE RICHMOND HAM

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September 2018

THE RICHMOND AMATEUR RADIO CLUB will meet Friday, September 14th 2018, 7:00PM, at the Bon Air United Methodist Church, 1645 Buford Road.

Coming Events:

RARC VE Testing Session. November 10th.

This Month's Program:

Cyber Security! By Jim Bates, K8OI

August 2018 RARC Meeting Minutes

Meeting Date: August 10, 2018

Meeting Time: 7:00 P.M.

Presiding Officers: Jim Bates, President, K8OI; George Golding, Vice President, W3PPY; Tom Newman, Secretary, KJ4LVC; Ken Leidner, Treasurer, WVOL;

Directors: Tom Flippin, KD4CMK; Win Grant, W4WIN; David Robinson, KJ4LHP; Trustee for W4FJ Mike Owens, K4RKO.

The meeting was opened by Jim Bates with a greeting to all the members assembled. Jim led the members in the Pledge of Allegiance. All members then introduced themselves by name and radio call sign.

Minutes from the July meeting was approved by voice vote.

Ken gave the treasurers report noting that income revenues was a little less for July and expenses a little more. The deposits included one new member for two years and another for one plus the 50/50 for a total of \$91.00. The expenses included the annual P.O. Box fee, expense for Armand Hamel, Tech Book for Instructor, and the Hartford Insurance for a total of \$593.93. That left the balance in checking at \$6,678.03. Ken also spoke on a radio outage that was random for W4FJ and that work was being done to trace the problem.

Next, Jim recognized Art William, W4TY, for offering prizes in the 50/50 of two sets of QST magazines. Bruce MacAlister, W4BRU, gave projections for student involvement for the radio school for the upcoming months. Ken then presented the donation given by member John De Majo, K5HTZ, for the RARC club to buy the manuals for Technician, General and Extra that would be given to the Chesterfield County Library. The Chesterfield County Library had said they would make these manuals available to patrons for four years.

Jim reminded members to consider volunteering for officer positions that must be filled soon.

The 50/50 was then held with the first winner receiving money and the next two winners receiving issues of QST magazine offered as prizes. Following the motion for the business meeting to adjourn, a short break was taken. The meeting then continued with a presentation by John De Majo, K5HTZ, on "Boat Anchors". It was very informative.

Respectfully submitted, Tom Newman, KJ4LVC, Secretary.

From The Prez

September 2018

I'm just gonna have to say it the way it needs to be said - this month's meeting will have very little, if anything, to do with Amateur Radio. Whew, I feel better now... While working through the RARC presentation calendar over the past 2 years, I've really tried to keep the focus on the key areas of interest within the Amateur Radio community - Digital Modes, Contesting Clubs, Local Ragchew Clubs, 2m/70cm local repeater topics (regardless of mode :)), etc. This month, however, I've broken my own "personal" rule about RARC presentations - I plan on talking about privacy and security, specifically related to the Internet, computers, and how you can help protect your digital identity and assets.

The presentation won't be exhaustive and deal with every nuance, rather - I've focused on some basic things you can do. Most presentation suggestions (products and/or solutions) are free

and some cost a few dollars a year; but all are worthwhile. I do hope you find it both informative and a good use of your time.

Switching gears to radio related stuff - I was SO excited to read about Phil & Ed's Russia experience in this month's QST (August, 2018) Public Service article. I find that the Amateur Radio community is really rather small if when you get involved in it and you meet a lot of interesting people - some of which you might have read about or heard someone else talking about. The best part is that YOU can make the hobby better for other hams too.

My wife was an "only child" growing up. One year for Christmas she received a pair of walkie-talkies - she'd put one by a tree outside, talk on the walkie-talkie in the house, drop it and go outside and talk "back". Needless to say, it wasn't that much fun for her and the novelty wore off quickly... Why this story? **"Amateur radio is a TEAM sport!"** It's not so much fun when there's nobody else to chat with. Get on the air and hit the PTT! Teach a class, mentor a new Ham, (to myself) get off the digital modes of HF and use PHONE for a little while.

Above all, I hope you enjoy our hobby! Thank you for bearing with me for the September program!

73 de K8OI

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 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.

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.

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!

RADIO 101, #15

By John DeMajo, K5HTZ

Our journey through radio's history has taken us from the very beginning of scientific experimentation, to the era that is considered to be the dawn of modern day ham radio. In our travels, we now find ourselves at the end of World War II. The nation was emerging from a manufacturing blackout that saw literally no civilian use electronics produced in the period between late 1941 and early 1946. For the electronics consumer and specifically the Ham radio hobbyist, extraordinary developments were on the horizon, many of which were being accelerated by wartime technology.

Most importantly, a new generation of radio geeks were returning from military service, many of them having been directly involved with electronic communications, radar and radio guidance systems. It wasn't long before radio manufacturers saw the new market opening, and thus stepped up the production of high end equipment in order to furnish new home ham shacks that were coming on line.

But the cost of introducing these new technological developments into civilian markets was high. Competition among manufacturers to produce the most coveted radios, often involved huge design teams, artists, industrial designers and engineers, all of whom had the ability to take the great advancements in technology and apply them to the construction of consumer radios and televisions. For the average ham, the cost of new high-end communications gear was often out of reach. This was especially true for GIs who were returning home to waiting wives and fiancées, acquiring homes and starting new families.

It wasn't only the consumer who was facing a new era. As a result of the accelerated end of the war, brought on by the bombing of Japan with atomic weapons, the U.S. Government found itself sitting on millions of dollars worth of equipment that included everything from surplus tanks and airplanes, to bolts and nuts. The war department came up with an ingenious plan for disposal of these no longer needed items through a program called the War Assets Administration. In cities all over the country, former war plants opened their doors to consumers in order to sell off surplus inventory. Within two years of the end of the war, most of the government's surplus property had been transferred into the hands of individuals and businesses who would apply it to new peace time projects.

One such beneficiary of this program was a group of investors from Benton Harbor, Michigan who envisioned using the electronics surplus they had acquired, to inexpensively manufacture much needed test equipment for a service industry that was awakening from the dark years of the war. Thus the Heath Company was born, and their products were branded under the name "Heathkit."

True to their mission, the first Heathkits to hit the market included RF and audio signal generators, cathode ray oscilloscopes, and a small offering of "build-it-yourself" home radios and phonographs. Over the next four decades, the Heathkit line expanded to include not only some of the most sought after Ham radio equipment of the era, but also television kits, hi-fi and stereo components, security systems, computers, automotive electronics, educational devices and even electronic organs.

Heath manufactured millions of kits in the period between 1947 and 1992 at which time they ceased kit production. In assessing the company's history, it appears that two major factors were responsible for driving them out of business. The first was the increasing complexity of the equipment consumers were demanding. Post war advances in solid state design, coupled with the lower costs of foreign manufacturing posed serious competition to American manufacturers. The company's engineers were quite capable of meeting the demand for technology, but the kits became so complex that the average hobbyist could no longer assemble them without difficulty. The other factor that seems to have sealed Heathkit's fate was the decision to open of branch stores in many areas of the country. These stores not only marketed Heathkits, but also served as local electronics parts houses intended to cash in on the market share going to the emerging Radio Shack network of stores. Heath' stores also served as factory authorized repair stations for kits that failed, mostly as a result of poor assembly. This author became acquainted with a student in New Orleans who was working his way through medical school as a technician in a Heathkit store. He often spoke of the frustration that his work day was consumed with cleaning up disasters created by inexperienced kit builders, most of whom could not afford the labor costs necessary to pay a competent licensed technician to rectify their damaged equipment. That, combined with the fact that kit electronics sales were to some degree a "niche" market, proved the branch store marketing plan to be short-lived.

After the 1992 shutdown of Heathkit manufacturing, the company, which had been first acquired by Schlumberger and later by Zenith, continued to build commercial lighting controls and educational kits. The lighting control business was sold in 2000 and Heathkit remained a somewhat inactive government contractor for the next ten years. Then in 2011, the company announced that it was re-entering the kit business. This endeavor also failed, and in 2012 Heath filed for bankruptcy. As far as can be determined, they are still in existence, and the company has an active website, however the glory days of Heathkit seem to have ended, and the name joins the other giants of radio manufacturing who have faded into history.

Shown this month are some examples of Heathkit products including a few of their first test instruments to hit the post-war market, along with the AT-1, DX-20, DC-40, DX-100 and their final QRP amateur transmitter offerings.



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 Pohlada-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

Net Controls

Many of us participate on a regular basis in various nets. Most nets are controlled nets with a net control station in charge to make things run smoothly. We often take for granted the services that net control operators provide.

At the Berryville Hamfest in August I ran into Mark, WA4KFZ, whom I have known for a number of years. I met Mark on the air when the W4FJ D Star repeater got our internet connection working and we began linking to the National Capital Region D Star Net on Wednesday nights. Mark has been the net control for that net for as long as I can remember.

With me at Berryville was RARC's own Armand Hamel, WA1UQO. A number of years ago we needed a new net control operator for the RARC D Star Net which also meets on Wednesday nights. I asked Armand if he would take on this duty (in addition to serving as the editor of this newsletter) and he accepted.

Armand is too humble to call attention to himself. He does an outstanding job of running the RARC D Star Net every week. A D Star net is a little different in the sense that there are some computer tools that allow you to view the callsigns of everyone who keys up. But it's even more complicated by the fact that the RARC D Star Net actually links three separate repeater modules (144 MHz, 440 MHz and 1.2 GHz) plus a number of stations who access the net by connecting a hotspot device to the reflector which links all of this together. So not only is Armand typically listening to two radio modules, he is listening to the reflector traffic on a hotspot and also watching callsigns appear on the D Plus Monitor site <https://nj6n.com/dplusmon/>.

It's sometimes a thankless job being a net control station, though I hear many of the Wednesday night checkins thank Armand for calling the net. I want to acknowledge Armand's faithful service. Without net control operators, there would be no nets.

Win - WA4SSG



WA1UQO and WA4KFZ

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.

A New Callsign After Many Years

In March 1961 I received a little envelope from the FCC in Gettysburg, Pennsylvania that I had been awaiting for three months. The envelope contained my amateur radio license. I had passed my Novice test in December 1960, but in those days the test papers themselves had to be mailed to the FCC. Typical processing time was three months. The FCC had randomly assigned me WN4SSG. Since a Novice license was only good for one year and could not be renewed, there was a real incentive to upgrade quickly.

Later in 1961 I passed the General class test at the FCC office in Norfolk, and about two months later a new license, WA4SSG, arrived from Gettysburg. I got my Advanced class license in 1969 when I was taking the First Class Radiotelephone license test, and a few years ago finally got around to taking the Extra exam. The WA4SSG callsign, though, has been with me since 1961.

In 1978, the FCC implemented the current vanity callsign scheme. Formal rules for issuance of callsigns were adopted after an FCC employee was indicted for taking bribes to assign "preferred" callsigns to hams who paid not the FCC, but the employee. An interesting history of callsigns is at <https://www.eham.net/articles/38849>. Although there are still many internet references to the fees associated with requesting a vanity callsign, there is now no charge to obtain a vanity callsign from the FCC.

I finally decided to give up WA4SSG if, and only if, I could get W4WIN. Around 2:20 am on August 14, I received an email from the FCC that my application for the available callsign, W4WIN, which I had submitted 18 days earlier, had been approved. WA4SSG was "canceled" by the FCC, and W4WIN was assigned to me. There are many resources on WWW.QRZ.COM, WWW.ARRL.ORG and WWW.AE7Q.COM to assist you in obtaining a vanity callsign. I wanted to share some tips on what you will need to do after you change your callsign.

- Call letter license plates. This proved to be one of the simplest tasks. I went to WWW.DMVNOW.COM and simply renewed my car registration. As part of the process I requested new license plates. I chose an Amateur Radio type plate and picked my license plate, my new callsign. The online system worked well. A week after I completed the process I

received an email from DMV that my new plates had been mailed.

- QRZ.COM – Everyone with a U.S. amateur license has a page on QRZ.COM, even if you did not request one. Most hams customize the free page with personal information and pictures. If you change your callsign, QRZ.COM handles everything as it gets your new callsign by syncing to the FCC Universal Licensing System database. Within a couple of days of a new callsign issuing, QRZ.COM will reflect your new callsign and list your prior callsign in "Other callsigns" under the Detail tab. Kudos to QRZ.COM for making this so easy.
- Logbook of the World – I have used LOTW for a number of years. It's a great way to manage QSLs and often to get quick confirmation of a DX contact without waiting years for a paper card to arrive. It also saves a lot of money on printed cards and postage if you simply want confirmation of a contact. A nice set of instructions on how to change your callsign for LOTW purposes can be found at <https://lotw.arrl.org/lotw-help/callsign-change/?lang=en>. Here's the kicker and where I made a mistake: wait at least three days before starting this process. The LOTW database apparently takes a while to sync with the FCC ULS database. I waited a mere 24 hours before following the LOTW instructions for requesting a new Callsign Certificate for W4WIN. Because LOTW had not synced with the ULS, I received an error message that my request was denied because W4WIN was not assigned to me, when in fact it was. A very nice lady named Kathy at the ARRL assisted me via email. Once you get an error message like I did, ARRL staff has to intervene before one can complete the process. The process is smooth if you wait at least three days for LOTW to catch up with the ULS. After setting up my new Callsign Certificate in LOTW, I logged on to the LOTW website and clicked on Your QSOs. Clicking on Most Recent QSOs showed my WA4SSG as well as the W4WIN QSOs that I had uploaded. But a few days after successfully changing the callsign in LOTW, I noticed that under my DXCC total, only the W4WIN stats were showing up. I used the "Link Account" feature in LOTW to request that my prior contacts be linked to the W4WIN account, but that alone did not work. Another email to Kathy at ARRL. Problem fixed in 20 minutes.
- Ham Radio Deluxe software – I began using HRD about ten years ago for the logging and digital mode programs. With so many years of contacts in the Logbook program, I have continued to use the program. I paid for a subscription some years ago, but I have not paid for tech support since my initial paid subscription because I did not need it, even though I am still allowed to install most program updates. I spent a few hours with the HRD program, specifically the "My Station" menus under the Configure tab trying to figure out how to change my callsign in HRD because the

Logbook module must have the correct callsign when you upload your log to LOTW. I finally found an obscure posting in an HRD forum that to change your callsign, you must request a new license key from HRD, even if you are not currently subscribed for support purposes. I emailed sales@hrdsoftwarellc.com and explained that I had changed my callsign and needed a new license key to update my software. In a matter of hours, I received an email with the new license key attached. In the HRD Rig Control program go to Tools >>HRD License Manager and follow the steps to add your new license key which will contain your new callsign. The program will still show your original callsign, so be sure to select your new one once you install the new key. In Logbook, go to Configure >> My Station and select your new callsign in the upper left of the My Station screen. You should see your new callsign displayed at the top right corner of the Logbook main screen if you have this set correctly. In addition, if you use HRD's Logbook to upload to LOTW, be sure to edit the LOTW Upload menu to reflect your new Username (callsign) and Station Location. Go to the More icon >>LOTW>>Upload and be sure your new callsign is showing in the Username box along with the correction Station location information. Sound complicated? It is.

- D Star radios – All D Star radios require your callsign to be entered into the radio because the radio transmits the callsign every time you transmit. It was a simple process to change the callsign in the radios, but be sure to register your new callsign with the D Star trust server at <https://w4fj.dstargateway.org/Dstar.do>. Jim, K8OI, manages the registrations and can help if you have a problem.

These are the tasks that consumed my first two weeks of having a new callsign after 57 years with the original one. I'm also being reminded of all the places where our callsign is our primary identifier, like when I sent a support question to Flex Radio and it asked for my callsign. Since my radio was registered with them under my prior callsign, I used that, but I'm sure I will encounter many more similar instances where some vendor or entity knows me only by my callsign, and I may have to explain that I used to be WA4SSG, but now I'm W4WIN. I gained an appreciation for what women go through when they get married and adopt the husband's last name. Unfortunately, I have no tips for how to remember to say your new callsign when on the air. I'm still working on that.

Win – W4WIN

Concern Rising within Amateur Radio Community over WWV Shutdown Proposal

ARRL members and Amateur Radio clubs are expressing increased concern over the inclusion of WWV and WWVH on a list of proposed cuts in the White House's National Institute of Standards and

Technology ([NIST](#)) Fiscal Year 2019 budget request. The proposed cuts, which only recently came to light, would also include the Atomic Clock signal from WWVB. Online petitions soliciting signatures include [one](#) established by Tom Kelly II, W7NSS, of Portland, Oregon, who would like to see funding for the stations maintained. The decision is up to Congress.

"It is important to note that no changes to NIST services have occurred, and if the proposal were to be implemented, public notice would be provided," NIST said this week.

ARRL is suggesting that members of the Amateur Radio community who value the stations for their precise time and frequency signals and other information sign the petition and/or contact their members of Congress promptly, explaining how the stations are important to them, beyond government and military use. WWV is among the oldest radio stations in the US and has broadcast the official time for nearly a century.

According to the NIST [Fiscal Year \(FY\) 2019 budget request](#), the specific cut would come from the NIST Fundamental Measurement, Quantum Science, and Measurement Dissemination budget and would amount to \$6.3 million.

"NIST has a long-standing history of providing time and frequency services through our radio stations and we appreciate that many people use these services," NIST said in a statement. "WWV is the longest continuously operating radio service in the US. At the same time, the proposed NIST budget for FY 2019 required difficult choices about budget priorities."

NIST said that it plans to eliminate "efforts that have been replaced by newer technologies, measurement science research that lies outside NIST's core mission space, and programs that can no longer be supported due to facility deterioration."

WWV and WWVH broadcast 24/7. Announcements include time announcements, standard time intervals, standard frequencies, UT1 time corrections, a BCD time code, geophysical alerts, and marine storm warnings. Transmissions are broadcast from separate transmitters on 5, 10, 15, and 20 MHz. An experimental 25 MHz signal is also currently on the air. WWVB transmits standard Coordinated Universal Time (UTC) signals on 60 kHz to appropriately equipped devices.

The SWAP SHOP

Club members may list their wares in the newsletter. Send descriptive information to Armand at wa1uqp@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.**

COMPLETE AMATEUR RADIO STATION

At age 91, must sell my amateur radio station after operating some 50+ years.
In last 11 years have checked into Central Virginia 6M SSB Net 50.215 MHZ USB
(web site www.50215.NET).

All items included for \$1500 cash:

ICOM I-C 746 Pro all band transceiver, includes instruction manual

Matching power supply (original box), foot switch can also be used

Tailor-made cover

Ear phones, RCA stereo 10R-216

HO Square loop antenna, mounted set for 6 meter band

100' coax, 40' green copper grounding wire

50' hard copper grounding wire

Dual tracking one thousand channel Pro 2052 scanner with owner's manual (serial #96012176-10A-99) with AC adapter

Serious inquiries only.

Floyd Callihan K4ROG

(804) 424-6009

Kenwood TS-520-S, with CW and SSB Crystal filters. The radio is in good shape, with AT-230 Antenna Tuner and MC-50 Mic.
All 3 - \$400.00.

Assorted 75 ohm cable lengths- \$30.00

Assorted meters: Transmatch SWR meter, SWR/Watt meter and Antenna Rotator: \$50.00

Contact benvec@gmail.com KF4HEV

Antenna equipment: New, never installed

Moved from house on ¼ acre to HOA townhouse not long after purchasing this gear. No hope of erecting it here, so must sell.
Items in clean, like-new condition.

myAntennas.com Model OCF-4010E off-center fed dipole. 40/20/15/10M 65 feet long. Integral 4:1 current balun. Rated 3 kW
ICAS; fully assembled including end insulators \$90.00

antennaTensioner.com Model 30-100. Maintains 30 to 50 pounds tension on antenna. Useful if one or both ends of wire
antenna are supported by moving trees. Tension adjustment is set and visible from ground. \$50.00

Misc. : 250 ft (approx.) 3/16" black Dacron rope (USA), pulley, large screw eyes (All included with purchase of both items
above)

Tom Tinsley KJ4WQ ttinsley@wlu.edu

Thought For The Day!

Smile : A curve that can set a lot of things straight.

Jim Bates	K8OI	President	(804) 592-1068	jlbbates4@gmail.com
George Golding	W3PPY	Vice President	(804) 318-6951	w3ppy@arrl.net
Tom Newman	KJ4LVC	Secretary		
Ken Leidner	WV0L	Treasurer		

Recycling including electronics, paint, pesticides

City of Richmond Special Recycling Collection Event

September 15 @ 10:00 am - 2:00 pm

The City of Richmond Department of Public Works , Richmond Clean City Commission and City of Richmond Stormwater Utility will be hosting a special collection event on Saturday, September 15 from 10 am – 2 pm at the old Kmart parking lot, 6807 Midlothian Tpke. This event will include electronics recycling (fees apply), document shredding, herbicides and pesticides , and oil based paint only. This event is for City of Richmond residents, only. Must show proof of residency. For more information call (804)646-8325 [Call: 804-646-8325] or (804)646-8661 [Call: 804-646-0177]