THE RICHMOND HAM

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March 2014

The RICHMOND AMATEUR RADIO CLUB will meet Friday, March 14th 2014, 7:00 PM, at the Bon Air United Methodist Church, 1645 Buford Road.

PROGRAM: Bruce Mac Alister, W4BRU will give a presentation entitled -Recalculating – how GPS navigation works.

Coming Events:

March Meeting, March 14th, 7:00 PM.
VE Testing Session, March 15th, 2014 9:am at the Bon Air United Methodist Church.

Public Service: Instant Classic Marathon Race being held at Pocahontas State park on Saturday March 15th. Contact Brad Price at ki4bwj@ki4bwj.org if you can help.

Virginia Special Olympics June 6th and 7th. Sign up at http://k4mtk.com/?page_id=2

Club Members!

If you are not receiving your copy of the Club's monthly newsletter, please contact Richard, WA4FEH, RARC's Treasurer, at wa4feh@gmail.com or phone 743-3899.

From the Prez

Well folk's we survived another snow storm. This winter has not given us a real snow storm, only some multiple inconvenience snows. At least we have lucked out by missing the kind of ice storm we experienced several years ago. Daylight saving time is next week and spring is coming. Time for new antennas, repairing antennas and more hamfests. WW DX contest this past weekend and Virginia QSO party March 15-16.

Ham school signups are fantastic. Chesterfield County is finally moving on ARES organization. I am awaiting my first great-grandchild, a girl. Life is GOOD.

Dr Joe Palsa

k3WRY

2014 Club Dues Reminder

Attention all members, I am finishing the 2014 RARC MEMBER roster.
ANYONE NOT PAID AS OF THE END OF THE MARCH MEETING WILL NOT BE ON THE ROSTER.
Dues are due in November and I have allowed enough time to get everyone on the roster
Thanks,
Richard, WA4FEH
Club Treasurer

RARC VE News

The March Testing session will be on the 15th at the Bon Air United Methodist Church at 9:00am.

If you have questions about a session, please see our website, www.rarclub.net/ or contact Allan, WA3J, at 804-399-8724, or wa3j@arrl.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.

  FCC EXAMS EVERY MONTH on the SECOND SATURDAY. For January and all odd-numbered months: Bon Air United Methodist Church, 9 AM. Call coordinator, Allan Johnson, WA3J, 399-8724, or visit http://www.rarclub.net/.

For February and all even-numbered months, FCC test sessions are provided by the RAVE group. Coordinator, Pat Wilson, W4PW 804-201-1898 has information on his website http://w4pw.org.

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 007D rather than to any of our modules. Since the W4FJ stack will all be linked to Ref 007D, anyone linked to that reflector will be connected to the net.

The Club sponsors several local radio nets each week. Join in for the informative discussions and fun.

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 Repeater
	8:15 PM	145.730	Packet

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
Age 12 and under	$5.00
Age 13 to 18	$10.00
Regular Membership	$15.00

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

2014 Refreshment Schedule

The refreshment schedule for 2014 is wide open! Consider signing up for your favorite month. The entire year can be covered by only ten volunteers. Let's see some new contributors!!

Help A Club Member

Grayle Hunley, KF4USV, is looking for volunteers to help give rides for older members to club meetings. He has members listed by zip codes to find those nearest to you. Contact Grayle if you can help. 730-0455 Also, members or prospective members needing transportation to the RARC meetings: Please contact Pete Fundinger at 804-639-5573 to arrange a ride for you. Pete will do his best to find someone near you or someone who can pick you up on their way to the meeting.

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.

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W1AW Centennial Year!

A reminder that the FCC has authorized the Maxim Memorial Station W1AW to also use the call sign W100AW during 2014, the ARRL's centennial year.
Contacts made from the Maxim Memorial Station in Newington, from regional Centennial conventions, and during the IARU HF Championship will use W100AW, with portable designators as appropriate. The "W1AW WAS" operations throughout 2014 from each of the 50 states will use W1AW, not W100AW. Bulletins and code practice transmissions during 2014 also will still use W1AW. Contacts with W100AW are worth 100 points in the ARRL Centennial QSO Party.
Information on the ARRL Centennial QSO Party may be found on the web at, http://www.arrl.org/centennial-qso-party.

2m SSB Interest in the Richmond, VA area

There are a few hams in the Richmond area who have expressed interest in using their 2m SSB gear on a more frequent basis. If you have an interest in participating or have ideas supporting this operation, please let me know.

Thank you!

Jim Bates

KJ4WLH

Mail to:jlbates4@gmail.com

(804) 592-1068

Virginia QSO Party

The 2014 Virginia QSO Party will be held during the weekend of **15-16 March 2014**. For more information visit the website of the Sterling Park Amateur Radio Club (SPARC). http://www.qsl.net/sterling

*** 900 MHZ Fun! ***

900 MHz has continued to expand in the Richmond area with the addition of the W4RAT repeater in Midlothian. The new repeater will soon be linked with the downtown WA4FC repeater to provide wide area coverage. If you would like to get in on the fun, Kenwood TK-481 version 2 handheld radios are available for $80 each. They are programmed like the TK-981 mobiles. Each radio comes with a battery, belt clip, antenna and KSC-24 rapid charger. Also a few 15 watt mobile radios are currently available. Contact Dave Meier N4MW n4mw@msn.com for details.

Getting to Know This Month's Speaker

Bruce MacAlister, W4BRU, spent about a decade working on the development of "geographic information systems" for IBM. His focus was on mapping the conductors and pipes used by gas, electric, water and sewer utilities. He has long liked maps and navigation, so he's followed the progress of navigation systems in retirement. He teaches in the RARC radio school and is a past president of the club. He is a volunteer "educator" at the Science Museum of Virginia which means he does canned scientific demos and interprets the science in the museum exhibits.

This Month's presentation

Recalculating – how GPS navigation works

So you're driving down I-95 and you decide to get off onto US 1. Your GPS navigation device immediately tells you to make a U-turn and enter I-95 on the right. You ignore it and head onto US 1. Your navigation device seems to heave a frustrated sigh and then says that well known word, "recalculating." Never fear, it will try to get you back onto I 95 with a "turn left at the next intersection, then take the ramp on right." If in your bull-headed way you stay on US 1 and pass that intersection, you will again hear "recalculating." This program will cover how GPS navigation systems work, the satellites, the navigation devices and all the map and data files to make it all go. This being Virginia where we must never forget the history, a little on navigation before GPS will be covered.

Ham radio for a 3-D view from above

Most folk think of ham radio operators as talking all around the world. Purist hams think of contesting, getting that elusive contact from that rare place far, far away. Then there are the rest of us, chatting on 2-meters, connecting with a favorite net on HF, or just building stuff. There is also flying model airplanes. You don't need a ham license to fly a model airplane, there are assigned license-free frequencies for that. But with a license you can use more isolated frequencies and higher power.

How about 3-D vision from your model airplane? David Schneider built one from two cameras, two 5.8 MHz transmitters, and a receiver with stereo image display. He described it in the February 2014 edition of IEEE Spectrum magazine. The transmitters were the issue. As he points out in the article ""To operate these transmitters legally in the United States, I needed my amateur radio license, so check your national regulations."

To read the article and view the pictures, go to spectrum.ieee.org/geek-life/hands-on/a-diy-3d-viewer-for-remote-piloting

6,000 Mile Two Meter Contact

On a recent day in February when it was snowing in Richmond, I had a 2 meter QSO with Jim, K8OI and Wray, AB4SF, using my 2 meter HT where I was enjoying 85 degrees and sunshine. They were in Richmond. I was in Tahiti. We were using the Club's W4FJ D Star repeater. While Jim and Wray were using their D Star radios to access our UHF repeater in the conventional RF method, my D Star HT on 2 meters was accessing a Digital Voice Access Point (DVAP) connected to my laptop where I had an internet connection.

Our QSO was crystal clear, the same as if I had been in Richmond, because D Star is a digital mode. And because my ID-51 HT has a built in GPS receiver, my location was automatically transmitted. By looking at the DPlus webpage for W4FJ (http://w4fj.dstargateway.org) one can see the callsigns of the last transmission of every user in the previous 24 hours. If the user has a GPS enabled radio, as I did, the callsign shows up orange which takes you to a Google Maps link that displays the location of the GPS enabled D Star radio on a map. See the image below.

In addition, the D Star radio will show the compass heading and the distance between two GPS enabled radios. See the image of Jim's HT showing that I was 6,018 miles southwest of his location.

I enjoyed the reactions of the folks in Richmond when I checked in to the Club's Wednesday night D Star net from Tahiti. I think that's the current distance record for a check to our local net.

My next trip is to Europe this summer. I'm planning to take the ID-51, DVAP and laptop. Listen for me near Normandy France on the 70th anniversary of D Day.

Win – WA4SSG
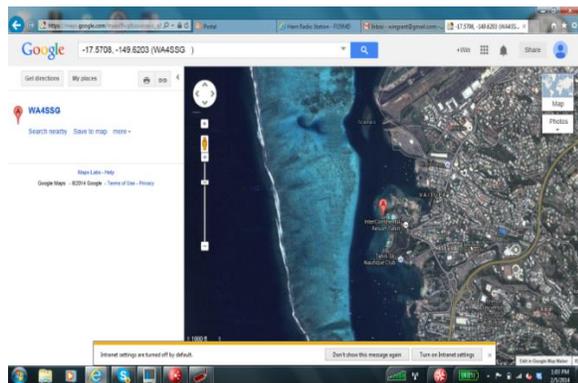
D-Star Routing Explained - Article from ICOM America 2007

D-Star routing can be confusing. There are many different options to set, and the Icom documentation may not be clear enough regarding how all the options work together. I'll try to explain what each of the routing entries means, and show how they fit together in common situations. First, a note on how routing entries are shown here. In nearly all cases, there will be one or more spaces in a routing entry. Since fonts differ, and the number of spaces matters, they'll be shown here as an underscore (_). Be sure to replace the underscore with a space when you enter it into your radio. Perhaps the hardest concept to understand is that the whole purpose of routing is not to get your signal directly to the other ham, it's to get the signal to the repeater that the other ham is using. He'll hear your signal when the repeater puts it out. He'll also hear every other signal the repeater puts out, so you don't have to specifically send it to him. As long as it gets to the repeater he's using, he'll hear it. The same goes in the other direction: he only needs to get the signal to the repeater you're using.

MYCALL is the easiest to understand. It's just that: the call sign of your amateur station. It doesn't figure into routing decisions, except that it tells a D-Star Internet gateway which repeater you're using. This happens every time you transmit through a repeater with an attached gateway, as long as you're registered as a gateway user anywhere on the system. When you change systems, a short transmission is all that's needed to tell every gateway in the entire network where you are.
RPT1 is the repeater you're talking to. If

you're talking on simplex, set it to NOTUSE*, so other stations won't wait for a repeater to retransmit it. If you're using a repeater, set it to the repeater's call sign, plus the port identifier in the 8th position. For example, if you're using a repeater with the call sign WR5XXX on 2 meters, you'd set it to WR5XXX_C, since C is the port identifier for 2 meter repeaters. If you're using the K5TIT system in Dallas on 1.2 GHz, you'd set RPT1 to K5TIT__A (using two spaces to get the A in the 8th position). The general convention for port assignments that has been agreed on is: Port A 1.2Ghz (23cm), Port B UHF (70cm), Port C VHF (2m) If you just set RPT1 to your local repeater, and RPT2 to NOTUSE*, your signal will go to your local repeater and be repeated, but it won't be sent any farther along than that. This is useful, but it's not where the real magic of D-Star lies. So far, all we've done so far is reinvent the local repeater. To really use the D-Star capability, we will use RPT2. **RPT2** tells your local repeater where else to send the signal besides its own transmitter. (It always does that.) If your local D-Star system has more than one band unit, you can cross-band repeat by setting RPT2 to the local repeater's call sign and port ID of the other band you want to use. For example: if you're on WR5XXX's 2 meter port and want to cross-band repeat to 440MHz, you'd set RPT1 to WR5XXX_C and RPT2 to WR5XXX_B (since B is the 440 port ID). Your transmissions will then come out on both bands. Someone on 440 who wanted to talk to you would do the reverse: set RPT1 to WR5XXX_B (since that's the repeater he's talking to) and RPT2 to WR5XXX_C. So far, so good, but the real magic of D-Star is in gateways. A gateway isn't a repeater, itself. It has no RF hardware at all. What it does have is the intelligence to look up a call sign and automatically send your signal to wherever that call sign is on the network. You tell the gateway what to look up by setting URCALL. Up until now, the URCALL setting hasn't really mattered. The default is CQCQCQ, which is a general destination, not any specific ham. Unfortunately, the gateway has no idea what to do with CQCQCQ. You have to tell it what to look up. There are two possible ways to get there. The first is the equivalent of CQCQCQ on a remote system. That's specified by putting a / in front of the repeater's call sign and port ID. The port ID, as always, is in position 8, so the CQ destination on WR5XXX's 2 meter port would be /WR5XXXC (note the lack of a space). A user on WR5XXX who wanted to talk to anyone at all on K5TIT's 1.2 port would set RPT1 to WR5XXX_C (as

always), RPT2 to WR5XXX_G (G is the gateway's port ID), and URCALL to /K5TIT_A (with the space there to put the A in the 8th position). When the gateway sees / and a call sign and port ID in URCALL, it simply routes the signal there, with no further processing. The second choice is if you want to talk to a particular ham, but you don't know which system he's on. You'd set URCALL to the call sign of the ham you want to talk to, RPT1 to your local repeater (as always), and RPT2 to the gateway. The WR5XXX 2 meter user who wanted to talk to N5MIJ would set RPT1 to WR5XXX_C, RPT2 to WR5XXX_G, and URCALL to N5MIJ. This will route the signal to WR5XXX's gateway, which will see that the destination is N5MIJ, look up where he was seen last, and then route the signal there. If N5MIJ is listening to that repeater, he'll hear your signal, and can respond to your call by reversing the process. (Some radios, such as the IC-91AD, can do this automatically.) Since all signals are retransmitted by the repeater that receives them, either from its RF input or another repeater (locally or through a gateway), others can join in on the conversation. To do so, they'd use the same routing settings as one of the other local stations they're talking with, which will cause their signals to be routed the same way. The exception is URCALL: since it's only used by the gateway to look up the destination repeater, it can be anyone on the other repeater system, or that system's general destination (/call sign), if it's known. D-Star routing isn't as complex as it appears in the documentation. Once you understand what each piece of the puzzle does, setting it up to do what you want is straightforward.

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 804-454-0564. 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.**

Thought For The Day

A man who can smile when things go wrong,
has thought of someone he can blame.

73 de:

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