



# PVRC Newsletter

## July 2013

### President's Letter – Rich NN3W

**H**appy Summer Solstice PVRC!

For the first three weeks of June, folks in PVRC land got to enjoy rather temperate (and sometimes very wet) weather - no longer.

Summer has arrived, and with it heat, humidity and **contesting!** Contesting, you say? That is a fall/winter/spring event! Not this year...

As I have previously announced, the Potomac Valley Radio Club is playing host to both the ARRL headquarters station, led by captain Steve Bookout NR4M, and the IARU headquarters station, led by captain Fran Donovan W3LPL. Steve's team, operating as W1AW/4, will be spread amongst 8 different stations in North Carolina and Virginia, while Frank's team, operating as NU1AW/3, will be spread amongst 5 different stations in Maryland. It's the Battle of the Potomac! The event starts at 1200z on July 13 and ends at 1200z on July 14.

#### W1AW/4 HOST STATIONS

Band	CW	SSB
160 Meters	K3ZM	K3ZM
80/75 Meters	N4AF	W4RM
40 Meters	NR4M	K4VV
20 Meters	NR4M	W4RM
15 Meters	N1LN	N4RV
10 Meters	K4VV	AA4NC

#### NU1AW/3 HOST STATIONS

Band	CW	SSB
160 Meters	W3LPL	W3LPL
80/75 Meters	W3LPL	N3HBX
40 Meters	N3HBX	W3LPL
20 Meters	W3LPL	N3HBX
15 Meters	N3RR	WX3B
10 Meters	W3LL	WX3B

For those of you who will not be operating as one of the headquarters stations, I urge you to get on and work both W1AW/4 and NU1AW/3. The IARU HF contest rules (available at <http://www.arrl.org/iaru-hf-championship>) allow you to work each

headquarters station up to twelve times (one time on each band mode). Many of the stations will be on around the clock and they will appreciate a contact in the wee hours of the morning (e.g., if you hear me pleading for a QSO on 15 meter SSB at 0600z, please feel free to call!).

Ideally, we want to make as strong as a showing as humanly possible. For your reference, I've pulled claimed scores from previous IARU HF Championship events going back to at least 2000.:

2012 NU1AW/0 MN Wireless - 7,500 Qs	7.9MM
2012 W1AW/7 AZ Outlaws - 8,450 Qs	8.3MM
2011 NU1AW/5 CTCC - 8,300 Qs	8.5MM
2011 W1AW/6 SCCC - 9,000 Qs	7.4MM
2010 W1AW/8 SWODXA - 9,000 Qs	7.3MM
2009 NU1AW/KH6 - 5,100 Qs	6.6MM
2009 W1AW/KL7 - 5,900 Qs	5.9MM
2008 NU1AW/0 MWA - 4,000 Qs	2.0MM
2008 W1AW/9 SMC - 3,700 Qs	1.8MM
2007 W1AW/4 PVRC - 7,800 Qs	6.8MM
2006 NU1AW/8 MRCC - 8,400 Qs	7.4MM
2006 W1AW/4 TCG - 9,000 Qs	6.8MM
2005 NU1AW/3 PA - 7,000 Qs	7.1MM
2005 W1AW/5 Arkansas - 6,400 Qs	6.0MM
2004 NU1AW/1 YCCC - 6,200 Qs	6.3MM
2004 W1AW/0 Grand Mesa - 7,500 Qs	6.5MM
2003 W1AW/3 NCC - 7,800 Qs	8.5MM
2002 NU1AW/4 PVRC - 8,400 Qs	10.8MM
2002 W1AW/5 CTCC - 10,300 Qs	10.2MM
2001 NU1AW/1 OBO - 7,500 Qs	6.6MM
2001 W1AW/6 NCCC - 9,700 Qs	7.8MM
2000 NU1AW ARRL - 8,800 Qs	11.8MM
2000 W1AW/4 FCG - 11,100 Qs	10.7MM

As you can see, the high water marks appear to be in 2000 for both NU1AW and W1AW with a very close following in 2002. Can we break that point score? Maybe, maybe not. But it will be fun to try!

Finally, there is discussion concerning t-shirts for the event. Steve NR4M made an announcement at W3LPL's open house. We're awaiting additional follow-up on this.

Whether you are the DX or a DX chaser, we hope that you all have fun and that the club's image as the premier contest club in the United States is proudly put on display through the efforts of our two headquarters teams.

73 Rich NN3W

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## **Upgrading my Ham Shack to SO2R, With an Intermediate Stop at 2-Radio Multi Op for IARU 2013 - Bill N3RR**

Since fully retiring in October 2012, and becoming a full-time ham radio contest operator, I started thinking about learning to operate SO2R and having Twice the Fun! Thinking about and doing, though, are two different things.

During 2011, I had upgraded my contest software to N1MM Logger and was intrigued with its SO2V (Single Op 2 VFO) and its SO2R modes of operation. I decided to first learn SO2V

So, I started my upgrade in the fall of 2012 with the purchase of an IC-7800 to replace the several IC-781s I'd been using in my single-radio operation for over 23 years. With the dual independent receivers and 2-VFO IC-7800, I would have the capability to implement and learn SO2V with one radio and gradually improve my SO2V skills, with an eye towards becoming a competent SO2R operator. I knew I had a lot to learn.

### **A Schedule is Defined**

In February 2013, Frank W3LPL offered me the opportunity to participate in IARU as one of the NU1AW/3 HQ stations. I jumped at the chance and ultimately chose 15m CW as my station's band-mode for the 24-hour event, then still 5 months away on July 13<sup>th</sup> – July 14<sup>th</sup>.

And, oh by the way, Frank told me, you'll have to upgrade your station operation to accommodate two operator positions (Run and S&P) required for each band-mode of our NU1AW/3 operation and include a hardware radio-lockout mechanism to prevent more than one signal on the band at any time.

"Of course," I said, fully understanding that I would need to "gut" my 12' x 14' ham shack and completely remodel it to handle two operator positions for IARU. My mind was full of ideas and possibilities. I decided to upgrade my shack to handle three types of contest operations: Multi-single with two operator/radio positions, Multi-2, and SO2R.

Since IARU was in July, that became the driving factor in my schedule. And, since my IARU operation is limited to a single band mode effort (15m CW), there won't be any receiver interference caused by "other band" transmissions. So, I'll first upgrade for the IARU two-position/two-radio operation in July then follow that in late July/August with the further multi-band hardware and radio control hardware upgrades required for SO2R and Multi-2. My goal is to be ready with all that for the fall 2013 contest season. I now had an implementation work schedule that would span February to September, 2013!

## Decisions, decisions, decisions

I knew my current 6-foot wide desk, upon which I had built a home-made shelf, would not accommodate a 2-radio, 2-operator, 2-PC operation, along with all five of my Ring Rotors, Ham IV rotor, 80m antenna frequency switching controller, and my HI-Z 160, 80, 40 m 4-square switching, even without my supervising cat, Charlie:



But, I wasn't sure how large a two-operator operating desk should really be. Additionally, my Upper/Lower/Both manual antenna switching console, using four Bird 74 coax switches, takes up valuable real estate on my operating desk (below the monitor in the picture), causing me to locate my PC monitor on the shelf and giving me a significant neck-ache because I have to look up at the monitor during contests.

I know from my corporate-America OSHA training that the proper look angle of the eyes looking at a PC monitor is down, below horizontal, with the head positioned at the top of, or above the top of the monitor. I wanted to incorporate that concept into my new station design.

So, I decided to visit some multi-op stations, take measurements, and talk to the hosts. My first stops were at N3HBX's "Farm" and W3LPL's 6-band multi op station. Both stations had many operator-specific design details incorporated within them. Each had a 7 foot operating desk for two operators, with two radios and two PC monitors. N3HBX's operating desk was integrated into a 2x4 frame structure that supported the desk and

operating equipment shelves. I had great meetings with both station hosts and gleaned several ideas I would incorporate into my station.

The biggest design consideration I now had was whether to build (or buy) the actual operating desk. But there were other elements of my station upgrade to get underway now, if I was to be ready for the IARU contest.

### **Multi-op/SO2R Hardware Needed**

My upgrade to Multi-op and SO2R would require another IC-7800 and another PW-1 amplifier. I wanted a complete 2-radio/2-amplifier system. I went directly to a known source of a IC-7800 & PW-1 pair that was for sale, and purchased the pair in early March. Meanwhile, I borrowed a PowerMaster I meter from W9GE (his spare) to try it out. Using it convinced me to buy a new one from Array Solutions.

During March, I ordered the hardware I would need for IARU & SO2R, including the StackMatch boxes to replace my Bird 74 coax switches:

<u>Supplier</u>	<u>QTY</u>
<u>Array Solutions</u>	
PowerMaster II w/ two 3KW HF couplers & cables	1
AS-419 6-Band Bandpass filter (controlled by band decoder)	2
Stackmatch II 3KW, 2 antenna	4
Stackmatch II new pushbutton controllers for the above	4
Dual feed option, SPDT RF relay for Stackmatch II	1
AS-RX FEP	2
“Managing Interstation Interference” by W3VJN	1
<u>Top 10 Devices</u>	
DX Doubler (DXD)	1
<u>AY Technologies</u>	
RAS 8x2 receive antenna switch	1
<u>K9JM (<a href="http://k9jm.com/CIV_Router/CI-V%20Router.html">http://k9jm.com/CIV_Router/CI-V%20Router.html</a>)</u>	
K9JM Arduino-based ICOM CI-V router	1

With these orders (and a few others for other components) placed, I could concentrate on finalizing my ham shack room layout and begin construction.



## **Back to Room Design/construction**

I was still looking for an operating desk when the opportunity to buy a IC-7000 mobile rig appeared on the PVRC reflector from KU1T. I visited Z at his QTH in WV, tested out the rig, and purchased it. While I was there, Z gave me a tour of his shack.

Serendipitously, he was using IKEA furniture for his operating desk. Now, I had an IKEA desk for my home office, but the legs on my desk would interfere with sitting at the desk if it were 7 feet long. KU1T's IKEA desk had legs that were inverted "T" shaped - such that the legs were located in the middle of the table depth and did not interfere with anyone's legs while sitting at any place along the length of the desk. What a great idea – I finally found my operating desk! My operating desk design was taking shape.

I purchased two 4-foot IKEA tables, with the inverted "T" legs. My plan was to install the two tables end-to-end, creating one 8 foot long operating table/desk. As you sit at the table, a 2' x 4' frame, 8 feet long and 7 feet tall (a la N3HBX) supports shelves on the side facing you. Behind the desk, there will be 42" of workspace. The back-side of the 2' x 4' frame will support all of the cable harnesses, power outlets, 12V distribution, and other hardware that will be mounted on the 2' x 4' frame. W3MC has always encouraged me to someday create a large workspace behind my operating desk. This idea of his will now be implemented.

## **Construction proceeds**

First, I removed the radio, PC monitor, Rotor controllers & most of the wiring from my old desk, including the "rats nest" of 25 year-old wiring behind the desk:



With lots more work ahead of me:



Old desk removed, 2' x 4' frame installed & being checked.



N3RR at work, building his new ham shack.

The 2' x 4' frame was constructed such that the spacing between the vertical studs was precisely the spacing I needed to accommodate the radio and the PC monitors I intended to use. Before I began construction, I made several trips to Micro Center, measuring monitor heights, widths, and lengths – finally settling on 21.5" Dell LED monitors and designing the 2' x 4' stud spacing appropriately.

The 2' x 4' frame was leveled, plumbed, and secured to an existing wall stud (as seen on the left of the frame in the photo below), secured to the concrete floor using a nail gun and two 2.5 inch nails between each vertical stud. Shelving supports were installed and test shelves were set in place. One inverted "T" leg on the IKEA desk is partially visible:



The right-most of the five vertical studs forming the 2' x 4' frame was secured to a floor joist of the room above, through the suspended ceiling, as seen in this photo:

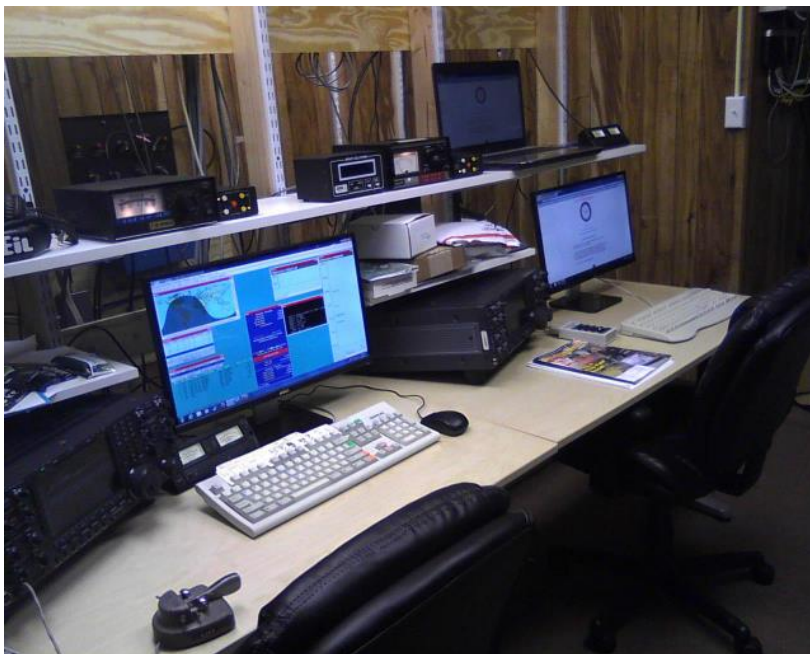




Construction is finished. The two-position operating desk of the NU1AW/3 15m CW station is complete!



Two IC-7800s, two 21.5" PC monitors, HAM IV & Ring Rotor controller, AY Technologies controllers, Stack Match controllers, PowerMaster II display unit and one of the PW-1 remote control units are visible.





A pair of PW-1 KW auto-tuned amps is shelf-mounted, out of operational view, in the technical workspace behind operating desk.



Suspended ceiling "grommets" provide out-of-sight, out-of-the-way, overhead cable-paths for rotor, RX antenna & Stack Match control cables.



Two Stack Matches will be used for IARU, two more will be installed for SO2R.



Here's what wiring looks like in a 42" workspace. Note the spare IC-4KL amp on the floor below the PW-1.

My ham shack is ready for IARU. My thanks to all who provided input, ideas and encouragement.

## Membership News – Bud W3LL

PVRC added one new member since the last newsletter. Please welcome Paul WX5USA in the Northwest Chapter.

Chapter leaders please remember to complete the [Meeting Attendance Report](#).



## VA Chapter of the “Over the Hill” Bunch Meeting – Bob W3YY

The Virginia chapter of the Over-the-Hill Bunch met at the Eclipse restaurant in the Falls Church Marriott on April 25, 2013. Pictures by W3YY.



From left to right: K3GEN, N3RR, N3JT, K6ETM, N4RA, K3ZO, W2YE, K3SC, and K5VRX.





Some late arrivals join the festivities. From left to right: N3JT, K3XA, WA2BCK, N3RR, CX1EK, N4RA, K3ZO, and W2YE.

### How I Broke the WriteLog Band Summary Window – Mike K4GMH

What follows is the correspondence with the members of the RTTY Contest Reflector on a weird experience I had in the Volta RTTY Contest over the weekend. Rich, VE3KI, solved the weirdness as well as determined my actual score. Independent of Rich, I had calculated my score and both numbers agreed - 2,389,647,220 points. Mark, N2QT, also pointed out the issue of a my trying to force a 32 bit machine to handle a number greater than 2.147 billion. Actually it has more to do with the absurdity of the scores that can be generated by the Volta RTTY Contest.

#### To Volta RTTY:

Hello,

Well it happened - scored too many points and broke the "Band Summary" window :->  
Just kidding. However, the "Band Summary" window is locked up, but at a -  
1,905,120,076 pts. Yes, that is a "-1," billion :->

Approximately 30 minutes from the end of the Volta Contest, I noticed the weird score. Last time I had looked at the "Band Summary" window, the score had been over 2 billion points. Suspect RF got to the code for the "Band Summary" window. (Gotta get the rats nest of wires in back of the op. position straightened.)

Tried to recalculate the score, didn't work, Saved the log as an ADIF and Cabrillo file (the Cabrillo file has the "CLAIMED-SCORE: -1905120076"). Closed WriteLog, and reopened WL, selected new contest - A. Volta. Imported the ADIF file and ended up with the same -1.billion "Band Summary" window score.

So, let's see anyone get a lower score than that - can you beat -1.9 billion? :->



The Volta Contest scoring computer will have to come up with a score. Hope the Contest scoring computer accepts my claimed score of -1 billion without kicking my Cabrillo log out.

Otherwise, the combination of MMTTY and 2 Tone RTTY engines work very well. Even the propagation was okay, including a few 10 meter QSOs, but then didn't start until ~1800Z. Twenty meters was open to Europe throughout the night although did take a three-plus hour nap starting around 0600Z. Forty and 80 m were noisy as had thunderstorms move through the area earlier in the evening. Still 80 m allowed several European contacts (love the double points) even with the QRN. Forty meters to Europe was open until my 3 + hour break at ~0600Z.

The ZL and VK QSOs were very nice with the 40 points per QSO. Thanks guys!

Thanks to all who were kind enough to work me. All QSOs (including dupes) are appreciated.

73,  
Mike, K4GMH

**From Richard Ferch ve3iay@storm.ca via arrl.net  
May 12**

**To k4gmh**

Mike,

It wasn't RF.

The largest number that can be stored in a signed 32-bit integer in the computer is 2,147,483,647. Anything larger than that will wrap around to a negative result, as follows:

2,147,483,647 + 1 -> -2,147,483,648  
2,147,483,647 + 2 -> -2,147,483,647  
2,147,483,647 + 3 -> -2,147,483,646  
...  
2,147,483,647 + 242,363,573 -> -1,905,120,076

So my guess is that your actual claimed score was 2,389,847,220. Congratulations!

73,  
Rich VE3KI

(Note: That is the same score I calculated using the Volta scoring method of number of QSOs (830) times number of QSO points (13,518) times number of multipliers (213). Even the 3830 Web site maxes out at 2,147,483,647 billion rather than 2,389,847,220.)

So now because of the insight from Rich and Mark I don't have to straighten out the rats nest of wires in back of the op. position!

## Upcoming Contests and Log Due Dates

### Contests This Month

- July 1 – RAC Canada Day
- July 7 – DL DX RTTY
- July 14 – IARU HF
- July 21 – NAQP RTTY
- July 21 – CQ WW VHF

### Logs Due This Month

- July 1 – Baltic Contest
- July 10 – ARRL VHF
- July 23 – Field Day
- July 31 – All Asian CW

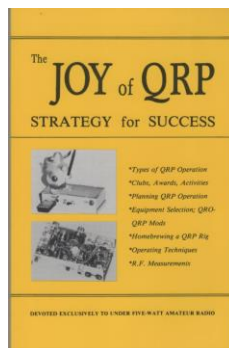
See WA7BNM's [Contest Calendar](#) for more detail and the latest information.

## The Editor's Last Word – John K3TN

It was nice having a bunch of eyeball QSOs at Frank W3LPL's get together. After 8 weeks in a sling following rotator cuff surgery, that was my first weekend unfettered - I felt almost human again. Soon I will completely lose my excuse for getting my shack redesign done – especially since Bill N3RR has provided a step by step guide in this issue.

Even though I generally believe “Life is too short for QRP,” I did my first QRP Field Day in many years, setting up a K1 and dipole at Gambrell State Park along with WA3SEE. By using those “power S&P” skills developed by using my K3 and the Reverse Beacon Network, I was amazed at the points/minute I could get, given that CW QRP QSOs are 10 points each in FD. Next year, I think I will try QRP again, but this time with the K3 and its dual receivers and put two dipoles up in the trees.

Thanks to Bill N3RR, Bob W3YY and Mike K4GMH for submissions this month and to Ed W3EKT who sent in a nice write-up on his BY trip that will run in the next newsletter. The newsletter will take the month of August off - please send any photos or contest write-ups or IARU reports my way for the September issue.



## **Eyeball QSO Directions**

The latest info on local club meetings and get together will always be sent out on the [PVRC reflector](#) and posted on the PVRC [web site](#).

**NW Region:** Meetings are generally held on the third Tuesday of each month at the City Buffet, 1306 W. Patrick Street, Frederick, MD. (301) 360-9666. It's in a small shopping center. Most arrive about 6 PM for dinner and informal discussions. The meeting begins at 7:00 PM.

From W. Patrick Street, turn up McCain Dr. (the Mountain View Diner is on the corner), then turn right into the shopping center, then turn left and search for a parking place. The City Buffet is tucked back in the left corner of the shopping center behind the Mountain View Diner. You can't see the City Buffet from W. Patrick Street. Contact: Jim [WX3B](#)

**Central Region:** Meets monthly the second Monday of each month, except June, July & August). The location alternates between the below MD and VA locations. Pre-meeting dinners start at 6:00 pm and meetings start at 7:30 pm.

VA LOCATION: Anita's, 521 E. Maple Ave, Vienna, VA. Tel: 703-255-1001. Meets at this location during the months of February, April and October.  
Contact: Rich [NN3W](#)

MD LOCATION: Max's Café. 2319 University Blvd W, Wheaton MD 20902. Tel: 301-949-6297 People usually begin arriving at the restaurant around 6:30. Meets at this location during the months of January, March, May, September and November. Contact: Art [K3KU](#)

**The Laurel, MD Region: Bill N3XL** The PVRC get-together is held at the first [LARC](#) meeting each quarter at the clubhouse.

**The Annapolis Crew: Dan K2YWE** Meetings are held on the 4th Wednesday of each month at Broadneck Grill in Annapolis. We gather at about 5:30 PM and order dinner about 6. We break up usually before 8 PM. E-Mail [K2YWE](#) to be put on the e-mail reminder list.

**PVRC-NC:** The PVRC NC-East chapter meetings are held at [Manchester's Bar and Grill](#) on the 9100 block of Leesville Rd. in North Raleigh, with "QRM" beginning at 6:00pm and the dinner meeting following shortly thereafter. The meeting is held monthly on the 1st Thursday of most months, cancellations or changes usually announced on the [PVRC-NC website](#). [The PVRC NC-West Chapter](#) holds its meetings on the 4th Monday of each month at [the Mellow Mushroom](#), 314 W. 4th St., Winston-Salem, NC. Ragchew at 7:00pm, dinner meeting starts at 7:30pm. All contesters and interested guests are invited!

**Central Virginia Contest Club: Ed NW4V** Meets the first Tuesday of the month at St. Martins Church, 9000 St. Martin Lane, Richmond VA, (between W. Broad St. and N. Parham Road). Our meeting begins at 7PM.

**Over the Hill Bunch:** The group meets for lunch at noon alternately in Maryland at the College Park Holiday Hotel Route 1 and the Beltway or in Virginia at the Parkview Marriot near route 50 and the Beltway. Meetings generally are held on the last Wednesday of the month and are subject to change. Meetings are announced by E-Mail. All PVRC members, non-members interested in membership and guests are welcome. For information contact Roger Stephens, K5VRX, 703-658-3991 for Virginia meetings; or Cliff Bedore [W3CB](#) or get on 147.00 for Maryland meetings.

**Downtown Lunch Group:** Meets on the 3rd Wednesday or Thursday of the month in the downtown area of Washington, DC. Locations occasionally change, but are always Metro accessible. Details are sent out on the PVRC reflector. Feel free to contact Eric W3DQ or Brian WV4V for details and directions.

**Southwest VA Chapter:** The Southwest VA group meets each Wednesday at about 8:30 AM at Hardees at 20265 Timberlake Road in Lynchburg, VA. This is an informal gathering, but normally has about 10-12 attendees..Contact Mark Sihlanick N2QT, Tel: 434-525-2921

**SOMD Region Meeting:** The Southern Maryland Chapter meets at 6:30PM on the first Tuesday of even numbered months. We meet in the vicinity of Charlotte Hall, MD, with the specific location (usually a local restaurant) to be announced several weeks prior to the meeting (keep an eye on the reflector). These meetings are open to all PVRCers, guests, and those interested in joining PVRC. Contact Tom AB3IC for information: e-mail: [GL1800Winger@verizon.net](mailto:GL1800Winger@verizon.net) - cell: 240-434-3811

If you'd like to add or correct a listing, contact K3TN for inclusion in the Newsletter!



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