



PVRC Newsletter

April 2016

President's Letter – Bud W3LL

April is a month of change. The grass is turning green, the tulips and cherry blossoms are in bloom. We're now on daylight savings time which changes the start time of many contests from 7 PM to 8 PM. It also means we're coming to a waning contest season.

It's a time to finalize plans for our annual trek to the Dayton Hamvention. The festivities begin with Contest University registration on Wednesday evening followed by a visit to the Crowne Plaza Super Suite for a pizza party that evening and every evening of the Hamvention. Saturday evening is especially important as that's the night of the PVRC Pizza party. It's preceded by the not to be missed Spurious Emissions Band at 10 PM. Look [here](#).

Your Hamvention check list: hamvention tickets and bus pass, reservation and ticket for the Friday night Top Band Dinner and Saturday night for the

Contest Dinner all at the Crowne Plaza hotel; the home of testers. Check for signs posted in the elevator and elsewhere for the party suites rooms.

The Contest and DX forum presentations will be available on 01 April on the Hamvention website.

It's also time to put in place those antenna improvements we were thinking about while enjoying the view of 32 inches of snow on the ground.

Speaking of snow and ice on the ground, those attending the 15 March Northwest meeting had a special treat. Dave Collingham K3LP, straight from South Sandwich and South Georgia island DXPeditions, was at the meeting reminiscing about his adventure down south. We all had an opportunity for one on one conversation with Dave about his truly amazing experience. But it doesn't end there. I just read in 425 DX News the following: "A team including Hrane YT1AD, Dave K3LP and others

has plans to operate from Baker Island (KH1) in September/October 2017.”

The goals and objectives of the officer community will be changing. During the first quarter of this year we completed most of the tasks outlined in the January Leadership Call-In. Those tasks were:

1. Distribute all plaques, endorsements and gavels when received to the local chapters for issuance in the presence of their peers.
2. The singular Christmas event will no longer take place having been assumed by the local area chapters.
3. The requested name change for the Central chapter has been accomplished. It's now the DC Metro Chapter.
4. A locally sponsored PVRC wide Galactic Social and Luncheon located in the “center of the circle” was a spectacular success.
5. A team led by VP Tom K3AJ is developing the PVRC Mission Statement.
6. A plan is in place for electing the 2nd VP open position. Voting for the two candidates is ongoing as I write this.
7. PVRC entering the Social Media arena was soundly rejected for the third year in a row.

Change has not affected the way we vote annually for PVRC officers. For the past nearly seventy years (yes, seventy years) our founding fathers have required us to go to a PVRC meeting. The wisdom in that requirement was to collegially meet amongst our peers to discuss and vote for or against the slate of candidates.

The officers and trustees recognized the time honored means to hold elections at

any of our chapters. It was a tenet that officers and trustees would not change. Doing so would undermine the importance of face to face interactions during the election process. Regular elections in November will be held at the chapters.

We again turn to the sports page of this newspaper to see how PVRC and our members did in competition.

With an eye toward a competitive club score in CQ WW 160, there were 48 PVRC'ers competing in the SSB leg. K3ZM led the pack with just over 1,000 QSO and a score north of 374K. Other big scores were put up by W3LL at 249K, N3HBX at 203K and K1RZ at 188K, and there were some nice multiop scores from N4RV (264K), N3RR (204K) and WG3J (147K). Top 10 finishers included K1HTV and NA1DX in SOLP, W3LL in SO (A) HP.

The weekend of 2/27-28 was a busy one. Not only was the CQ WW 160 SSB contest going on, but the February NAQP RTTY was scheduled as well. After the first two 2016 NAQP events (CW and SSB), PVRC had a lead in the club challenge standings, but last year we learned that our friends at SMC turn out in force for the RTTY events. This time around, PVRC had 39 entries while SMC fielded 55 (we are just reporting scores entered here, not accounting for the number of M/2 participants). The numbers aren't up yet for the club challenge standings with this one included - it will be interesting to see where we stand! K3AJ edged out N3QE for the top PVRC SO score (76,950 to 75,858). N4UA wasn't far behind at 67.5K. Congratulations to WA3AER on his first ever RTTY contest entry!

In ARRL DX SSB, big congratulations are due to the TI5W team of PVRC'ers N3KS and N4YDU (along with third op LY7Z), who came out on top at No. 1

world in M/S HP! Kam notes that this three person team consisted of a pair of WRTC competitors and their referee! How cool is that? N3RR appeared to have set the pace for PVRC SO's, with a score over 3 million, sitting in the top 10 in US SO (U) HP on 3830. K3ZU was not far behind at 2.6 million. K3ZJ is in the top 10 US for SOAB HP at just under 2 million while N4RA also made the top 10 in SO (U) LP. Other notable results include CX1EK (as XR2K) making the most of the 10M openings to come in at #2 in SOSB 10 LP, AB3WS snagging third place in SOAB QRP, and NA1DX sitting at #1 in SOSB 160 HP.

Conditions were tough for the Russian DX contest, but 14 hardy PVRC souls played. There are a mind-boggling number of categories in this one, so the PVRC'ers were spread out over many of them. Some scores of note include N4YDU (as NR3X) with 2.1 million in SO MIX HP, N4AF (as NY4A) with 1.9 million in SO CW HP, N3RR with 1.4 million in SO MIX HP, and KE3X with 1.3 million in SO MIX LP. K3ZU also managed a top 10 US placing in SO CW

HP at just over 1 million, and W3LL is sitting in first place US in SO SSB HP with 660K.

Some of the energy around Russian DX was occasioned by its status as a WRTC qualifying contest. Hence the big efforts from N4YDU, N4AF and KE3X! KE3X is currently in third place in his regional qualifying standings, and N4YDU is first and N4AF third in the 4th call area region.

Finally, the VA QSO party gets a lot of attention from many PVRC'ers. K1HTV reported an incredible score of 247K (no one else reporting on 3830 is even close) and N4CF clocked in at 101K. K4GMH made just over 200 QSO in a single band, single mode effort (40M CW). N8II from WV put up over 250 QSO in this one as well.

That's it for this month. We're keeping the steam up but the bilge is again beginning to leak.

73, Bud W3LL

PVRC Officers:

President: W3LL Bud Governale
Vice President: K3AJ Tom Valenti
Vice President:
Secretary: N3QE Tim Shoppa
Treasurer: N3RR Bill Hider

Trustees:

K3MM, N3OC, WX3B, W4ZYT, N4NW, K2AV, KE3X, K4ZA, K3WRY

PVRC Charter Members (all SK):

W3GRF, W4AAV, W4KFC, N0FFZ, W4LUE, W7YS, VP2VI/W0DX, W3IKN, W4KFT

PVRC Website: <http://www.pvrc.org>

Tribute to Jack WØUCE – Dan N3ND

(via N4YDU and K3AJ, below is the eulogy Dan N3ND delivered at the funeral service for Jack WØUCE)

June 12, 1938 was a day no different than any other in “Small town USA.” Grinnell, Iowa, was a city of about 5000 that year, a city at the intersection of two railroad lines and along an old pioneer’s pathway in east central Iowa. However, what was different on this day, in this town, was that Jack Ritter was born.

A normal childhood ensued for young Jack and at 14 years of age he became fascinated in radio communication. Mostly, however, he became infatuated with the language of Morse, taking to the language immediately and becoming conversationally proficient in it almost overnight. He became amateur radio operator, WØUCE.

He became so good with this language that in his adolescence and under the tutelage of several well-known radio engineers and entrepreneurs he became an instant child prodigy at Morse. His circle of friends and mentors included persons like Art Collins of Collins Radio, and Bob Denniston, a prolific DXpeditioner and a former President of the ARRL.

After high school graduation came the military years where Jack’s strength in the Morse language landed him at Navy radio school. It turns out that his prowess of Morse was better than the instructors who were teaching that same language to students and Jack was relegated to helping teach the “less than stellar students,” a job he excelled at using his own training techniques that bucked some of the established coaching methods at the time.

Upon graduation from radio school, Jack’s first orders came with a move to Maryland where he was assigned as a secure Morse operator for our country’s main government agency that “leads the U.S. Government in cryptology that encompasses Signals Intelligence (SIGINT) in order to gain a decision advantage for the Nation and our allies under all circumstances.” Yes, a military person at a civilian agency. He was stationed outside of Washington, D.C.

Several years later, Jack met and married Frances Swann, had two children and saw tour duties to Rota, Spain and then to Vietnam.

Jack returned from SE Asia with orders to Navy Radio Station, Cheltenham, MD. This cold war radio intercept station also required the use of his incredible expert Morse skills, skills that required perfect decoding of dots and dashes that were sent and received as coded words and/or numbers. It was while stationed at NavRadSta, in 1967, that Jack became a member of the radio contesting club, PVRC, Potomac Valley Radio Club.

After 13+ years of service to his country, Jack became a sales and marketing mastermind and worked with many telecommunications companies. His hobby as an amateur radio operator and the corresponding radio electronic knowledge had created the path to his illustrious career. Along the way, Jack became an in-demand square

dance caller, an auctioneer, and even a real estate agent. All the while, Jack enjoyed his amateur radio hobby and his Morse language skills and mentored countless ham radio friends.

Several years ago, Jack became a charter member of a Morse code aficionado club known as CWops. Several of the members created a curriculum to help assist the burgeoning Morse code enthusiast and Jack, who felt the need to give back to a hobby he so loved and to a language that he so enjoyed - Morse code, dots and dashes - quickly became a senior advisor for this endeavor. In the past three years or so he successfully graduated over 30, four to six member, six week classes. Several of his current and former students attended the memorial service to honor this man. The man just kept on giving.

Over the years, WØUCE was logged by hundreds of thousands of amateur radio operators with his long history of NTS, National Traffic Service, as well as hundreds of CW radiosport activities both under his callsign and many others in multi-multi or multi-single operations, most recently at N1LN, N3ND, and at the Goat Farm, NR4M. He was an active member of CWops and FOC as well as other CW-centric organizations.

I don't believe there is anyone who met Jack that could ever forget him, as he seemed larger than life itself. His close friends and associates will always remember his humor and his politics! He built many, many relationships over the years, the 10's of thousands of his world-wide amateur radio friends, his business acquaintances, and his neighbors.

Jack's Morse code key is now silent. There will no longer be dots and dashes sent by his hand; but his legacy, the memories, the man will never be forgotten.



RIP, WØUCE

Short Beverages DO work on 80 & 160 meters – Jim WX3B

As any low band enthusiast already knows, having an excellent transmit signal on 80 and 160 is only part of the equation - you must also be able to hear extremely well in order to put hundreds of stations in your log efficiently during your favorite contests.

I got spoiled using full size beverages at W4MYA in the early 2000's and at W3LPL after that. At my own station, I do not own enough land to put out multiple-direction, full-size beverages, so I settled on a 300 foot compromise. The beverages need to be usable at WX3B on 80 & 160 simultaneously, and K9AY provides a nice system perfect for such sharing and direction selection.

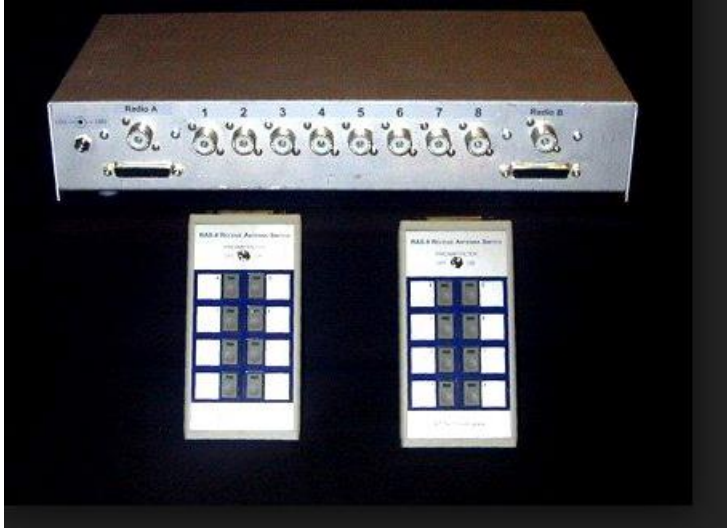
Here is a listing of the components utilized for the 4 direction x 2 operating position beverage selection at WX3B:

1. (2) KD9SV reversible beverage kits for WD1-A Military wire. These items are now available through DX engineering. One kit is required for each beverage, and each beverage provides two listening directions – forward and backward. The units have a feed point transformer and a reflection transformer.
2. (4) X 4 foot copper ground rods at each end of the beverage wires. You will also need a wire attached to each ground rod (can be held in place by a radiator clamp) that connects to each KD9SV box.
3. WD-1A two conductor, insulated military wire, used for the beverage itself. You can buy this wire on ebay.com, and you run it for the desired length of the beverage.
4. Beverage wire supports. I use Tractor Supply Company 4 foot push-in fence posts. They are inexpensive, non-metallic, and easy to install and remove. A more permanent (and deer-proof) installation would likely utilize 8' metal fence posts with a plastic offset at the top.
5. "Dual" RG6 Coax feed line. This is two runs of RG6 Coax that are held together in plastic with "F" connectors on each end. At the KD9SV beverage feed point are two female RG6 connections that the coax screws into. Two feed lines are used, one for the forward direction, and one for the reverse direction.

There are (4) feed lines entering WX3B, two for the beverages in the "forward" direction, and two for the "reverse" direction. Each feed line has one direction: NE, SW, NW, and SE.

A 4-position rotary antenna switch would suffice for antenna selection in most stations however with the encouragement of N3KS (or was it NI1N???) I have added Gary Breed K9AY's excellent RAS-8x2 beverage control box to my station. This box takes up to 8 receive inputs, and SPLITS them among two operating positions. A control box at each operating position has an 8 push button switch, and this is how the receive direction is selected. One of the major benefits of this box is that you can also listen in **multiple** directions simultaneously, by pushing more than one button. This is very helpful in quickly determining where a signal is coming from.

Gary Breed K9AY RAS-8x2 receive antenna switching system

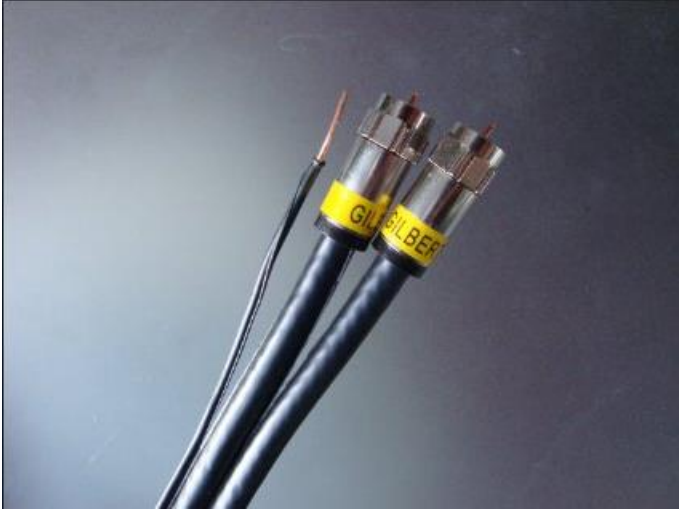


KD9SV beverage feed point and beverage reflection transformer

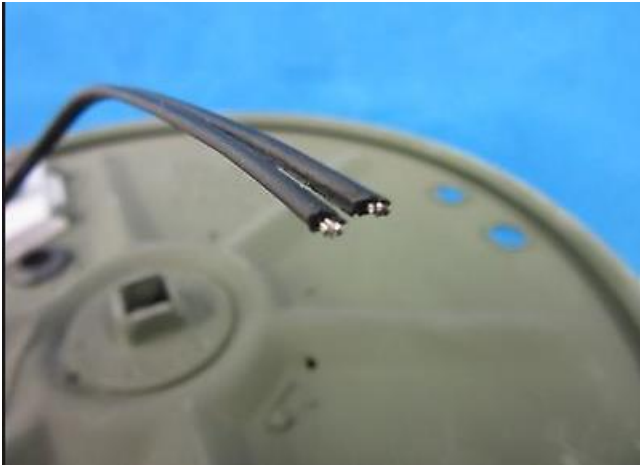
KD9SV
Products



Dual RG-6 Cable with "F" connectors (ground wire not required)



WD-1A 2 conductor insulated military wire on spool



4 foot plastic "step-in" type Fence post with side wire holders



So the real question is – is 300 feet ENOUGH to make a measurable signal to noise improvement on 80, and particularly 160 meters??

The answer may surprise you: it is a resounding YES, especially on 80 meters!

I have two transmit antennas on 80, a low, flat dipole at 55 feet, and a phased vertical array made from inverted L wires. During the contest season (October to March) there are many signals at or below the noise floor on my 80m dipole that are Q5 on the beverages. During the summer thunderstorm season, the beverage makes an even larger difference. The phased array on 80, however hears almost as well as the beverage does – toward Europe...except on the noisiest of nights. My conclusion is that a 300 foot beverage on 80 meters provides a large improvement.

On 160 meters, the signal to noise improvement is not that dramatic, in non-contest conditions. I can generally hear as well on my 160 inverted L as the beverage does; however there ARE times when the beverage out-receives the transmit antenna.

In contest conditions, however, I have had un-anticipated success on 160 using the beverage to tune OUT QRM. This is particularly helpful for high angle signals (like close USA signals while I'm trying to hear a DX station). The beverages are surprisingly directional on 160 and when your pass band is filled with several stations on each edge, being able to listen selectively in one direction, even with a short 300 foot beverage, is a large advantage.

The beverages provided one other un-expected bonus. When running in low power domestic contests like NAQP, I can use them as receive antennas ON THE SAME BAND I am CQing on. This is helpful for the North American QSO party where (2) operating positions are usable on each band of a Multi/Two operation - the pounce operator can hear the loud signals through the CQing operator and the CQing operator can hear his (loud) callers through the pounce operator. The results are reasonable on 10, 15 & 20, and mediocre on 40, 80 & 160, where more spacing between the transmit antenna and beverages would be ideal.

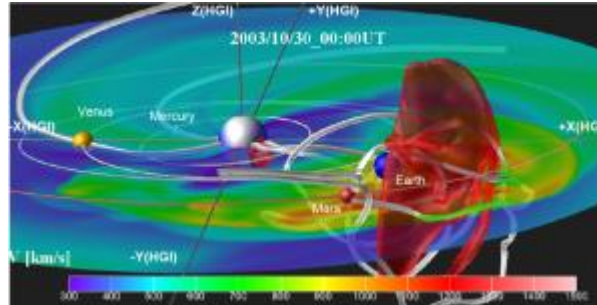
The picture below is my property with the red lines indicating my beverage locations. Ideally, beverages should be further away from your transmit antennas, and...preferably in a straight line(!) Don't laugh, please...



There are many compromises that make this installation a less than perfect arrangement, however I am delighted with the results and appreciate the encouragement and advice given to me by W3LPL, N3KS and NI1N to try it – once again proving that even a compromise is better than nothing, and that there is no such thing as too many antennas.

Space Weather Forecasting Advances – Space Weather Journal

The article below can be found [here](#), the full research report can be found [here](#) but requires payment.



Space weather forecasting might not have a dedicated segment on the evening news, but the disruptive power looming above the Earth's atmosphere cannot be underestimated. One form of space weather in particular, the coronal mass ejection (CME), has the potential to take down satellites and power grids on a national and even international scale.

A coronal mass ejection occurs when eruptions of plasma from inside the sun's corona are released into the solar wind. In the cases where these winds reach the Earth's magnetosphere, the resulting geomagnetic storm can disrupt radio communications and damage electrical systems. Human and animal life can also be harmed by the intense cosmic radiation. Predicting such events is a crucial step on the way toward developing accurate space weather forecasting.

One of the largest and most troublesome CME events of the last two decades occurred in late-October 2003. Multiple CMEs sent magnetic shockwaves hurtling toward earth, wreaking havoc with communications systems. So far events like these can be tracked, but due to heavy compute and data demands, predictive capabilities that would enable a defense to be marshaled are still emerging. Advancing toward that goal, a team of researchers at Japan's Nagoya University have developed a new simulation code for CME events, based on a realistic model of the mechanisms behind CME generation and how the phenomena move through space. The method was successfully validated using observational data from the 2003 events.

In the February 2016 issue of *Space Weather*, the team [describes](#) how their newly developed magnetohydrodynamic (MHD) simulation of the solar wind was able to predict the time profile of the southward interplanetary magnetic field at the Earth, in relation to the passage of a magnetic cloud within a CME. "We find that the observed complex time profile of the solar wind parameters at the Earth could be reasonably well understood by the interaction of a few specific CMEs," they affirm.

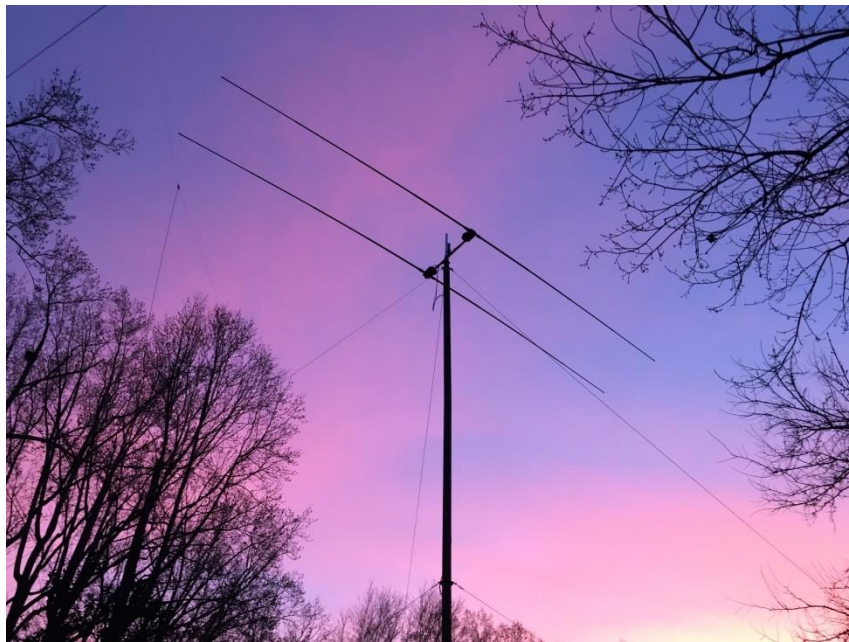
Lead author Daikou Shiota of the Nagoya University Institute of Space and Earth Environmental Research [explains further](#):

“Our model is able to simulate complex ‘flux ropes’, taking into account the mechanisms behind CME generation derived from real-time solar observations. With this model, we can simulate multiple CMEs propagating through space. A part of the magnetic flux of the original flux rope inside the CME directed southward was found to reach the Earth, and that can cause a magnetic storm. The inclusion of the flux rope mechanism helps us predict the amplitude of the magnetic field within a CME that reaches the Earth’s position, and accurately predicts its arrival time.”

Achieving the speed required for predictive capability meant slimming down the parameter profile.

“Because our model does not simulate the solar coronal region, its computational speed is fast enough to operate under real-time forecasting conditions,” observes Shiota. “This has various applications in ensemble space weather forecasting, radiation belt forecasting, and for further study of the effects of CME-generated solar winds on the larger magnetic structure of our solar system.”

Beams are Beautiful – Gary WR3R



Above is my 2 element SteppIR on an AB-577 that I put up last fall for Sweepstakes in my small city lot. It worked well on both CW (QRP) and phone (low power unassisted), allowing me to S & P much better and even get a few runs going on the high bands.

Special thanks to K3AJ, WX3B and the entire W3AO team to help educate and inspire me to make this happen!

PS – those are not the Northern Lights, just a nice sunset in Rockville, MD!

Membership News

PVRC had a rare shutout in the last month – no new members were reported.

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

Upcoming Contests and Log Due Dates

Contests This Month

- Apr 2 – SP DX
- Apr 3 - NA SSB Sprint
- Apr 9 – Yuri Gagarin DX
- Apr 9 – JIDX
- Apr 16 – YU DX
- Apr 23 – Helvetia DX

Logs Due This Month

- Apr 1 – CQ WPX SSB
- Apr 5 – ARRL DX SSB

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

The Editor's Last Word – John K3TN

Thanks to Jim WX3B, Dan N3ND and Tom K3AJ for submissions for this month's newsletter. If you have any good WPX or ARRL contest stories or photos, or anything else – send to jpescatore at aol dot com.

From the PVRC Treasurer – Bill N3RR

PVRC has chosen not to implement an annual Dues requirement. We depend on the generosity of all of our club members to finance our annual budget. In addition, active PVRC members are expected to participate and submit logs for at least two PVRC Club Competition contests per year.

When contemplating your donation to PVRC, each member should consider the benefit you are receiving from PVRC and its many opportunities for your personal growth in our wonderful hobby, then donate accordingly.

Direct donations to PVRC via Credit Card or PayPal may be made by clicking this "Donate" button and clicking the next Donate button that appears on your screen:



Donations to PVRC are not tax deductible

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: [Chef Lin](#), 417 S Jefferson St. Frederick, MD 21701 Phone #: 301-620-0664(2675)
The meeting begins at 7:00 PM.

Contact: Jim [WX3B](#)

DC Metro: 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 6:00. 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 meets the 3rd Monday of each month (except December) at about 7:00 PM at Hams Restaurant, 414 S. Stratford Rd., Winston-Salem on the south end of the Thruway Shopping Center. We meet in the front meeting room of the restaurant. A wide variety of cold 801s and Sports bar menu available. Contact Henry Heidtmann [W2DZO](#), full info at <http://www.w4nc.com>

Over the Hill Bunch: The group meets for lunch at noon alternately in Maryland at the Sir Walter Raleigh Inn 6323 Greenbelt Rd, Berwyn Heights, MD or in Virginia at Anthony's restaurant in Falls Church. 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 at noon on the first Wednesday of the month in the downtown area of Washington, DC. Location: R.F.D. Washington, 810 Seventh St., N.W. Closest Metro stop is GALLERY PLACE-CHINATOWN (Red, Green and Yellow lines). Any changes will be 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

Eastern Shore Chapter: Meets every three months, on the second Saturday of April, July, October and January at noon. In keeping with the tradition established by SK Dallas W3PP we will also meet at the contest station of Eric WG3J one hour before the start of most major contests. Contact Eric Hudson [WG3J](#)

Location: Delmar Pizza, north west corner of the intersection of highways 13 and 54 in Delmar, De.

Southern Maryland Chapter: Currently on hiatus, if interested in meeting contact the Chapter Chair, Tom Shelton, [ND3N](#) via email or (240)

Colonial Capital Chapter: Meets the 2nd Thursday of each month at 8:30 am
Location: Hot Stacks Restaurant, 6495 Richmond Rd, Williamsburg, VA 23188
757-565-1105

Contact: Bill Conkling [NR4C](#)

The Tidewater Chapter meets the 3rd Tuesday of every month at Frankie's Place for Ribs located in the Fairfield Shopping Center on the corner of Kempsville Rd and Providence Rd in Virginia Beach. The meeting starts at 7:00 PM.

Contact either Chapter Chair: Don Lynch, [W4YZT](#), or Ron Young, [W8RJL](#) All amateurs are invited.

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

Now a Word From Our Sponsors

PVRC doesn't ask for dues, but the Club does have expenses. You can also support the Club by buying from the firms listed who advertise in the newsletter!

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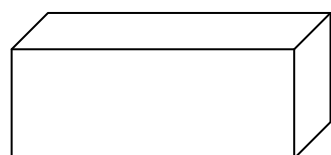
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7 Big Problems that are Probably Affecting Your Scores Right Now!

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Your Radio

← Mic/PTT cable
RX Audio: L/R cable
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Shure BRH440M
Broadcast Headset

Problem #1: Foot Not Near Footswitch, QSO Missed

Solution #1

Use Your Finger Instead!

- Mike-Link finger-touch PTT
- Momentary SPST switch
- Positive tactile feel



Problem #5: Operating CW, you have a "pain in the head" after "Y" hours on-air

Solution #5 - Use Mike-Link

Periodically, Flip the Reverse/Inphase Audio Switch

- Reverses mono audio source for greater listening pleasure



Problem #2: You wear eyeglasses and you have a "pain in the temple" after "X" hours on-air

Problem #3: Brand 'Z' comfortable headset solves problem #2, BUT increases external background noise

Solutions #2 & #3

Use Shure BRM440M
Broadcast Headset

- External background noise isolating
- Closed back—noise isolating
- Gamer-style, circumaural (over-the-ear) ear cup pads



Problem #6: Special microphone is needed for your ICOM radio

Problem #7: External batteries needed when your ICOM-specific headset is used with other radio brands

Solutions #6 & #7

Use Mike-Link & Shure BRM440M

- Built-in, user-selectable, Active ICOM pre-amp
- External power/battery NOT required
- Built-in, user-selectable mic input impedance 2.5K or 10k

Problem #4: "RF in your mic audio OM!"

Solution #4 - Use Mike-Link

Ferrite RF suppression chokes included on:

- microphone audio
- receiver audio
- PTT

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Low Band Systems

DX Engineering now carries Band Pass Filters and Multiplexers from Low Band Systems. These high-quality, multi-stage filters limit the RF band pass to a single band, effectively eliminating the harmonic and adjacent band issues multi-radio contesters experience when using dedicated monoband stations. Filters are available for all popular HF bands. Search keyword "LBS Band Pass" at DXEngineering.com to learn more.

Running multiple stations during this year's Field Day? These filters and multiplexers are an excellent addition to your club's setup!



Active Magnetic Loop MF/HF Receiving Antenna

The well-known RF-PRO-1B is now manufactured and sold exclusively by DX Engineering. This original Pixel loop design incorporates a high performance preamplifier for excellent broadband reception from 100 kHz to 30 MHz. Installation is easy, because it's only 38 inches in diameter. When rotated, this antenna provides deep nulls for effective reduction of directional noise and interfering signals. Ideal for Amateurs, SWLs and AM DXers, this loop also offers up to 30 dB rejection of electrostatic field noise.

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With unmatched port-to-port isolation, these switches have been tested to deliver exceptional performance and long-term reliability. You'll also see an excellent SWR and improved RF voltage/current capability over other manufacturers' switches. They're available separately or bundled with DX Engineering's Control Consoles.



1,500 Watt Automatic HF Linear Amplifier

The ACOM 2000A combines fully automatic tuning and sophisticated parameter monitoring to give you consistent performance and lightning-fast bandswitching. Its time-tested design yields years of reliable service.

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