



Potomac Valley Radio Club Newsletter

May 2006

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PVRC Welcomes AE4MN, Paul Morgan to the PVRCNC East Chapter

Editor's Note

By **Pete Smith N4ZR**

This is the next to last issue of the current contest year, before the Newsletter goes on hiatus for the summer. If you've ever wondered how K7SV racks up those low-power scores, his SO2R secrets are revealed (well, the technical ones, anyway). K4ZA provides a primer on the use of cranes, and N3JT writes about doing it the old-fashioned way. W4KAZ reports on the advent of RUFZ for the Windows XP world, WM3T reminds us all of how to make sure you get your points toward the 5M Award, W3YY reports on his I/ operation, and a bunch of other, hopefully useful information is inside. Enjoy.

From the President

By **Jim Nitzberg, WX3B**

Greetings from WX3B/0. I'm writing this column from Colorado as my 14 year old son Alex and I are taking a break from our "normal" activities to go and skiing and snowboarding for the last weekend of the season!

In recent weeks, DXers all over the world have been enthusiastically chasing the various VU4 stations, including one operated by PVRC members Bernie, W3UR and David, K3LP. I hope you have been fortunate enough to work them on a variety of bands and modes.

We had a great turnout at the April Central Region meeting for the fascinating presentation given by Kam, N3KS (with narration from David, K3LP) on the Desecheo Island (KP5) DXpedition. This was not your average or everyday run of the mill DXpedition. It was it one full of adventure, politics and extreme...EVERYTHING. Kam and David will be taking their story to the Dayton Hamvention[®] in May, and will at some of the other regional PVRC meetings later this year.

N3HBX's new Poolesville station has been the host to some very impressive scores being racked up by PVRC members. As KD4D in the most recent CQ WPX SSB, N3HBX, KD4D, NI1N, N3CA and N8II may have set a new Multi/Two world record in the CQ WPX SSB contest last month! Congratulations to all for their fine effort.

And speaking of N3HBX ... If you're interested in learning what it is like to design, build and operate one of the most competitive M/2 stations in the world from the ground up, you'll have the opportunity to hear John present his station building story this month. John will be telling his story on Monday, May 8th at Capitol College in Laurel, MD. Mark, KD4D is organizing the meeting and pre-talk dinner. Keep your eye on the PVRC email reflector for further details.

The PVRC 5m Award is one of the most important functions of the PVRC. An integral part of the program is to make sure our program is secure, error-free, and provides ample opportunity for us to correct any mistakes we

make. It was recently brought to my attention recently that some scores entered for the award were inadvertently 'lost'. Please contact me or Anthony, WM3T if we need to make corrections. In the future, we will be delivering email updates of club scores on a more frequent basis, providing members with more opportunities to review their results before they are finalized. I apologize for any recording errors. Rest assured that we are making efforts to tighten the ship so everyone's scores are correctly counted!

Eric, W3DQ just emailed me from his trip to the Visalia International DX Convention, which he attended with five other PVRC members. He will be writing a summary of his experience upon his return, outlining some interesting product announcements, our opportunity to present a contesting seminar in Dayton, 2007, and, with some luck, a very interesting guest speaker that we hope to attract to one of our Central meetings.

Finally, our thoughts in late April turn to the Dayton Hamvention[®], the CQ WPX CW contest coming up, both coming up in May, and W3LPL's Open House and Field Day in June.

And...don't forget...the annual PVRC On The Air Reunion takes place on is June 4th and 5th this year. I look forward to working you in this event.

Best wishes to all for a great spring season.

73,

Jim Nitzberg WX3B

PVRC Contest and Event Calendar

PVRC Events in boldface — all dates and times are Zulu except as noted

Low Power Sprint, 0000Z-0359Z Apr 1

EA RTTY Contest, 1600Z Apr 1 to 1600Z Apr 2

JIDX CW Contest 0700Z Apr 8 to 1300Z Apr 9

CQWW WPX Contest, 0000Z May 27 to 2400Z May 28

PVRC Reunion on the Air, June 4-5 (see the June issue for rules and a club roster)

ARRL June VHF QSO Party, 1800Z June 10 to 0300Z June 12

All Asia DX Contest (CW), 0000Z June 17 to 2400Z June 18

West Virginia QSO Party, 1600Z June 17 to 0200Z June 18

W3LPL Open House, Noon local time, June 17

ARRL Field Day, 1800Z June 24 to 2100Z June 25

Station Building—How Will You Spend Your Summer?

For the June issue, in addition to PVRC Reunion materials, your humble editor would like to run an article describing what station-building projects are in the pipeline before the next contest season. If you've already built something new, I'd love to include pictures, but in any case, please drop me a note and tell us all what's on tap for the summer.

Be Radio-Active

Don't forget the WPX CW Contest, May 27-28 and the PVRC Reunion June 4-5

2006 Hamfest Schedule

Date	Location	Date	Location
April 23	York, PA	July 9	Hagerstown, MD
May 7	Hagerstown, MD	August 6	Berryville, VA
	Warminster, PA		Mountaintop, PA
May 13	Fredericksburg, PA	August 13	Westminster, MD
May 28	Howard County, MD	August 20	Hanover, PA
June 4	Manassas, VA	September 9	Stroudsburg, PA
June 10	Bloomsburg, PA	September 9-10	Gaithersburg, MD
June 18	Frederick, MD	October 15	Sellersville, PA
July 2	Wilkes-Barre, PA	October 29	Westminster, MD
July 4	Harrisburg, PA	Additions/corrections are appreciated!	
July 16	Kimberton, PA	de Glenn, K3SWZ	
July 23	Howard County, MD		

From the Secretary

By **Anthony Brooks, WM3T**

I was just reviewing the methods that I gather scores, and wanted to remind everyone and make a few remarks about score submittals.

Methods, in order of preference:

1. Submittal form on the 5M page. A confirmation email is sent immediately to your roster-listed email address after submitting the form.
2. Email to PVRC Reflector, 3830 (as long as the Club listed is Potomac Valley Radio Club, all others go to the bit bucket), or direct email to me. If the email is direct to me, indicate in the subject the contest and your call, i.e. WX3B CQWW SSB. Having a proper subject line will help catch my attention when I am sorting through email. Each one of these scores is manually entered into the online form (#1), which will send a confirmation to the call listed.

Sometimes, a confirmation doesn't get sent because of the callsign used, i.e. NY4A scores since NY4A is a club call. I am looking to modify the confirmation script so it will send the confirmations to the person who hosts the club station operation.

A couple notes of interest:

1. Some folks send me their Cabrillo log file. All I need is just a summary in an email, not the whole log.
2. It's easier to get the information from the 3830 posting than from logging program generated summaries sent directly to me as an attachment.
3. If commenting on a contest, have your score summary at the top of the email with your commentary following.
4. If you submit a score by one of the above methods and don't get a confirmation or see your score listed in the Open Contest Report on the 5M webpage within 24 hours after you submitted, SEND ME AN EMAIL to make sure your score was received!! I don't want your score to slip through the cracks and not get credited to you.
5. Scores submitted to me are not forwarded on to the sponsor. Send the sponsor your log, with Potomac Valley Radio Club listed as the club, and then send me a summary. Scores I collect are for the 5M Program only.

2006 MD State ARRL Convention, July 29

Location: Otterbein U.M. Church
(corner of N Locust and E Franklin Streets)
Hagerstown MD ([to see a map, click here](#))
\$5 Donation Admission

8:30 AM Start of Registration

9 AM

The Golden Age of Short-wave Radios by PA Ham
and ARA Club Member, Eldon Geiman, KA3ZKU.

The YL System- Its more than just a net by YL-ISSB
and Presented at least in Part by ARA Member Bill
Drager, K3UMV (A Past ARA President)

MARS Forum- by Steve Creekmore, KC3S, Assistant
State Director of Army MARS for MD-DC

10 AM

Software Defined Radio
by Carlin Morris WN3DUG
(A Past ARA President)

Youth in Amateur Radio
by Bob Rose AA3RR
and Sponsored by KI3DS
A.A.R.C., Jr.

QRP including

Adventures on the Appalachian Trail
by Ron Polityka WB3AAL
Founder N.E. Pa QRP Club

11 AM

The Rules Say
by John Johnston W3BE
Worldradio Columnist

Introduction to Contesting
Presented by and Sponsored by
The Potomac Valley Radio Club

Ham Radio -What It Is and
How To Get Started
Presented by Bob Long KD3JK

Portable In Italy
By [Bob Peterson W3YY](#)

I just returned from two weeks in Italy, where I operated as I/W3YY (CEPT license) from Tuscany. I only had a 100ft long wire and a 40-meter dipole up about 20ft, so antennas were pretty minimal. The rig was a FT-897D.

The ham radio experience was fascinating. I could easily work other EU and especially Russians, who seemed to

A Past ARA President

Noon

Door Prize drawings and lunch break
Some ARRL Appointees like the MD OO's may meet
during this period

1 PM

Field Day Is Not Enough
by Bob Josuweit WA3PZO
CQ Magazine's Public Service Editor

RFI:Find It, Fix It

by Stu Benner W3STU
(Of EM Consulting and an ARA Member)

EmComm Forum

Moderated by Roy Bates, N2CSQ
Sponsored by MADXRA Club

2 PM

THE EAGLE- AMSAT's Newest Satellite
by James A Sanford, PE WB4QCS
Eagle Satellite Program Manager for AMSAT

Some Simple Projects You Might Like

by Mark Arnold KB8YJV
President Opequon Radio Society
(An ARRL Affiliated Club)

ARRL Meet and Greet

(Informal time with ARRL Officials Present)

3 PM

ARRL Keynote Forum and Final Door Prize Drawings
Kay Craigie, ARRL 1st Vice President, N3KN is Key-
note Speaker.

At the conclusion of this forum slightly before 4 pm,
convention will shift location as a motorcade lead by
ARRL officials will motor to Rose Hill Cemetery
where ARRL Officials will conduct a memorial ser-
vice to commemorate the 70th Anniversary of the
passing of ARRL Co-Founder and First President,
Hiram P. Maxim, the first W1AW.

be everywhere all the time, but the U.S. was a real challenge. I don't know if it has to do with the sunspot cycle or the particular DX location I had, but I've previously done micro-DXpeditions like this and worked the U.S. from my hotel room with the antenna inside the room. This time I couldn't work the U.S. with some relatively good wire outside. What U.S. stations did I work? WK2G wins the prize as the ONLY U.S. station I worked in two weeks! He was in the Florida QSO party - hope I counted for him!

It was nice to work many of the EU/Russian/Middle East stations that I work in the contests. The highlight of my trip was when I answered 9K2MU's CQ and he immediately came back with "Hi Bob, nice to hear you from Italy". That was great.

I also visited San Marino (T7). Pictures are at http://www.w3yy.com/dx/travel_dxcc/italy/italy.htm and http://www.w3yy.com/dx/travel_dxcc/t7/t7.htm. For the trip I purchased a nice travel case for ham gear in which you might be interested. Pics at http://www.w3yy.com/pelican_1600.htm.

Good to be home and have big antennas again. Propagation today was fantastic.

The Toolbox

By Don Daso K4ZA

Working With Cranes

Sometimes the mechanical advantage is simply too great, or the safety factors out-weigh the extra expense, or timesaving alone makes it worthwhile. Whatever the logic or reasoning, sometimes, when putting up or taking down towers or beams, using a crane is the better solution. Herewith, some thoughts on that subject, motivated in no small measure by my recent trip to MD to build and install WN3R's new SteppIR Monster Yagi.

Some obvious points, but if you've never worked with or used a crane, remember that cranes are only used to hoist heavy loads and move them short distances. A crane is a steel boom (usually) mounted on a hinged platform with a cable running through it on pulleys. This cable ends in a hook and is raised or lowered by a winch attached to the platform. The boom can be raised and lowered, and the entire platform can turn, or slew.

Most cranes today are hydraulic. Most of us will use mobile cranes, which can vary in size and shape, depending on their lifting capacity or boom length. Truck-mounted cranes can be cost-effective, with boom lengths to 150-feet or more, while still being small enough to fit into a normal backyard. Most of the time, weight limits will not be a problem for cranes, as they're designed for construction use, and our towers or antennas are light in comparison.

Cranes are rented by the hour, but that means "portal-to-portal," so plan accordingly. Also, some states have fees, imposed for transporting such heavy vehicles on the highway, too.

The first time you utilize a crane on a job can be a sobering and frightening experience. But once you do it, you'll be hooked (pun intended). No more heavy lifting, no more laborious rigging of tramlines or back guys, and so forth.

Of course, the crane operator may not be familiar with ham towers or antennas (they're used to lifting large, heavy items, not delicate fixtures of aluminum). So, spend some time going over the work to be performed. I almost always spend twice as much time talking about the job we're about to do as it actually takes to DO the work. But, as usual, safety first is the key to this work, and such discussions help ensure that, and get the climber and crane operator on the same page.

Rigging is always a factor to consider—how does one attach that delicate Yagi to that huge (500 lbs, typically) "headache ball" hanging there on the end of the cable? Again, time spend rigging and lifting a literal few inches will help ensure your load is balanced, secure, and ready to "fly" once you're atop the tower waiting for it. I like to rig the load myself, and then climb. I use my usual assortment of slings and carabiners to rig; again, these are much smaller and lighter-weight, compared to what the crane folks are used to seeing and using, so discussing

them beforehand is a good idea. Once up the tower, you can either communicate with the operator using a radio or via hand signals. If you don't have an FRS-type radio, you must rely on hand signals. A simple Google search will provide the half dozen most common ones (they ARE standardized). Learn and utilize them. Again, safety first! Here are some rigging rules:

- Know the weight of the load; don't guess when telling the operator.
- Use the proper size slings and carabiners or hardware for lifting.
- Make sure shackle pins and shouldered eye bolts are installed to the manufacturer's recommendations.
- Do not use slings, eyebolts, shackles, hooks or any hardware that's been cut, welded, brazed, or otherwise modified.
- If you're using wire-rope clips anywhere in the lift, make sure they're installed correctly! (The base goes on the live end; the U-bolt goes on the dead end.)
- Determine the center of gravity and then balance the load. Only lift the load a few inches at first, testing both your rigging and the balance point.

This simple introduction will ease you in to using one of these mechanical marvels for the heavy lifting involved in building larger towers and antennas. Some of the current truck-mounted cranes (National and Grove are two popular manufacturers) are truly amazing. A typical unit is shown at right, effortlessly lifting WN3R's new MonstIR. Trimming wasn't really an option—trees prevented us from hauling it up at an angle. So, we simply plucked it from the driveway where we'd built it (the only space available), hauled it up and over the trees and the roof of the house, and then turned and brought it into the tower, using the 150-foot crane. Six minutes from the pick to the final boom-to-mast bolt tightening. If that's not impressive, I don't know what is....



What's in your toolbox?

A Poor Man's Evolution to SO2R **By [Larry Schimelpfenig, K7SV](#)**

It seems that the completion of each major contest is followed by extensive argument regarding the merits of the concept of Single Operator Two Radio (SO2R). Many voice concern with the expense of adding the necessary accoutrements to do SO2R. The expense of setting up SO2R is a relative thing, just as setting up a contesting station or an amateur radio station might be. I'd like to share with you my poor man's evolution to K7SV/SO2R and the benefits I've gained from it along the way.

What does the term SO2R really mean? Think about that as you follow my rambling, based on the history of my contesting activity over the past fifteen years. Remember that what I've done has strictly been low power.

My first taste of this two-radio thing came back in the early 1990s as my station gained an ICOM IC-735 transceiver in addition to the Drake C-Line. I really hadn't given any thought to using both radios at the same time during the contest until the CQ WW 160 Meter contest. I used the 735 with the Tee (40 meter double extended zepp with 60 feet of open wires fed against a pair of elevated quarter wave radials) to transceive, while the R4C had the switch with two 300 foot beverages attached. I used a three position rotary switch to place the audio from either receiver in both ears, or from the 735 in the left ear and the R4C in the right. There were two advantages to this arrangement. The first was the ability to listen on the omni directional transmit antenna and one of the beverages at the same time. Typically I could hear a responding station on either receiver with either beverage selected on the R4C, but there were times that I could copy a station with one antenna but not the other two. Second, once responses to my CQs slowed down, I would add a little more space between auto-CQs and use that space to listen for mults in other parts of the band. It was a little tricky, but produced something once in a while. Was use of the second receiver consider to be SO2R?

Picking mults on the same band as you're running on is something that has been played with by several PVRC members in the past. I know that Phil KT3Y had some form of receive antenna far enough removed from his transmit antenna on some band (probably 20) that using it, he could get quite close to his transmit frequency while mult hunting. During the last couple of contests at his place, Paul K4JA played with using a vertically polarized tribander element to hunt in-band multipliers on the high bands as well.

I prefer CW over other modes, so my first ventures into SO2R were with CW. When operating CW I use QSK or break-in 100% of the time. My next step towards SO2R found me adding a second RCA connector and a switch to my keyer so I could chose which rig to key at the flip of the switch. With that I dabbled at running on one band while picking mults on another, but with the 40 through 10 meter antennas as close as they were, that was about as tricky as trying to works in-band mults while running on 160.

After migrating from NA to Writelog contesting software, I became interested in RTTY and using WL as a voice keyer. After getting both of those functions working, I decided it would be interesting to use Writelog, toggling a relay through a parallel port to switch my CW keying between rigs. Once that was accomplished, the thought of running with one rig while hunting on another band with the second rig became more appealing.

The next step in the process was to determine which band combinations were really problematic and what I could do to battle it. The first thing I learned was that my biggest problem was the second 40 meter harmonic killing 20. Remember that there's about 8 feet of space between my 40 and 20 meter antennas, though they are 90 degrees apart. Steve, NR4M, had single band ICE filters for 40, 20 and 15 as well as an all band ICE filter that I borrowed. Using these filters on 40 and 20 made marginal difference. So the next step was putting an A3S tribander at the 25 foot level on the tower. While I was surprised at how competitive the antenna was at that height, interaction between 40 and 20 was still unacceptable, even with the filters.

Around this same time, I started dabbling in SO2R RTTY, using Writelog with the MMTTY RTTY engine on one rig and a commercial TNC borrowed from K3NC on another. It sort of worked, but it also got to the point that I had to make some decisions regarding which contests I was going to operate. The decision on RTTY was to stick to the shorties such as NAQP and Sprint. About this time I found myself making several trips a year to K4JA and decided to sell the C-Line and 735. I then purchased an IC-746. In addition to contesting from Paul's I became rather interested in VHF.

After the last contest before K4JA pulled stakes in preparation to moving to Kentucky, I became more interested in contesting from home again. I still thought that SO2R could be beneficial, and thinking about polarization isolation, decided to put a vertical dipole for 20 meters at the bottom of the yard, about 250 feet from the tower. The vertical dipole never played very well. I decided to flip it to horizontal polarization, one end toward the tower. That worked much better, and I could get within 15 or 20 KHz of my second harmonic from 40 on 20 and quite painlessly work people. That's without any filters or stubs.

That pretty well put me into the SO2R business. I could effectively work other band combinations quite well. I worked the 2005 ARRL CW DX using a TS-850 and the IC-746. I used SO2R quite heavily, and ended up Nr. 4

in US/VE low power, behind W1MU, N1UR and W4PA.

While this may be giving away one of N4GGs secrets, a simple dipole is a very effective antenna, depending on the band and how high it is. I fully expected that the 20 meter dipole would be relegated almost entirely to S&P, but I've been surprised how effective it's been in running in some contests. The NAQPs are a good example. I've had decent rate while running with that antenna, and picked up a lot of mults in the process. While S&P'ing on 40 one night, a KL7 answered my CQ on 20 with the dipole. One doesn't necessarily need a pair of towers to make SO2R pay off.

Now I decided it was time to pick up a second rig again. I was thinking of a second IC 746, but K3NC offered me a deal on an IC 756PROII that I couldn't refuse, so I was off and running. While I'm not a great phone contest fan, I found that a voice keyer made it a lot more fun. In the course of the year I decided to add SO2R phone capability to the station. Again using VOX, all I needed to do was switch the microphone and the sound card output between rigs. Akin to what I was doing on CW, I used a relay driven from a parallel port controlled by Writelog to switch the mike between rigs. By design the audio from the sound card was switched between tip and sleeve mini-fone jack depending on which radio was selected.

At this point I'll state that relays driven from the parallel port and controlled by Writelog are the heart of what I do with SO2R. For what I'm doing, I'm not switching much, but if you need to switch anything such as PTT or transmit/receive audio, it can easily be done with most contesting software and inexpensive relays.

SO2R isn't for everyone in every contest. If you find that you don't adapt well to situations requiring multitasking, you may not handle SO2R well. RTTY and SO2R seem to have a perfectly natural fit. I'd say that's due to predominant use of the visual sense. I believe that second most difficult use of SO2R is on phone. If you can carry an intelligent conversation with separate individuals on separate topics simultaneously I'd say SO2R is for you. I'd say the same for CW except you must be able to decipher the CW as the data is processed in your head. With practice you can get fairly good at ignoring or filing the least pertinent data to the back of the brain.

Some contests seem to be a natural fit for SO2R. I'd start by tagging all RTTY tests. Follow that up with NAQP CW and phone. I think Sweepstakes could be fun with SO2R. Keep in mind that I'm running low power, but I found the ARRL CW to be a total blast with SO2R.

So, is SO2R all about running and searching and pouncing simultaneously? Or is it that, plus dueling CQs on different bands? I find it's just as important to determine where one should be operating and for strawman planning for the coming hours. It's very important to know when to switch bands. It helps a lot to be very active, to know when the various bands typically open up, but during a contest, things frequently happen differently.

During the bottom part of the sunspot cycle, there may be brief openings on the higher bands. If you miss those openings, it could mean the loss of multiple multipliers. Going back to the early days, a very large advantage to having a second receiver was the ability to check other bands for openings. At night while running 40, I'm frequently watching 20 for those secondary openings that occur. Once 20 opens in the morning, I'm carefully watching 15 for decent European signals. Once I've gone to 15 if I have a good run going, I'll frequently plant the second receiver on W3LPL on 10 listening for the first sign of an opening to him. Or the second receiver might be scanning 20 for good mults, or simply additional run of the mill Q's if 15 is a bit slow. A slow run on 15 while getting good results while S&P'ing on 20 will put Qs in the log! As 15 dwindles down to the last few Gs and EAs and perhaps Scandinavians, I start watching 40 for signs of life. As night progresses and I run on 40, I'm watching 80 and 160 as well. Depending on the ferocity of the run, I may do the SO2R thing, or I may just listen to other bands to help determine what I should do next.

Did you watch the weather forecast for the weekend prior to the contest? Have you been following propagation tendencies and forecasts leading up to the contest? Having done so may help as you plan which bands to be on. Once you're into the contest, listening to the bands may provide additional hints as to how you should plan things. Noisy low bands might help you decide to spend more time on the high bands. If the bands have seemed consistently better than usual, it could be the pre-solar event boost we often times see. Are there any keys that might in-

dicating the bands are going to be different during the second half of the contest? Are you hearing aurora on the Scandinavians?

Over time, I've managed to put a fairly competitive low power SO2R station together without spending a huge amount of money. While that is a relative statement, I can state that I haven't spent any money on SO2R boxes, filters or stubs. The most expensive piece needed to go SO2R was the second rig. I ended up with the two ICOM radios because I like them, and they were reasonably priced. I would have been just as happy going with a pair of TS-850s. The only difference in antennas is the addition of the 20 meter dipole. Oh yeah, I forgot, I've got about fifty bucks invested in relays, transistors, cabinets and cables. It hasn't been necessary to do any special filtering, bypassing or such. In my case I found that I could even directly couple audio from my sound card into the radio without isolation transformers, and get excellent reports on the audio.

Obviously your mileage may vary, especially if you decide to go high power SO2R, but I've had a lot of fun with a small outlay in cash. This was certainly not intended to be a piece by piece SO2R construction article, but if anyone has any questions on how I did anything, please let me know. While sufficient information is available from Writelog to do this, it might take some digging and head scratching to get it all straight. The most difficult construction I had to deal with involved a few relays, transistors, resistors and connectors. If anyone needs a hand on getting started, I'd be happy to answer your questions.

[Editor's Note: Larry modestly downplays one of the key elements, whether you are SO1R, SO2R or somewhere in between, and that's the ability to maintain a high level of concentration and focus over a very long period of time. That's why I and many others will never achieve results like his—K7SV is one of the best operators I've ever met. This is not to say that unless you're K7SV, you shouldn't experiment with SO2R. Even if you decide eventually that it is not for you, it's fun to try, and with his approach, it can be done without tempting bankruptcy. CU on SO2R?]

The Occasional Climber and Rotators

By Jim Talens, N3JT

We all have the occasional equipment failure, and my most recent case involved my Orion (M-Squared) 2800DC rotor. The symptoms began with sluggish rotation in one direction, shortly followed by no rotation at all. It was at that point of keen technical observation I concluded I had a serious rotator problem, and of course it was early February, the perfect time for it.

Measuring the motor DC resistance from the shack showed 2 kOhms 1998 Ohms too many, so it looked like there was a bad connector somewhere in the rotator circuit. My subsequent chat with the Orion folks indicated that my assessment seemed to be on target, and I hoped it was the connector at the protector box at the base of the tower. I disconnected the rotator line at the protector box only to find the same high resistance looking toward the rotator. The culprit was clearly the connector at the top of the tower. Connecting the dots, that meant I had to climb the tower – for the first time to the top.

It had been a while since I'd ventured to climb above about 30 feet, and even then I had used my very old line-man's belt. In discussing the rotator issue and climbing with several PVRC members, the consensus was that I should upgrade my safety equipment to the 21st century OSHA standards by buying a climbing harness and lanyards. Looking more closely at the belt I noted a certain stiffness to the leather and maybe some small cracks, something I realized meant it was time to follow the collective advice.

There are probably a thousand versions of harnesses one can buy, but in the end I paid about \$140 for everything I needed, including flexible lanyards that would cushion the shock of any fall from the tower. No, not cushioning for when I hit the ground, but cushioning for when the six-foot length of safety lanyard attached to the tower had been stretched to its limit. That assumes, of course, that the fall occurs from more than six feet above ground.

It took me a full 20 minutes to figure out how to get the harness on, and I now empathize with women's sartorial challenges more than ever. My particular model of harness has several straps that extend around legs and body

and have to be “assembled” with each wearing. Subsequent occasions of wearing the harness have reduced that time to about 3 minutes, which is 2-1/2 minutes longer than it ever took to don the old safety belt. The advantage of the additional time is that during the dressing process you can think about tools and other items to take with you. Isn't rationalization a wonderful ability?

I stood on that warm February day at the base of my tower ready to climb, with Ohmmeter, pliers and other tools in a bucket and power cord for the soldering iron attached to my belt. The goal was to separate the multi-conductor cable at its connector adjacent to the rotator and measure DC resistance toward the rotator to see if the same high resistance measured from the ground was present here. Hopefully it would not be. But if it was, the next step would be to remove the connector shell and check the conductors and pins for corrosion. After all, Orion told me that the problem was probably in the connector. I was ready with everything I needed, or so I thought. But first I had to get to the connector.

It has been my experience that climbing a tower for the first time in a long while is an unnerving challenge. It is even more so when there is a significant breeze, and it doesn't help if the tower is self-supporting, i.e., without guys to provide psychological confidence in structural integrity. Never mind that this tower is planted in 36 tons of concrete and withstood Hurricane Isabel as well as high winds from thunderstorms over the last four years. When at “unnatural” places like the top of a tower, one's mind is not necessarily concerned with facts or rationality. So at 35 feet, beyond the grape vines and despite being tethered by two lanyards (each capable of holding my car off the ground), I was unnerved by slight tower sway and the perspective of height. I decided to stay put for a few seconds or, put more accurately, my body decided not to move. Ten minutes later, I was still at the same location, fully confident that if I didn't budge I might actually live to eat another pizza someday. Of course, I also realized that if I continued parked where I was it might take a few days for anyone to find me. These are just a few of the clever insights about life one gets while hugging a tower.

Soon, I managed to wiggle a foot and then an arm, until finally I found myself reaching for a lanyard and resuming my ascent. Confidence had returned and up I went, to the very top, comfortable enough to enjoy the tower sway and the view from above. Short of exhilarating, it was definitely fun, except for not having worn the right shoes and stretching muscles that no other activity ever requires.

The harness and lanyards provided greater security than the old safety belt because it was now very clear I could not possibly slide out of the harness, a danger I had not even considered when using the belt. In fact, no part of my anatomy could move within the harness more than the minimum needed to climb from one tower member to another or to reach into my tool bucket. Moreover, I was effectively lashed to the tower by the lanyards as well as the strap around the tower that allowed me to free my hands from holding on for dear life. Sequentially attaching and detaching the lanyards to climb or move around the tower was at first somewhat troublesome, but soon I got the hang of it and the process became almost second nature.

Back to troubleshooting, my DC resistance measurement at the pins of the detached connector was still high toward the rotator. That was definitely bad news. Now I had to disassemble the connector itself to find and repair the effects of corrosion. The Orion engineer had explained that small amounts of water inside the rotator (presumably from condensation) can wick down the tightly packed cable into the connector and remain trapped there, causing pin corrosion. That had to be the problem, but now I saw that I had failed to bring the really tiny screwdriver I needed to take the connector apart. I had the soldering iron and everything else to do virtually any other job up there, but not the tiny screwdriver. Nobody was at home to help me, so I had no choice but to descend. I was quite surprisingly worn out when I reached the ground, likely from the adrenalin release at mid-climb. Clearly, it could not be a question of aging or overall physical shape!

The next day I started it all again, but this time it was with annoyance rather than nervousness. Once at the top (with better shoes), I disassembled the connector and found the conductors inside as shiny as the day they were made. There were no loose wires and no corrosion of any kind! Grumbling, I returned to the ground, disappointed but not entirely surprised. This is ham radio, after all.

The rotator had to be removed from the tower for internal inspection and I had two choices on how to proceed: I

could spend the entire day trying to do it myself, assuming I could manage to lift the mast and antennas from the rotator with a come-along and otherwise deal with the physical challenge of handling and lowering the heavy rotator; or I could call Mike, W3MC, who can do this kind of task efficiently. I chose the latter. A few days later, thanks to continued warm weather and a break in his busy work schedule, Mike (with my critically important function of watching from ground level) removed the rotator and had it on my workbench in less than two hours. (He complained, though, about the grape vines.) A chat with Orion as we peered into the open rotator case hinted at a motor problem, not something simple like a bad connection, limit switch or diode. The resistance measurements we then made on the entirely disconnected and hand-rotated motor were intermittent, variable and high, leading to the definitive diagnosis of a bad motor.

Despite being well out of warranty, Orion agreed to cover the repair as though it was a new purchase. They even arranged to pay all shipping charges, which are not insignificant. It took a few weeks for Orion to repair the rotator and ship it back with its new motor, but my antennas were fixed toward Europe so I was not completely without a source of contacts.

We all know that it is not common today to encounter such positive customer relations policies. Largely because of that, I decided to “invest” in a spare Orion rotator. That won’t help me with the replacement process should another problem occur and I won’t be able to buy that new digital camera until summer, but at least now I have the right safety equipment for tower climbing and I won’t face the delay of getting a spare rotator. Meanwhile, maybe I should trim those grape vines so Mike doesn’t get tangled in them again!

RUFZ Updated

By Keith Kazeringue, W4KAZ

Remember DOS? Remember playing with RUFZ under DOS? Remember not taking the time to bother with ironing out the kinks to run RUFZ on Windows XP?

Well, if you are inclined to, you can now get the “new improved” release of the RUFZXP CW software. It is available for download as in a Windows installation package, or it can be downloaded as a zip file which can be installed and run from a USB drive for portability. Now you can practice CW anywhere you need to cart your laptop — in that boring hotel room. On that boring plane trip. Egads!—at that boring job! Perfect for the aspiring CW Op, along with MorseRunner.

I was not all that familiar with the DOS version of RUFZ, but the new version appears to offer several new options. Not that you guys really need to practice your CW. But for those of us who do.....it’s helpful. No substitute for live QSO’s, but sometimes more practical.

The RUFZXP download is available courtesy of Mathias, DL4MM and Alessandro, IV3XYM at the official homepage: <http://www.rufzxp.net/>

There is also a new release of MorseRunner (v1.62) available from Alex, VE3NEA at <http://www.dxatlas.com/MorseRunner/>

[Editor’s Note—MorseRunner is far and away the best contest simulator available today, but RUFZ is an old friend, and for pure CW exercise (as an example, for increasing the speed at which H’s and S’s become all the same) it can’t be beat]

Briefly Noted

Mike, K4GMH, sends along congratulations to Bruce, W3BP for finishing first in North America in the 205 WAE RTTY contest. Mike notes that PVRC finished second in the outside-Europe club competition.

Paul, K3STX reports his pleased surprise at receiving a 2005 WPX CW certificate for first place in USA in low power, all band assisted category. He notes, “Of course, I only got 455,000 points and would have received 67th place in the 3rd call area if I did not enter the Assisted category, but I did assisted to earn points and was rewarded with a certificate. How about that, a guy with a barefoot rig, some wire verticals, a single dipole, and a 386 computer running Windows 98 winning for the whole USA! I think this means something about Armageddon or Hell freezing over.” Congratulations, Paul!

Around The Club

Meeting Minutes from the Regions

PVRCNC—East had a tremendous turnout (21) and an excellent program during our April gathering. It was great to be back in our normal room and it was a good thing we had the privacy as our meeting went on to around 9:30! Thanks to all who made the effort to come out.

Those in attendance were: W0UCE, Jack; N4CW, Bert; W4TMO, Jim; K4CIA, Bill; NX9T, Jeff; N4TL, Tom; W4KAZ, Keith; K4QPL, Jim; W4MY, Marty; K1ZW, Larry, and XYL KA2SVC, Kathy; NT4D, Jay; NT4Q, Jerry; AD4L, Pete; WW4M, Jim; K0BHC, Brad; K4CZ, Barry; K2AV, Guy; AE4MN, Paul; and special guests KC4RI, Mike, and Marshall Kay. K4QPL welcomed the group and indicated that we had an full agenda for the evening and would try to keep things moving the best possible. NX9T introduced AE4MN as attending his second meeting and confirmed his desire to gain PVRC membership. Paul was quickly nominated, a second was offered, and he was welcomed to the fold. Congratulations Paul...and welcome!

W0UCE conducted the regular "Paper Contest." This month's contest resulted in a four-way tie for first, but after a "booth review," the official win was awarded to NT4D who took home the 8" Torpedo level. RARSFEST will take place on April 23rd. Our group will have 3 tables for members to use for selling their wares and using as home base. An informal gathering is scheduled for 11am. Please stop by if you can!

Pete, AD4L, and Mike, KC4RI, presented a very interesting and informative program on Software Defined Radios (SDR). Mike came in from Atlanta for our meeting. Both gentlemen had plenty of superb information which was presented via a Powerpoint slide show. Pete provided a solid overview, some history, current trends, and basic operation of SDRs. Mike touched on some of this information as well but focused our attention on his rig, a Flex Radio SDR1000. Mike compared some specifications of the SDR1000 against several well-known and respected rigs. It was clear that SDRs have tremendous potential. This program will be available soon via the PVRC website. The program schedule for May is: "Working the Weak Ones-Part II--An Introduction to Receive Antennas"

Member Reports: N4CW, Bert was on during the ARRL DX and Russian contest. He received a nice certificate from last years New England QSO Party as well as a bottle of maple syrup. W4TMO, Jim was on during the ARRL and WPX. He is also adding to his antenna farm at home and is having a blast after a 35 year absence from ham radio.

K1ZW, Larry is getting active again and working on station automation projects. We were graced with the presence of his XYL, Kathy-KA2SVC. Kathy is a novice operator who gets on 10m from time to time. K4CIA, Bill placed 2nd in the Pesky Texan Armadillo Run and received a very nice (and timely) certificate. In keeping with his promise, K4QPL assured Bill that he would receive a gift certificate for winning NC at the rate of 1 USD per watt employed. Good thing for Jim that this was a QRP contest.

NX9T, Jeff operated some in the ARRL DX and WPX contests. He is in the final stages of putting up an new inverted L for 160m and then will begin planning on a receive antenna. Jeff reminded the group that the US Championships in ARDF are taking place this weekend in Raleigh. W4MY, Marty happily reported that his new job may lend itself to making our meetings more often than originally thought. He's enjoying using Telnet w/ N1MM and placed 2nd in the fall FIST Sprint. Great Job Marty!

K4QPL, Jim advised that he participated in the ARRL DX contest and the Pesky Texan Armadillo Run. He also reported that, due to his multiple callsign operation during SS SSB, he may have been first and second place in NC. (We need more NC participation in SS SSB, if this is the case!) K4CZ, Barry has been pretty active these days. He made a personal best, 470 Q's, in the WPX SSB. Barry also received his WAS certificate the other day and is planning to apply for DXCC soon. Tower work remains in the planning stages.

N4TL, Tom got on during the WPX to the tune of around 100 Q's. Big news is that he received a certificate and pin from the ARRL for 40 years of membership! Way to go, Tom. W4KAZ, Keith operated some during the ARRL DX and WPX. He reported how he provided a "mercy contact" to NX9T who was on 15m calling CQ with

little response (must have been after I got relocated from my earlier run frequency). The faux Sri Lanka DXpedition, of which Keith is a mover and shaker, has its own homepage.

W0UCE, Jack continues to rebuild his station after the significant lightening damage incident. He is very thankful for full replacement value insurance! NT4D, Jay operated in the ARRL DX SSB. His current project involves switching his rig/computer interfacing over to all USB connections. NT4Q, Jerry proudly described how he finally has 12 ft. of tower planted in concrete and plans are to grow it much taller over the next several weeks. He also operated in the ARRL DX contest with NT4D and W4KAZ.

K2AV, Guy performed an autopsy on a burned up Carolina Windom. He showed the "secret" components inside those magic boxes that make the Windom work on multiple bands. Very interesting to say the least. Contact Guy for autopsy results. K0BHC, Brad has returned following a one year tour serving our country in the middle east (YA). Welcome back! Brad is putting his shack back together and is planning to add to his tower and take it up to around 90 feet.

WW4M, Jim described how the NC State Univ. radio club (W4ATC) was recently donated a FT990 and Alpha amplifier. This has made a tremendous difference in their station make up and seems to be igniting interest by club members. AE4MN, Paul indicated that he recently purchased a new IC756PRO III and has a roof mounted tower supporting a Force 12 C4. AD4L, Pete reported that he was on for the ARRL DX contest. He is working on a software project to address QRM from adjacent SSB stations. Good luck Pete! Keep us posted on your progress.

Thanks again to all who made this one of our best attended meetings in PVRNCN-EAST history! We look forward to seeing you all and many others next month in May. Don't miss out...mark your calendars now for May 4 and come join us and learn more about "How to Work the Weak Ones-Part II."

73, Jeff NX9T

Thirteen **Rappahannock Chapter** members showed up at 10 AM for the meeting on this dank cold April day at the NR4M QTH (Goat farm, Goat ranch, Goatville, House of Goat). Those in attendance were Mike K4GMH, Lew K4HR, Steve K4FJ, Tom N4NW, Bob AF4UU, John W4IM, Steve NR4M, George K4GM, Bill K1SE, Steve K4EU, Boris WF3J, Larry K7SV and Nathan NW3Z (with cute 2 month old baby daughter in tow - she must have found it boring as she slept through it all).

Larry begin the meeting by going around the room for introductions, then went around the room allowing each attendee to discuss what he had been up to in recent months radio-wise. Seems like the Virginia QSO party was quite popular with most of the group.

K1SE has moved to Forest VA near Lynchburg. He has a large horizontal loop up and the QTH is very quiet, so he's having fun. He activated Bedford County in VAQP. W4IM assembled a Beverage for use on 160. He operated VAQP field day style from Essex County. K4GM operated VAQP from his summer home in Mecklenburg County. He's looking to get a tribander and a 40 meter shorty set up at that qth.

AF4UU got in most of the recent major contests for a hundred or so QSOs. He's using a Cushcraft multiband vertical and is having some problems with RFI at neighbors. He's looking to elevate the vertical to help resolve. K4GMH, Mr. Greenkeys, operated the BARTG RTTY contest (poor condx) and the EA RTTY contest (very noisy low bands, but great opening to SE Asia on 20). One side of his 80 meter dipole is down, so that needs repair. K4EU activated Culpepper County in VAQP. He did a single band 20 meter effort from the NR4M QTH in the ARRL CW DX Contest. Just short of 1600 Qs. He says the 4 stack of OWA's is working!

N4NW put delta loops up for 160 and 80, fed at the bottom corner. They're working well, accounting for about 400 Qs and 51 countries in the 160 contest. He, K4HR and K2PT put Stafford County on for the VAQP. He said that working simplex on 2 meters helps pick up some of the local counties in VAQP. WF3J, Boris gave an interesting description of his birth and growing up in the Soviet Union and his introduction to ham radio. He also described his situation with an acre and a quarter in Gainesville VA. He's looking to get a permit to put up a 75 foot

tower with a KT36XA on it. Should that fail he's going to put up three 50-foot towers with tribanders that can be phased on Europe or JA.

K4HR put up a few delta loops on the low bands. He's looking to put a few beverages up and is close to completing assembly of SO2R. He joined N4NW during VAQP. K4FJ has a pair of stacked tribanders working well on one tower and is preparing to put a 40 shorty on a second tower at 110 feet. W3BP purchased a second Orion and has set up for SO2R. He has been playing with Flex Radio SDR. Says it's interesting, but currently isn't a contester or cw operators radio!

Under business, Mike K4GMH suggested PVRC sponsorship of club category plaques for the CQ WW RTTY and the CQ WPX RTTY contests. Attendees unanimously agreed with the proposal. Also under business, Tom N4NW mentioned the Mid-Atlantic QSO Party 13 and 14 May 2006. It includes the Mid-Atlantic states NY/NJ through VA. Tom says awards includes plaques and nice 11 x 13 certificates. It has a club category. See <http://www.eham.net/calendar/details/4369> for further details.

Next we discussed antenna work needed by various members. In about a month K4FJ will be ready to put his 40 shorty and a 17M yagi on the second tower. N4NW needs to replace the balun on his TH6 at 110 feet. K4GM is about to remove a 51 foot crankup tower in the Richmond area. NR4M is in the process of putting a 70 foot crank-up tower in place for multiplier antennas. He also needs to get a group together to bring the 40 meter tower to the farm from the W3LPL qth. Steve will be talking with Frank to identify a good day.

A M/S effort in the CQ WPX CW contest is planned from NR4M with K4EU, K1SE and K7SV operating as well. If the crank-up tower is in place the plan is to put K7SV's KT36XA and 2 el 40 on it. If not we'll put a tribander on a rocket launcher and some dipoles for 80 and 40. In discussing DX, it was mentioned that Western Sahara would be on next week and J5 is currently qrv. K7SV finally worked VQ9LA on top band with low power. The meeting adjourned around 12:30 and burgers and dogs were served. This group consumed an incredible amount of beef!

Larry, K7SV

The **Northwest Region** met at the City Buffet in Frederick, MD on 18 April. In attendance were: N3HBX, WF1L, W2YE, W4AU, NC4S, K3WC, NE3H, W0YR, W3YOZ, N3CA, WN3R, W3EKT, W3RAR, N3VOP, K3OQ, W3ZZ, W8ZA and W3LL.

Regrets: K8OQL, Jerry won't be coming to the Tuesday meeting, because he's driving to Baltimore Wednesday afternoon and leaving for the DX Convention in Visalia Thursday morning from B.W.I. Driving to Frederick Tuesday evening and returning home (95 mi. one-way) is a bit too much for him. It looks like he won't be at the May meeting either. Jerry is going to Wheeling, WV, for a couple of days before going on to Dayton. Then, he might do the Wheeling visit right after Dayton on the way home--not sure what he's going to do yet. Looks like VU4 is down-the-tubes for Jerry cuz he'll be in California for most of the time they are on-the-air--oh well! Jerry always enjoys coming to the Frederick meetings. All but 25 miles is four-lane highway--a very easy drive in good (non snowy-icy) weather.

W3KHZ, Art sends his regrets. At the last minute his daughter and her husband decided to spend an extra day or two on vacation down south so he does not have a companion for Mary for the night. Art had planned to come out with a new ham friend of his to introduce him to the group (he drives!). Art and Marty will be driving with Bud on the 10th for the Central meeting. Art hopes to work the VU4 boys on some new bands and modes (RTTY). K2PLF, Marty is attending the DX Convention at Visalia and will miss tonight's meeting. N4MM, John is also attending the DX Convention at Visalia.

W3LJ, Bruce will be unable to attend due to Passover. He will be back in May. The non-working Alpha 99 is still in MD awaiting a discussion with their techs in the next week or so. W3UR, Bernie can't make it to the meeting as he will be in Port Blair, Andaman Islands (VU4) at the Hamfest/DXpedition.

From Around the Table: N3HBX, John reports Mark is putting together a group to do the CW version of WPX at

the Poolesville station. He has four ops lined up so far. WF1L, Bill worked Algeria on 20M mobile today on his way to the meeting. W3YE, Dick was in the WPX SSB contest. He usually doesn't get in this contest being embarrassed to pass out low serial numbers. It's also chaotic with every body working everybody. He did make 500 Q's for .5M points in the tribander/wires category. With the force 12 beam locked to the NE, he used the 2 element quad which turned out to be an excellent contesting antenna. By aiming it to the NE he could work the world because of the poor front to back ratio. Dick noticed his score in the WAE RTTY contest was much lower than what was submitted. The answer came back from the sponsor that he was signing W2YE/4 but submitted the Cabrillo log with W2YE. This resulted in few matches. This was corrected. Others may also be caught by this. W4AU, John was in the VA QSO Party. The Londoun ARC puts in a big effort in this contest with over 30 logs submitted. John made 640 Q's in the contest. With the introduction of electronic log submittals there was some serious out of state logs submitted. There was about 250 logs total submitted to date. NC4S, Gary's last meeting was in November when we asked for quotas in the SS contest. Gary pledged 75K phone points and met his quota with 76K points. Gary also participated in the VA QSO Party with 416 CW Q's which should be a first place score again. Gary is still having a lot of fun with the SteppIR learning how to make use of it. He will be putting in hardline to the tower next month. K3WC, Dusty's tower is still on the ground. He is looking for a Cushcraft 2 el 40M beam. Dusty will be looking for the VU4. He needs it on RTTY. NE3H, Joe got a new 3CX800A7 tube for the amp and now has two functioning amps. He got the tube on qth.com for \$320 including shipping. W3LL, Bud saw in February's QST that he set a new W/VE record in the 2005 IARU in the SOLP Phone category. So far he has the high score in the WAE RTTY US SOLP category. Bud went to the Timonium hamfest and was disappointed with the low turnout and low vendor participation compared to three years ago. He will be going to Dayton. Due to technical difficulties this is an abbreviated version of the minutes.

The meeting was adjourned at 8:00 PM. The next NW Region meeting is scheduled for Tuesday, 16 May 2006.

73, Bud, W3LL

The ever-hearty **downtown lunch group** (W3DQ, NN3W, K3ZO, K3ZJ, WV4V, VK4VB, W3OU, W3QX), met outside Reeve's Bakery and Restaurant in early April. Outside because Reeve's had just closed for renovations! We moved on to a nearby venue for an enjoyable lunch, complete with QSL card distribution for those who RSVP'd and more "Tales from the QSL Bureau" from Fred, K3ZO, who's off to Thailand as this is written.

From the others around the table: Rich, NN3W, is talking about putting up more wire antennas to make his home station more credible; Newly minted PVRC member Brian, WV4V, is becoming more active on the bands. You may remember Brian as the original "Green Stamp Guy", providing foreign stamps for QSLing those elusive DX stations. While Brian's out of that business, he may be able to help you with foreign postage in a pinch.

Eric, W3DQ, and his neighbors are about to undertake some major tree removal, so he's planning for new and hopefully better new low-band antennas and station renovations. Eric also reported that the District of Columbia Amateur Radio Society (a small group of NW DC hams) has a new callsign, NW3DC. William, W3QX, is working on VHF and UHF antennas, and is looking for help on RF circulators. Dave, K3ZJ, has all the hardware and a club callsign, N8ZJ (with K3ZO, N4ZR, K8OQL, W8OHT and K2UOP as charter members), to re-establish his West Virginia QTH, but alas, doesn't have much time to work on it. Fortunately, his younger son (KI4CTY) has taken up an interest in contesting, so there is hope for M/S PVRC efforts from West Virginia.

Steve, W3OU, took it all in after missing too many gatherings. We're certain he'll have more to contribute next month! Ralph, VK4VB, may be moving back to Tanzania this summer on a multi-year work assignment. It will be sad to see him go.

The next downtown lunch gathering will follow a different format. On Wednesday, May 10th, we'll be gathering at the law offices of Wiley, Rein and Fielding for a brown-bag (i.e., bring your own food) presentation on the 2000 XZ0A Myanmar DXpedition by Milt Jensen, N5IA. The presentation covers the entire trip "From LAX to LAX" as Milt says. More details have been and will be posted to the PVRC reflector. If you're interested in attending, please let Rich, NN3W, know. If there's enough interest, we can order pizza for the lunch, but Rich must know in advance. (submitted by Eric, W3DQ)

5M Scores

Compiled by [Anthony Brooks, WM3T](#)

CQ WPX SSB

Call	Class	Band	QSO's	Mults	Score
KD4D	M2		4694	1190	14,869,050
V31RV	MS		4758	1011	13,746,567
WX3B	MM		3952	1059	8,363,982
WR3Z	M2		3323	1036	8,062,152
K3ZO	SOHP		2473	908	6,388,688
K3EST	MS		2368	955	5,538,045
WT4M	MS		2212	941	4,898,846
N3KS	SOA		2319	891	4,712,499
W4NF	SOA		1536	702	2,468,232
(OP OF WM4RM)					
WS4NC	SOHP		1320	614	1,874,542
(@ KG4NEP)					
K3DI	M2		1297	621	1,720,791
N3UM	SOHP		866	515	1,080,985
(TS)					
KW3W	SOA		662	392	675,416
W2YE	SOHP		574	361	539,334
(TS)					
K13O	SOLP		556	336	453,936
K3KO	SOA		439	314	400,036
K4CZ	SOA		479	284	351,876
W4YE	SOHP		400	284	282,012
N0KTY	SOHP		316	300	279,300
N3ST	SOHP		398	265	219,420
W2CDO	SOA		391	255	217,770
WA8WV	SOLP		331	240	201,120
W3GNQ	SOLP		355	155	165,075
WR3L	SOA				156,640
W8OHT	SOA		301	218	143,226
K4MIL	SOLP		300	212	135,892
K3QX	SOA		293	195	118,950
K1ZW	SOHP		227	192	111,168
N4VA	SOLP				108,225
WA4BKW	SOLP		206	159	103,668
NW4V	SOLP		237	188	103,588
KE3OM	MS		235	188	94,000
AJ1M	SOA		307	173	92,901
(TS)					
W2BZR	SOLP		509	176	89,584
N4JED	SOLP		229	169	83,655
N4MM	SOHP		152	137	77,679
N3FNE	SOLP		172	126	72,954
N3YIM	SOA	20	171	162	72,738
NX9T	SOHP		251	169	66,417
(TS)					
4U1WB	MS		167	134	59,362
NS3T	SOLP		220	153	53,703
K4FTO	SOLP		156	122	35,136
K3STX	SOLP		142	121	34,727
(TS)					
W4EE	SOA		124	99	26,136
K4EU	SOLP	15	102	102	24,786
N4TL	SOHP		102	92	24,748
WF1L	SOHP		110	98	22,638
W4KAZ	SOLP		103	87	19,314
AE4EC	SOLP		107	90	18,990
K4GM	SOA		117	90	17,550
AF4UU	SOLP		81	71	12,212
WA3G	SOHP		66	63	9,513

Call	Class	Band	QSO's	Mults	Score
K8OQL	SOHP	160	80	60	6,420
K3ASK	SOA		64	57	5,757
(/OP OF NF3R)					
WA4PGM	SOQRP	15	41	41	4,018
KI4KNS	SOLP		50	44	3,696
W2DZO	SOLP		26	22	1,078

Total Logs: 57
Total Club Score: 79,520,743

2005 Results:

	Logs	Score
CW	52	92,123,933
SSB 5	4 6	7,960,041
Total	106	160,083,974

Multi-Op Operators

WR3Z WR3Z, ND3A, WM3O, N3OC
 K3EST KT3Y, K3EST
 WX3B AG4RZ, K3LP, K3MM, KG4NEP, N3FX, N3SB,
 N3ST, N3VOP, N3YIM, N5WNB, NY3A, W3ADC, W3ADX,
 WB4MSG, WX3B
 K3DI W4EE K3DI
 WT4M N4BAA (HOST/OP), N6ZO
 KE3OM KE3OM, K3NCO, W3IDT, W3LJ (HOST/OP)
 KD4D NI1N, N3CA, N8II, KD4D, (N3HBX HOST/OP)
 4U1WB AJ3M, VK4VB
 V31RV K3RV, W3NO

ARRL DX SSB Final

Call	Class	Band	QSO's	Mults	Score
W3LPL	MM		4847	565	8,213,970
W4RM	M2		3188	461	4,374,429
W3PP	MM		2824	476	4,002,684
K4ZW	SOHP		2781	424	3,537,432
NN3W	SOHP		2436	386	2,820,888
(@ N3HBX)					
K3ZO	SOHP		1829	354	1,942,398
K3DI	M2		1601	386	1,853,958
N8II	SOHP		1892	326	1,842,552
N3KS	SOA		1265	365	1,380,795
W4WS	MS		1252	340	1,264,800
N4NW	SOHP		887	338	899,418
WX3B	SOA		916	305	838,140
W1ZA	SOA		809	325	788,775
N4CW	MS		846	297	753,786
K4VV	SOA		614	278	511,241
N3HBX	SOHP	20	1483	114	506,844
NT4D	MS		618	253	469,062
W3LL	SOLP		555	250	416,250
N4MM	SOHP		532	241	384,636
K2UOP	SOHP		535	237	380,385
K1RH	SOA		538	233	376,062
W6AAN	SOHP	20	1066	113	361,374
N3UM	SOHP		601	200	360,600
W3BP	SOA		472	236	334,176
W3BW	SOA		413	247	306,033
K1KO	SOA		484	205	297,660
W8HC	SOA		565	167	282,063
K4HR	SOHP		402	218	262,908
K3KO	SOA		401	208	250,224
NS3T	SOA		346	207	214,866
K13O	SOLP		389	184	214,728

Call	Class	Band	QSO's	Mults	Score	Call	Class	Band	QSO's	Mults	Score
W4DR	SOHP		307	214	197,094	WY3P	MS				45,188
K4CIA	SOQRP		362	178	193,308	W3LL	SOLP	402	38	8	42,596
WA3G	SOA		361	170	184,110	N2QT	M1	346	45	6	39,627
NX9T	SOA		315	185	173,715	W3DQ	SOHP	357	42	5	37,412
W3GNQ	SOHP		355	155	165,075	W4NF	M1	340	39	7	37,260
N3YIM	MS		301	176	158,400	N6ZO	SOHP	225		58	32,712
N0KTY	SOHP		260	195	152,100	W6AAN	SOHP	241	39	8	27,824
N4RV	SOA		303	142	129,078	WB4MSG	SOLP	256		43	25,069
WA8WV	SOLP		300	143	128,700	N3ND	SOHP	177	48	8	24,976
W4YE	SOHP		302	138	125,028	N4DWK	SOHP	220	40	6	24,196
N3II	SOA		263	155	122,295	N4MM	SOHP	143	40	6	21,758
W3YY	SOLP		235	164	115,620	NS3T	SOLP	227	36	1	19,018
K4CZ	SOLP		270	141	114,210	W9GE	SOHP	221	33	4	18,796
W8OHT	SOLP		256	149	113,985	K8OQL	SOHP	201	35	2	16,317
WB4MSG	SOHP		271	125	101,250	N4VA	MS	198	44	6	12,950
W3ARS	SOLP		663	151	100,113	AJ1M	MS	146	35	2	12,136
N4DEN	SOHP		209	154	96,096	K1KO	SOHP	119	35	3	10,412
K1ZW	SOHP		240	132	94,248	W2YE	SOHP	113		35	9,275
K3SV	SOA		200	157	94,200	KG4NEP	SOLP	107	33	5	8,686
N4ZR	SOA		271	115	93,495	K4ZW	SOLP	105	30	3	8,646
W3LJ	MS		236	130	92,040	(OP OF K3VOA)					
W4RQ	SOLP		211	130	82,290	K3SWZ	SOLP	91	27	1	6,020
N4TL	SOHP		222	122	81,252	K4VV	SOHP	110		20	5,061
K3ASK	SOHP		218	111	72,594	K3SV	SOLP	74	27	1	4,564
W4JVN	SOA		201	112	67,536	W4YE	SOLP	75		25	4,250
W4EE	SOA		191	108	61,884	N3II	SOLP	69		16	2,496
K3OQ	SOA		187	98	54,978	W2DZO	SOLP	55	20	1	2,436
W2CDO	SOA		157	106	49,926	AE4EC	SOLP	40	16	1	1,462
WR3L	SOA	15	180	70	37,800	K3KO	SOLP		30	17	1,173
K4MIL	SOLP		131	88	34,584	K4FTO	SOLP	33		11	759
N4VA	SOA		143	79	33,891						
WA4PGM	SOLP		123	86	31,734						
K1SE	SOLP		158	59	27,966						
WY3P	MS				25,992						
WM3O	SOA		109	78	25,506						
W2BZR	SOLP		119	71	25,347						
AA4KD	SOLP		112	76	24,192						
W4PRO	SOA		119	67	23,919						
W8RJL	SOLP		117	67	23,517						
W4ZYT	SOLP	20	120	57	20,520						
N3FNE	SOLP		139	49	20,433						
W8LRL	SOHP	160	92	59	16,284						
(OP OF K8V)											
K4FTO	SOLP			79	13,806						
K4EU	SOLP		73	60	13,140						
AF4UU	SOLP		65	47	9,165						
AE4EC	SOLP		56	48	8,064						
AJ1M	SOLP		55	43	7,095						
KC9LC	SOHP		52	36	5,616						
AJ3M	SOA		49	38	5,586						
K4GM	SOLP		46	36	4,968						

Total Logs: 37
Total Club Score: 1,374,754

2005 Results:

	Logs	Score
CW	61	5,724,112
SSB	38	1,933,247
Total	99	7,657,359

Multi-Op Operators

Multis listed below with no additional operators were SO Assisted.

- AJ1M
- N2QT
- WY3P W3ARS, N3VOP, W3RAR, N3NKA, W3ADX,
- W3ADC
- N4RV
- W4NF
- N4VA

PVRCers Win EA RTTY Contest

Mike, K4GMH, took first place world wide and now holds the World Record score.

Bruce, W3BP (AKA KM4M) took first place in the SOAB HP North America category.

PVRC finished 2nd in the outside Europe club competition.

[Thanks to Frank, K4EC, for the info]

CQ 160 SSB

Call	Class	QSOs	Mults	Mults	Score
N3HBX	SOHP	1095	58	25	223,512
N4RV	MS	998	57	21	186,576
N3KS	SOHP	656	48	11	89,267
N8II	SOHP	585	54	11	87,880
K3ZO	SOHP	504	53	16	84,732
W3YOZ	W3SO	276	54	5	81,656
(OP OF W3SO)					
NX9T	SOHP	536	45	7	61,464
WK4Y	SOHP	527	41	7	56,592

The Reference Page Has Moved

Because it changes so little from month to month, we've decided to move the reference page to www.pvrc.org/refer.htm. That should be more convenient for most readers because there are many links in that page pointing to e-mail addresses, etc. We'll probably publish one here semi-annually, or I'll be glad to send one, on request.

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IC-2200H 2M Mobile Transceiver

- 65W Output • Optional D-STAR format digital operation & NEMA Compatible GPS interface • CTCSS/DTCS encode/decode w/tone scan • 207 Alphanumeric Memories • Weather Alert



IC-T90A Triple Band Transceiver

- 6M/2M/70CM @ 5W • Wide band RX 495kHz - 999.999MHz** • 500 alphanumeric memories • Dynamic Memory Scan (DMS) • Backlit keypad & display • CTCSS/DTCS encode/decode w/tone scan • Weather Alert



IC-T7H Dual Band Transceiver

- 2M/70CM • 70 memory channels
- 6W output • CTCSS encode/decode w/tone scan • Auto repeater • Easy operation! • Mil spec 810, C/D/E**



IC-V8 2M Transceiver

- 5.5W output • 107 alphanumeric memories • Customizable keys • Auto repeater • PC Programmable • CTCSS encode/decode w/tone scan • Drop-in trickle charger included



IC-V82 2M Transceiver

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