Potomac Valley Radio Club Newsletter

January 2005

Visit us on the web at www.pvrc.org and www.pvrcnc.org

Scott Robbins, W4PA, Ten Tec's Amateur Radio Product Manager will present a forum on the Ten Tec Orion at Capitol College in Laurel, Maryland on Monday, January 10, 2005. Details on Page 3

PVRC's first-ever Contest Seminar is scheduled for March 19-20 in Fredericksburg, VA. Details on page 2.

OK, let's try this again — PVRC welcomes Talley George, KH6HHS (name reversed last time!). PVRC also welcomes Joe Sheinman, W2BHK, to the SW Virginia chapter, and also Van Key, KC4WSK, and John Kippe, N0KTY to the NC West chapter

PVRC regrets to report the passing of Ed Rummel, KB3DVC, who became a silent key on November 13. Our sympathy to his family and friends.

Editor's Note

By Pete Smith N4ZR

Here I was thinking that copy would be short for the January issue! Instead, I find that I have far too much this month. In particular, an excellent article by W3BW on his weather station linked to APRS, several others' inputs on this topic, and K7SV's write-up on keyboard mapping and miniature keyboard alternatives, will all be appearing in the February issue. In the meantime, enjoy the second half of K4ZW's account of CQWW SSB, the usual excellent columns by W4XP and K4ZA, and a variety of other features, including a year-end wrap-up of claimed scores by club members in 5M contests.

From the President

by Jack Hammett, K4VV (Note—Please read all of this !)

The PVRC Holiday Dinner on December 13 in Fairfax, VA was a festive occasion due to the fascinating presentation by Bob Cox, K3EST, and the interesting awards. Bob talked in detail about the early years of PVRC, describing the people and the relationships that launched from PVRC roots to spread the enthusiasm for contesting and expeditions to others. Bob held our attention focused as he delivered fascinating details without notes.

The following awards were presented:
1. Club Competition Gavels & Plaques: a. 2003 ARRL 160 Meter Contest--Phil Alardice KT3Y, b. 2003 ARRL June VHF Contest--Bill Seabreeze W3IY, and c. 2001 CQWW WPX--Marty Green K2PLF

2. PVRC 5 Million Award--"Year 7 Awards":

a. 25 Million Point Endorsements: 1) Mark Bailey, KD4D, 2) Marty Green, K2PLF, 3) Bert Michaud, N4CW,

4) Barry Shapiro, WR3Z, and 5) Paul Hellenberg, K4JA. b. 10 Million Point Endorsement: 1) Ben Hutchinson, N3UM, 2) Jack Hammett, K4VV, 3) Ray Conrad, KT4W, 4) Rick Niswander, K7GM, 5) Jeff Keller, NX9T, 6) Bill O'Mara, W4RM, and 7) Rob Shapiro, ND3A.

c. 5 Million Point Award Plaque: 1) Bill Seabreeze, W3IY, 2) Mike Lonneke, W0YR, 3) Don Daso, K4ZA, 4) Dan Zeitlin, K2YWE, 5) Ed Himwich, K3PN, 6) Cliff Bedore, W3CB, 7) Art Boyars, K3KU, and 8) Jim Headrick, W3CP

3. President's Awards:

a. Pioneering the Frontier Awards: 1) Jim Nitzberg, WX3B—Caroll County, Maryland, 2) Henry Heidtmann, W2DZO—Forsyth County, North Carolina, and

3) Marty Johnson, W3YOZ—Blair County, Pennsylvania

b. Leadership Service Awards: 1) Brian Mcginness, N3OC—Six Years as President and Vice President, and 2) Bob Dannals, W2GG—Six Years as Secretary

Congratulations to all the Contest Award winners. WX3B, W2DZO, and W3YOZ are recognized for their extraordinary leadership and personal commitment and enthusiasm, which resulted in new teams of active contesters forming in counties that are on the frontiers of PVRC. N3OC and W2GG have contributed a tremendous amount of time and energy and dedication to quality leadership and helping others in PVRC. We salute them all!

The election of officers was conducted to recognize that voting in all the PVRC Regions reporting approved the following slate of nominees: 1) President--Jack, K4VV, 2) Vice Presidents--Jim, WX3B and Eric, W3DQ, 3) Secretary--Anthony, WM4T, 4) Treasurer—Dave, WR3L, and Trustees N3OC, K2AV, and returning Trustees K3MM, N4AF, KE3Q, W4ZYT, N4ZR, W4MYA, K4IQ, W3PP, and ND3A. Thanks to all of this team of volunteers who are key to PVRC operations.

A list of those attending the Holiday Dinner may be found on the web page at http://www.pvrc.org/Newsletters/Extended_Content/Jan05.htm.

We look forward to Year 2005 with anticipation and high expectations. The Contesting College initiative is coming together with leadership from N3OC and help from WX3B and N3RR; a session in Fredericksburg, VA in mid-March is a possibility. The officer team will be very active. WX3B will focus his efforts to promote contesting activity and cooperation, probably doing some travel. W3DQ will focus on the traditional VP leadership role, providing leadership for activities and the Central Region, and supporting general operations. WM3T will perform all Secretary functions and continue to administer the 5 Million-Award Program. WR3L will continue to perform the Treasurer functions. N4ZR and N4AF continue to provide leadership for the Newsletter and the Web Site, which are key to our culture and communications. N3RR has volunteered to lead our PVRC delegation to work with the ARES leadership in Maryland and D.C. to formulate the role that our willing members might fill to bring the special skills and capabilities of contesting to emergency communications. Phil (Pip), WB4FDT, has volunteered to pick up the role as Historian of PVRC, reviewing available files and writing some articles for the membership. I will continue to work towards growing our capabilities and leadership, probably doing some travel as time and budget permits. The membership has given a strong response in supporting our treasury, and I believe we should apply the available funds to build PVRC capabilities and effectiveness.

PVRC Contest Seminar Update

By Brian McGinness, N3OC

PVRC is moving forward with planning for the upcoming Contest Seminar (anyone have a better, catchy name for this?). The seminar is planned for Saturday, March 19 and Sunday, March 20 at the Holiday Inn North in Fredericksburg Virginia, right off I-95 at the North US17 exit.

The planning group (N3OC, WX3B and N3RR) has developed a draft agenda, invited and received confirmation from a number of speakers, and is getting pricing from the facility. We are looking for a few additional

people to help out with the event, so please contact N3OC if you are interested in helping out.

It is anticipated that PVRC will pick up the cost of the conference facility, having only to charge a very small amount to member-attendees to cover lunch Saturday and breakfast Sunday. That amount is currently proposed to be $25 per attendee. You would also be responsible for the cost of your room Saturday night, and dinner Saturday night.

There would be a pre-registration period for PVRC members only, after which we plan on opening up registration to the general contesting community if there are spaces left. Any non-members attending would pay a higher rate, which would include their share of the conference facility costs plus the $25 mentioned above.

To my knowledge, this is the first ever event of this type for contesters, so mark your calendars for 3/19 & 3/20 and be ready to register! We plan on a full day of speakers Saturday, and a half-day Sunday so everyone has time to get home.

Ten Tec Orion Presentation
Info from Eric Rosenberg, W3DQ

PVRC is pleased to announce that Scott Robbins, W4PA, Ten Tec's Amateur Radio Product Manager, will present a forum on the Ten Tec Orion at Capitol College in Laurel, Maryland on Monday, January 10, 2005.

The Orion has been the talk of the contesting and DX community since its introduction in mid-2003. Here's an opportunity to learn about the history, development and future of this revolutionary new radio.

The program will begin at 7:30 PM in Capitol College's main auditorium, located at 11301 Springfield Road, Laurel, MD 20708 (Phone: 301-369-2800 / 800-950-1992)

Directions to the College can be found at: http://www.capitol-college.edu/aboutcapitol/visiting/map.shtml

[When you turn into the college's driveway, proceed straight ahead to the stop sign. The auditorium is at your far right, the last building on the left after turning right at that stop sign.]
We look forward to seeing you on January 10th!

"Please, No Slashed Zeros"
By Dan Henderson, N1ND, ARRL HQ

Folks, please do not use the "cute" character that you think makes the number Zero in a call look like a "slashed zero". They two characters are not the same and are not interchangeable. Computers read them as two separate things, which means they get sorted and stored as a different call and may get overlooked. If you can, please help spread this to other reflectors and newsletters. It will help us serve you better.

[Editor's note — Dan is not referring to the TrueType fonts that many of us use in Windows applications to make zeros more readable on the screen, but to the ASCII slashed-zero character that can be produced under DOS by pressing the ALT key and entering a character number from the numeric keypad. Apparently some people have been using these in their Cabrillo logs, and messing them up in the process. You really have to go out of your way to substitute these characters for the regular ASCII zeros, and Dan's point is simple — please don't!]

This Just In
From Charter Member W7YS

Just a note to let you know as a Charter Member of PVRC , I am still very active in contesting. Participated in

19 contests this year and made a Clean Sweep in the ARRL CW SS. Just finished the CQWWCW and most exciting moment was when Fred HS0 came back to my CQ with only a few minutes left in the contest! I enjoy working all of the PVRC members. I remember when we voted to change our name from Aurora Hills ARC to PVRC - it almost became the Potomac River Valley ARC but we decided to just make it Potomac Valley ARC. 73, Bill W7YS (ex W4JUY in Falls Church.)

W3AU Reassigned

By Ray Conrad, KT4W

The W3AU call was reassigned to the W3AU Memorial Operator's Club on Dec 28, 2004. Trustee is N4KW.

I was very glad to see that the call was re-assigned to the club. As K3EST noted this year, many of us owe our opportunity to operating at a big station to Ed. I'm in that group and will certainly remember the victories and the also-ran entries from Accokeek. If anyone tallied them up, the victories certainly outnumbered 2d or 3d place.

What Does It Take?

By Ray Conrad, KT4W

A good discussion has been going on about new ops becoming skilled in our hobby. As in any other endeavor, it takes practice to become proficient. I'd say it's 3 to 5 years to reach a journeyman level. Probably 7 to 10 years to reach a master's level.

I'm trying to set reasonable expectations for new ops. No one becomes a champion over night. I do not know if this sort of a hierarchy of operator attributes has been developed before. Here's my cut, intended to give some idea of whether a new op is making progress. Note: I have NOT shown station attributes here. I assume that a new person will have a poor station at first, but will quickly get to a reasonable signal. It is recognized that it's difficult to have a great score from a poor station. So, there may be some ambiguity between good op and big signal. Good op will usually win out over the big signal run by an unskilled op.

What attributes does a beginner, with potential, have?
a) enthusiastic about learning
b) asks a million questions
c) enters contests from home or at a multi-op
d) may make tactical errors such as selecting the wrong band
e) misses easy mults
f) is disappointed with score
g) is willing to brush self off and try again, keeps chin up

What skills does a journeyman level require?
a) band selection is good
b) rates are good
c) works multipliers efficiently
d) makes prudent use of off times
e) shows consistently good scores, improving each time

What additional skills does a master level require?
a) journeyman level PLUS
b) good knowledge of propagation
c) good knowledge of bands and rates
d) consistently high performance from home and abroad
e) Wins section in SS or ARRL DX

What additional does champion level require?
a) master level PLUS
b) consistently places in top 10
c) wins contest in category several times
d) is sought out for advice by the major contest committees
e) makes innovations in antennas, computers or station design
f) has a sixth sense" about bands and rates, will find unexpected openings

And, finally Hall of Fame Members
a) Champion PLUS
b) freely contributes for many years to the sport, shares
knowledge with newbies and seasoned operators alike
c) is internationally known as an ambassador of good will
d) may develop permanent ham radio presence in previously rare countries

CQWW SSB [Part 2—Part 1 appeared in the December issue]

By Ken Claerbout, K4ZW

Day 2 00:00 – 11:00 GMT

At the halfway point, I'm mopping up a few Asians on 15 meters before going to 20 for an S&P session at 00:13. At 00:19 I find Chak JT1CO operating with his contest call JT1C on 14189 KHz. He quickly goes into the log for a double multiplier and my only zone 23 station the rest of the weekend. That is followed by EY8MM, HS0ZEE (double mult and only zone 26 the rest of the weekend), VK6LW (zone 29 mult), BD5RT, 9M8YY, UA0SR (zone 18) and a couple more Caribbean multipliers. The 35 minute S&P session nets just 19 QSO's but 16 multipliers. Not convinced 15 is completely dead just yet, I try CQing on 21255 KHz and grab a few more JA's before heading to the lowbands at 01:22Z. Over the next couple of hours I make several attempts to get a run going on 80 meters with very limited success. 40 meters is strictly S&P. While the rates are slow, I'm picking up some decent multipliers and looking for others that I'm missing in Europe and the Caribbean. I decide to tough it out until after European sunrise at which time I'm going to take a short sleep break. At 07:10Z I take my first sleep break. The plan is to set the alarm for a 90 minute snooze with an extra 30 minutes or so for a shower and a bite to eat. I go into my first and only break with 2358 QSO's and 601 multipliers in the log. This is going to feel good but I know the break will go by in a snap.

At 09Z I'm back in the chair and I really feel rested. I know this will be my last "long" break until the closing bell Sunday night. Jeff K1ZM operating his super-station VY2ZM, goes into the log on 160 at 09:05Z. The next two hours are nothing but scouring the bands for needed QSO's and more multipliers. That nap really did wonders! Notable QSO's during the period include VK3PA (80 meters), LT1F (double mult on 40), OA4O (40 meters), EW8MW & EA6AZ (20 meters), VK6LK (double mult on 40), and XE1GRR (80 meters).

11:00 – 21:00 GMT

At 11Z, 15 meters is already in full swing to Europe. Since my numbers on that band were in pretty good shape, I purposely drag my heels getting there in order to spend a few extra minutes looking for multipliers on the low bands. At 11:05Z I set up shop on 21236 KHz and begin to run Europe. It can sometimes be a challenge to get established on a run frequency as the band opens. The frequency may sound clear but as the band opens, adjacent stations and maybe even someone on that frequency, in Europe, begin to appear and build in strength. In this case, I have one of the French TM stations about 1 KHz away who is building in strength and shows no signs of wanting to move even though my rate is about double his. I know I have a choice to make. Do I duke it out with this guy in hopes of keeping a nice frequency low in the band or do I slide up and try to find something clearer before the whole band is jam packed? I sense that I have a better hold on the frequency than he does (almost like an arm wrestling match) so I decide to tough it out a bit longer. I'm eventually rewarded when he QSY's and leaves me with a nice clear spot.

While this is going on, I'm able to locate VK3IO and work him, just in the nick of time, for much needed zone 30 on 40 meters. The 11Z hour produces 93 QSO's on 15 meters. My strategy for the morning is to run on 15 meters and tune 10 meters with the second radio until such time that 10 is reasonably open. Then I'll flip flop the scenario (run on 10 and tune 15 with the second radio). In the meantime, I continue to hold forth on 21236 KHz and rattle off 118 QSO's in 46 minutes. The second radio is busy on 10 meters grabbing a few loud stations. At 12:49Z I make a break for 28674 KHz and immediately begin a run of Europeans. The remaining 11 minutes of the 12Z hour produces an amazing 48 QSO's! This is going to be fun! The 13Z hour produces 195 QSO's on 10 meters. I'm also able to grab another 7 QSO's and 4 multipliers on 15 for an hourly total rate of 202 QSO's. 14Z produces more of the same with 183 QSO's on 10 and 11 second radio QSO's on 15. Needless to say, it becomes more challenging to work the second radio when the run rates get this high.

It's somewhere around mid morning that I begin to realize I'm in the middle of something special. This clearly will be my best ever CQWW SSB score unless the bands completely shut down and they show no signs of doing that. My previous best score of 6,388,875 (3431 QSO's, 152 zones, 523 countries) in 2001 was good enough for the 4th call area record. After a few rough calculations, a never-before thought occurs to me. Might I have a shot at K1AR's USA record? I begin to look for last year's CQ Magazine with all of the records while continuing to run stations. I see that John set the record in 1999 with 7,898,499. That of course is a final score and what I'm looking at is claimed yet I feel I have an outside chance at it. My enthusiasm is somewhat tempered by the fact that the usual single op suspects are also very active and they no doubt are benefiting from the superb conditions just as I am. I had planned to bring a TV into the shack so that I could watch my Packers since they were in town to play the Redskins on Sunday. I decided to bag that idea and devote my full attention towards the remainder of the contest. Even though I may well finish below the record, I didn't want to have any regrets about not giving it my all.

Rates continue to stay well above 100/hr throughout the remainder of the morning. The final hour on 10 meters (16Z), nets 125 QSO's. During the last hour, Writelog's rate meter shows a very downward trend. 10 meters still has some life left but I decide it's time to go so that I can get established on the next band. Hopefully rates there will be at or above what I'm currently leaving. At the same time, I recall a contest in the last year or two where I was slow to leave a dying 10 meters. The result was a jam-packed 15 meters in which I was unable to find a run frequency. Listening to your competitors run stations while you're unable to find a run frequency leaves one with a sense of desperation.

Typically I would return to 15 meters and milk it dry. However, a quick glance at the score box shows some big numbers on 10 and 15 meters. The weakest band in turns of numbers at this point is 20 meters. Towards the end of my run on 10 meters, I work a number of stations on 20 with the second radio and observe that signals are very good for this early in the afternoon. I decide to start at the bottom of the band, work what I can and grab the first clear spot so that I can get a run started. I find a loud YB2DX on 14205 KHz for a new multiplier. At 17:20Z I set down on 14247 KHz and it's off to the races. I'll stay put on this frequency for the next 3-plus hours.

Sometime during this period, the wind picks up outside. It's enough that it moves connections on the power lines and my line noise is up to S5 on 15 & 20 meters. This is not a good thing! Over the years, I've learned that I live in a somewhat noisy neighborhood regardless of how often the power company comes out. Any time the wind kicks up enough, I can expect a rise in the line noise. It's just something I've learned to live with. Between the power line noise and adjacent QRM, I experience several periods where I'm unable to pull out calls of weaker stations even though I can hear a bunch in there. Switching to the beverage helps on occasion. It gets pretty frustrating but the best option I decide is to hang in there and tough it out. From 17:20Z – 20:44Z I log 395 QSO's on 20 meters plus some odds and ends on 10 & 15 with the second radio. Some of the more interesting QSO's during the period are 4J3M (4K – 20 meters), 4L6AM (20), HV0A (20 – called me), TK5IH (20), OA4O (10), T48K (CO-10), EK6TA (20), ES6Q (20), TF3AM (20 – called me for double mult), VK9NS (10), V55V (20 – called me), V55V (15 – moved him from 20), and V55V (10 – he was CQing),

21:00 – 24:00 GMT

At this point my run to Europe has pretty much petered out on 20 meters. I still feel like I have a shot at the record but it's going to get much more difficult since there isn't a good band to run Europeans on. I can only hope for a treasure chest of multipliers and/or a strong opening to Asia on 15 meters. Experience has taught me that the best

way to increase my score at this point in a contest is to jump around the bands focusing on multipliers. I will also grab any new station I run across. Rates hover around 40/hr. Some of the multipliers I run across are FM5BH (10), D4B (15), OA4O (15), HC2GT (10), 9G5OO (20), and T48K (20). At 21:33Z I make another stab at running Europe on 14206 KHz. The rate is dead but I'm pleasantly surprised to receive a call from FR1HZ on Reunion Is.

By 22Z I come to the conclusion that it will take a miracle to break AR's record. At 22:08 I decide to take a quick check of 40 and the first QSO in the log is 4U1ITU. 10 minutes later I figure I'll try running Europe although it's early and many of the stations below 7100 KHz are not even listening up for the US yet. I work a quick burst of 17 stations in 14 minutes. A quick trip back to the high bands yields ZL2AFT for a double multiplier on 15, KH7X for a double multiplier on 20, and a much needed VK3TZ on 15 meters for zone 30.

The final hour has arrived so I decide to point the 15 meter beam to Asia and see what I can dig up. I start CQing on 21237 KHz. A couple of minutes later JR6TYH/JD1 (Minami Torishima) calls in as does AL1Z (zone 1). I need zone 1 on 10 meters and AL1Z agrees to give it a try. One call on 10 and he goes into the log at 23:14Z. Further CQing on 15 produces a decent run of JA's and an occasional HL or YB. At 24Z it's all over and I've amassed 3888 QSO's, 154 zones, and 538 countries for 7,781,697.

Conclusion

One of the things I hope you take away from this is that there are no big secrets to generating a big score. Sure there are little tricks and tips. I've learned those by reading other accounts such as this and of course by spending a lot of time in front of the radio. It's like free throws in basketball. If you stand at the line and practice enough, you will get better (unless you're Shaq).

The other thing I suggest is to push yourself a little harder each time. But do so only to the point that you still have fun. One way to do that is to identify a station or two who consistently finishes ahead of you, and then go after them. It sets a goal and provides great motivation! If you're interested in my hourly rate sheet, it is posted on the November 2004 3830 reflector. The direct link is http://dayton.akorn.net/pipermail/3830/2004-November/096125.html. If I can answer any questions, please feel free to contact me at K4ZW@staffnet.com.

The Toolbox

By Don Daso, K4ZA

Bob Finger, W9GE, out in Easton, MD, writes: "My shack has an un-insulated concrete floor, and in the winter, that floor is quite cool. My feet were always cold when in the shack, until I found a way to eliminate the problem. As we all know, if your feet are warm, the rest of you will feel warm, too.

"I built a small riser for under my operating desk. Mine is about 30 inches wide by 15 inches long and rises from floor height at the heel to about two inches high at the toe end. I used ¾-inch plywood covered with a carpet scrap. I spent a bit of money ($50) and purchased a rubberized heater: http://www.houseneeds.com/shop/HeatingProducts/heatingunits/electrical/industool/indusfootwarmer.asp

"I placed the heater on a small riser alongside my footswitch. I wired it into my AC master switch so it's on when the radios are on. Uses very little electricity and keeps my feet, either in shoes or without, nice and toasty during the cooler months. If you have a cold floor, try this solution." Thanks, Bob, for that idea!

Recently, while working up in Maryland, a client asked about some of my tools. Accordingly, *A Few Words About Holes, And The Tools That Make Them,* for this month.

The name "twist drill," relates to the original manufacturing process of such drills, not their appearance. Originally, flutes were rough-milled along the body of the bit, which was then heated and twisted into shape. The bit was then milled, heat-treated and ground to size. Today, twist drills are typically manufactured from solid rod material, cylindrically ground, then coated and finished.

Although twist drills are simple to use, these bits themselves are not simple. We never think of them as precision tools, yet a few minutes spent examining a bit close up should change that, and allow you to appreciate such tools.

After the drill has been ground to size, the tip is formed. Typically, bits have a tip angle of about 118 degrees, which works well in most materials. (Special tip angles satisfy different materials and different applications—beyond the scope of this month's column.)

Twist drills are manufactured as right and left handed, (right hand is the most common), and composed of three principal parts:

* The Shank (solid part of the bit without flutes, either straight or tapered)

* The Point or Tip (what cuts the material)

* The Body (flutes, carries away debris/shavings)

We all know that twist drill bits are one of the more common tools in everyone's toolbox, sometimes poorly cared for, or taken for granted, and often misunderstood. With bits, the old adage of getting what you pay for applies quite literally. Ranking bits, in terms of price, we find something like this:

 Steel Bits: the least expensive, & work well for boring in soft woods. However, steel bits dull quickly in hard woods or metal.
 High-Speed Steel Bits: usually abbreviated as HSS, more expensive, harder than steel bits, meaning they stay sharper longer.
 Titanium Coated Bits: higher priced than HSS, but their titanium coating allows them to stay sharp longer than either HSS or steel counterparts.
 Carbide-Tipped Bits: again, higher priced, but they stay sharp much longer than steel, HSS or titanium coated bits.
 Cobalt Bits: most expensive, extremely hard and dissipate heat quickly, cobalt bits are usually used for boring in stainless steel and other metals.

Here in America, drill bits from zero to one half inch are sized in four ways: fractions, wire gauge numbers, letters, and metric (in millimeters). You'll see drill bits with a fraction, number, letter or metric number stamped on their shank indicating their size. The fractions range from 1/64 inch to 32/64 inch. The numbers range from 107, (the smallest) to 1 (the largest). Where the number 1 drill bit ends, the letter A (smallest) begins and continues on to the letter Z (largest). Metric sizes are dispersed throughout this range. Yes, Virginia, all these drill bits are different in size, except for the 90 and .22mm (which are .0087 inches in diameter), the 85 and the .28mm (which are both .0110 inches in diameter), the 13 and the 4.7mm (which are both .1850 inches in diameter), the 4.8mm and the 12 (which are both .1890 inches in diameter), and the 1/4 inch and letter E bits (which are both .250 inches in diameter).

Since hams are often required to drill into "soft" material (such as aluminum), I like to have a Uni-bit (a brand-name item, but it's a tapered, multi-sized bit) on hand, along with a self-centering jig, to allow me to accurately drill the center of tubing. The Uni-bit also is well suited to drilling thin materials. I also carry long bits in my toolbox—sometimes referred to as "aircraft drills" or "electrician's drills." These extra-length bits are ideal for drilling large booms or even pilot holes through walls (you have to get the coax in somehow, right?).

Again, different materials require different approaches and methods. Drilling anything requires lubrication. It not only cuts down on heat, but helps carry away debris. Kerosene is an excellent lubricant for drilling aluminum, for instance. (You do not have to buy one of the specialty items!) And pay attention to drill speed—plastics are best drilled at very high speeds. Steel requires you to work slowly. And in every case, slow, steady feed works best (backing out the bit to clean/clear the flutes is a good idea, in any material).

And let's add a few words about countersink bits. Countersinking means producing a taper or cone shaped surface at the entrance of a hole so that the head of a flat head screw, or an aviation rivet, or other similar fastener will sit

flush or below the surface. These cone shapes are made with a countersink bit. Countersinks are available as single flute or multi flute bits. A variety of sizes and included angles of 60, 82, 90, 100,110, and 120-degrees are available. (The most common angle you'll encounter is 82-degrees.) Drawing specifications will usually determine the angle required.

I received a Drill Doctor ™ last year as a Christmas gift. It's an amazing gadget. It works, and works well. I'm sharpening every bit I own with the thing! It makes getting the right profile on the tip of a drill bit simple. Go to http://www.drilldr.com for more information.

Finally, I've been asked to write something like this column for the National Contest Journal. Initially, I'm going to try continuing providing something both this newsletter, as well as the NCJ. Depending on my schedule and time constraints, I may have to drop one. I'll go with the larger readership column, if that happens. In the meantime, what's in your toolbox??

SCP Customization [Part 1]

By Howie Hoyt, N4AF

Ever want to know how to build your own Super Check Partial file (otherwise known as an SCP, or master.dta file)? How about building a custom Super Check file filledwith the names of every op whose station you have ever logged?

SCP's have been around for a number of years and are supported by most contest logging programs. One of the nice things about SCP's is that they merely display whether there is a match (and, optionally, other data) but do not attempt to pre-fill your sent or received exchange. Trlog has the most extensive support for building or modifying a master (aka SCP) file but there are other (free) products around.

Let's start with the basics of building a custom SCP:

One of the newer products is Master.dta Editor (freeware) by VE3NEA (*Medit*).
It is written in Delphi, is available at http://www.netvampire.com/ham/ , and wins the award for best graphical user interface (GUI). Let's explore it:

Medit comes up with two side-by-side resizeable windows. The left window is where you load your existing master.dta file and the right can be used for display of files to import into the master file. Manipulation/editing can be done directly off the GUI using a single main menu.

Ok, let's say we want to build a SCP with this program.
The steps are something like this:

1) Obtain the most current Master.dta from K5ZD
2) IMPORT your logs into the Master.dta file
3) That's it !

Typically you would firstly choose menu item DOWNLOAD and select LATEST MASTER.DTA to start with the most current master.dta available. WARNING: the program points to the old master.dta files house at Datomonline. Instead go into TOOLS-SETTINGS and change LATEST MASTER.DTA to one of the K5ZD SCP's. EX: http://k5zd.contesting.com/scp/MASTERSS.DTA

You will then be prompted for a location to save the master file to. You can then OPEN it from Medit and EDIT any entries via a mouse right click.

Note: most logging programs allow you to specify the name of the active SCP file. Because the SCP uses system resource, on slower CPU's it pays to use specific SCP's (US Domestic, DX only, etc and give each its own name).

Let's say you are KE3Q and want to add your last five years of SS logs to K5ZD's Masterss.dta. File. Start with your OLDEST log and IMPORT it. You do not have to bring the log in on top of the master file, but it makes sense to have it as a base. You have options to import Cabrillo, ADIF, or text. Assuming you want Cabrillo, you just import your Cabrillo logs into Medit. Then choose ADD IMPORTED CALL SIGNS TO MASTER DATABASE. This will result in a message telling you

1) how many calls were actually added and
2) how many were duplicates and were rejected.

Note that no matter how many logs are imported, only new calls will be added.

When finished you will have a database of callsigns including not only K5ZD's latest Master.dta but all calls you have worked in the last five years. You can right click on any of the displayed callsigns to see your editor manipulation options.
Wonder how folks like K5ZD build a d/b ? Look at the BATCH IMPORT option. You can fill a directory up with callsigns and batch import all the text in one operation, then using the TOOLS option you can specify the criteria for how many times the callsign must show up before it is added to the database - this to help prevent blown calls getting into the database. What a nice way for contest sponsors to build a master callsign database for checking! (In this case you would rather **not** use the K5ZD Master.dta as your base).

While we are on the subject of text, a lot of utilities that work with the callsign database require it be reduced to a 'flat' (non-indexed) ascii file. That is what the EXPORT MASTER DATABASE AS TEXT option does for you.

Postscript: thanks to N4ZR for extensive testing. In the course of which Pete discovered SS logs were not being handled by Medit import. VE3NEA was kind enough to fix this the same day we reported it.

Some direct comments from the program author:

"Download Announced DX Operations is a useful function. The calls that this command retrieves give you the most juicy multipliers, you will want to have them in the DTA to make sure you log them correctly."
"The Batch Import command can handle a mixture of ADIF, Cabrillo and text files in the same directory, it auto-detects the format of each file.
You can quickly test your dta file using the Tools -> Partial Callsign
Search command: enter a partial call that you know is in the dta and see if
the program finds it."

Coming next: how to import names, sections, FOC numbers, SS checks, etc (for those logging programs that support it).

VHF and Above Radio Frequencies:

By Chuck Watts, W4XP

Once thought of as useless, now one of the most sought after resources in the world … use them or lose them!

Every HF contester seeks to find ways to improve station performance, search-and-pounce techniques, logging shortcuts, and how to hold a run frequency close to the band edge. This aspect of VHF contesting is no different. However, there is one significant difference between HF and VHF and above contesting; with one exception, the ARRL 10-meter contest, you only have to be concerned with one mode at a time in any HF contest. VHF contesting, on the other hand is a mixed mode contest, not like the ARRL 10-meter phone/CW mix, but all modes – phone [AM, N/WBFM, DSB, SSB], CW, digital [RTTY/PACTOR/AMTOR/etc., SSTV, PSK31 and its derivatives, WSJT (Weak-Signal by K1JT), spread spectrum].

Until recently, within the past three years or so, SSB and CW have been the predominant modes, this is likely to continue for sometime. However, in the search for ways to increase scores and become more competitive, some stations are pursuing the more "unusual" digital modes, most, including K8GP, are engaged in a serious WSJT effort.

Let me start with a bit of information on the author of WSJT, Joe Taylor K1JT. In 1993 **Joseph H. Taylor** and Russell A. Hulse, both now physicists at Princeton University, were awarded the Nobel Prize in Physics for their discovery in 1974 of the first binary pulsar. This unique phenomenon, two stars orbiting each other -- one of them giving off regular radio-frequency "beeps" -- has been important **as a deep space proving ground for Einstein's general theory of relativity.** I guess it's safe to say Joe is a pretty smart guy.

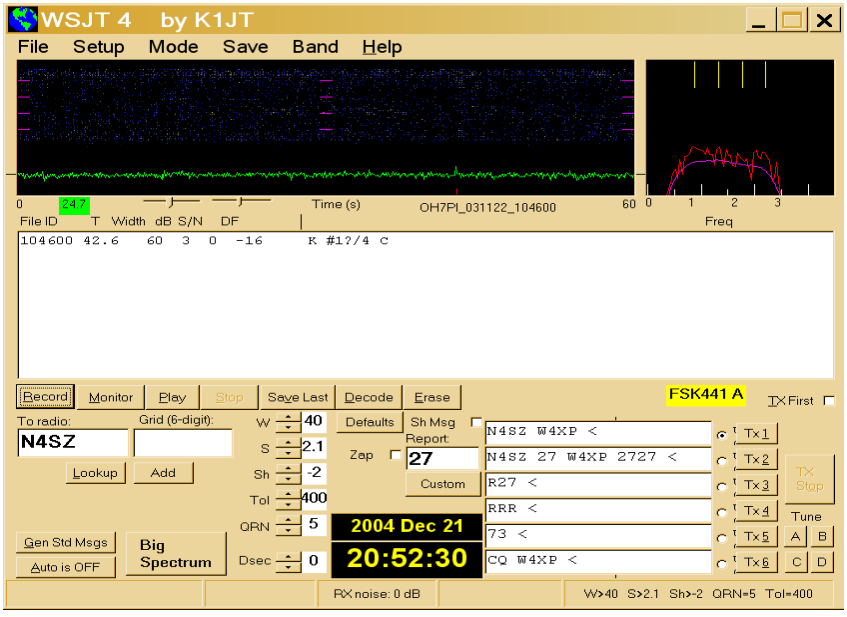
Since the 1974 discovery, Joe has continued searching the heavens for **pulsars**. As he and Hulse did in 1974, his research group at Princeton uses the largest and most sensitive "bucket" in the world for catching radio waves from space, the 1,000-foot radio telescope at Arecibo, Puerto Rico.

What is so unusual about WSJT and what is the implication in VHF contesting? Most of us who VHF and above contest are always looking for an advantage over the other guy or group. The number one advantage is location, so are advantage numbers two and three! So, if you have arguably the best VHF and above contest-station location in the continental USA, and you've wrung all of the contacts you can from the prevailing propagation, how do you get more calls and unique grid squares in the log? You look for "rocks!" Not just any rocks, but meteors!

Working meteor scatter isn't exactly a new phenomenon; 6-meter band meteor scatter, along with ionospheric scatter [back scatter] contacts are a common mode for DXing when the band seems "dead," especially most mornings in the summer. But once the sun rises well into the Western sky scatter goes away, or does it? How about working meteor scatter anytime you want too? Under less than ideal conditions, braying into the microphone or banging away on the keyer paddles may yield a few contacts (probably not), but if you use WSJT you are more likely to work scatter contacts than with the traditional SSB or CW modes.

WSJT has four operating modes:
- **FSK441** for high-speed meteor scatter
- **JT6M** for meteor/ionospheric scatter on 6 meters
- **JT65** for extremely weak tropospheric/scatter and EME
- **EME Echo** for detecting your own echoes from the moon

WSJT uses the DSP features of sound systems found in most personal computers (pc) or laptops to process audio signals into digital information, which is then displayed on the computer's monitor. Utilizing modest power levels of 150- to 200-Watts output, and equally modest antenna(s) with boomlengths of 2 to 4 wavelengths, all of the modes have been demonstrated to yield contacts.



All that is needed to use WSJT is a SSB transceiver and antenna for one or more VHF/UHF bands, a computer with the Microsoft Windows operating system, a 200 MHz or faster CPU, 32 MB of available RAM, monitor with 800 x 600 or higher resolution, a Windows compatible sound card, computer-to-radio interface using a serial port to key your PTT line (or use VOX), audio connections between transceiver and sound card, and finally, a means for synchronizing the computer's clock to Universal Coordi-

nated Time (UTC). After you have everything listed, you're ready to give it a try.

Rather than attempted to go through the ins-and-outs of using WSJT, I'll refer you to the K1JT web site and the *WSJT User's Manual*; **http://pulsar.princeton.edu/~joe/K1JT/WSJT_User_470.pdf** If you've used any of the computer-based logging programs, especially any that include PSK31 software, using WSJT will be a "snap." I should mention that the two most important operating parameters with WSJT are time synchronization and accurate and ***stable*** frequency; you must be sure of the frequency – no guessing allowed! If the computer clock is off by more than a few seconds, adversely affecting send/receive sequencing, or the frequency is off by more than 200 Hz, it is unlikely you will work anybody.

Although relatively easy to use and set up, WSJT does require a good understanding of all the nuances the program has in order to function efficiently. The program is intuitive, but to get the most from the program it is necessary to read the manual!

You can use this program for "casual" operating too. There are many stations using this program and the modes it offers. Give WSJT a try during non-contest operations and you may find this a valuable tool to add to your VHF and above contest "arsenal!"

2004 Treasurer's Report
By Dave Baugher, WR3L

I wish to thank all that have donated to PVRC in the past and give you a report on how the club spends your money.

Beginning Balance:	**$1951**
Income:	
Donations and Newsletter Advertising	$6496
Expenses:	
Donations (Meeting Church and ARRL)	$300
Insurance	$325
Newsletter Expense (Postage, Copies, Envelopes)	$1469
Plaques, Trophies ARRL and CQ	$167
Club Awards	$436
Web Hosting	$60
Annual increase:	$3739
Year end balance:	**$5690**

All figures are rounded to the nearest dollar from Jan 1, 2004 thru December 17, 2004 and balance with the bank statement.

Around the Club
Meeting minutes from the Regions

Notes from the 4 December 2004 meeting of the **Rappahannock** Chapter - PVRC The meeting was held at Steve, NR4M's, "Farm". Attendees: Bill, K1SE, John, W3ULS, Steve, NR4M, Neal, K3NC, Steve, K4EU, Larry, K7SV, Bob, AF4UU, Frank, K4EC, John, W4IM, and Mike, K4GMH. Bob, AF4UU, and John, W3ULS, were attending their first PVRC meeting. After consuming a quantity of donuts, coffee and other beverages, the meeting got underway with a discussion on contesting. Several of the attendees commented on their experience during the first evening of the 160 meter Contest.

The Chapter voted to accept the nominations for PVRC officers. Appreciation was voiced for those who step forward to serve as PVRC Officers.

The recent PVRC reflector thread on what it takes and how long it takes to become proficient in contesting was discussed. All agreed the "thread" provided a lot of good information on contesting. This was part of the general comments on the good quality of the information in the PVRC Newsletter. Don's, K4ZA, "The Toolbox" series received several comments on how accurate and helpful the information found in it is.

During the discussion of the possibility of PVRC putting on a "Contest College", several (majority?) said they would like to attend. The consensus was that it should be held separate from a hamfest.

Attracting, introducing, stimulating interest in other hams, whether new or not, was discussed. Several ideas were put forth, e.g., at amateur license exams to have PVRC member(s) congratulate the new "hams" and provide them with something they can take with them letting them know about contesting/DXing and PVRC. Another possibility is for PVRC members to become familiar with the "Contesting-Why Bother" presentation on the PVRC Web site and offer to make presentations to local amateur clubs.

Roundtable:
Bill, K1SE, still is putting up wire in the attic in his son's house while the son is on a work assignment in Norway. He may be operating from K4ZW in the 10 meter Contest. Larry, K7SV, gave a summary of his experience of operating in the recent CQ WW CW Contest from K4JA - the last contest from K4JA. They came close to beating their record set last year even with the upper bands not being as good. They still were able to make over 400 contacts on 10 meters. Larry's antenna system, KT36 and M2 2 element 40 Yagi, has started exhibiting low SWR across the bands after several problems were fixed. They also seem to be "playing" as well or better than before the fixes were installed.

Steve, NR4M's, goal is to have the twenty meter stack (4, 36 foot boom OWAs) on the 150 foot tower ready for a multi/single in the ARRL DX CW Contest. (Two already are mounted on the tower.) Also, the Beverage antenna and a transmitting antenna will be ready for the CQ 160 CW Contest. Steve feels the lack of a functioning Beverage aimed at Europe was the difference in the score between the winning station in the multi/single category and NR4M - too many European stations (10 point per contact) were just too weak to work. A new computer and Ten Tec Omni VI Plus has been added to his station.

John, W3ULS, who was attending his first PVRC meeting, said he was just operating with no recent improvements to the station. John is located in Montross, Westmoreland County. John was first licensed in the 1950s. The amateur radio spark was rekindled in the late nineties after his retirement. However, a lapse active for several decades required him to retake the license exam. After getting licensed again he was able to get his old call back - W3ULS.

John, W4IM, and Bob, AF4UU, teamed up and used K4GMH's station for a multi/single SS SSB effort using the call K4TS. They got a sweep with South Carolina being the last section. A spontaneous discussion occurred regarding the sparse number of South Carolina stations in SS versus the number that have already been worked in the first night of the 160 Contest.

Bob, AF4UU, who was attending his first PVRC meeting, has been getting into contest, but not on a full time basis. Lot of distractions - work, family, etc. His location is in North Stafford County on a third acre, subdivision lot. So far all he has up is an all band vertical.

Steve, K4EU, had good results with his new inverted L and was quite pleased with its performance versus his previous dipole. He now is able to consistently work stations on the other side of the Rockies on 160. In addition, he gave a description of his experience as part of the record setting (North American - M/2) operation from FS5UQ in the ARRL DX CW Contest. He described the operator rotation, the beautiful station location, the attempted antenna set-up and final antenna set-up, the shipped equipment's condition on arrival at the QTH, and band conditions during the Contest as seen on Saint Martin. Steve shared a CD full of pictures he took of the Island and the station. The FS5UQ station location has a beautiful view of the island from its mountain top location.

Frank, K4EC, is still covenants challenged and has been doing minimal operating from the home QTH. Neal, K3NC, still needs to put up the 40 meter 4 sq. Fortunately, the single element from the XM240 that is now on the mast is working very well. This has reduced the pressure to get the 4 sq. installed. Lately he has been discovering firewall problems in allowing access to the cluster server computer. Presently, there are three methods of establishing an internet connection to the K3NC Cluster:
www.k3nc.com
www.dxcluster.us ----> notice it ends in us not com, could not get that address!
k3nc.no-ip.com

John, W4IM, had fun working the SSB SS. (John did the bulk of the operation in the K4TS multi/single effort.) He wants to put up a few more wire ant. at his home QTH. Mike, K4GMH, has the tower and the antennas installed. This is the replacement for the tower and antennas destroyed by Hurricane Isabel. The "shack" has been remodeled and still is being put back together.

Central Virginia Contest Club 2004 Christmas Dinner

The CVCC held its annual Holiday Dinner on Monday December 20 at Topeka's Steakhouse in Richmond. Those present were:

Ralph N4EHJ and Reba. Paul K4JA, and Betsy. Jerry K4KJL, and Marie K4KML. Bruce WD4LBR, and Shelia KG4WNW. Bob W4DR, and Rosalie N4CFL. Dennis N4DEN, and Vicki. Dave N4DWK. Ed NW4V. A.C. W4HJ, and Jo. Bob W4MYA, and Lily. Puck W4PM, and Judy. Ronnie W4UG, and spouse.

Thanks to Dennis, N4DEN for arranging this years gathering! A good time was had by all!
Happy Holidays and best wishes for a healthy, prosperous New Year!

PVRC/NC-East Meeting Minutes Golden Corral, Cary, NC November 4, 2004

In Attendance: Jim K4QPL, Jim WW4M, Tom N4TL, Nate N4YDU, Jay NT4D, Keith W4KAZ, Jeff NX9T, Guy K2AV

Jay, NT4D was wondering who might have his gin pole. Jay has been helping Jerry KI4CCJ and his wife Jolene KI4GMW. Hopes to hear everyone on during Sweeps. Keith, W4KAZ had his best-ever QSO total on CQWW doing 16 hours of S&P. He was going to try to get on for some CW during Sweeps.

During CQWW Jeff, NX9T put in 15 hours. He was planning on getting on during SSCW but wanted to get some chores out of the way before other contests later in the season. Nate, N4YDU did CQWW from K4QPL's house and had a lot of fun in working from Jim's new shack. He was planning on operating from there for CQWW-CW as well.

Tom, N4TL Got on 160 the past weekend for CQWW Phone. This summer he put up a new tower for two 5-el beams on 6m and a 2m beam above that. Jim, K4QPL enjoyed operating CQWW vicariously through Nate. His new shack has new LMR-400 feedlines, which are also 50-feet shorter than the old coax. It made a big difference on 10m over RG8 and 213. Unfortunately the LMR-400 has foam dielectric (which is not waterproof) but ran it in black PVC pipes.

Guy, K2AV was planning on operating SSCW - just point the beam at 285 degrees and lock it down. Unfortunately he was going to be busy on Sunday. He's been helping Jack, WA0UCE improve his wire antennas, and they've been working with a Z-Slope antenna that is working well. Guy and Howie will be re-doing Howie's 20m and 40m quads this winter if the weather allows.

PVRC/NC-West Meeting Minutes November 22, 2004

The NC-West Chapter of the Potomac Valley Radio Club held its regular monthly meeting on November 22, 2004 at Cobalts Eats and Drinks.
Attendees: W2DZO/Henry Heidtmann (Chairman) KG4NEP/Robert Whitaker (Secretary) N0KTY/John Kippe W4RXG/Melissa Hall KF4PLQ/Woody Kinney N4IOZ/Tom Gallagher WS4NC/Don Edwards KC4WSK/Van Key

Meeting was called to order by W2DZO. Discussion ensued about our WW SSB effort, and that we'll probably end up 6th US, off one spot from last year's 5th place, but that we made our highest score ever.

KG4NEP and N0KTY talked about their SS SSB work, while W2DZO whined that due to the throes of home buying, he didn't operate at all. Henry did make it official that he's moving to Lewisville and needs to sell his downtown place. Kippe has agreed to buy the towers.

NEP also mentioned he worked one (1) SS CW QSO. It's one more than most of us. NO time for CQWW CW effort- most people out of town- Robert might put some time in.

The 10 Meter contest was mentioned- possibly a Multi op brewing from KG4NEP. N4IOZ said the W4WS website has been moved from Summit School to Don, WS4NC's webspace.

The January FARC Swapfest will be Saturday, January 8, 6am-Noon at Summit School.

Other notes- Van KC4WSK has attended about 6 meetings, and is official as a PVRC member. We'll send his name into HQ. We'll also send him to the
application website.

John N0KTY, though already a member, was evidently listed as a non-PVRCer in a recent PVRC publication. Henry will check on this.

Official meeting adjourned at 8:05PM, while the WFU- Yale game went on across the street. Announcement that Wake had been name #1 in the AP Basketball poll caused much excitement in Cobalts. Yes, some Tarheel fans had the gall to counter with "Well, we beat you in football this year." Some things never change. (OK, the previous 4 sentences were pure editorializing by Henry, W2DZO, but geez, Its 1 AM on Wednesday morning, and I'm tired. I'm also annoyed that this idiot NBA player who is, at this moment, shopping his new CD on MSNBC in an interview, saying he did nothing wrong in punching several fans at the Basketbrawl a couple days ago. Unbelievable.)

Happy Thanksgiving to all

PVRC/NC-East Meeting Minutes Golden Corral, Cary, NC December 2, 2004

Very light turnout. A few notes written on the back of my receipt.

K4CIA - Went with K4HA to FL to repair/replace relocated PVRC'er K4PB antennas after hurricane.

K4QPL - SS cw low power. However, wimped out and bought a Heath SB-1000 linear from K3KO and operated HP a few hours in SS phone. New station also used by N4YDU for CQWW ssb and cw, both SOLP. Added a tree-hung triband dipole broadside N-S cannibalized from old beam from N4YDU. Gives another antenna for SO2R and quick switch to work SA mults when beam aimed to EU.

N4XD - a bit of activity in contests. Plans to be on for 160M. N4CW - "He's baaaaack!" Did SS /1 from ME.

Also in the M/M crew at NY4A for WW CW. NX9T - Family commitments. Hasn't been on much. W4KAZ - Operated CQWW CW.

Several reports of working Mark KI7WX from N2NT in SS phone. Also Alan, KO7X active from WY in recent contests.

Usual B.S. followed. In some discussion on UHF, N4CW recounted calculating formulas on a parabolic dish. N4XD suggested Bert might have made his work easier if he had used a flat sheet of paper! On that note, the meeting adjourned about 7:20

December Meeting Minutes – **SW VA** Chapter PVRC

The Southwest Virginia Chapter PVRC met Friday December 3 for dinner and companionship at the Golden Corral in Roanoke. Attending were Nat – N4EL, Bill – WA4BKW, Randy – KC9LC, Anthony – WM3T and his wife Shilynn – KF4OKG and their daughter, David – N4JED and his wife Freda and son Robert. Everyone had a great time and the all-you-could eat ribs were better than most in Roanoke.

Regards were passed on by Buddy – W4YE who had previously committed to drive his antique car in a parade that night (wonder when he will install one of those antique radios in it), as well as Jerry – K1SO who had company come in from out of town, and new member Joe – W2BHK who had driven north to pick up tower hardware for his station.

Most everyone has been active in one or more of the recent contests turning in scores for PVRC. N4EL and WM3T reported racking up some impressive scores (as has W4YE). N4JED and KC9LC have been attempting to make their presence known from their low power stations as time has permitted. WA4BKW begged forgiveness for not operating as much due to flooding problems in his basement station during the recent wet period. We hope to find him back up and running soon. N4EL described recent problems trying to operate RTTY with Writelog completely missing one contest only to have it function perfect the next. Nat, you jinxed me. Your gremlin came to visit me this weekend as I could not get out on 160 at all!

The chapter voted unamiously for the officer slate of the PVRC as part of its official business. In addition, everyone present agreed to try the next meeting on a Thursday at the Golden Corral. We will look for a date in January clear of snow (GRIN). The meeting was adjourned and, after another round of ribs, everyone departed for a little Christmas shopping before heading home to contest.

David Jones – N4JED

5M Contest Scores

Compiled by Bob Dannals, W2GG

Note — with this issue, Bob turns over the job of compiling and coordinating our club competition results to Anthony Brooks, WM3T(wm3t@wm3t.com) We all owe Bob a tremendous debt for his uncomplaining and meticulous handling of this critical task over the last 6 years and more.

ARRL PHONE SS

Call	Prec	QSOs	Sections	Score
K3MM	B	1755	80	280,800
N3OC	M	1585	80	253,600
W4MYA	U	1556	80	248,960
W4NF	U	1540	80	246,400
K2PLF	B	1400	80	224,000
KD4D	U	1390	80	222,400
W3YY	U	1100	80	176,000
W3SO	M	1066	78	166,296
K3DNE	U	1038	80	166,080
K3TW	A	1025	80	164,000
W3PP	U	866	80	138,560
K3DI	M	865	80	138,400
K2UOP	B	840	77	129,360
N3FX	B	828	78	129,168
W8ZA	U	788	80	126,080
N6ZO	U	732	80	117,120
N3UM	B	720	75	108,000
N3KS	B	###	##	107,492
N8II	A	675	78	105,300
W3LJ	M	679	77	104,566
W3UL	U	650	79	102,700
N2NFG	A	637	78	99,372
W3LL	A	586	78	91,416
WB4FDT	B	532	69	73,416
N3II	U	454	80	72,640

K3UT	#	466	77	71,764
KB3KAQ	A	423	76	64,296
WK4Y	A	428	75	64,200
NE3H	B	428	74	63,334
W3GNQ	M	405	78	63,180
K1RH	U	388	80	62,080
W5KL	B	380	80	60,800
WM3T	U	355	80	56,800
N4MM	U	349	80	55,840
KI3O	A	358	76	54,416
KU4FP	B	333	80	53,280
K4QPL	B	347	74	51,356
4U1WB	U	333	73	48,618
W4KAZ	A	311	77	47,894
N4JED	A	297	75	44,550
W9GE	B	300	73	43,800
W3LRC	M	283	75	41,550
W3HVQ	B	278	72	40,032
K3KO	U	250	80	40,000
K4ZW	A	270	74	39,960
N3HUV	U	233	79	36,814
K1KO	B	237	77	36,498
WD4LBR	B	235	74	34,780
N4CW	B	227	69	31,326
N3FNE	A	196	66	25,872
NI4S	A	203	63	25,578
K4HA	A	163	78	25,428
WA3G	#	205	62	25,420
K4FPF	A	160	72	23,040
KM4M	A	178	59	21,004
K3KU	A	166	59	19,588
K4FTO	A	155	63	19,530
K3SWZ	Q	138	68	18,768
KC9LC	A	145	64	18,560
AA4KD	A	154	59	18,172
W3OU	B	137	60	16,440
K4MIL	A	114	70	15,960
N4ZR	B	128	55	14,080
K3SV	U	80	80	12,800
W2GG	A	106	55	11,660
W4JVN	B	85	59	10,030
N4EL	A	94	41	7,708
KI4FDF	A	##	##	6,966
WA4PGM	Q	71	42	5,964
AE4EC	Q	69	41	5,658
N4AF	B	60	32	3,840

SSB	Logs:	71	
Club	Score	5,351,360	
CW	Logs:	67	
CW	Club Score		5,493,652
Total Club Score			10,845,012

Other Scores of Interest

WP3R	B	2621	80	419,360
By KE3Q				
KH6/W0CN	A	250	62	31,000

Operators (non-PVRC):

4U1WB:	AJ3M
K3DI:	W4EE K3DI
KD4D	at N3HBX QTH
KM4M:	W3BP
N3OC:	N3OC WR3Z
W3GNQ:	W3GNQ (KB3JUV)
W3LJ:	W3IDT W3LJ
W3LRC:	K3HDM K3QX N3XL WI3N (WV3D)
W4NF	at W4RM QTH
W3SO:	W3TEF W3YOZ
W5KL:	W4YE op
W8ZA:	K8OQL op

ARRL 10 Meter Contest

Call	QSOs	States	DX	Total
Single Op High Power—Mixed				
K3ZO	903	88	69	410,084
N4CW	595	148	#	309,616
K2UOP	629	85	56	266,490
KM4M	500	102	#	183,600
N4MM	471	134	#	151,420
N8II	531	77	23	143,000
WK4Y	382	60	56	139,896
W4YE	329	104	#	119,600
N4XD	431	64	41	111,510
K4VV	333	100	#	105,200
W9GE	###	##	#	62,784
W4RM	285	85	#	62,560
NX9T	203	87	#	53,244
N3CW	196	63	#	49,266
W4HJ	143	40	#	20,710
W3HVQ	87	19	23	11,340
WA8WV	66	19	20	8,112
W3PP	74	27	#	7,182
WD4LBR	##	##	#	6,160
N3XL	47	20	#	3,600
Single Op Low Power—Mixed				
KI3O	358	134	#	135,072
W4EE	247	44	31	55,800
W2YE	206	47	29	42,560
NW4V	202	79	#	40,922
K3KU	130	30	21	24,786
K4GM	103	41	#	16,482
W2GG	100	19	27	14,444
K4FTO	84	44	#	12,848
W3DQ	116	25	#	10,664
W3MR	91	45	#	10,260
Single Op High Power—Phone				
W3LPL	1116	54	38	205,344
N3HBX	707	52	45	137,352
4U1WB	161	37	#	11,914
K4WNW	###	##	#	4,620
WA3G	76	27	#	4,104
K4AF	61	8	9	2,074
Single Op Low Power—Phone				
K4TMC	278	67	#	37,252
W3LL	219	53	#	23,214
KB3KAQ	151	50	#	15,100
W2DZO	126	31	#	7,812
W2BHK	81	22	7	4,698
N4DWK	60	37	#	4,440
KU4FP	60	15	15	3,600
N4IOZ	68	9	17	3,536
Single Op High Power—CW				
N4AF	575	102	#	234,600
K8OQL	256	38	25	64,512
N3JT	220	59	#	51,920
W3MC	209	40	21	50,996
K1KO	233	35	18	49,396

N3ST	202	35	22	46,056
K4QPL	100	26	15	16,400
N3AM	85	24	16	13,600
W3GG	37	12	8	2,960
Single Op Low Power—CW				
NY3A	564	89	#	200,784
K4GMH	274	61	#	66,856
K4EU	245	59	#	57,820
W3CB	208	38	20	48,256
K3STX	112	35	#	15,680
WA4PGM	70	28	#	7,840
AE4EC	51	13	7	4,080
Multi-One				
K1SE	1108	189	#	650,916
W4MYA	1036	194	#	616,144
N3OC	866	88	81	443,456
K3DI	901	90	67	421,388
N4RV	717	88	62	317,700
N6ZO	473	143	#	200,564
K3KO	320	114	#	128,364
K3NCO	250	88	#	73,744
N4ZR	225	42	43	65,450
K3SV	214	71	#	60,776
NT4D	225	45	42	59,160
WI2T	131	61	#	24,644
K3AU	104	21	27	16,608
N3HS	60	19	#	4,680

DXpedition				
8P9Z	2905	117	125	2,052,644
Total logs	75			
Score:	9,122,266			

Note: Multi-One not listed below were SO Assisted

Multiop operators (non-PVRC in parentheses):

4U1WB:	AJ3M op
8P9Z:	K4FJ (K3KG)
K1SE:	K4ZW K1SE at K4ZW QTH
K3AU:	K2YWE op
K3DI:	W3UL W3ICM K3DI
K3NCO:	W3LJ (K3NCO)
K4AF:	K9QQ op
KM4M:	W3BP op
N3OC:	N3OC WX3B
NT4D:	NT4D W4KAZ
W3LPL:	AC5RR op
WI2T:	WI2T W3RFC (WA3OFF)

Other Scores of Interest

WJ9B (SOLPCW)	884	58	27	300,560

- not reported separately

ARRL 160 Meter Contest

Call	QSOs	Sections	DX	Score
Single Op High Power:				
W4MYA	1469	78	38	368,300
N4XD	987	78	26	218,400
K2UOP	971	74	14	176,176
WK4Y	941	74	12	165,206
K4EU	738	73	7	120,000
K3ZO	685	##	#	112,914
N3UM	687	66	12	110,214
W3SO	607	86	#	107,758
K8OQL	662	72	3	100,200
W3MC	537	65	9	81,918
KM4M	557	67	1	75,956
N3AM	624	58	0	72,384
K4QPL	484	59	12	71,781
N6ZO	428	79	#	70,152
K3SV	407	67	13	68,720
K1KO	391	60	4	50,816
N3OC	328	55	7	41,974
W9GE	345	57	##	39,501
W3HVQ	320	59	0	37,642
N4AF	235	68	0	34,612
W4AU	329	50	1	33,303
K2AV	271	57	3	32,940
N4YDU	217	48	2	22,000
W3MR	201	48	2	19,584
N4ZR	106	46	6	11,960
W4RIM	138	43	#	11,100
Single Op Low Power:				
N8II	630	67	11	101,322
NY3A	694	62	4	92,400
K3SWZ	303	59	1	36,540
N3II	319	51	1	33,332
W4YE	265	58	#	30,914
N3ST	289	50	#	29,500
K7CMZ	258	53	1	28,026
K4HA	196	52	#	20,696
N4MM	109	40	#	8,720
NN3W	57	23	0	2,622
Single Op QRP:				
WA4PGM	600	64	##	77,184
AE4EC	44	24	0	2,112

Multi-Op (single op plus packet unless listed below):

W0UCE	1229	78	30	279,720
K3DI	861	72	16	156,552
N4RV	713	76	20	144,096
W3UL	261	45	#	23,490
4U1WB	54	26	0	2,808
K4WES	26	23	0	1,196

Logs:		44		
Club Score	3,326,741			
Other scores of interest:				
WJ9B	702	76	12	127,248

Operators (non-PVRC):

4U1WB:	AJ3M
KM4M:	W3BP
W3SO:	W3YOZ
W0UCE:	N4CW W0UCE

- missing data

CQWW CW

Call	Power/ Band	QSOs	Zones	Countries	Score
Single Op—Unassisted					
K4ZW	C	1810	127	376	2,555,743
NY3A	C	1898	121	356	2,542,410
W4RX	C	1572	128	385	2,287,467
N3UM	C	1139	100	312	1,313,044
N4YDU	B	1100	112	341	1,297,845
K3AU	B	1096	105	330	1,267,155
K2UOP	C	845	109	326	1,018,770
W4RQ	C	857	113	340	1,033,746
WF3J	C	675	97	261	656,572
KT3Y	C/40	1132	35	129	514,790
W4YE	C	525	91	248	480,000
N3II	B	479	93	247	431,460
W4EI	C	473	95	236	424,342

N4MM	C	414	83	221	419,824
K7CMZ	B	440	82	214	351,944
W3HVQ	C	381	83	212	293,820
K1KO	C	399	70	189	277,648
W3IUU	B	347	81	192	260,169
W4ZV	C	10	694	31 104	237,870
K1EFI	B	334	66	184	226,250
KI3O	B	365	203	##	222,285
N4MO	B	15	559	29 104	213,731
N2NFG	B	306	80	165	195,755
WD4LBR		C	###	## ##	72,209
N4JED	B	153	145	##	56,985
W4ZYT	C	150	43	53	56,576
W2BHK	B	40	###	## ##	54,035
W4KAZ	B	149	46	92	53,958
W3MC	C	40	227	63 19	49,528
W2GG	B	100	36	59	23,688
K4FTO	B	87	32	61	21,297
KM4YY	#	93	78	##	19,344
AE4EC	B	70	30	54	14,616
K4EU	C/80	90	12	48	13,980
NN3W	B/40	67	13	37	8,200
WA4PGM	A	52	41	25	8,646
Single Op—Assisted					
N3AM	C	1418	135	532	2,251,557
KM4M	C	1445	117	434	2,236,509
N3JT	C	1274	141	459	2,112,600
W3GG	C	1255	126	411	1,884,333
K3TW	C	970	122	344	1,236,764
W2CDO	C	864	99	335	1,065,904
K3KO	C	766	115	372	1,050,946
W9GE	C	523	##	###	594,683
K3SV	C	531	88	252	479,400
W3YY	C/40	705	39	129	325,416
N4ZR	C	226	63	138	126,630
NE3H	C	207	63	139	117,766
K4GMH	B	172	40	116	73,788
W2BHK	B/40	195	22	77	54,035
K3DNE	B	104	29	63	26,496
4U1WB	C	90	64	31	21,375
Multi-Single					
N4RV	C	2280	159	553	4,576,553
Multi-2					
K4JA	C	5910	184	685	14,476,671
K3DI	C	1436	144	436	2,307,820
W8ZA	C	1138	137	425	1,737,142
Multi-Multi					
W3LPL	C	6842	192	718	16,511,040
NY4A	C	4766	171	613	10,273,636
W4MYA	C	3628	169	623	7,840,800
DXpedition					
C6AQQ	B	2792	110	307	3,496,812
KH6/W0CN		B	200	49 60	60,604
PJ7/K4MA		B/40	368	12 46	47,444

A: QRP B:Low Power C:High Power
CW Logs: 59
CW Score: 90,405,010
SSB Logs: 82
SSB Score: 115,462,896
Combined: 141
Total Score: 205,867,906

Operators(non-PVRC):
4U1WB: AJ3M op
C6AQQ: ND3F
K3AU: K2YWE op
K3DI: W3UL W4EE K3DI
K4JA: K7SV KE9I WE9V (AJ9C KA9FOX KO9A)
KM4M: W3BP
N4RV: N8II KT4W N4RV
NY4A: K2AV N4AF N4CW WJ9B
W3LPL: W3LPL N2YO WX3B K3KU K3MM K3NA N3OC K3RA K3RV W3UR WR3Z KD4D AC5RR K9QQ
W4MYA: K4VU KI4FDF N4EHJ W4HZ W4MYA W4TNX WK4Y
W8ZA: K8OQL W8ZA
- missing data

ARRL CW SS

Call	Prec	QSOs	Sections	Score
N4AF	B	1209	80	193,280
W4RM	M	1193	80	190,880
K3MM	B	1178	79	186,124
KD4D	B	1160	80	185,600
K3ZO	B	1106	80	176,960
W4MYA	U	1048	80	167,680
W3PP	B	1010	80	161,600
NY3A	B	1031	78	160,836
W3EF	A	967	79	152,786
N3JT	B	951	79	150,258
N4ZR	B	893	78	139,308
K2PLF	B	853	79	134,774
KM4M	B	833	79	131,614
N6ZO	U	803	##	128,000
K4QPL	A	773	78	120,588
K3TW	U	750	80	120,000
KT3Y	B	719	80	116,240
N3UM	B	743	78	115,908
W4AU	B	728	78	113,412
K4EU	A	703	79	111,074
K3DI	B	683	80	109,280
W4YE	A	680	79	107,440
W2CDO	M	655	80	104,800
N3AM	B	655	78	102,180
WB4FDT	B	700	74	103,600
K3SV	U	629	80	100,640
K3KU	A	645	78	100,620
K3KO	U	625	80	100,000
W4UG	M	582	80	93,120
WA4PGM	Q	576	80	92,160
W3CB	A	513	76	77,824
K4GMH	A	469	76	71,280
K4MA	U	438	80	70,080
W4ZYT	M	436	80	69,760
W3SO	B	448	73	64,408
K2UOP	B	431	75	64,650
W3UL	U	368	79	58,144
WK4Y	A	398	71	56,516
N3II	U	342	79	54,036
KI3O	A	354	75	53,100
W3AZ	B	350	75	52,350
N3IQ	A	331	78	51,636
N4MM	U	318	80	50,880
KI4FDF	A	###	##	49,350
K3AU	A	320	73	46,720

WM3T	U	292	80	46,720
WR3L	M	275	74	40,700
K2AV	B	300	67	40,066
W3YY	U	250	79	39,500
W3HVQ	B	282	68	38,352
K1KO	U	245	77	37,730
W8ZA	U	251	75	37,650
N8II	A	260	70	36,680
K4FPF	A	236	76	35,872
K4ZW	A	250	67	33,500
NE3H	U	224	61	27,238
W3DAD	A	204	6	26,520
W3DOS	A	208	63	26,208
K4AF	A	204	63	25,704
K4RT	A	200	61	24,400
AA4KD	A	168	66	22,176
KC9LC	A	150	60	18,000
K4FTO	A	150	58	17,400
N4TL	B	141	58	16,356
N3HUV	C	118	67	15,812
AE4EC	Q	143	52	14,872
W3LJ	U	107	50	10,700
Logs:	67			
Club Score:	5,493,652			
Other Scores of Interest				
WP3R	B	1538	80	246,080
By KE3Q				
WJ9B	A	948	80	151,680
N4CW/1	B	836	78	130,416

Operators (non-PVRC):
K3AU: K2YWE
K4AF: K9GY
KD4Dat N3HBX QTH
KM4M: W3BP
N3IQ: ND3F
W2CDO: W2CDO K3STX
W3DOS: K9GY
W3SO: W3YOZ
W4RM: W4NF K5VG NN3W K4GM AJ3GW4RM
W4UG: W8RJL KI4VB KT4P (WA4EUL KF4NMK)
W4ZYT: W4ZYT W4SD W4WV W4PRO KU4EC AF4CD AG4JT N8CH KH6HHS KG4PWC
WR3L: AA3SC WR3L
- missing data

CQWW SSB

Call	Power/ Band	QSOs	Zones	Countries	Score
Single Op	- Unassisted				
K4ZW	C	3888	154	538	7,781,697
K3ZO	C	2976	125	434	4,796,779
N8II	B	1473	118	392	2,115,480
W0YR	C	1409	109	348	1,795,553
NR3X	B	1203	98	329	1,419,348
K2UOP	C	1072	103	355	1,392,778
NX9T	C	1111	100	302	1,275,144
W4JAM	C	776	98	355	985,275
W4ZV	C/10	1862	33	143	930,160
W3LL	B	786	95	312	881,969
N3UM	C	777	80	278	791,180
W4YE	C	731	90	293	780,171
N3HBX	C/15	1641	34	121	711,915
K1KO	C	626	80	260	626,140
W4HJ	C	518	87	267	512,238
N4MM	C	489	95	253	464,928
KU4FP	C	537	68	229	452,331
W3HVQ	C	530	79	223	439,410
N4BAA	C	503	66	216	399,594
NY3A	C	569	57	168	371,925
W4KAZ	B	511	62	194	364,544
N3ZR	C	444	65	184	310,005
N4EHJ	C	###	##	###	230,294
K1EFI	B	326	50	175	201,600
N4JED	B	312	56	145	163,815
N4EL	C	314	52	145	178,088
K4MIL	B	###	##	###	145,754
KI3O	B	480	101	###	145,440
WA3G	C	259	169	###	118,131
W3GG	C	271	30	113	115,687
NW4V	B	223	46	132	111,962
WA4BKW	B	210	42	118	95,040
N3FNE	B	220	47	113	92,160
K3AU	TS	192	38	132	92,140
W3DF	C	170	63	132	91,650
W4RQ	C	172	52	128	88,020
N4TL	#	169	49	108	70,179
N3ST	C	171	42	90	61,849
N3HUV	C	156	45	101	61,466
K3STX	B	129	47	94	48,786
W8RJL	C	125	42	85	43,815
K4GM	B	124	108	###	34,128
W4RIM	C	118	25	62	28,449
K4FTO	B	88	33	58	19,838
KC9LC	C	60	26	45	11,289
W3DQ	B	47	26	30	6,664
W3SF	B	35	12	28	3,160
Single	Op	-	Assisted		
W4MYA	C	2135	156	550	4,216,232
N3AM	C	1340	121	423	2,081,344
K1RH	C	1035	102	376	1,401,496
K3KO	C	701	117	414	1,037,574
W9GE	C	765	97	379	1,024,352
N3II	C	651	110	311	764,115
K4YT	C	628	###	###	610,392
W4JVN	C	628	84	263	609,332
K4VV	C	438	92	300	480,592
W3OU	C	473	84	238	429,870
KI4FDF	B	###	##	###	346,329
N4ZR	C	425	66	209	326,150
K1HTV	B	280	71	156	172,293
WM3T	C	317	37	133	159,460
NE3H	C	235	54	160	135,676
WR3L	C/10	326	27	103	122,720
N3HS	C	218	49	139	115,432
W4DR	C	116	40	95	44,010
AJ3G	C/10	###	##	###	36,855
K3SV	C/80	154	16	64	33,120
N2YO	B	73	27	52	14,062
Multi-Single					
W4WS	C	2479	149	572	4,976,342
W3GNQ	C	664	84	263	641,256
W3LJ	C	597	76	245	528,366
W3LRC	B	268	48	119	120,407
Multi-2					
K4JA	C	5309	182	702	13,315,692
W4RM	C	4122	133	508	7,502,264
K3DI	C	1742	137	438	2,804,275
Multi-Multi					

W3LPL	C	8519	187	778	22,527,925	
W8ZA	C	2251	157	548	4,440,090	
WX3B	C	994	123	375	1,322,688	
Dxpedition						
V26B	C	12815	165	588	23,657,110	
(PVRC	portion	=	1/6		3,942,851	
VP5X	C	7397	162	603	13,676,670	
(PVRC	portion	=	1/5		2,735,334	
4X0WV	C	3674	92	315	4,317,049	
KH6/W0CN	B	655	60	83	268,983	

	ND3F K3RA K9QQ W3LPL K4ZA K1RZ W3ZZ NK3R AC5RR
W3LRC:	K3HDM KT3D N3XL K3QX KB3BWR
W4RM:	W4NF K5OF KA4RRU K4RG W4RM (W7IY)
W4WS:	KG4NEP W2DZO KG4ECI WS4NC KA1ARB N4IOZ WB4MSG (N0KTY)
W8ZA:	W3BTX W3TEF W8ZA K8OQL K3DNE K3IXD WD3A
WX3B:	WX3B N3SB K3ZE N3YIM (N3MNM KB3HAM KB3HAN)
###	- missing data

A: QRP B: Low Power C: High Power TS: Tribander +single element 160-40 BR: Band Restricted R:Rookie
Logs: 82
Club Score: 115,462,896
Operators (non-PVRC):
4X0WV: W8HC WA8WV
K3AU: K2YWE
K3DI: W3UL W3ICM KB3KAO K3DI
K4JA: AJ3M K4MA K9GY KE9I W3BP W4TNX WK4Y K4JA
NR3X: N4YDU at K4QPL QTH
V26B: N3OC plus 5 other ops
VP5X: WA4PGM plus 4 other ops
W3GNQ: W3GNQ (KB3JUV)
W3LJ: KA3UBJ W3IDT W3LJ
W3LPL: AI3M ND3A NN3W W6AAN W3UR WR3Z KD4D

PVRC REFERENCE PAGE Please send corrections to the editor. January 2005

PVRC OFFICERS:

President	K4VV	Jack Hammett	540-882-3188	k4vv@aol.com
VP	W3DQ	Eric Rosenberg	202-363-3930	wd3q@starpower.net
VP	WX3B	Jim Nitzberg	410-374-9233	nitz@selectsa.com
Secretary	WM3T	Anthony Brooks	540-493-4239	wm3t@wm3t.com
Treasurer	WR3L	Dave Baugher	410-DX1-WR3L	dave@wr3l.net

Trustees: N3OC K2AV K3MM KE3Q N4ZR W4MYA W4ZYT N4AF K4IQ ND3A W3PP N1KC

PVRC Charter Members (* =SK) W3GRF*, W4AAV*, W4KFC*, N0FFZ*, W4LUE*, W7YS, VP2VI/W0DX*, W3IKN, W4KFT

PVRC Reflector administered by N4AF <http://mailman.qth.net/mailman/listinfo/pvrc>, postings to <pvrc@mailman.qth.net> (Members only, if your call-sign is not part of your email address, send an email to n4af@qsl.net to subscribe.)

PVRC Dues PVRC has no annual dues. Donations are gratefully accepted by the Treasurer, Dave Baugher WR3L, 615 Rockaway Beach Ave., Baltimore MD 21221. Please make your checks payable to PVRC.

Autocall Column Editor is K3DI 410-757-6706

PVDXSN Packet Network

W3LPL	Glenwood MD	145.590, 441.250	w3lpl.net	W3IP	Crownsville MD	145.570	
WR3L	Baltimore MD	145.610, 440.950	wr3l.net	N3RR	Rockville MD	145.510, 441.325	
K3SKE	Frederick MD	144.930, 441.125	12.173.48.67 port 23	W3YOZ	West River MD	144.910	
W3TOM	Acokeek MD	145.770		N1WR	Lusby MD	145.690	
N4OHE	Mt. Weather VA	145.710, 446.025		NE3H*	Harrisburg PA	144.970	
W3BD	S. Mountain PA	145.630		N4SR*	Woodbridge VA	145.630	
W4XP	Bull Run Mtn. VA	144.990		K3NC*	Fredericksburg, VA	144.930	dxc.k3nc.net
				W4ML	Goochland, VA	145.09	dxc.w4ml.net

Most of the system is sponsored by the Potomac Valley DX Spotting Network. Nodes with * are independently funded by each SYSOP,. The W4ML node is funded by CVCC.

PVRC Meetings

ANNAPOLIS: Dick Wilder, K3DI 410-757-6706
BWI: Weekly breakfast Wed at 7:00 AM at Basil's Deli Port on Elkrdige Landing Rd 1/4 mile South of Winterson Road 410-850-4333. Director: Ike Lawton, W3IKE, 410-263-2830. Sec: Howard Leake, W6AXX, 410-465-7008, w6axx1@starpower.net
CENTRAL VA: Pres: Ed Moore - NW4V - nw4v@comcast.net, Secy: Marie Long - K4KML - long2624@netzero.net, Treas: Robert (Bob) Ladd - NK4H - rladd@comcast.net. Meetings are held on the second Tuesday of the month at 7:00 PM at the Henrico Doctor's Hospital, 7700 Paraham Rd., Richmond, VA. To the right of the main entrance is a second entrance. Go through that door, turn left through that door and the cafeteria is the first room on the right. There will be some who meet at Nick's Roman Terrace, Westlands Shopping Center, West Broad Street starting at 5:50 PM for dinner before the meeting. Talk-in available on 145.430
CENTRAL: The Central Meeting is always the second Monday (except June, July, and August) at 7:30 pm. The central meeting generally alternates between MD and VA locations. A pre-meeting dinner is usually held between 5:00 and 6:30 pm. Check via 147.000- repeater. VA LOCATION: The Patrick Henry (Public) Library, Route 123, Vienna, VA. MD LOCATION: Church of the Nativity (Episcopal), Route 5, Temple Hills, MD.
Pre-MD meeting dinner at Topoleno's Restaurant about 6:00 or 6:30 pm.
EASTERN-SHORE (DEL-MAR-VA): Dallas Carter, W3PP 302-875-0550 ludal@dmv.com
LAUREL: Pud Reaver W3YD preaver@earthlink.net Laurel Region meets concurrently with the Laurel Amateur Radio club at the first LARC meeting of each quarter.
NORTH CAROLINA -- EAST: Chair: Guy Olinger, K2AV, k2av@contesting.com; Sec: Jim Price WW4M. POC's are K2AV and WW4M (h:919-362-4635, w:919-460-2991). PVRC/NC meets at 6 pm the first Thurs of each month, plus an additional meeting in April at the Raleigh Hamfest. For details see http://pvrcnc.org
NORTH CAROLINA -- WEST (TRIAD): Meets the 4th Monday of the month at 7:00 PM at Cobalt's Elemental Eats and Drinks on Deacon Blvd. in Winston Salem. Ragchew at 6:30. Directions are available upon request. The chairman for the new PVRC/NC West chapter is Henry Heidtmann W2DZO, henry@summitschool.com and the secretary is Robert Whitaker KG4NEP, kg4nep@yahoo.com.
NORTHEAST: WR3L Dave Baugher 410-DX1-WR3L dave@wr3l.net
NORTHWEST: Chair: Bud Governale, W3LL, 410-666-9189. W3LL@arrl.net. Meets monthly the 3rd Tuesday. Informal dinner about 6pm; meeting at 7pm at the City Buffet, 1306 W Partick St, Frederick, MD 301-360-9666. Rear of shopping center, behind Mountain View Diner.
OCCOQUAN: Jack O'Mara W4NF, H:703-791-3302 W:703-739-7636 w4nf@comcast.net and Cliff Deel W4CE, w4ce@aol.com 703-491-0841
OVER-THE-HILL LUNCH BUNCH (VA DC MD): Meetings are held monthly at two locations: Falls Church, VA (Parkview Marriot) and Beltsville, MD. Meetings are announced by E-mail. All members, their guests and non-members interested in membership are welcome. For information contact Roger Stephens K5VRX, rogerergo@netzero.net, 703-658-3991 for the VA meetings; or, Bill Leavitt W3AZ, 301-292-5797 for MD meetings.

PENNSYLVANIA: Steve Cutshall, K3TZV, k3tzv@paonline.com, 717-763-0462.
RAPPAHANNOCK: Steve Bookout, NR4M (ex-NJ4F) NJ4F@erols.com. Also, Larry Schimelpfenig, K7SV, k7sv@va.prestige.net
SHENANDOAH: Bill Hinkle KV3R kb3aug@juno.com 304-567-3138
CARROLL COUNTY: Jim Nitzberg, WX3B.410-374-9233 nitz@selectsa.com
SOUTHERN MD: Chair: Wayne Rogers N1WR E-Mail: n1wr@chesapeake.net Phone: (H) (410) 394-0313 Meetings held at the home of N1WR.
SOUTHWEST VA: Coordinator: David Jones, N4JED, Vinton, VA 540-890-2034, N4JED@AOL.COM. Meetings begin at 6 pm at the Roanoker Restaurant, Roanoke, Virginia in a private room (ask at the desk if you have not joined us before).
TIDEWATER COLONY OF PVRC: This group now meets in conjunction with the Virginia DX Century Club at Ryan's Steak House, which is on Battlefield Blvd in Chesapeake, at the Battlefield Blvd South (VA 168) exit off I-64. The meeting is still the third Tuesday of every month. We gather for dinner around 1815-1830, with the meeting around 1915-1930. Contact W4ZYT at 757-457- 5181 or w4zyt@exis.net for additional info.