Important Announcement for US Mail Subscribers

Due to the costs associated with reproducing and mailing the Newsletter by USPS, the lack of a dedicated person to handle these tasks, and the availability of the Newsletter on the PVRC website and via email, this will be the last Newsletter distributed routinely via US Mail, except for the annual reunion issue.

If you wish to continue to receive a printed copy by US Mail, you must notify the PVRC treasurer (WR3L), and either have contributed at least one contest score to the club during the past year or send $10 to the treasurer to help with postage and handling. If you have already contributed at least that amount this year, just let Dave know.

PVRC Event Calendar (includes summer get-togethers)

Note: All dates are Zulu. Boldface denotes contests that count toward the PVRC 5 Million Award and summer PVRC events

NR4M Open House, September 18 (see details and directions below)
WAE DX Contest, SSB 0000Z, Sep 11 to 2359Z, Sep 12
FAR-Fest returns to Gaithersburg, Sep 11-12
ARRL September VHF QSO Party 1800Z, Sep 11 to 0300Z, Sep 13
North American Sprint, CW 0000Z-0400Z, Sep 12
North American Sprint, SSB 0000Z-0400Z, Sep 19
North American Sprint, RTTY 0000Z-0400Z, Oct 10
CQ Worldwide DX Contest, SSB 0000Z, Oct 30 to 2400Z, Oct 31
ARRL Sweepstakes Contest, CW 2100Z, Nov 6 to 0300Z, Nov 8
WAE DX Contest, RTTY 0000Z, Nov 13 to 2359Z, Nov 14
ARRL Sweepstakes Contest, SSB 2100Z, Nov 20 to 0300Z, Nov 22
CQ Worldwide DX Contest, CW 0000Z, Nov 27 to 2400Z, Nov 28

PVRC welcomes new members:

W3ADC and W3ADX, John and Nathan King, and N6WHB, Patty Green
N3ST, Bryan Dorbert and K9QQ, Brian Maves
NR4M Open House

From NR4M: K4JA, W4MYA and I agreed to host this annual open house. This year it’s my turn.

The lunch will be home-made pork barbecue, with all the fixin’s, cooked on site, prepared by a local “barbecue guru”, Hillbilly Harry. There will be no cost for this meal. Just please let me know if you will be attending, for food ordering purposes. Lunch served noon-ish. Drinks also provided.

Good chance for those of you outside the DC area to meet other PVRC’ers. QTH is located 15 miles west-southwest of Fredericksburg in northern Orange County, VA. For whatever it’s worth, the location is about at the geographic center of the PVRC area, convenient from both I-95 (Exit 130) and US 29 (Culpeper exit).

Directions:
From I-95: Take exit 130 west about 12 miles to route 20 and turn left. There will be a Sheetz gas station and a McDonalds on the left corner. Hard to miss. Go 5 miles to the Exxon on the right. Turn right onto route 611 (Zoar road.)
Go a quick 1/4 mile and turn right onto route 614 (Governor Almond road.) 6480 is about 1/2 mile on left.

From route 29: Take Culpeper (route 3) exit and go east about 18 miles to the intersection of route 20 and turn right. There will be a Sheetz gas station and a McDonalds on the right corner. Hard to miss. Go 5 miles to the Exxon on the right. Turn right onto route 611 (Zoar road.) Go a quick 1/4 mile and turn right onto route 614 (Governor Almond road.)
6480 is about 1/2 mile on left.

For those who get lost, the number for the goat farm is 540 854 6127. If there are any questions, contact NR4M at nj4f@erols.com.

From the President
By Jack Hammett, K4VV

Accomplishments by PVRC contesters continue to be prominent in the recent ARRL and CQ results. K3ZO, W3LPL, K4JA, NY4A, N4RV, W4MYA, W4RM, and others are in the top boxes setting the pace. We won the club competition for the 10 Meter Contest again, and W3SO took a top spot in the January VHF Sweepstakes. Many other successes are notable. PVRC members and teams continue to demonstrate leadership.

Change continues as K4JA is in transition to another competitive sport and W4MYA is shifting the nature of his efforts. N4RM, K4RM, N3HBX, KD4D and many others are upgrading or rebuilding stations and enhancing their operating skills. Members are taking leadership to deal with BPL challenges and to deal with zoning and emergency communications issues.

Opportunities are all around us in PVRC. Our Newsletter and our Web Site and our Reflector are delivering valuable contributions to our members. The Chapters and Regional units of PVRC are providing leadership to build our membership and fellowship in contesting. Our members responded this year with substantial financial contributions to raise our current balance above $6000. Having discretionary money will help us to do even more in supporting our objectives. PVRC is on the move!
From the Treasurer
By Dave Baugher, WR3L

Thank you for the exceptional response in donations to the club. Here is where most of the donations are used yearly, not necessarily in this order:
Newsletter circulation — postage, envelopes, copies.
Insurance — liability for events such as field day and meetings.
Club awards
Christmas meeting plaques and awards.
CQ and ARRL plaques.
Donation to ARRL BPL fund.
Donation to ARRL educational fund.
Donation to the church for Maryland meetings.
Web registration.

All member donations are recorded and will be kept confidential. If you have any questions concerning your particular donation or general treasury information please don’t hesitate to contact me by email to dave@wr3l.net or by packet telnet: wr3l.net.

Editor’s Note
By Pete Smith, N4ZR

This is the first issue of the new contest season, so it seems like a good time to try an experiment. The text in this issue is one point size larger than before. I hope it will be more comfortable for those reading the Newsletter on paper, or at 100 percent magnification on a computer screen at 800 x 600 resolution. It does cause about a 5 percent reduction in the amount of content per page, though. Please let me know what you think.

The Toolbox
By Don Daso, K4ZA

So, I’m talking to one of the locals, who’s telling me about his plans to “refurbish” some 25G tower sections—he’s planning to sand and paint them before installing same—when the conversation veers toward air tools. He’s very proud of his air tools, which he intends to use to sand the tower, although he admits it’s not as fast as he’d like. I ask to see his setup, as I’m afraid he’s wasted some money, but is about to waste some time.

Home shop compressors vary widely. Most stores are not staffed by sales folk who can truly tell you want you NEED, based on the work you intend to do. So, here’s a sort of “Compressors For Dummies” introduction. Consumer compressors consist of a motor, a pump, a tank, an unloading valve, a pressure relief valve, and a pressure switch. Ancillary items can include: a pressure regulator, a tank drain, and a tank stop/shutoff valve. There are basically two designs for these—horizontal or vertical tank, with the pump/motor mounted on top of the tank. Vertical systems take up less floor space, and are intended to be left in place. Horizontal systems can be rolled around more easily.

Oil-less compressor pumps are connected directly to the motor. They’re usually noisy, and not very efficient. But they are cheap, and are often a first choice where high duty cycles and lifespan are not major considerations to the buyer. As their name implies, no lubrication is required. Incoming air passes a simple filter, but the crank assembly and the bottoms of the pistons and cylinders are exposed, so whatever dust/dirt is in your shop’s air will eventually deteriorate the pump or seals. It’s usually cheaper to replace than fix such compressors.

Belt-driven compressors have a separate motor driving a reciprocating compressor, usually through a V-belt. These are quieter and more efficient, and the crankcase is sealed. The vulnerable part of any compressor is the valves, so a valve and gasket replacement kit is a good investment. If a belt-driven compressor fails, replace-
ment parts are not only cheaper than replacing the whole unit, it’s usually easy to work on.

The pressure relief valve (sometimes called a “pop-off” valve) is designed to open if tank pressure exceeds a safe working level. Compressed air should be treated like a potential bomb, so exercise the pop-off valve at least once a year.

The unloading valve works to prevent the compressor does not have to start working against tank pressure. That’s the PSSSSSSsssssssssttttt sound you hear once your compressor shuts down—the unloading valve is “unloading.”

A popular misconception is that a large air tank (the reservoir for air) will offset an undersized compressor. Another error in thinking is that you really don’t have to drain the tank (the valve is usually hard to reach, after all). But you should do this after every use. Otherwise, water will collect and rust, and eventually the tank will develop pinhole leaks, which can, of course, be dangerous.

Tool choice and use should dictate your selection. Most any small oil-less compressor will work for a nailer, or to pump up your tires, or to sandblast rusted parts. But move to spray guns or rotary tools, the simple, homeshop compressor fails to meet your needs.

It’s just this simple: EVERY rotary tool is incredibly inefficient. Typically, they require 5 HP of compressor power to generate ¾ HP of tool power. If a sander says it requires 5-6 CFM @ 90 PSI, you should count on 9-11 CFM of actual air consumption. Traditional wisdom says your compressor should be twice your largest air demand, so you’re now talking about an 18 CFM compressor to run that sander. Around the 3 HP compressor point is where thermo-dynamic efficiency kicks in, and two stage compressors are more economical. But be careful—a two-cylinder compressor may not be a two-stage compressor (the cylinders may be in a V configuration or side-by-side). Again, the simpler shop compressor, run continuously, will fail, usually earlier than you think.

So, what’s this mean for the average shop? The Sears oil-less two stage compressor will not adequately power rotary tools. Yes, it’s a true two-stage compressor; yes, it will pump up to 175 PSI. But once you put that rotary sander under load, the compressor cannot keep up. What my friend really needs is something like the 5 HP Ingersoll Rand compressor (two stage, with a 60 gallon tank), on sale at Home Depot for $899. A far cry from the $299 unit he’s got in his garage.

And of course, the simpler truth is that sanding the tower is probably not a good idea. A simpler and less labor-intensive approach would be to use a paint designed to “convert” the rust (none of which is structural in nature, anyway), and then paint the sections with a quality topcoat of paint. I’ve had excellent results with Rustoleum’s rusty metal primer, for instance, followed by their topcoat paint.

What's in your toolbox??

Under the Hood -- The New 5M Web Pages
By Anthony Brooks, WM3T

I have always been a number junkie, so taking on the 5M calculation was a natural progression. When Pete, N4ZR said that he would like to be relieved of the duty in 2003, I gave it some serious thought. After some discussion with Pete about it, I took the challenge. Pete sent me some great information about the process with which he had been using to get the normalized scores and generate the web pages associated with the data.

I don’t want to bore you with a step-by-step rundown of how Pete had been producing the score tabulations, except to say that it was quite labor-intensive. I found that I was spending about an hour per contest to take the
data from text email to webpage. The time consumption would cause me to wait until I had a couple of contests to add before doing any calculations. If after I did the calculations and getting the website updated, a late score would inevitably be turned in. That is when I would have to spend another hour on that contest getting the one score into all of the places that it needed to be.

I started looking for ways to improve the web page generation, cut time required for updates, and improve the time it takes to view the webpage. I also wanted to add some capabilities that were not possible with static pages. One of the best solutions that I came across involved PHP (Hypertext Pre Processor) and MySQL (a database server backend). With both of these, I could create search routines based on criteria chosen by the visitor. The major projects involved with making the switch were:

1. Learning PHP and MySQL.
2. Transferring data to the MySQL database.
3. Writing the PHP scripts to parse the data in the database.

I was able to pick up the coding quite quickly, which made the transition take less time. I am still working at getting all of the historical data into the database. I have been using the new process for a couple of months now.

Now, when results are posted to the reflector, I still import it into Excel and do the normalization. From there the process is completely different. I append the new data to the MySQL table that all of the searches parse. From this point, the data are available on the web! No special formatting is required to create the web page, because all of the formatting is done by the script that performs the search. To calculate the Year to Date table, I import the contest results into MS Access and perform the correlation and export to Excel so calculations can be performed. After the Year to Date calculations are done, I dump the data into the YTD Table in MySQL and import the new data. The new data are now searchable without any other intervention by me. A contest now takes approximately 15 minutes to go from email to web page! When a late score is submitted, I only have to add that score to the various tables, which only takes a few minutes. The big benefit to the switch is that the Year Total, which has more data, is down to around 140k. To view the table over dial up is no longer a “click and go make a fresh pot of coffee” type of affair.

If you haven’t looked recently at the Search page for the 5M Results, here are the current search routines:

1. All contest scores for a particular call, in a given year or overall.
2. The reference score for an individual contest.
3. Results for a contest, sorted by callsign or score.
4. Historical scores for one station in one contest, for example WM3T scores in the ARRL SS CW Contest.
5. Year to date standings sorted by callsign, current year total descending, cumulative 5M total descending.
6. From the year to date standings, you can view stations who have qualified for the 5M Award and those who are within 1,000,000 points of achieving the Award.

I hope I have given some insight into the what is required to maintain the 5M statistics. I enjoy doing the calculations for the PVRC and I am always open to suggestions to improve the 5M pages.

Errata

From Fred, K3ZO — “I do hope however that you will take note of the errata in my column. That's the part where I said that W5's are worth the same point value in the IARU as are Europeans. Is my face red! N9RV was the one who noted the error to me, which illustrates that the Newsletter does get read far and wide thanks to its presence on the Web site.”
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!

Don’t forget the ARRL September VHF QSO Party and the VHF Sprints

QSO Party:

1. **Object:** To work as many amateur stations in as many different 2 degrees X 1 degree grid squares as possible using authorized frequencies above 50 MHz. Foreign stations work W/VE amateurs only.

2. **Date and Contest Period:** The second full weekend of September. Begins 1800 UTC Saturday and ends 0300 UTC Monday (September 11-13, 2004).

7.1.6. Top scoring club in each club competition category will be awarded a gavel.

Complete rules may be found on the ARRL Web Site: [http://www.arrl.org](http://www.arrl.org)

VHF Sprints:

VHF Fall Sprints--CW/Phone/Digital--sponsored by the Southeastern VHF Society as follows: 144 MHz--7 - 11 PM local Sep 20; 222 MHz--7-11 PM Sep 28; 432 MHz--7-11 PM Oct 6; Microwave--902 MHz and higher--6 AM -- 1 PM Oct 16; 50 MHz--2300Z Oct 23 - 0300Z Oct 24. Fixed and Rover categories. Exchange: Grid Square. QSO Points: 1 pt/QSO. Score is QSO Points x Grid Squares, score each sprint separately. Rovers all grids worked from each grid.

For more information: [http://svhfs.org/fall_sprint_rules.htm](http://svhfs.org/fall_sprint_rules.htm). Logs must be emailed or postmarked within four weeks of the contest. 144 MHz logs to ottf@wbia.net or Ottmar Fiebel W4WSR, PO Box 957, Hayesville, NC 28904, 222 MHz logs to k4sz@arrl.net or Bob Lear K4SZ, PO Box 1269, Dahlonega, GA 30533. 432 MHz logs to w4kxy@arrl.net or Jim Worsham W4KXY, 1915 Oak Wind Lane, Buford, GA 30519-6766. Microwave logs to rover@wireco.net or Greg Robinson KB4NVD, 208 Dogwood Acres Rd, Hampton, and TN 37658-3348. 50 MHz logs to wa4njp@bellsouth.net or Ray Rector WA4NJP, 3493 Holly Springs Rd, Gillsville, GA 30534.

I guess great minds come to similar conclusions. I wrote about rovers in the June PVRC Newsletter, and independently Gene, W3ZZ, chose the same topic for his July QST column. I think that fact only serves to emphasize the importance of the rover stations in VHF and above contesting.

Since the Rover is so important to the activity level in VHF and above contesting, what can we say about those hardy souls that set up mountaintop-portable stations? Several years ago Owen Wormser, K3CB (the Radio Amateur formerly know as K6LEW) presented a brief look at the contest efforts of the Delmarva VHF and Microwave Society’s Grid Pirates Contest Group, operating as K8GP from Spruce Knob, West Virginia. A lot has changed with the DVMS/GPCG operation since that article was published, so I thought it was time to revisit this group’s contesting efforts and the Grid Pirates’ contribution to PVRC club competition efforts in the VHF arena.

When this group started out there wasn’t much thought about how our efforts might impact club competition (the ARRL January VHF SS was the only League-sponsored VHF club competition at the time). However, the group membership has steadily expanded to the point where on the order of 80 percent, typically, of the operators in any given contest are also members of PVRC. So it is natural that the scores from DVMS VHF contest
efforts are contributed to the PVRC club scores.

At the time the group was organized, for the January 1994 VHF SS, the membership consisted of four “core” operators and some “interested parties.” The progenitor of the group is Ken Ramirez, N4UK (the Radio Amateur also known as WP3X and formerly known as KH2F, KP4XS, among other call signs Ken’s held). Ken recruited me, W3ZZ, Terry, K8ISK, and Rol, K3RA as the core group. I handled 222 MHz, while the others covered 6, 2 and 70 CM (I don’t remember which did which). Ken and Frank Cahoon, N3HIH were the “fill” operators. Thanks to some ingeniously designed brackets by K8ISK we were able to employ existing parking-lot lighting poles as swing-up-mast mounts, resulting in very usable and effective “towers.” Combined with a couple of pushup masts on Ken’s camping trailer, we had a very reasonable mountaintop operation. The first QTH for the group was Clear Springs, Maryland.

Fast-forward to June 1997; “lady luck” stepped in when Dick Fowler, N8FMD, long-time VHF contester from Spruce Knob West Virginia retired from VHF contesting, and the DVMS/GPCG become the “inheritors” of arguably the best VHF and above site on the East Coast. Dick’s converted 1973 school bus purchased, and the Grid Pirates began their Spruce Knob period, which continues today.

The equipment used in the June 1997 outing was a conglomeration of rigs, transverters and power amplifiers. The Blue Bus, as the former N8FMD bus became known, was the R&R vehicle, as well as home to the 222 MHz and up stations. The other bands, 6- and 2-meters, were operated from the War Wagon (the 15-passenger Dodge Van in the foreground) and K6LEW’s Dodge Truck.

K8GP easily captured 1st place un the Limited Multi category, but the group’s intent was to build a station which would be competitive with the perennial Unlimited category winner of the June and September Contests, W2SZ/1.

In late 1998 another used school bus was purchased and the result was a platform for two operating position per band for 6- and 2-meters. This beauty became know affectionately as Big Red. Over the fall of 1998 and spring of 1999 Big Red underwent a significant face-lift, beginning with the outside paint job done by Sonny Merriman, and culminating with the construction of four bunk beds, an operating table and carpeting.

[Because of space considerations, the rest of the article will appear in next month’s Newsletter.]
**Around The Club**

*News from the regional chapters*

**Central Chapter Meeting Schedule**

**September** - Temple Hills, Monday, Sept. 13, 7:30 PM
Dinner before around 6 PM at Topolino's for those interested

**October** - Vienna, (hopefully at Anita's), Monday, Oct. 11 7:30 PM
Dinner before for those interested

**November** - Temple Hills, Monday, Nov. 8 7:30 PM
Dinner before around 6 PM at Topolino's for those interested

**December** - annual holiday dinner, Monday, Dec. 13, location and time to be announced

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**Fowlfest 2004** — N3OC presiding. It was mentioned that K4VV was working on his new tower.

Two visitors were present: Bryan, N3ST and Brian, K9QQ. Both visitors were voted into membership by the end of the meeting. N3ST was instrumental in helping N3OC with his recent station set-up. K9QQ is visiting the DC area for the next few months.

The next “big” meeting of the year will be the NR4M open house on September 18.

N3OC addressed the upcoming changes in Newsletter distribution. Check elsewhere in this issue for details.

Our treasurer, WR3L, gave a brief report. The summer’s mailing to the membership received an enormous response. Previously the Club treasury averaged $1500. But after receiving contributions from over 180 members, the treasury now stands over $6000. If members have any ideas for utilizing treasury funds in support of the Club mission, it was suggested that members contact K4VV with their thoughts.

The group assembled thanked our host, W3YOZ, for his hospitality. Thankfully the major rain held off until after the festivities had concluded.


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The **Over the Hill Group** met at the Holiday Inn In College Park, Maryland on 30 June 2004. Those attending were Brian, N3OC: Robert, W2BZR; Fred, K3ZO; Gene, W3ZZ; Howard, W6AXX; Cliff W3CB; Ron K3RO; Tony, K3WX; Ben, AA4XU and Bill, W3AZ. As usual, discussions ranged from amateur to BPL to politics and other related items. One item of note was the web page of the Radio Marine Museum in California that W3LPL found and had informed some of the members about it. It was about KPH which started in 1903 as PH in the Palace Hotel and closed down in 1997 with the cessation of CW. It was one of the shore stations in the ship-shore communications service. They now use the Call W6KPH. The web page is www.radiomarine.org. Click on the link KPH Project after the message form. Also, the other links are worth reading. Save yourself plenty of time to cover everything. It brought back the some of the sounds of the cw signals of the 1930's to this writer.

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The **Over the Hill Group** met July 28 for lunch and discussion at the Park Bistro Restaurant in the Marriott Hotel in Falls Church, VA: Attending were W4RX Jim Ahlgren, W3ZZ Gene Zimmerman, W3AZ Bill Leavitt, W4RW Floyd Martin, N3JT Jim Talens, W3YY Bob Peterson, K3ZO Fred Laun, K6ETM George Sinclair, K5VRX Roger Stephens, AA4XU Ben Shaver. The next Virginia meeting will be held the last...
Wednesday in September. All PVRC members and their guests are welcome.

The **NW Region** met at the City Buffet in Frederick, MD on 20 July 2004. In attendance were K4VV, W8ZA, W3TEF, W3BTX, N4MM, K8OQL, N8II, KA3UBJ, W3IDT, K3STX, W2CDO, WN3R, W3EKT, K2PLF, N6WHB, N3UM, W0YR, W3ADX, W3ADC, N3VOP, K3ZO, W3ZZ, KC3EK, N3YDT, N3HBX, and W3LL.

Regrets: WQ2M

Announcements:  W3LL, Bud: N6WHB, Patty Green, attending her second meeting was voted into PVRC. Congratulations Patty! This was the first meeting for WN3R, W3ADX and W3ADC. N3VOP, Mike provided contesting background for both W3ADX, Nathan and W3ADC, John.

N3VOP, Mike announced the Carroll County Tailgate Fest will be held at the Ag Center in Westminster on 15 August. N4MM, John reminded us of the 25th anniversary Berryville VA Hamfest on 1 August. Lots of good food, AC building and lots of shade trees. N3UM, Ben advised the recommended changes to ARRL VHF contests can be found at www.contesting.com. Choose the VHF Contesting button then to the archives with 20 July date. Don't look for too many changes. N3HBX, John updated us on the January VHF contest issue. Early score postings to the robot were filed with the 2003 January VHF contest scores. This resulted in some 2004 January VHF contest scores not being published in QST. This was not noticed until John queried Dan Henderson on the whereabouts of his score. John also discovered it was not possible to cross check the robot logs in California with those at Headquarters. KC3EK, Glenn announces that KC3EK is back into contesting after a five year absence. Glen demonstrated the danger of using a split pulley vs carabineer.

From Around the Table: K4VV, Jack let us know there's a lot going on in PVRC during the slow season. Antennas and towers are going up, inactive people are coming back, young people are coming in, new people are moving into the area - all resulting in new talent adding to the strength of PVRC. A few people in the club put in a lot of time and energy on the BPL issue. Those that did really did a significant service for both the club and amateur radio. While our voice may not be dominant, we add to the chorus. We made some very creditable comments. Jack passed around the PVRC initial filing to the FCC done on 03 May. A well done document with a lot of effort going into it. Very professional compared to submissions by other organizations. PVRC reply comments were submitted towards the end of June. This filing applauds the good comments made by others in their initial filings and boos the bad comments. A lot of people were involved; W0YR Mike did the labels for 120 copies to key persons by name in the FCC and NTIA. Both filings can be found on the PVRC website. The FCC is showing signs of having heard the message. Mr. Powell in some of his speeches has included the need to take care of this interference issue. It's going to take more energy and evidence of compelling situations to use as leverage. With the slow summer season, it's great to see a meeting so well attended as this. Fowl fest is coming up which is a good one and the real contest season will soon kick off. Jack is continuing to work on his antenna and tower project. He hopes to have towers up with some antennas on them for the contest season. Jack has been using the HFTA program. This is the improved version of the Terrain Analysis, TA, program which is bundled with the new antenna handbook. N4ZR was a beta tester and has done a lot with it. He helped Jack and a lot of others with trial runs of their antenna positioning with respect to local terrain. This program was developed from a military line of sight targeting program. The program inputs are the GPS position of the tower site, local terrain, elevation of antennas along with a menu pick of antenna description and configuration such as stacks. The tricky part is getting local terrain data from the internet. The output is a plot which can be chosen for every five degrees around the compass. Using the data, it's easy to compare alternative iterations. Jack showed, after the meeting, examples of the program output.

Updating of PVRC bylaws remains a work in process with activity expected to pick up after the summer lull. The bylaws reflect one club in the DC area with Central control which is no longer true. The voting clout of the members needs to be broadened to provide an equal voice in changing what we do. Membership requirements need to be simplified to relax the two meeting requirement. A sponsor who works with a prospective candidate
to help them be effective in contesting may be an option.

We have an issue with the mailed version of the newsletter. After the next issue the mailed version will fade away unless someone steps up to take over the mailing. Very few active members want the mailed version. W8ZA, Bob added a number of PVRC stations to his Field Day log. His XYL let him out of the house on her birthday to attend tonight's meeting.

W3TEF, Roy brought us up to date on the W3SO VHF contesting station. A sixth tower has been installed. Phasing lines from C3I remain to complete the 6 meter antennas. The station has been in the top five the past several years. However, after four years they won the limited multi category- APPLAUSE. In the CQWW contest they made about 500 Q's and 120K points under difficult conditions.

W3BTX, Bob worked three new countries on 6M and now has 30 zones confirmed. When Bob applied for a tower permit last year in Altoona he had to educate the board on what amateur radio and towers were all about. They remembered Bob last month by giving him an appointment to the board. His official duty is now reviewing and modifying the requirements for antennas, towers, and other items of that nature. The rules went from 35 feet to a minimum of 150 feet in the city with special variances to 200 feet. Bob next intends to educate the zoning board about BPL. He is in the process of gathering BPL documents to use in changing city codes. W3ZZ, Gene interjects that PEPCO has shut down their demonstration project and will not pursue this further unless a third party will put in all the upfront money and take all the risks.

N4MM, John received a call from a Republican Committee woman wanting a rating of Bush and Chaney. When he told her zero, he got to explain the hazards of the BPL position and why he and 600K hams were unhappy. This is another way to get the BPL message out. John was in the WPX CW contest (300/400 Q's), the June VHF and CQ VHF contests. Little activity was observed in the CQ VHF contest. Marty Laine and Mike Stahl will be operating from Aves Island on 6M starting on 28 July. John has five prop pitch motors for sale - $30 as is.

K8OQL, Jerry has little to report because he has been everywhere but home this summer. N8II, Jeff made 350 Q's in the WPX CW contest in the low power 20M single band category. He was on Saturday in the CQ VHF contest. Jeff recently went to the outer banks and operated 6M from FM26 using a two element W8JK and 50W. He was able to include some DC area PVRCers in the 125 contacts made on Sunday. N3UM, Ben was in the WPX CW contest making 2M points in triband & wires class. He was on in the June VHF contest and reports very low activity in the CQ VHF contest. Ben was drafted into the W3AO Field Day operation and given a battle field commission to 15M CW band captain when some PVRC stalwarts couldn't make it. He had a ball on 15M. He made a few hundred contacts noting the very short skip encountered.

KA3UBJ, Miriam is back in the area after a couple of years in New England. She plans to operate some contests with her dad W3IDT. W3IDT, Bob has been busy buying Miriam and her sister a condo to live in. Bob also received a field commission an hour prior to the start of Field Day to run 15M phone. He had an eight hour blast making 700 Q's. Bob also noted the short skip condition on 15M.

W2CDO, Peter for the last twelve weeks has had to deal with all the difficulties of living in a house under reconstruction. The good news is he now has a separate 20A line for the rig and no dimming lights. He managed to put in a few hours during the WPX CW contest on 80M. With an S9+10db noise level he was grateful to break 50 Q's. In the IARU Peter managed 500 Q's and 147K points on low power CW using wires and verticals. K3STX, Paul worked the WPX and IARU contests with 300 Q's in each using wires. He hopes to have a beam up in the fall. N6WHB, Patty thinks she'd like to operate in RTTY contests. WN3R, Dick plans to have a ham shack on top of the mountain in Frederick within the next year. W3EKT, Ed operated on Field Day. He worked six new countries on 6M during a nice opening. A few days later he managed seven new grids on 2M - as far as west Kansas using tree top high antennas. Ed ordered the SteppIR three element Yagi twelve weeks ago. It arrived last Thursday. He plans to have it in the air in the next week or two. K2PLF, Marty got the Field Day set up detail but no operating detail.
He worked a few stations in the CQ VHF contest on Sunday. This summer Marty picked up six new countries on 6M.

W0YR, Mike asked all to look at page 18 of this month's CQ magazine. It lists the top scores for the 2003 WW DX SSB contest. N8II Jeff is one of eleven PVRCers listed in the top scores page. Jeff also won low power all band USA in that contest - APPLAUSE. Mike read off the calls of the eleven PVRCers noting that this is one hell of a club guys. Mike encouraged all to get in the WAE contest. Learn how to send QTC's before the contest. Most contest programs make this easy. The Europeans are adept at receiving QTC's. Each QTC counts as much as a QSO. A great way to double your score with up to ten QTC's at a time. Mike passed around the new WAE plaque which is beautiful. This contest counts for 5M award credit. W3ADX, Nathan worked the CQ VHF contest this past weekend and is having a blast on 6M. W3ADC, John made 145 Q's and a score of 6956 in the CQ VHF contest. Four of the five members in John's family are licensed. The ten year old may have his by summers end. N3VOP, Mike and Clint W3ARS will set up a special event station at FARFEST with a rig on each band. After 2PM they will revert to full contest mode for the following 33 hours. Mike was in the IARU contest with about 60 Q's. He had 19 Q's in the CQ VHF contest. Mike worked a grid on 6M, EL99, that he never heard before. He also worked Ed, K3IXD at lunch time from his mobile. K3ZO, Fred had a lightning strike on 17 June. The storm stayed overhead for about three hours hitting the main tower three times. Fred managed to get into the IARU in mixed category and remains in third place. If he entered CW only, his 1.1 M points would be out of the top ten. N9AG, who is leading the mixed category class, made only one phone contact - he must have decided to get into a category he could win. With damage to his VHF gear, Fred managed to cobble together 15 watts on 2M for the CQ VHF contest. He learned how the other half lives by working 17 stations in this contest. The 06 July VHF opening may result in the all time greatest 2M opening in the history of ham radio. What tipped him off to the opening was the FM broadcast band full of white noise due to so much co-channel interference. He worked three stations in the Midwest with 2 watts.

W3ZZ, Gene noted that in Europe there have been some monstrous E skip openings this year. One in June lasted eighteen hours. In Japan this may have lasted an entire week. On 05 July there was an opening between our area and Newfoundland. On 06 July Gene received a robot email alerting him of an opening on 6M which resulted in 42 contacts. This was followed by the largest 220 Mhz opening in history with over 100 contacts reported. Gene plans to map these contacts. On 09 July there was an even better opening out to 1399 miles away. Gene has been testing an Elecraft 2M transverter kit for ARRL. He finished the write-up yesterday. Connected to an FT-1000MP it sounded like 20M with the skip rolling in. At $350 this transverter rates up there with the newest DEM and the SSB Electronics but a lot cheaper.

The Grid Pirates were operational in June minus one 22,000 lb blue bus. It may run one last time in September followed by $8K for a new bus. K8GP scored 750K points in limited multi category and is apparently the top score. If the microwave log was submitted, a second place finish would be likely. If all ARRL rule change recommendations are adopted, most people will see little change. Differences include a limited single op category on any four bands. There will be rule changes of some sort to be defined later which will eliminate grid circling by roverers. There will be no captive rovers. These changes should increase participation.

KC3EK, Glenn has been off the air since late 1998. He retired early and is now living in PA. Glenn is used to contesting in any mode. He uses his 432Mhz handheld to communicate on his property because the land is higher than the cell phone towers. N3YDT, Jim had to rewire his satellite system because the Alfa Spid rotor turned two times around tearing the cables off the antennas. The new Echo satellite (AMSAT-OSCAR 51) went up a few weeks ago. It's being commissioned and is expected to be ready for general operation in about two weeks. It operates on 2M up and on 440Mhz down in addition to other channels. It was launched into a perfect orbit by an old ICBM missile from Kazakhstan. Communication through the satellite can be easily accomplished with a hand held FM transceiver.

N3HBX, John operated Field Day from his barn on emergency power. In the IARU contest John reported miserable conditions into Europe until 4PM. For most of the day there were two domestic contests going on, one in the US and one in Europe with little interaction with each other.
John ended up with 1400 contacts mostly from the US. His score was way down from last year due to the lack of multipliers. John also reports participation way down in the CQ VHF contest. He had 400 contacts and a score of 50K points in this contest. W3LL, Bud was in the June VHF contest, attended the W3LPL open house and did Field Day from the comfort of his home with an emergency generator running outside. In the IARU contest he managed about 200 Q's on low power SSB with wire antennas. — W3LL Bud Governale, Chairman

The NW Region met at the City Buffet in Frederick, MD on 17 August 2004. In attendance were W2YE, W8ZA, K2UOP, N4MM, K8OQL, KT4W, W3ADX, W3ADC, N3VOP, K3LP, K2PLF, N3KTV, N3HBX and W3LL. Via EMAIL: NE3H

Announcements: W3LL, Bud: Nathan, W3ADX and John, W3ADC (sponsored by Mike N3VOP) both attending their second meeting were voted into PVRC. Welcome aboard John and Nathan! NE3H, Joe announces via Email he is going on an IOTA Dxpedition to the Pescadores Islands. Operation will take place on 27 - 29 August using callsign BV9A. Antennas will be set up in the yard of City Hall. Joe has been assigned CW duty.

From Around the Table: W2YE, Dick made 28 contacts in the MD/DC QSO Party in between working occasional DX and grid squares on 6M. W8ZA, Bob spent $631 on 27 pieces of aluminum tubing at Dillsburg in preparation for antenna repair work. Bob announced he is retiring effective 31 December - APPLAUSE. K2UOP, Tom lost his dad in March. He spent seven weeks there taking care of family affairs. His wife brought up an FT817. With a long wire strung between front and back upstairs bedrooms he worked South America, the Caribbean, Europe, JY9 and a few contests. Tom received certificates from CQ for winning West Virginia on 160M CW in 2002 and 2003. He also saw reported in CQ his eighth call area first place finish in CQWW CW and second place for SSB - thanks to 'ZR and 'II for being on another band and low power. Tom had 300 Q's in the WAE contest and plans to be in the SSB portion. He also plans a few hours in the VHF QSO Party at the end of the WAE contest. N4MM, John had 132 Q's after working a few hours in the WAE contest. John still has a few $50 prop pitch motors for sale.

K8OQL, Jerry reports he hasn't done anything that's of any interest to anybody. KT4W, Ray is the author of the new N3HBX tower site location report. The complaining farmer, Mr. Allnut, is frequently in the media and personally knows the reporter. Ray has been keeping in touch with his mentor N4RV who is under the weather with regard to contest scoring procedures/penalties. A roundtable discussion followed on scoring/logging/penalty tales.

W3ADX, Nathan, age 16, is using the 6M dead time to study for his upgrade. W3ADC, John along with Clint W3ARS will be mountain top contesting this weekend. N3VOP, Mike's friend, is going to the Outer Banks this weekend and will be operating QRO on 2M and 432 SSB from grid FM25dn in Waves, NC using a 3 el dual band antenna. Hurricane Charley put a damper on the Carroll County Tail Gate Fest. Attendance was down by two thirds resulting in a small profit. Mike and W3ADC built 6M J poles the night before the tailgate Fest and W3ADX along with Clint were putting together wire dipoles for the MD QSO Party special event station. Mike will be in the NAQP this weekend. Mike and Clint will be setting up a special event station for Farfest followed by entry in the ARRL VHF QSO Party on 6M, 220, 440 SSB and FM.

K3LP, Dave thanks everybody for working him from 3D2, T30LP, T33C and T33LP. Dave lost 40 lbs during the trip. FM5UQ was 1st in NA and 2nd in the world in the ARRL DX CW contest. Both Jeff and Steve were incredible. Upcoming trips are FS5UQ in February for ARRL DX CW. Dave along with WX3B and N3SB will be in FM5 for the WPX CW contest. From August 27 thru 15 Sept., Dave will be in Italy visiting several of the islands including Greece and 3A/Monaco. This is a family cruise vacation. Eight month old Ryan Austin Collingham is the new addition to Dave's family. Note the initials RAC - Radio Amateur Club. K2PLF, Marty wanted to know how to get the packet cluster into CT using NET. Marty spoke with Art, W3KHZ / VY2MM periodically on the 2M PEI repeater, VE1ZX, using Echo Link. Many PVRC'ers worked Art on 6M over a 3 hour period. Marty tape recorded this opening. The FT1000MP is back from the Yeasu hospital and seems to be working ok. The repair to the power supply section cost $276. Marty put the Inrad filters in the FT847. Between the filters and removing the 6M link, working 6M is now more enjoyable. When the Quadra went into
the Yeasu hospital, Marty entered the CQ 160M contest in low power and received a 2002 or 2003 certificate for winning Maryland low power. Marty will be going to PJ2T for CQWW SSB. N3KTV, Jim reports the W3AO field day operation was the largest on the NA continent. A fourth district ham taped the operation from start to end using a 3/4" video machine for CD production. This ham also wants to tape Frank's house and ND3F's rover mobile. Ten rocket launchers, Maurice's super duper VHF trailer and Brian Skutt's 30 band - 30 radios DC to daylight mobile unit was too much for the video ham. He used about 30 boxes of canisters before the end of field day. Jim's daughter operated the GOTA station. She wanted to work states which was a perfect goal for field day. She made about 100 Q's in about two hours on 15M. What irked her was when a guy, after working her, called QZ on her frequency. She called CQ right back - he wasn't getting my frequency! Jim couldn't figure out why the poles were not going down in a straight line. He was using a compass for alignment but later determined the ground had iron septic pipes running underground which affected his compass. Jim passed around tower bolts as part of show and tell. The grade three bolts were rusted in two in the center. The outer ends looked good. Apparently Rohn tubular leg towers accumulate water which rust out the bolts from the inside when sediment/dust clogs the lower drain holes.

N3HBX, John receive three certificates from CQ for 2001, 2002 and 2003 made out to N3HBX, "Ruth Jones". John gave us an update on his new QTH situation. John had been looking for over a year for a new QTH. The restrictive change to a 75' tower height eliminated Loudoun county. John's requirements were level land, his wife's approval and no power lines (a 256 KV line runs thru his present location making it the bane of his existence). However, his wife always found something wrong with each location. He finally decided his wife was not going to move - requiring dynamite to get her out of the house. This leaves a property with a small house for the station. The property in Poolsville meet all these requirements. The 44 acre lot turned out to measure 46 acres after the survey. A small three bedroom cape is on the property. The lot is level and without power lines. John's bid was accepted with the contingency that a permit be issued for amateur radio towers. The sellers were the Allnuts and related to the farmer. They never mentioned that this was a tight knit community that would resent amateur radio towers. The sale went thru in March. The permit was for fixed towers and had to be revised for rotating towers. This required going thru the Montgomery county review process again which was incredibly tortuous. He spent $8K on PE studies to get the permit with another $1600 before it was all done. John contracted with Norm's to put in the footings for the four 190' towers. Norm started work on these about two weeks ago. That activity alerted the neighbors to what John was about to do. When John returned from England where he had been for 10 days with a family reunion, he was met by literally by a lynching party and is lucky to be alive. John feels he is certain to be sued by these people who are wealthy and well connected. They pulled all the levers all the way up to the state legislature. They are being told John is well within his rights - it's a legal thing he is doing and we can't stop him and they are furious. So John will be hiring his own lawyers next week. Meanwhile, John is negotiating with one neighbor who seems interested in buying him out. But his contingency for loss of use of his hobby, because he doesn't think he will ever be able to get another permit in Montgomery county again, may deter him from trying to buy out John. Norm is supposed to come out by the end of the week to install the K0XG rotating tower bases which are sitting on the footings. Seventeen Force 12 antennas have been delivered and filling up the basement. Matt, KC1XX will come down from New Hampshire with the towers early next week and start putting them up. John is 71 and these are supposed to be the golden years. Building a new station is what he really wants to do. He is maxed out at this present QTH.

W3LL, Bud also received a certificate from CQ. This was for the 2002 CQWW 160M SSB LP MD winner. He worked YV0D, Aves Island just prior to their getting off the island. Tower foundation excavation is scheduled for 29 August with concrete scheduled to be poured on the 30th. The meeting adjourned at 7:55 PM. The next NW Region meeting is Tuesday, 21 September 2004. — W3LL, Bud Governale, Chairman

Carroll County PVRC Minutes, June 5, 2004, by Jim Nitzberg, WX3B. In attendance were members WA3G, N3SB, W3DF, NY3A, K1EFI, K3LP and guests WA3SKQ, N3STZ, K3LP/baby (Ryan). Special thanks to Steve Beckman, N3SB who provided Pizza for everyone

The Carroll County PVRC group was honored to have a special guest speaker for the summer meeting. David
Collingham, K3LP told great stories and relayed important information for any of us considering a serious do-it-yourself DXpedition.

Many of us have had experience going to a resort and experiencing the all-inclusive radio vacation where almost everything is set up and ready to go – commercial power is available and your air conditioned villa provides comfort while you operate. David’s story is exciting, nerve racking, dangerous, humorous and describes in detail how difficult it is to active a rare country (T33C: Banaba) which doesn’t even have a reliable power grid or updated shelter.

David had to contend with a 36+ hour boat ride each way from Tarawa to Banaba and let’s just say that all sailors aboard that boat knew what the expression “chum fishing” was by the end of that ride. Then there were the endless supplies – tons of equipment, food, generators, etc. that had to be carried to the DX island. Mix in the fact that you show up at the beginning of your two week DX-Pedition exhausted, dehydrated, and then the work begins… and you have a prescription for some real radio FUN.

Add in the passionate personalities of the DXpeditioners themselves and somehow, everything gets done, and T33C is on the air with a big signal with many stations for several weeks. A few Carroll County PVRCers even worked David on 160 meters! Make sure you ask David about his experience with guns and his friend Will.

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**Single Op High Power**

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**Single Op Assisted**

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<td>W2DZO</td>
<td>50</td>
<td>48</td>
<td>4,560</td>
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**Operators [non-PVRC in ()]:**

- AC5RR: AC5RR K4VV at K4VV
- KM4M: K4JA AJ3M K9GY KD4D NW4V W3BP WK4Y (RA3CO) at K4JA
- KN1DX: K4ZW
- KO1N: K1KO
- N4CW: N4CW (WA2JKF)
- NG3U: KB3KAQ K3DI (NH7C) at K3DI
- W4WS: W2DZO W4MSG
- WR3Z: WR3Z K3FT N3OC at N3OC
- WX3B: WX3B W2DZO W4MSG K1RH N3YIM W3ARS N3FX N3SB

### CQ WPX CW

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<td>5,302,352</td>
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<tr>
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<td>694</td>
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<tr>
<td>N3JT</td>
<td>865</td>
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<td>1,201,962</td>
</tr>
<tr>
<td>K3JT</td>
<td>895</td>
<td>472</td>
<td>985,536</td>
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<td>616</td>
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<td>W3AZ</td>
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**Single Op High Power**

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**Single Op Low Power**

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<td>48</td>
<td>4,560</td>
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</table>
## CW Logs: 36
## CW Club Score: 71,372,104
## SSB Logs: 43
## SSB Club Total: 54,104,977
## Combined Logs: 79
## Combined Total: 125,477,081

### CW Logs: 36
### CW Club Score: 71,372,104

### SSB Logs: 43
### SSB Club Total: 54,104,977
### Combined Logs: 79
### Combined Total: 125,477,081

## Operators [non-PVRC in parentheses]:
- NY4A: N4AF W2CS WJ9B K4QPL K2AV at N4AF
- WR3Z: WR3Z K3FT N3OC at N3OC
- KM4M: K3TW K4JA K4ZA K7SV KD4D
  - N4GG W3BP W4TNX at K4JA
- KN1DX: K4ZW
- NG3U: W3UL K3DI at K3DI
- W4ML: W4MYA
- NR3X: N4YDU

## Miscellany

By Pete Smith N4ZR

In case they get overlooked I want to call special attention to two outstanding scores in the listings above. Robert, KG4NEP turned in a score of almost 1.9 million points in the Rookie category of this year’s WPX SSB, and Ben, N3UM scored over 2 million points in the Tribander/wires category in the WPX CW. Great jobs, both! This is not to knock the excellent scores turned in by others in the “unlimited” categories but I think it’s important to emphasize how much you can do with a little, or as a “newbie.”

Also of note this month, proud father David, N4JED sent in this picture of his daughter Catherine, KE4EVA operating in her first contest. David reports that he had to arm-wrestle for control of the station in the June VHF QSO Party. Well done, both! David reports that Catherine will be upgrading soon.

This is probably a good occasion for me to make another pitch for material for the Newsletter. I’m particularly looking for human interest, first-person operating stories and technical articles to round out our content. It doesn’t have to be anything either profound, record-setting, or otherwise extraordinary, so long as it’s of interest to other PVRCers.

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Treasurer  
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410-DX1-WR3L  dave@wr3l.net

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**PVRC Charter Members**  

**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.

**PVRC Meetings**

**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.

**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.

**NORTH CAROLINA -- WEST (TRIAD):** 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 -- EAST:** 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).

**OVER-THE-HILL LUNCH BUNCH (VA DC MD):** Meetings are held monthly at three locations: Falls Church VA (Parkview Marriot), Oxon Hill MD, and Beltsville MD. Meetings are announced by E-mail or by telephone. All members and non-members interested in membership are welcome. For information contact Ben Shaver, A44XL, 703-534-4740 or Bill Leavitt, W3AZ, 301-292-5797.

**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.

**SOUTHWEST VA:** Coordinator: David Jones, N4JED, Vinton, VA 540-890-2034, N4JED@aol.com. Meetings begin at 6 pm at the Roanoker Restaurant, Rockville, Virginia in a private room (ask at the desk if you have not joined us before).

**TIDEWATER COLONY OF PVRC**  
bird:  

**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.)

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**Autocall Column Editor** is K3DI 410-757-6706

**PVDXSN Packet Network**

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<td>21221</td>
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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.
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

SOUTHERN MD: Chair: Wayne Rogers N1WR E-Mail: n1wr@chesapeake.net Phone: (H) (410) 394-0313 Meetings held at the home of N1WR.

EASTERN-SHORE (DEL-MAR-VA): Dallas Carter, W3PP 302-875-0550 ludal@dmv.com

SHENANDOAH: Bill Hinkle KV3R kb3aung@juno.com 304-567-3138

CARROLL COUNTY: Jim Nitzberg, WX3B 410-374-9233 nitz@selectsa.com

LAUREL: Pad Reaver W3YD preaver@earthlink.net Laurel Region meets concurrently with the Laurel Amateur Radio club at the first LARC meeting of each quarter.

NORTHEAST: WR3L Dave Baugher 410-DX1-WR3L dave@wr3l.net

ANNEAPOLIS: Dick Wilder, K3DI 410-757-6706

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