PVRC Newsletter
July 2019

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Website: http://www.pvrc.org
Meeting Info: http://www.pvrc.org/chapters.htm
Facebook: https://www.facebook.com/groups/PotomacValleyRadioClub/

President's Letter – Tom K3AJ

Doing Business

This month I would like to talk about how the officers of PVRC do business. PVRC is a volunteer membership organization, so the only authority the officers have is that granted us by the members voting us into office, as defined in the bylaws. Those bylaws, although they surely have their issues (as you know we have discussed and are addressing) are clear on the duties of the officers:

Article III Section 5
The President and Vice President(s) shall be responsible for Club Leadership, including conducting meetings, appointment of Chapter Chairmen, encouraging club activities and participation, and representing the PVRC at external functions. The President shall be authorized to make disbursements on behalf of the PVRC. The Officers are expected to consult and attempt consensus with the trustees before making decisions critical to the future of the club.

And…

Article IV Section 3
The overall management of the PVRC shall be under the direction of the PVRC Officers. The PVRC Trustees are expected to participate in major club decisions, such as Club Contest Selection, Club Competition Boundaries, Club Award Programs, and other major events.

Subject to the oversight of the Trustees (who also have the power to overrule the officer's actions and even remove them if necessary), then, the officers are expected to make decisions and take actions in the best interest of PVRC. So how do we go about doing that?

Building on many excellent operating practices initiated by immediate past president Bud, W3LL, here is how we operate:

- The officers have a bi-weekly conference call. We use an agenda to guide those discussions. We keep track of open action items. We monitor the club finances via a treasurer's report. Our webmaster Bob K4NTO participates in those calls so we can discuss web site updates immediately.
- We share the workload by individually taking on specific initiatives. For example, VP Jay W3MMM took the lead on the nomination of W3ZZ to the CQ Contest Hall of Fame, Secretary Tim N3QE keeps track of PVRC's contest results and leads the discussions about awarding club competition plaques to individual members, VP Mike N4GU has taken on the administration of the PVRC Olympics and Treasurer Dan K2YWE manages the on-line store with Land's End Business Outfitters.
- Most of the real work in PVRC is accomplished by a team of volunteers who keep the wheels turning on their own initiative. To name a few: Alan AA4FU runs the 5M Award program, John K3TN publishes the Newsletter, Bob K4NTO acts as webmaster, Eric W3DQ moderates the reflector and Jim AB3CV manages our Facebook presence. The Chapter Chairs provide direction and organization on a local level, helping to keep a large, dispersed organization connected. We keep in touch with these folks and support them when needed.
- Other members volunteer or are recruited to take on specific or ad hoc initiatives, such as Mark KD4D leading the bylaws update team, Ken KE3X working on an NCJ article about PVRC and Doug AA3S coordinating new member recruitment. Some members step up to "cheerlead" our efforts for big turnouts in important club competition contests. These are just a few examples of a wide range of efforts by a multitude of members. Members stepping up to get things done is a big part of what makes PVRC great!
- The officers work together to review and jointly develop almost everything that gets written down. The Olympics rules, the charter for the bylaws team, the PVRC brochure developed this year and almost every announcement that one of us posts to the reflector undergoes that kind of review. Heck, even the President's Letter for the Newsletter gets reviewed by this team!
- We try to keep the membership updated via the reflector and Newsletter, without deluging everyone with a lot of administrative minutia.
- In keeping with the spirit of the bylaws, we do consult with the Trustees. Although we seldom ask for a vote, from time to time we let them know in advance what we plan to do to seek their advice and input. Some examples from the recent past include an action to suspend a member's reflector privileges, the nomination of W3ZZ to the CQ Contest Hall of Fame (which alas, was not successful, at least not yet!) and of course the launching of the current by laws update team.

We are always open to your ideas and input. If you have suggestions for improvement, would like to participate more, or simply have questions - please let us know.

73 Tom K3AJ

About Those Non-Standard Phonetics – Vic W4VIC

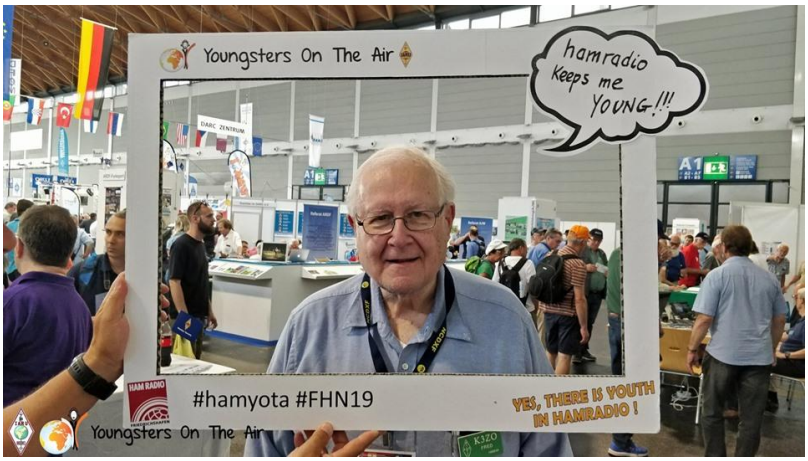
Although I am now almost exclusively a CW operator, there was a time in my earlier days when I practiced SSB with a vengeance. I was, and am, a strong supporter of those practicing the use of standard phonetics. Even the earlier version of what is now considered "proper" phonetics is useful, especially among us more senior -- very senior, in some cases – operators. Or maybe I should say 'contesters' as that is about all I do now that there hasn't been a DX ATNO on the air for many too many years.

Phonetic use is meant to facilitate understanding among several factors detrimental to understanding the spoken words. In a time of near universal DX available to even QRP with Wires contestants, and the very heavy accents of some of the DX aficionados, the use of standard sounds do greatly facilitate correct logging and supports rate in contesting. Standard phonetics should be used in all SSB operations. An example would be Kilo Two Queen Oboe Henry, one of my original call signs.

Sometimes, however, there comes a situation where departure from the rule can bring benefits. I recall in earlier days when I signed K4JNM in a DX pile-up that I was having trouble busting. It must have been a prize location, the particulars long since forgotten, and I was striving mightily to make the QSO. I called and called and called some more. Finally, in desperation, I decided I'd make one more call and then hang it up till the next opening. I off-handedly threw out Kinky For Juvenile Naked Maidens! There was a second or so of silence from the DX op who then said "Who's the Naked Maidens?" Whereupon I flooded him with "Kinky For Juvenile Naked Maidens Kilo Four Juliet November Mike!" Not missing a beat he responded "OK, Naked Maidens, you're in the log.

Am I ashamed of such a tactic? Not for a minute. But I still maintain the opinion that we should all use standard phonetics…

K3ZO Showing His Lack of Age – Dave K3ZJ via Facebook



Fred K3ZO hamming it up at Friedrichshafen this past weekend. Photo courtesy DK6SP and YOTA.

Blue Ridge Chapter Field Day Fun – Mike W4AAW

The PVRC Blue Ridge operated FD as a 2A station as W4YY from the Leesburg, VA VFW site.

Back row, L to R: N4PD, KS1G, unknown, W3IP, W3UL
Front row, L to R: N2LEE, K0ZR, W4AU, N1RM

Portable crankup tower with TA33 and apex of 80M delta loop at 60'

The W4KFC Calls Lives On – Mike N4GU

We are happy to announce that the Clark Memorial Amateur Radio Club is officially W4KFC.

Not long ago, we became aware that the W4KFC callsign would be available. The original W4KFC was Vic Clark, one of the founding members of PVRC and past president of the ARRL among many other accomplishments. Upon Vic's death in 1983, Vic's son Kenneth took over the call. With Kenneth's passing, no other family members expressed a desire to obtain the call.

Because of the close association of Vic with PVRC, many felt that the club should obtain the call for our club call. But PVRC already has a club call, namely W3GRF, the original call of Lenny Chertok, another of the founding members of PVRC. Under current FCC rules, no club can hold more than one club callsign and no individual may be trustee for more than one club call.

As a solution, the current PVRC officers elected to form a new club, the Clark Memorial Amateur Radio Club, to obtain and administer the W4KFC call. The club's goal is to honor the memory and legacy of Vic and Kenneth Clark. The Clark Memorial Amateur Radio Club was founded by the current PVRC officers with Mike, N4GU, elected as president and Tim, N3QE, acting as trustee for the club call. The Clark Memorial Radio Club is a no dues club with membership open to all. We are currently formulating a policy for the usage of the club call but we hope to see it active in events closely identified with Vic, namely CW Sweepstakes, Field Day, and the NAQP's (successor of the old CD Parties).

Inquiries regarding the Clark Memorial Radio Club and usage of the W4KFC call should be directed to either Mike, N4GU, or Tim, N3QE.

W4YE Shows W4KFC's Awards to the SWVA Chapter – Mike N4GU

At the June meeting of the SWVA chapter, Buddy, W4YE brought along some rare mementos. Buddy was a good friend of Vic Clark, W4KFC, and was fortunate enough to be allowed to keep some trophies Vic earned. The first picture is Buddy, W4YE flanked by WM3T (chapter head) and N4GU (PVRC VP), while holding the first ever Wouff Hong awarded by the ARRL to Vic in 1938 as the first recipient of the Hiram Percy Maxim award. The second photo is the W2IOP trophy won by Vic for winning the 1957 CQWW CW contest.

The Attenuation Thread – from the PVRC Reflector

From Pete N4ZR: “Last week at Dayton Rob Sherwood said something that made sense, but I'd never heard it before. What he said was, for best receiver performance you should insert attenuation until band noise is essentially zero, even on the high bands. I tried this during the weekend and was pleasantly surprised. With the attenuator of my K3 on, I could get band noise on 20-10 down to just 1 S-unit, and the resulting listening experience was much more pleasant. I found I had plenty of AF gain, and the biggest problem I encountered was having excellent copy on weak signals, and not realizing that they probably couldn't hear me.

Question:Are there downsides to this approach that I don't realize, or is it in fact good advice? “

Reply from Frank W3LPL: “Hi Pete, I'm not convinced that you heard Rob correctly. Perhaps you could email him to obtain a clarification of his comments. While the method you described may produce one or two dB additional dynamic range, it will always reduce receiving sensitivity by at least a few dB or more. This is what I always tell W3LPL operators and anyone else who might ask me.

Optimum receiver sensitivity requires that external noise exceed receiver internally generated receiver noise by at least one S-Unit. You will lose several dB of receiving sensitivity if you set your attenuator until external noise is essentially zero and several more dB if you set attenuation a few dB more aggressively than intended. During situations when receiver dynamic range is not an issue (e.g., 20 meters at night during the winter when all signals are weak) its best to use no attenuation at all.

Because "band noise" is essentially always high on 160, 80 and 40 meters your attenuator should always be turned on. You should always use more attenuation at night than during the day. Set your attenuator as described above. Because band noise is essentially always low on 17, 15, 12, 10 and 6 meters, you should always set attenuation to zero on those bands. One more important related item that I always tell my operators that has saved their bacon more than once and has caused them embarrassment on more than one occasion when my advice was ignored: When you sit down at your receiver you should first and always use your attenuator to verify that external band noise is dominating receiver noise floor by at least one S-unit. If varying the attenuator does **not** vary the noise floor, there is a serious sensitivity problem caused by improper receiver performance or something in the receiving RF chain between the antenna feedpoint and the input to the receiver. If in doubt, always ask your station owner to verify receiving sensitivity.”

Rob NC0B weighs in: “Hi Pete and Frank, there is no disagreement at all on this subject between Frank and me.

Possibly the confusion is over setting attenuation to raise the AGC threshold about 6 dB above band noise. **The key is band noise, not receiver noise**. We want 6 to 10 dB of antenna noise gain when we switch between the antenna with no signal tuned in, and ideally a 50 ohm termination. Usually an open circuit, at least at HF, is adequate. This can be antenna port 2 if the receiver has that option, or if you have an antenna switch that includes a dummy load that is ideal.

As Frank said, particularly at night, on 160 - 40m I always run attenuation. Certainly, it is less likely to run attenuation on 20m or higher in frequency. If I lived in a noisy urban environment I might well have local noise above AGC threshold.

There are two issues here, one is maximizing dynamic range or minimizing ADC overload with a direct-sampling radio. Out in rural Colorado I would rarely be in an overload situation, but reducing fatigue is the main reason why I use attenuation when appropriate. I don't want band noise to be reading upscale on the S meter."

PVRC Chapters and the Battle of the Potomac Trophy – Mike N4GU

NC East Chapter with the Battle of the Potomac trophy

BATTLE OF THE POTOMAC

WITH THE MALAYS.

Written by one of the Crew.

SWVA Chapter with the Battle of the Potomac trophy

Central VA chapter with the Battle of the Potomac trophy

Cybersecurity for the Shack – John K3TN

Our hobby has always been about connectivity – wiring together radios and power sources and antennas to connect with other hams over the radio airwaves. But hams have always also connected over every other available technology, ranging from postal mail for QSLs cards to telephone calls for rare DX spotting to using the Internet for uploading QSLs to LotW, checking callsigns on QRZ.com, operating remote stations, etc. In fact, it is rare today to find a ham's shack that is **NOT** connected to the Internet.

However, much the way putting up an antenna brings risk from lightning strikes, connecting to the Internet exposes your shack (and possibly your entire home) to attacks from vandals, criminals and even espionage agents that are looking to steal sensitive financial and personal information, or just make headlines by crashing as many computers and networks as possible. Every ham needs to think about protecting their shack from cyber damage with almost as much rigor as preventing lightning damage. Imagine what your XYL will do to you if you lose all those pictures of the grandkids…

Internet Security Basics

The Internet itself is very secure. It is actually all the endpoints (PCs, servers, home routers, WiFi access points, etc) that are vulnerable to attackers! The Internet just carries traffic, both good and bad – it is up to us to make sure our endpoints are secure enough to deter attackers.

To do so, there are a few bits of terminology to understand (many of you can skip this section):

- **Internet Service Provider (ISP)** – Usually a telephone or cable TV company, your ISP provides your connection to the Internet through the ISPs own network. ISPs provide some limited security services for your connection, but users always need to add to that in order to stay safe.
- **Local Area Network (LAN)** – in your shack (and probably your house) you will have multiple devices connected together to form a LAN where services (like printers and the Internet connection) can be shared.
- **Internet Protocol (IP) Address** – every connection to the Internet has a public IP address, something like 108.28.196.217. Your ISP will assign this to you when you start up your service and this essentially acts as your telephone number for connections on the Internet. On your LAN, you will have private IP addresses that look like 192.168.1.11. These are like private extensions on a telephone system – they do not work over the Internet, only on your LAN.
- **Domain Name System (DNS)** – your ISP will provide DNS services that convert human readable names (like www.irs.gov) into computer readable IP addresses (84.106.62.251)
- **Router** – to connect to the Internet, you need a router between your home network and the Internet. ISPs will provide a pre-configured router, or you can usually buy your own and configure it to the ISPs specifications.
- **Wireless router** – some routers contain a Wireless Access Point which allows you to connect WiFi enabled devices, like iPads or PCs with WiFi adapters.

- **Firewall** – a firewall limits connections between your systems and the Internet in order to reduce your exposure to attackers. All routers have firewalls built in that can protect your LAN and all newer PC operating systems have firewall (and other security) services built-in as well.

A Secure Shack Starts from the Inside

There is a truism in security: a soft squishy interior can never be fully protected no matter how crunchy the exterior. A secure shack begins at your PC, or PCs.

Some simple guidelines:

- **Whenever possible, use a supported operating system** – you don't have to always use the latest version of Windows or Apple iOS or Linux but you should always use a version that is still supported by the OS vendor. Windows 7 will be supported through 2020, then Windows 10 will be the only supported version of Windows. The risk of staying on Windows 7 is minor, but really not worth taking.
- **Turn on the security features built into the operating system and browsers** – auto-update for patches, firewall services and anti-phishing/anti-spyware, anti-malware functions (like Windows Defender) should always be enabled. If there is a choice of security levels, go for at least medium, if not high. Use a password for booting up your PC and don't use this password anywhere else – write it down and leave it in your shack.
- **Install an anti-virus program, free ones are fine** – don't waste your money on the high-end programs from the major vendors. Free versions from AVG, Avast, Malwarebytes, Microsoft and others work just as well, and cause many fewer problems in the long run.
- **Break the habit of clicking on links in emails** – the vast majority of malware gets on PCs because someone clicks on a link in an email that really isn't from who it appears to be from, and the link doesn't really take you where you thought you were going. If you can't resist, do it on your smartphone or tablet – not on your PC.
- **Don't believe everything a search engine tells you**! – if you have a problem with your PC or software and do an Internet search to look for solutions, **don't trust all the answers you see!** This especially applies to search for software drivers. Bad guys are very active in perverting search engine results to point to their own "solutions" which will often hijack your browser settings or install malicious software on your PC.

Those five steps will greatly increase the likelihood of your PC getting trashed or your bank accounts being compromised. Now it is time to make that exterior as crunchy as possible.

A Note About Passwords

Phishing attacks succeed by tricking us into giving away our passwords. Reusable passwords are kind of like the deep-fried candy bars of the Internet: we know they are bad for us, there are healthier alternatives, but they are sooo addictive.

Wherever possible, turn on two step verification or other strong authentication alternatives. Use a different set of passwords for your shack accounts than you use for your bank accounts or other important services. Use hard to guess and hard to remember passwords – and write them down and store them in a drawer in your shack somewhere. If you use your callsign as part of your password, mix in special characters or mixtures of upper and lower case – ham callsigns are not unknown to hackers, they show up on cracked password lists all the time.

My personal approach is to have 3 different passwords:

- **Low security**: I use this for all the stupid websites that make me register just because they want to try to send me email. I really don't care if anyone hacks these.
- **Medium security**: most of my ham stuff fits into this area, like LotW and the like. I don't really want these compromised but not that big a deal if something happened.
- **High security**: these are ones like my email, online banking, etc. I really don't want these to get compromised and I'm willing to make this one a bit more complex.

Your Internet Router is Your Front Door – Lock It

The Internet was a friendly place in its early days but all that changed in November 1988, when the Morris Worm was launched from computers at MIT by a Cornell graduate student. That piece of malicious software caused more than 10% of the systems connected to the Internet to crash and resulted in the development of what became known as a "firewall."

An Internet firewall is designed to implement a simple approach to security, with kind of a bandpass filter philosophy: "Block everything unless I specifically allow it." That's fine for simple or very restrictive environments, but in real world use most firewalls are configured to try to limit connections that are obviously dangerous but to allow other forms of access to proceed. A firewall is essentially like the front door to your house, with a deadbolt lock that will keep most attackers out – but not all. Just like that front door – they don't provide security if you leave a window open or your other doors just have spring latches on them.

For most hams, the Internet firewall is built into the router provided by your ISP. The ISP will have given you some documentation with the IP address (usually something like 192.168.1.1) of the router and an administrator access account name and password. **Change the admin account name and password from what the ISP provided and write it down!**

Most home firewalls will give you the options of selecting from high/medium/low levels of security. If you are only using the Internet for email, LotW and web surfing, the High security setting is a good choice. If you are doing remote operating, Echolink, Skype or

anything else, the Medium level of security will allow you to use these advanced capabilities but still stop unsolicited external access. Never use the low setting – it is like removing your front door completely.

All firewalls also allow you to define exceptions to these security policies, both to allow more open access or to be even more restrictive:

- **Access control** – you can restrict the level of Internet connectivity for any device on your network. This can be useful if you have a print server or network disc drive that is only used internally, or to limit what Internet access children's PCs will have.
- **Port Forwarding** – many applications (games, remote operating, Voice over IP) may require a more direct connection to a device on your network. Port forwarding allows you to selectively enable such connections. This should only be done when the instructions for a trusted device or application require port forwarding to be enabled.
- **Demilitarized Zone (DMZ)** – firewalls will allow you to logically place an internal device **outside** of the firewall, **completely** exposed to the Internet. This should never be done with any personal computer but is sometimes required if you are setting up a remote access server or other special purpose device.

These (and other advanced firewall capabilities) should only be used when absolutely necessary – many of them are essentially like hiding a key to your front door under the welcome mat and hoping the bad guys don't look there.

WiFi Is Like Your Upstairs Windows – Don't Leave Ladders Leaning on Your House

Most homes with Internet connectivity also have wireless (WiFi) network capabilities and all smart phones and tablets have WiFi built in. Most Internet routers today come with a built-in Wireless Access Point or you may still be using a stand-alone WAP in addition to your Internet router. WiFi connectivity is very useful but since it is based on the use of radio frequencies (2.5/5 GHz) it brings its own set of risks: anyone within range can see your WiFi traffic and possibly connect to your network. Most households have an increasingly large number of devices on the WiFi network, each of which can provide a way in to your network if WiFi is not secured.

The simple "lock your WiFi front door" approach is to always enable WiFi Protected Access 2 (WPA2) on the WiFi access point. You will end up with a long password that has to be entered into every WiFi device in the house (and given to every family member or visitor) that needs WiFi access – write it down and add it to that password list you've stashed in a drawer.

Final Thoughts

The Pareto Principle has long shown that 80% of the value comes from 20% of our actions. The above steps will generally keep your shack secure and the computers in your house safe. However, attackers are clever and have a lot of time at their disposal to develop new tricks. The reference section provides pointers to additional steps you can take to raise the bar and make sure you are QRV to say QRU to attackers.

References for more detail:

Stay Safe Online
NSA Best Practices for Home Network Security
Securing the Human Simple Guidelines.

NASA: Next Solar Cycle Good for Astronauts, Bad for Amateurs

June 12th article here.

The last astronauts of the Apollo program were lucky. Not just because they were chosen to fly to the Moon, but because they missed some really bad weather en route. This wasn't a hurricane or heat wave, but space weather – the term for radiation in the solar system, much of which is released by the Sun. In August 1972, right in between the Apollo 16 and Apollo 17 missions, a solar storm occurred sending out dangerous bursts of radiation. On Earth, we're protected by our magnetic field, but out in space, this would have been hazardous for the astronauts.

The ability to forecast these kinds of events is increasingly important as NASA prepares to send the first woman and the next man to the Moon under the Artemis program. Research now underway may have found a reliable new method to predict this solar activity. The Sun's activity rises and falls in an 11-year cycle. The forecast for the next solar cycle says it will be the weakest of the last 200 years. The maximum of this next cycle – measured in terms of sunspot number, a standard measure of solar activity level – could be 30 to 50% lower than the most recent one. The results show that the next cycle will start in 2020 and reach its maximum in 2025.

On August 31, 2012 a long filament of solar material that had been hovering in the sun's atmosphere, the corona, erupted out into space. This coronal mass ejection — an immense cloud of magnetized particles — traveled at over 900 miles per second. The ability to forecast these kinds of events on the Sun is increasingly important as NASA prepares to send humans to the Moon under the Artemis program.
Credits: NASA's Goddard Space Flight Center.

Sunspots are regions on the Sun with magnetic fields thousands of times stronger than the Earth's. Fewer of them at the point of maximum solar activity means fewer dangerous blasts of radiation.

Both the forecast and the improving ability to make such predictions about space weather are good news for mission planners who can schedule human exploration missions during periods of lower radiation, when possible.

The new research was led by Irina Kitiashvili, a researcher with the Bay Area Environmental Research Institute at NASA's Ames Research Center, in California's Silicon Valley. It combined observations from two NASA space missions – the Solar and Heliospheric Observatory and the Solar Dynamics Observatory – with data collected since 1976 from the ground-based National Solar Observatory.

One challenge for researchers working to predict the Sun's activities is that scientists don't yet completely understand the inner workings of our star. Plus, some factors that

play out deep inside the Sun cannot be measured directly. They have to be estimated from measurements of related phenomena on the solar surface, like sunspots.

Kitiashvili's method differs from other prediction tools in terms of the raw material for its forecast. Previously, researchers used the number of sunspots to represent indirectly the activity of the solar magnetic field. The new approach takes advantage of direct observations of magnetic fields emerging on the surface of the Sun – data which has only existed for the last four solar cycles.

Mathematically combining the data from the three sources of Sun observations with the estimates of its interior activity generated a forecast designed to be more reliable than using any of those sources alone.

In 2008 the researchers used this method to make their prediction, which was then put to the test as the current solar cycle unfolded over the last decade. It has performed well, with the forecast strength and timing of the solar maximum aligning closely with reality.

Knowing how the Sun will behave can offer necessary insight to plan protections for our next explorers who will venture into deep space. It also lets us protect technology we depend on: satellite missions studying the universe from space, landers and rovers heading to the Moon and Mars, and the telecommunications satellites right in our own backyard.

NASA is charged to get American astronauts to the Moon in the next five years with a landing on the lunar South Pole. With a calm and quiet space weather forecast for the coming decade, it is a great time to explore!

(Frank W3LPL posted a link to an even more pessimistic study, article here.)

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Membership News – Tim N3QE

PVRC did not add any new members in the latest reporting period.

Chapter leaders please remember to complete the Meeting Attendance Report. Members can check and update their roster details via the Roster Lookup.

Upcoming Contests and Log Due Dates

Contests This Month

- **July 1 – RAC Canada Day**
- **July 6 – DL DX RTTY**
- **July 13 – IARU HF**
- **July 20 – NAQP RTTY**
- **July 20 – CQ WW VHF**

Logs Due This Month

- **July 2 – SEANET**
- **July 17 – All Asian CW**
  July 22 – Field Day

See WA7BNM's Contest Calendar for more detail and the latest information.

Editor's Last Word – John K3TN

Thanks to Vic W4VIC, Dave K3ZJ, Mike N4GU and Mike W4AAW for contributions to the PVRC Newsletter. The newsletter will be taking its usual August QRX, so the next newsletter will be the September issue.

The quality and usefulness of the PVRC newsletter depends on contributions from members. If you have photos from club meetings, screen shots of new contest software, or brief writeups on station improvements or contest war stories, send them in any format to jpescatore at aol dot com.

PVRC Officers:

President:	K3AJ	Tom Valenti
Vice President:	N4GU	Mike Barts
Vice President:	W3MMM	Jay Horman
Secretary:	N3QE	Tim Shoppa
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PVRC Charter Members (all SK):

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

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

PVRC Meeting Info: http://www.pvrc.org/chapters.htm

PVRC on Facebook: https://www.facebook.com/groups/PotomacValleyRadioClub/

From the PVRC Treasurer – Dan K2YWE

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

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

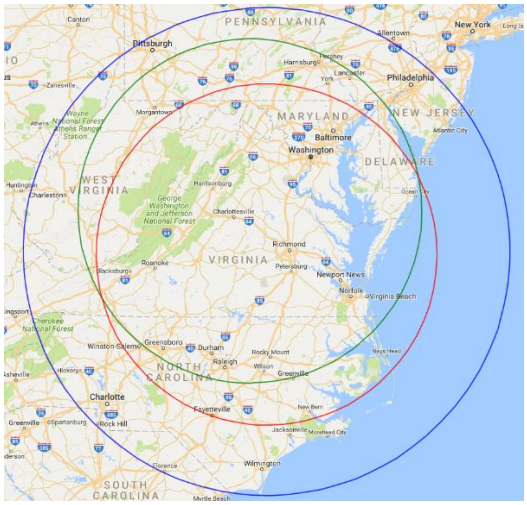
Direct donations to PVRC via Credit Card or PayPal may be made by clicking this "Donate" button and clicking the next Donate button that appears on your screen:

Donate

Donations to PVRC are not tax deductible

Eyeball QSO Directions

The latest info on local club meetings and get togethers will always be sent out on the PVRC reflector and posted on the PVRC web site.



Green: ARRL VHF Circle
175 mile radius
Around 38.075N,
78.171W

Red: ARRL HF Circle
175 mile radius
Around 37.43168N,
77.858482W

Blue: CQ HF Circle
250 mile radius
Around 37.43168N,
77.858482W

Now a Word From Our Sponsors

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

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DX Engineering has the right antenna tower for your station. Choose from Rohn, including its G-Series guyed towers; Amerite 25 Series bracket towers; packaged tower kits from TBX; and lightweight freestanding aluminum towers from Universal. Enter "Tower" at DXEngineering.com to view your options.

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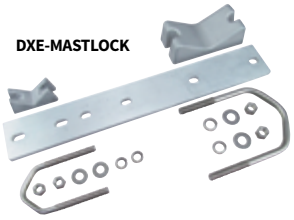
plasticase NANUK PROFESSIONAL PROTECTIVE CASES

Analyzer and NANUK Case Combos
In the field, an antenna analyzer is especially at risk for weather and shock damage. We've paired select RigExpert Antenna Analyzers, including new Bluetooth® versions, with perfectly sized NANUK equipment cases. Each case is filled with cubed, sectioned foam for custom configuration. Find detailed information on each analyzer and case at DXEngineering.com.

DXE-TB-400

DXE-AS25G


DXE-MASTLOCK

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DXE-SSGC-2P

Tower Accessories
Choose from advanced design thrust bearings for 2" and 3" O.D. masts; accessory shelves for Rohn and Amerite towers; lightning rod kits; bearing bypass kits; the MASTLOCK Tower Accessory, which holds your mast in position for easy maintenance; Genius Clamps for mounting round tubing and pipe members perpendicular or parallel to each other; and more. Enter "Tower Accessories" at DXEngineering.com for complete details.

PHILLYSTRAN

Guy Lines and Accessories
Phillystran makes high performance guy lines made from Aramid fiber with a strength-to-weight ratio five times greater than steel. These guy lines are electrically "transparent," so you won't have the EMI, RFI and negative signal issues associated with steel cable. Phillystran also makes Big Grip Dead Ends to terminate its guy lines. DX Engineering offers guy line shackles, thimbles, end caps, and steel Phillystran Tail Kits that protect non-metallic guy lines from damage.

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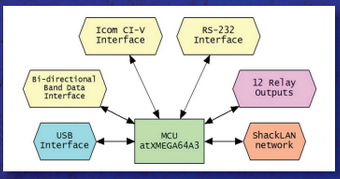
JK ANTENNAS

Announcing the new BM-5 BandMaster V

The next generation of the popular BM-3 with direct USB support for FLEX Radios

NEW!

The BM-5 BandMaster V is a full featured unit that contains a universal band decoder and antenna switch controller. It features five communication channels. All channels are active simultaneously and provide data translation for your station accessories. In other words, if you are using an Icom radio on the CI/V interface the BandMaster V will output 4-bit band data as well as RS-232 data in Yaesu or Kenwood format. In reverse, when using a radio on the RS-232 interface the BandMaster V will output 4-bit band data as well as an Icom CI/V data stream.
The USB interface may be connected to your PC for radio control. **The USB interface may be connected directly to a Flex SDR with no additional cables or interfaces required.**



RatPack Remote Antenna Switch

Six antenna remote switch with rotary switch controller. Push button controllers available. HF and 50 MHz. Power rating 5 kW CW.

StackMatch

The original, not the imitations. For phasing 2, 3, 4 and even 6 antennas. Also it can be used to combine vertical and horizontal polarized antennas to diminish fading.

TwoPak

Two antenna switch, 12 V DC via wires or optional via coax cable. DC to 150 MHz. HF 5 kW rating. Metal box.

Off-Center Fed Dipole Antenna

AS-OCF-2K, AS-OCF-5K Seven bands antenna (80 to 6 m). Heavy duty materials. 4:1 balun included. Ratings: 2 or 5 kW or higher available.

PowerMaster II

RF Power and SWR meter. Couplers for 3 kW, 10 kW or higher available for HF/6 m. VHF and UHF couplers for 1.5 kW. You can connect up to 5 couplers to the display to monitor RF power on different TX lines.

ARRAY SOLUTIONS

OM Power Amplifiers, The New RF Power Benchmark!

OM Power

OM Power Amplifier Sales Program

Lower prices than the competition's equivalents, most modern design, and strongest warranty in the market!

OM4000HF	**Manual 160-10 m 4 kW**
OM4000A	**Automatic 160-10 m 4 kW**
OM2500HF	**Manual 160-10 m 2.5 kW**
OM2500A	**Automatic 160-10 m 2.5 kW**
OM2000+	**Manual 160-6 m 2 kW**
OM2000A+	**Automatic 160-6 m 2 kW**

The automatic amps can drive an antenna switch of up to 10 antennas andselect up to ten bandpass filters applies to all automatic models

OM Power was founded in 2004 as an initiative of two enthusiastic Slovak ham operators. Since that time OM Power has become a successful and well established company in the production of amplifiers. OM Power amplifiers can be found on all continents and in almost every country of the world. All of the amplifiers have state of the art design, and are solidly built.

OM4000A – OM4000HF
OM2500A – OM2500HF

The A-series are automatic band change amplifiers.
The HF-series are manual band change and tuning amplifiers.
OM4000: 4 kW SSB and CW, 3 kW RTTY, AM and FM
OM2500: 2.5 kW SSB and CW, 2 kW RTTY, AM and FM

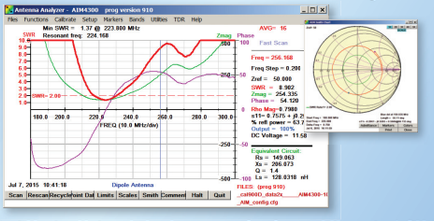
OM2000A+ – OM2000+

NEW!

The **OM2000A+** is the lightest and smallest 2000 W fully automatic HF/6 m power amplifier in the market. Its manual tuning version, the **OM2000+**, is our affordable unmatched best-seller.

Frequency coverage:
Amateur bands 1.8 – 29.7 MHz including WARC + 50 MHz
Power output: 2000+ W in SSB/CW on HF bands, 1500 W in RTTY
1500 W CW/SSB on 50 MHz

Laboratory Grade Antenna and Vector Network Analyzers



One Port Analyzers and Two Port Vector Network Analyzers ranging from 5 kHz up to 1 GHz

AIM 4300	**$495**
AIM UHF	**$695**
VNA 2180	**$995**
VNA UHF	**$1,295**
PowerAim 150 Broadcasting Engineers Choice. 150 V peak RF capable.	**$2,495**

Surge Arrestors

AS-302, AS-303 Coaxial cable arrestors. DC to 500 MHz. N-type or SO-239 connectors. **AS-300SB** Stacking fixture available. **AS-309H**, ladder line arrestor. All have static bleed function. **AS-8SP**, **AS-12SP** and **AS-16SP** control cable arrestors. Protect your rotator's and other control cables.

Baluns & RF Transformers

Ratios 1:1, 1:2, 2:1,4:1 and more. RF line isolators. Ratings 3, 5, 10 kW+. Get the most out of your antenna by stopping the coaxial cable from becoming part of it.

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Array Solutions' products are in use at top DX and Contest stations worldwide as well as commercial and governmental installations. We provide RF solutions to the DoD, FEMA, Emcomm, UN, WFO, FAA and the State Dept. for products and installation of antennas systems, antenna selection, filtering, switching and grounding. We also offer RF engineering and PE consulting services.

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IC-9100 | *The All-Round Transceiver*

• HF/50MHz 144/43vvv0 (440) MHz and 1200MHz*1 coverage • 100W on HF/50/144MHz, 75W on 430 (440) MHz, 10W on 1200MHz*1 • Double superheterodyne with image rejection mixer

IC-7851 | *HF/50MHz Transceiver*

• 1.2kHz "Optimum" roofing filter • New local oscillator design • Improved phase noise • Improved spectrum scope • Dual scope function • Enhanced mouse operation for spectrum scope

IC-7700 | *HF/50MHz Transceiver*

The Contester's Rig • HF + 6m operation • +40dBm ultra high intercept point • IF DSP, user defined filters • 200W output power full duty cycle • Digital voice recorder

IC-7610 | HF/50 MHz *All Mode Transceiver*

• Large 7-inch color display with high resolution real-time spectrum scope and waterfall • Independent direct sampling receivers capable of receiving two bands/two modes simultaneously

IC-7300 | *HF/50MHz Transceiver*

• RF Direct Sampling System • New "IP+" Function • Class Leading RMDR and Phase Noise Characteristics • 15 Discrete Band-Pass Filters • Built-In Automatic Antenna Tuner

IC-9700 | *All Mode Tri-Band Transceiver*

• VHF/UHF/1.2GHz • Direct Sampling Now Enters the VHF/UHF Arena • 4.3" Touch Screen Color TFT LCD • Real-Time, High-Speed Spectrum Scope & Waterfall Display • Smooth Satellite Operation

IC-7100 | *All Mode Transceiver*

• HF/50/144/430/440 MHz Multi-band, Multi-mode, IF DSP • D-STAR DV Mode (Digital Voice + Data) • Intuitive Touch Screen Interface • Built-in RTTY Functions

IC-718 | *HF Transceiver*

• 160-10M** • 100W • 12V operation • Simple to use • CW Keyer Built-in • One touch band switching • Direct frequency input • VOX Built-in • Band stacking register • IF shift • 101 memories

IC-2300H | *VHF FM Transceiver*

• 65W RF Output Power • 4.5W Audio Output • MIL-STD 810 G Specifications • 207 alphanumeric Memory Channels • Built-in CTCSS/DTCS Encode/Decode • DMS

IC-2730A | *VHF/UHF Dual Band Transceiver*

• VHF/VHF, UHF/UHF simultaneous receive • 50 watts of output on VHF and UHF • Optional VS-3 Bluetooth® headset • Easy-to-See large white backlight LCD • Controller attachment to the main Unit

IC-R8600 | *Wideband Software Defined Receiver*

• 10 kHz to 3 GHz Super Wideband Coverage • P25, NXDN™, dPMR™, D-STAR Mode • Large Dot Matrix LCD Display w/ Quick Spectrum Scope • SD Card Slot • Remote Control Function

ID-5100A Deluxe

VHF/UHF Dual Band Digital Transceiver

• Analog FM/D-Star DV Mode • SD Card Slot for Voice & Data Storage • 50W Output on VHF/UHF Bands • Integrated GPS Receiver • AM Airband Dualwatch

ID-4100A | *VHF/UHF Dual Band Digital Xcvr*

• Compact, Detachable Controller for Flexible Installation • DV/FM Near Repeater Search Function • Apps for iOS™ and Android™ devices • Wireless Operation with VS-3 & UT-137 Bluetooth® Headset & Module • MicroSD Card Slot

IC-R30 | *Digital/Analog Wideband Xcvr*

• 100 kHz to 3.3 GHz Super Wideband Coverage • P25 (Phase 1), NXDNTM, dPMRTM, D-STAR Mode • 2.3" Large LCD Display & Intuitive User Interface • MicroSD Card Slot for Voice & Data Storage • USB Charging & PC Connection

ID-51A PLUS2

VHF/UHF D-STAR Portable

• RS-MS1A, free download Android™ application • New modes for extended D-STAR coverage • Terminal Mode & Access Point Mode allow D-STAR operation through Internet • DV & FM repeater search function • Dplus reflector link commands

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FTDX5000MP Limited | *200W HF + 6M Xcvr*

• Internal Power Supply • Two Totally Independent Receivers • Super Sharp "Roofing" Filters • High Performance Yaesu Custom- designed 32-bit Floating Point DSP • True Analog Meter Precision

FTDX3000 | *100W HF + 6M Transceiver*

• 100 Watt HF/6 Meters • Large and wide color LCD display • High Speed Spectrum Scope built-in • 32 bit high speed DSP /Down Conversion 1st IF

FT-991A | *HF/VHF/UHF All ModeTransceiver*

Real-time Spectrum Scope with Automatic Scope Control • Multi-color waterfall display • State of the art 32-bit Digital Signal Processing System • 3kHz Roofing Filter for enhanced performance • 3.5 Inch Full Color TFT USB Capable • Internal Automatic Antenna Tuner • High Accuracy TCXO

FTDX1200 | *100W HF + 6M Transceiver*

• Triple Conversion Receiver With 32-bit Floating Point DSP • 40 MHz 1st IF with selectable 3 kHz, 6kHz & 15 kHz Roofing Filters • Optional FFT-1 Supports AF-FFT Scope, RTTY/PSK31 Encode/Decode, CW Decode/Auto Zero-In • Full Color 4.3" TFT Display

FT-891 | *HF+50 MHz All Mode Mobile Transceiver*

Rugged Construction in an Ultra Compact Body • Stable 100 Watt Output with Efficient Dual Internal Fans • 32-Bit IF DSP Provides Effective and Optimized QRM Rejection • Large Dot Matrix LCD Display with Quick Spectrum Scope • USB Port Allows Connection to a PC with a Single Cable • CAT Control, PTT/RTTY Control

FT-857D | *Ultra Compact HF/VHF/UHF*

• 100w HF/6M, 50W 2M, 20W UHF • DSP included • 32 color display • 200 mems • Detachable front panel (YSK-857 required)

FT-2980R | *Heavy-Duty 80W 2M FM Transceiver*

• Massive heatsink guarantees 80 watts of solid RF power • Loud 3 watts of audio output for noisy environments • Large 6 digit backlit LCD display for excellent visibility • 200 memory channels for serious users

FTM-100DR | *C4FM FDMA/FM 144/430 MHz Xcvr*

• Power Packed System Fusion Transceiver • High Audio Output Power • Rugged Powerful Transmitter • Integrated 66ch High Sensitivity GPS • 1200/9600 APRS Data Communications

FTM-400XD | *2M/440 Mobile*

• Color display-green, blue, orange, purple, gray • GPS/APRS • Packet 1200/9600 bd ready • Spectrum scope • Bluetooth • MicroSD slot • 500 memory per band

FT-70DR *C4FM/FM 144/430MHz Xcvr*

• System Fusion Compatible • Large Front Speaker delivers 700 mW of Loud Audio Output • Automatic Mode Select detects C4FM or Fm Analog and Switches Accordingly • Huge 1,105 Channel Memory Capacity • External DC Jack for DC Supply and Battery Charging

FT-2DR *C4FM/FM 144/430 MHz Xcvr*

• Analog/C4FM Dual Monitor (V+V/U+U/V+U) • System Fusion compatible • 1200/9600 APRS Data Communications • Integrated 66ch High Sensitivity GPS • Wide Band Receiver • Snap-shot Picture Taking Capability With Optional MH-85A11U

FT-65R | *144/430 MHz Transceiver*

Compact Commercial Grade Rugged Design • Large Front Speaker Delivers 1W of Powerful Clear Audio • 5 Watts of Reliable RF Power Within a compact Body • 3.5-Hour Rapid Charger Included • Large White LED Flash-light, Alarm and Quick Home Channel Access

FT-60R | *2M/440 5W HT*

• Wide receiver coverage • AM air band receive • 1000 memory channels w/alpha labels • Huge LCD display • Rugged die-cast, water resistant case • NOAA severe weather alert with alert scan

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