PVRC Newsletter March 2013

President's Letter – Rich NN3W

Greetings PVRCers!

I had a column all queued up and ready to go for this month's newsletter, but I have the need and the duty to inform the club about a rather serious issue that is starting to rear its head, and the club, as a whole, is going to need to address this issue.

As you all know, the greater DC area is well attuned to politics – this is, after all, arguably the seat of power for the "Free World". Part of being in that position means paying bills and having a budget. And, as you all have I am sure heard over and over and over in the past few weeks, the Federal Government is now subject to sequestration. This is a result of many ~~months~~ years' worth of politicians in Washington who refuse to address the Federal government's budget – be it through reduced expenditure, increased revenue, or a combination of both.

PVRC is starting to run into a similar budgetary burden. Recently, I received the club's income statement for 2012, and it wasn't pretty. In 2012, the club had total expenditures of $3,250.00. Nearly one-third of that amount was devoted to the payment of awards and plaques that the club sponsors in various contests (Sweepstakes, CQWW, ARRL DX, and the like). Another 30 percent of the expenditure was devoted to awarding PVRC members plaques and endorsements for things like the 5M program. The balance was expended on items like necessary liability insurance, donations to QTH.net, and social functions (primarily the pizza party at Dayton).

In contrast to the $3,250 that PVRC expended in 2012 (a sum which is in line with previous years), the club took in revenues totaling $1,208 – with only $808 coming from in-kind donations from the membership. That equates to less than $1.00 per member - incredibly low. The result of our income shortfall was an overall budgetary deficit of over $2,000 for 2012.

This trajectory is not sustainable in the near- or long- term future. Your club officers and trustees are seriously discussing several options to improve our finances. On the expense side, among the options being

considered are: 1) reducing the number of plaques we sponsor in major contests, 2) negotiating different rates for our own award program plaques, and 3) minimizing our support at various social functions. On the revenue side, we are considering (amongst other things): 1) the sale of PVRC "gear" (hats, jackets, pull overs, etc.), 2) raffles/drawings at club chapter meetings, 3) propagating the club newsletter differently so as to better inform the membership regarding club activities, and 4) **reimposing club dues**.

Yes, you heard that last point right – reimposing dues. The club has gone over 15 years without the need for dues, but I am not sure if the experiment is surviving – especially when our in kind donations were $808 for all of 2012. We have NOT made any decisions yet….

Perhaps, the message regarding finances simply has not been communicated as strongly as it should have been. I know that Dave WR3L has urged folks to contribute to the club's coffers at both W3LPL's event (which was well attended) and at the Central holiday dinner (again, well attended). Before we consider enacting any of the aforementioned items, we would like to remind everyone that there is already a mechanism to contribute to the club – via Paypal. This option has been set up so that, if using your checking account, there are no fees to you and there are no fees to PVRC. Through Paypal, donations should be directed to dave@wr3l.net – your club's treasurer.

We very much want to continue a full club program –sponsorship of plaques and awards, publication and maintenance of our newsletter, sponsorship of events and socials, etc. However, this is only possible through the generous donation of your monies. Please consider a donation!

73, Rich NN3W

PVRC Officers:

President:	NN3W Rich Didonna
Vice President:	W9GE Bob Finger
Vice President:	K8GU Ethan Miller
Secretary:	W3LL Bud Governale
Treasurer:	WR3L Dave Baugher

Trustees:

K3MM, N3OC, N4ZR, W4ZYT, NW4V, K2AV, K4ZA

PVRC Charter Members (all SK):

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

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

Another ARRL RTTY Roundup Result or A Day in the Life of a Multiplier Junky – Mark N2QT

K4GMH's excellent write-up (in last month's Newsletter) as a "rate junky" in the recent ARRL RTTY roundup prompted me to do this one. I am more of a multiplier hunter - I came to contesting as a DXer and my thrill is working that next new multiplier. However, Roundup is not a contest for much in way of mults as they count only once and there aren't a lot of them. (It's not quite as bad as Sweepstakes since you can at least work stations more than once.) So once you work a JA on 15 there is no good reason to fight a pileup or propagation to work another on 40. The next JA counts the same as to keep working the endless supply of CA/MN/IL stations. At least in CQWW that JA on 40 is a double mult and well worth the effort. So to be competitive in Roundup you **have** to go for rate.

Now I also have a smaller station than Mike and run 100 watts with:

- KT34A at 60'
- 3 el Steppir at 48'
- 40M rotary dipole at 54'
- shunt fed tower on 80 M, dipole at 55'

I used to always start RU just like any DX contest, with the antennas towards Europe. However the last two years I figured all those guys to the west of us were looking for Europe and if I aimed their way, I'd get a bunch of them. It also helps in this strategy that there aren't as many DX participants as in CQWW or WPX so I don't give up that many opportunities doing this. I do not totally ignore Europe, since on Sunday morning the propagation is good that way and all the guys to our west are asleep or on 40 (or to a lesser extent 80) so it's wide open for us on the east coast.

I do use the classic SO2R approach and try to operate one rigs run and the others S&P. If the rate is crummy, I'll S&P with all rigs. I try to use the Steppir on the S&P radio since the 180 mode means I don't ever have to swing the antenna more than 90 degrees to get it pointed right. I do find that I need to point accurately or just they just ignore me. I even find the 40M dipole needs to be tweaked to calls guys in Europe vs Caribbean/SA. The KT34 is on a triplexer so it acts like I have three monobanders.

Using this approach got me 1700 q's this year, or about 70% of Mike's total. My rate sheets shows what I was doing, and when. I will have fewer DX stations and far higher percentage of S&P contacts than Mike. Since I make a lot of S&P contacts I do what I can to improve tuning. I use a band scope that allows me to click on a displayed station and tune them in accurately enough to decode. Since it's a waterfall like display I can also see where someone was, and how strong they are, so it's pretty easy to pick the stations I can work. It also means that I can see where my interference is when I am running, so I can jog my frequency a bit to avoid the spurs from all the over-driven AFSK rigs - and tell the difference between a spur and some guy trying to take my frequency. It also helps to see the guys way up (or down) in the band, like 3V8BB who was way up away from everyone else. This keeps my hands on the mouse and keyboard, and I don't do a lot of tweaking on the radios.

All my antenna selections are automatic, and I really operate as though it was just one big band and not 5 different ones. There are interlocks to keep me from doing something expensive, or against the contest rules.

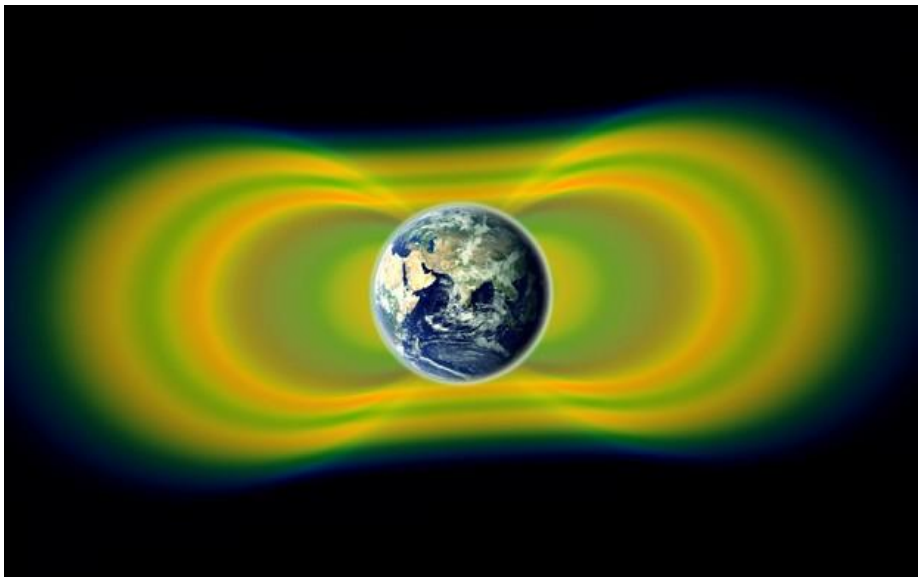
Also I take my 6 hours in two breaks, 5 hours to sleep and about another mid day on Sunday when the rates drop (and I fade). There are also a couple of 5-10 minute breaks as needed.

The key thing to all this is to figure out what works best for you and your station, and if you are trying to 'win' (where you get define what win **means**), hand out points or just play. It is also good to see how others are operating. Luckily a lot of the top ops, like Mike, Don AA5AU and others do share that they do and you can see how what you do compares.

If you liked the write ups by k4gmh and me, be sure to read the notes by AA5AU: http://rttycontesting.com/contestnotes/2013_arrlru.htm

YARB: Yet Another Radiation Belt – Bob KI3O

Interesting article here about the discovery that the outer Van Allen belt actually separated into two belts temporarily – until a blast of solar radiation destroyed the outer third belt.



Telegraphy in the Spielberg Movie "Lincoln" – reprinted with permission from the Morse Telegraph Club "Dots and Dashes" Winter 2012

NOW STARRING … TELEGRAPHY!
by James Wades, WB8SIW

Copyright: James Wades and the Morse Telegraph Club, Incorporated, 2012, All Rights Reserved

Those of us with a background in telegraphy have all winced a time or two when we see telegraphy in the movies. Be it a cowboy western, a military thriller, or a view of the maritime radio operator sending a distress call, more often than not, telegraphy is represented in a simplistic or highly inaccurate manner, which serves only to marginalize the important contributions of this revolutionary technology.

Having a bit of a jaundiced eye when it came to Hollywood's relationship with telegraphy, I was pleasantly surprised to be contacted by the producers of Steven Spielberg's Lincoln with questions about Civil War Telegraphy. It was their goal to incorporate an accurate representation of telegraphy in the film and, of course, I was more than happy to oblige. After all, it's not every day one gets an opportunity to place real telegraphy in a movie nor is it every day one gets to work with Steven Spielberg.

After numerous discussions with the producers, an offer was made to not only supply telegraph instruments for the sets, which reasonably approximated the Civil War era, but I also offered to automate the instruments to ensure that any scenes involving telegraphy incorporated the proper American Morse Code and meaningful content, which was consistent with the dialogue contained in the script. After numerous discussions, the film company agreed this was an appropriate idea. Two telegraph related scenes were planned, the first being Lincoln in the War Department Telegraph Office, and the second being at Grant's City Point Headquarters.

At the outset, it is easy to forget that few Americans have any conception of the telegraph, how it worked, or its roll in history. Therefore, our first job was to educate the film crew about the role of telegraphy in the Civil War. Jim Wilson, the Editor of Dots & Dashes, the journal of the Morse Telegraph Club, put in hours of work providing photos and bibliographies as well as responding to various questions about Civil War telegraphy. Such education did much to give the set department a feel for the nature of telegraphy and its place in the process.

In preparation for filming, the first priority was, of course, the need to obtain instruments that were representative of the Civil War. As you might imagine, pre-1870s instruments are extremely rare. It's hard enough to find one or two, let alone a dozen of them! It therefore became necessary to press into service instruments primarily from the 1870s to 1880s. As a movie is primarily about the visual image, instruments were selected based primarily on readily identifiable characteristics, including the "camel back" key, and certain sounder characteristics, which were common during the era. Thanks to the help of several renowned telegraph historians and collectors, most notably Tom Perera and Roger Reinke, we were able to obtain a sizeable number of appropriate instruments. The remainder of the instruments were provided by Morse Telegraph Club members active in Civil War re-enactments and telegraph demonstrations, most notably Kevin Saville of Washington State,

who provided some replica Daniels Batteries and a portable telegraph set for use in the City Point scenes. As it turned out, the demands of the set designers increased as production came closer, so we had to make a few additional compromises by using some later instruments, but such is the nature of movie making.

The process of representing the telegraph in a movie set during the Civil War sounds relatively easy. Yet, a number of surprisingly detailed questions arise, many of which have no specific answers. For example, copies of Civil War telegraph messages exist, but information on the exact nature of the message format and operating procedures used at the time do not. Books written after the war often dealt with the relationship between the telegraph and the major players in the War Department and White House. Undoubtedly, details about the "mechanics" of telegraphy were viewed as insignificant. This made it necessary to extrapolate a number of details. For example, it seems reasonable that a "check" or "group count" was incorporated in message transmission as it was an essential tool for accuracy and accounting, which would have likely been common practice by the 1860s. A close inspection of existing telegrams from the era showed several numbers written at the bottom of the messages. For example, a telegram from the War Department might have "WD 40" written along the bottom of the message. Sure enough, a count of the words (groups) in the text added up to 40. Therefore, the simulated message traffic developed for the movie included a "check."

Another problem that would have likely been addressed fairly early in the era of telegraphy was that of message serial numbers. A message serial number was essential to prevent fraud, particularly with respect to messages containing financial transactions. Only by assigning a message serial number and associating it with an audit process could a telegraph company prevent an operator from inserting a false message into the telegraph network. Therefore, it seemed reasonable that a serial number would have been assigned to originated messages by the time of the Civil War. Therefore, the simulated message traffic includes a serial number.

Other aspects of the familiar Western Union or commercial telegram format were likely in place by the 1860s. However, it was difficult to determine to what extent these additional components were used by the US Military Telegraph Corps. As such, we dispensed with the date, time, place of origin and operators sine. However, we did add a traditional two-letter office call to selected messages.

Thanks to the mass production of the typewriter and the invention of the Vibroplex semiautomatic telegraph key, the speeds at which telegraph traffic was transmitted during the 20th Century ranged from 30 to 40 words per minute on average. Neither of these devices existed during the Civil War. Therefore, it was necessary to consider the speed at which a typical telegrapher could send traffic over a period of hours using a hand key. As many of the operators were likely highly skilled, relatively young and enthusiastic, we decided to average the speed of any telegraph traffic in the movie to approximately 18-wpm. This speed was then varied to differentiate between wires when more than one sounder was operated simultaneously.

Related issues also arose. For example, there are few descriptions of exactly who did what in the War Department telegraph office. These details were likely considered mundane at the time as well and were therefore not recorded. When planning the War Department telegraph office scenes, it became necessary to extrapolate our 20th century experience with larger telegraph offices to make an assessment of the rolls and activities of individuals

working in a similar environment in the 1860s. The movie crew was briefed on the "process" of how a large relay office or message center would have likely worked with incoming and outgoing telegrams, messengers bringing telegrams into the office, other messengers being dispatched with telegrams for local delivery, messages being transferred from one circuit to another for relay and the like. Sufficient individuals were detailed to play the various administrative rolls of managing the flow of message traffic, accounting, encoding and decoding messages, and the like in addition to the usual activities, which would have taken place in the War Department.

It is important to note that movies are, first and foremost, entertainment. Unlike a historical documentary, accuracy takes a back seat to the richness and texture of the visual image. Therefore, artistic license applies. For example, the real War Department Telegraph Office had a staff of just a few operators. Spielberg's Lincoln shows a telegraph office with 16 operators! The tables and dividers shown in the War Department scene are more in keeping with the design and nature of a Western Union relay office of the 1880s, the inspiration being derived from various texts and engravings from that era.
During the process of filming the scenes, time doesn't permit a detailed treatment of a something as "mechanical" as a message being transmitted or received. A certain amount of tension must be maintained in a movie to prevent a loss of interest and to convey excitement. The camera may shoot only seconds of an activity, unless an extended process can support the creation of suspense, such as waiting for a critical message to arrive. While considerable effort was expended to develop and transmit messages that fit specific time frames and subjects within the script, only short bursts of telegraphy can be heard in the final product.

Another issue that arises in movies is the visual scene depicting the manipulation of the telegraph key. Jim Wilson and Jim Wades worked extensively with the youthful actor Adam Driver who was selected to play the role of Samuel Beckwith at the War Department. In addition to briefing him on the mechanics of properly manipulating a telegraph key, he was briefed on the process of actually transmitting a message. He caught on quickly and even taught himself the American Morse Code Alphabet in a cram study session over a weekend. He demonstrated his ability to send the message called for in the script on the key and, honestly, I was impressed not just with his ability to do so, but his commitment to the process. A genuine professional actor indeed!

In reality, the Morse heard in the movie is not what is transmitted by the actors, even if they are seen manipulating the key. The actual Morse was generated off-set. In the case of the War Department scenes, I generated the Morse using a computer program called "MorseKOB." A variety of prepared message texts as defined in the script were programmed into the software, which then controlled associated serial interfaces and telegraph terminal units to remotely drive the instruments over a telegraph loop. A hand key was also available at the terminal units to facilitate the improvisation of a scene if necessary: Keys that were visible in the scenes were adjusted to a very narrow gap so the sound of a key inexpertly manipulated would not be heard nor interfere with the real Morse reproduced on the sounder.

A number of humorous incidents occurred during filming. During the construction of the War Department set, I selected two locations where I expected Mr. Speilberg to shot the primary telegraph scene, it being my goal to place the most authentic and attractive instruments at these locations. Now, I don't claim great expertise in movie making. However, my father was educated in commercial art before the World War and I grew up with considerable exposure

to the fine arts in addition to having a technical background in the broadcast industry: Concepts of perspective, balance, framing, lighting and aesthetics come fairly naturally to me. Unfortunately, several key crew members didn't agree with my assessment. Therefore, the location of the instruments changed several times throughout the set construction process. Ironically, when Mr. Spielberg walked onto the set the following morning to shoot the scenes he chose.. .you guessed it.. .the same locations I had originally selected. This last minute change created a problem. There wasn't enough time to move the most authentic instruments back to their original locations to accommodate Mr. Spielberg's request. Therefore, a Barclay Relay was pressed into service to accommodate the late night War Department scene. This instrument is, of course, an early 20th century instrument. Sometimes, done is simply better than perfect!

The detail invested in the War Department Set was significant. Early code books were reproduced along with message forms, facsimiles of actual messages written in script, and the like. This doesn't include the incredible investment in the other aspects of the set ranging from period maps to period furniture! Many of these fine historical nuances will never be noticed by the average movie fan, yet Spielberg's organization invested the time and effort to see to such details.

The City Point scene was originally planned to incorporate a single telegraph instrument. However, by the day of the shoot, things had changed and the script had been modified to call for four operators and instruments. Fortunately, I arrived prepared with some extra instruments, additional terminal units, and extra wire and cable. Again, a late 19th century box relay was incorporated into the set to accommodate these requirements. Ultimately, only one instrument was used during the shoot, but we were prepared for any last minute decisions or changes in the script. Fortunately, in this case I chose well again and placed the most authentic looking instrument at the location ultimately chosen by the Director. Telegraph experts will note a few additional historical inconsistencies. For example, a specialized propo company provided “imitation” telegraph sounders in resonators. According to our best research, the resonator wasn't used until after the Civil War. However, the Art Director and others found them aesthetically pleasing, so they were incorporated into the War Department Set. Even the color of wire I used to connect the instruments was carefully considered for its artistic impact. After wiring up a couple of operator's positions using green cotton covered wire, I was informed that brown or black wire was preferred. Out came the green wire and the wiring process started over. Cotton covered wire reasonably approximating the appearance of that manufactured during the era was utilized to connect the instruments.

Few today have heard the actual sound of a telegraph relay office, with its many sounders conveying real message traffic. A sample of this sound was recorded as a "wild track." A wild track is essentially a recording of background noise inserted into a movie during the audio post-production process. It can range from waves crashing on the shore to wind or the noises of a city streetscape. Most background noise is somewhat random in nature. During the process of gathering this "wild track" audio, eight of the War Department sounders were keyed simultaneously with message traffic in American Morse Code at speeds ranging from 18 to 22 words per minute. A short sample of about 30 to 45 seconds was gathered, which could then be "looped" and overlaid as necessary to provide the background ambiance of a busy telegraph office. In the end product, the shots featuring the overall activity of the War Department telegraph office are not used. This is a shame, as few alive today have heard the actual sounds of a busy telegraph office.

Ultimately, filming went very smoothly. The months of planning, discussions, and the hours spent constructing specialized equipment to animate the set paid off. We were able to accommodate all requested last minute changes and we were able to provide the necessary animation on cue without problems. It was a smooth and fairly seamless process.

Once a movie is filmed and edited, audio post production takes place. This was a final element of the editing process in which we were not involved. The result was the elimination of much of the detailed work that went into the movie. If one listens to the telegraphy in the final product, one will quickly notice that what is actually heard is a collage of the telegraph text and characters that were originally recorded. The audio engineers essentially took thean imaginary "bag," shook it up electronically, and created a fairly realistic facsimile of Morse traffic that actually conveys no intelligence! Now and then, one can pick out a bit of a message or letters here and there, but it is all sounds as if it is at the same speed and therefore a bit "mechanical."

While the result is not perfect, Spielberg and his staff should be given high praise for treating the telegraph with dignity and respect. By giving it a meaningful role in Lincoln, Spielberg restores it to its rightful place as a transformative technology, which has done much to shape our modern world. One might even say that the transformative role of Civil War telegraphy nicely parallels the transformative political environment wrought by the crisis, which is so successfully depicted in the film. Lincoln also gives voice to the countless men and women who made their living developing, maintaining and using this transformative technology by portraying their role at the major events of their time.

Finally, family and friends have often asked "what is it like to work on a Spielberg movie?" My initial response is that it's much like working in the TV business, but with better equipment and a bigger budget. Of course, this is not a satisfactory answer for the uninitiated. In reality, the creation of a major motion picture involves careful design, logistics, coordination and implementation, not unlike managing a major engineering or construction project. That having been said, a movie set at this level is probably not the right place for a "star struck" young person or an individual without some experience working around celebrities in a high pressure media environment.

So that's the story. If you have an opportunity to watch Spielberg's Lincoln, you can now do so with a bit of the back story. It is my sincere hope that those scenes incorporating telegraphy do justice to this important technology and craft. While some artistic license certainly applies, Mr. Spielberg's organization should be complimented for its efforts to treat the history of telegraphy and its role in the Civil War with genuine respect. Perhaps Lincoln will generate a renewed interest in the transformative and revolutionary roll of telegraphy in our progress as a nation.

-30-

Copyright: James Wades and the Morse Telegraph Club, Incorporated, 2012, All Rights Reserved - Dots & Dashes - Winter 2013

Membership News – Bud W3LL

PVRC added one new member since the last newsletter. Please welcome:

- In the Rappahannock chapter, Richard K3UI
- In the Tidewater chapter, Ken KK4EIR

Chapter leaders please remember to complete the Meeting Attendance Report.

Upcoming Webinars – Ken K4ZW

The World Wide Radio Operators Foundation (WWROF) is pleased to announce the following Webinars:

- **March 18** – "The First Topband DX Contest: The 1921 Transatlantic Test", with Frank Donovan W3LPL

- **April 26** – "What I've Learned in Two Decades of Terrain Assessment", with Dean Straw N6BV

Details and registration links are available on the WWROF page at http://wwrof.org/webinars/

Upcoming Contests and Log Due Dates

Contests This Month

Mar 10 - NA Sprint RTTY
Mar 16 – BARTG RTTY
Mar 17 – Russian DX
Mar 17 – NA Sprint SSB
Mar 24 – UBA SB
Mar 30 – WPX SSB

Logs Due This Month

Mar 3 – NAQP RTTY
Mar 11 – UBA CW
Mar 16 – NAQP RTTY
Mar 19 – ARRL DX CW

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

The Editor's Last Word – John K3TN

Keep sending those cards and letters – and pictures, too! Pete N4ZR has set up an email push mechanism we are trying out this month. Let Pete know if you didn't get the email blast, or if you did and don't want to.

73 John K3TN

Eyeball QSO Directions

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

NW Region: Meetings are generally held on the third Tuesday of each month at the City Buffet, 1306 W. Patrick Street, Frederick, MD. (301) 360-9666. It's in a small shopping center. Most arrive about 6 PM for dinner and informal discussions. The meeting begins at 7:00 PM.

From W. Patrick Street, turn up McCain Dr. (the Mountain View Diner is on the corner), then turn right into the shopping center, then turn left and search for a parking place. The City Buffet is tucked back in the left corner of the shopping center behind the Mountain View Diner. You can't see the City Buffet from W. Patrick Street. Contact: Jim WX3B

Central Region: Meets monthly the second Monday of each month, except June, July & August). The location alternates between the below MD and VA locations. Pre-meeting dinners start at 6:00 pm and meetings start at 7:30 pm.

VA LOCATION: Anita's, 521 E. Maple Ave, Vienna, VA. Tel: 703-255-1001. Meets at this location during the months of February, April and October.
Contact: Rich NN3W

MD LOCATION: Max's Café. 2319 University Blvd W, Wheaton MD 20902. Tel: 301-949-6297 People usually begin arriving at the restaurant around 6:30. Meets at this location during the months of January, March, May, September and November. Contact: Art K3KU

The Laurel, MD Region: Bill N3XL The PVRC get-together is held at the first LARC meeting each quarter at the clubhouse.

The Annapolis Crew: Dan K2YWE Meetings are held on the 4th Wednesday of each month at Broadneck Grill in Annapolis. We gather at about 5:30 PM and order dinner about 6. We break up usually before 8 PM. E-Mail K2YWE to be put on the e-mail reminder list.

PVRC-NC: The PVRC NC-East chapter meetings are held at Manchester's Bar and Grill on the 9100 block of Leesville Rd. in North Raleigh, with "QRM" beginning at 6:00pm and the dinner meeting following shortly thereafter. The meeting is held monthly on the 1st Thursday of most months, cancellations or changes usually announced on the PVRC-NC website. The PVRC NC-West Chapter holds its meetings on the 4th Monday of each month at the Mellow Mushroom, 314 W. 4th St., Winston-Salem, NC. Ragchew at 7:00pm, dinner meeting starts at 7:30pm. All contesters and interested guests are invited!

Central Virginia Contest Club: Ed NW4V Meets the first Tuesday of the month at St. Martins Church, 9000 St. Martin Lane, Richmond VA, (between W. Broad St. and N. Parham Road). Our meeting begins at 7PM.

Over the Hill Bunch: The group meets for lunch at noon alternately in Maryland at the College Park Holiday Hotel Route 1 and the Beltway or in Virginia at the Parkview Marriot near route 50 and the Beltway. Meetings generally are held on the last Wednesday of the month and are subject to change. Meetings are announced by E-Mail. All PVRC members, non-members interested in membership and guests are welcome. For information contact Roger Stephens, K5VRX, 703-658-3991 for Virginia meetings; or Cliff Bedore W3CB or get on 147.00 for Maryland meetings.

Downtown Lunch Group: Meets on the 3rd Wednesday or Thursday of the month in the downtown area of Washington, DC. Locations occasionally change, but are always Metro accessible. Details are sent out on the PVRC reflector. Feel free to contact Eric W3DQ or Brian WV4V for details and directions.

Southwest VA Chapter: The Southwest VA group meets each Wednesday at about 8:30 AM at Hardees at 20265 Timberlake Road in Lynchburg, VA. This is an informal gathering, but normally has about 10-12 attendees..Contact Mark Sihlanick N2QT, Tel: 434-525-2921

SOMD Region Meeting: The Southern Maryland Chapter meets at 6:30PM on the first Tuesday of even numbered months. We meet in the vicinity of Charlotte Hall, MD, with the specific location (usually a local restaurant) to be announced several weeks prior to the meeting (keep an eye on the reflector). These meetings are open to all PVRCers, guests, and those interested in joining PVRC. Contact Tom AB3IC for information: e-mail: GL1800Winger@verizon.net - cell: 240-434-3811

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

Now a Word From Our Sponsors

PVRC doesn't ask for dues, but the Club does have expenses. Please send PayPal donations via DAVE@WR3L.NET or by snail mail to Dave's address at QRZ.com. You can also support the Club by buying from the firms listed who advertise in the newsletter, or by getting your company to sponsor the newsletter!

TOWER WORKS

Specializing in Rohn guyed towers

Don Daso K4ZA

515 Withershinn Drive

Charlotte NC 28262

704-408-7948

e-mail: k4za@juno.com

www.k4za.com

THE R. F. CONNECTION
"Specialists in RF Connectors and Coax"

213 North Frederick Avenue
Suite 11-F
Gaithersburg, MD 20877

Tech Support:
301-840-5477

24-hour Fax:
301-869-3680

Order line:
800-783 -2666

Email: rfc@therfc.com

Please visit us at:
Http://www.therfc.com

Our catalog includes:

UHF Series, N Series, BNC Series, Adapters, F Series, DIN Plugs, Portable Radio Power, DIN Plugs, Hardline Connectors, Audio Connectors, Microphone Connectors, FME Series, SMA Series, Reverse Thread SMA Connectors, MCX Series, MMCX Series, Adapter Kits, Reverse Polarity (TNC, N, SMA), 39 coax types and 5 balanced lines

QSL CARDS By LZ1JZ

WWW.LZ1JZ.COM

By Scott KA9FOX
•Free Ham Radio Classifieds (most popular ham swap site)
•Low Cost Web Hosting, Email & Domain Name Services

CYCLE 24

6063-T832 Aluminium

O.D.	Per Foot
.375	$.50
.5	$.70
.625	$.80
.75	$.90
.875	$.95
1	$1.00
1.125	$1.10
1.25	$1.30
1.375	$1.40
1.5	$1.50
2.0	$2.25

U-Bolt Saddle Clamps for 1.25" Tubing – 3.5" Tubing **Galvanized – Zinc Plated – Stainless Steel**
Monoband Yagi Antenna Kits for 6-20 Meters **Custom Built and Designed Yagi Antennas**

TX38 Triband Yagi Antenna
10-15-20 Meter with Monoband Performance
2 Elements on 15 and 20 and 4 Elements on 10
All hardware weather resistant
Antenna Rated for over 100 MPH

Official Antenna of WRTC 2014

www.cycle-24.com
sales@cycle-24.com
870-715-8228

ANAHEIM, CA
(Near Disneyland)
933 N. Euclid St., 92801
(714) 533-7373
(800) 854-6046
Janet, KL7MF, Mgr.
anaheim@hamradio.com

BURBANK, CA
1525 W. Magnolia Blvd, 91506
(818) 842-1786
(800) 854-6046
Eric, KA6IHT, Mgr.
Magnolia between
S. Victory & Buena Vista
burbank@hamradio.com

OAKLAND, CA
2210 Livingston St., 94606
(510) 534-5757
(800) 854-6046
Mark, WI7YN, Mgr.
I-880 at 23rd Ave. ramp
oakland@hamradio.com

SAN DIEGO, CA
5375 Kearny Villa Rd., 92123
(858) 560-4900
(800) 854-6046
Tom, KM6K, Mgr.
Hwy. 163 & Claremont Mesa
sandiego@hamradio.com

SUNNYVALE, CA
510 Lawrence Exp. #102, 94085
(408) 736-9496
(800) 854-6046
Dan K6DN, Co-Mgr.
Howard, W6HOC, Co-Mgr.
So. from Hwy. 101
sunnyvale@hamradio.com

NEW CASTLE, DE
(Near Philadelphia)
1509 N. Dupont Hwy., 19720
(302) 322-7092
(800) 644-4476
Rick, K3TL, Mgr.
RT.13 1/4 mi., So. I-295
newcastle@hamradio.com

PORTLAND, OR
11705 S.W. Pacific Hwy.
97223
(503) 598-0555
(800) 854-6046
Leon, W7AD, Mgr.
Tigard-99W exit
from Hwy. 5 & 217
portland@hamradio.com

DENVER, CO
8400 E. Iliff Ave. #9, 80231
(303) 745-7373
(800) 444-9476
John, N5EHP, Mgr.
denver@hamradio.com

PHOENIX, AZ
1939 W. Dunlap Ave., 85021
(602) 242-3515
(800) 444-9476
Gary, N7GJ, Mgr.
1 mi. east of I-17
phoenix@hamradio.com

ATLANTA, GA
6071 Buford Hwy., 30340
(770) 263-0700
(800) 444-7927
Mark, KJ4VO, Mgr.
Doraville, 1 mi. no. of I-285
atlanta@hamradio.com

WOODBRIDGE, VA
(Near Washington D.C.)
14803 Build America Dr. 22191
(703) 643-1063
(800) 444-4799
Steve, W4SHG, Mgr.
Exit 161, I-95, So. to US 1
woodbridge@hamradio.com

SALEM, NH
(Near Boston)
224 N. Broadway, 03079
(603) 898-3750
(800) 444-0047
Chuck, N1UC, Mgr.
sales@hamradio.com
Exit 1, I-93;
28 mi. No. of Boston
salem@hamradio.com

Special Holiday Discounts Off Our Already Low Prices!

HAM RADIO OUTLET®

WORLDWIDE DISTRIBUTION

GREAT YAESU WINTER SPECIALS Through 12/31/06

YAESU

FT-897D VHF/UHF/HF Transceiver
- HF/6M/2M/70CM • DSP Built-in
- HF 100W (20W battery)
- Optional P.S. + Tuner • TCXO Built-in

Call Now For Our Low Pricing!

FT-817ND HF/VHF/UHF TCVR
- 5W @13.8V ext DC • USB, LSB, CW, AM, FM
- Packet (1200/9600 Baud FM) • 200 mems
- built in CTCSS/DCS • TX 160-10M, 6M, 2M, 440
- Compact 5.3" x 1.5" x 6.5", 2.6 lbs
- FNB-85 NiMH battery + NC-72B included

Call Now For Low Pricing!

FT-8800R 2M/440 Mobile
- V+U/V+V/U+U operation
- V+U full duplex • Cross Band repeater function
- 50W 2M 35W UHF
- 1000+ Memory channels
- WIRES ready

Call Now For Low Pricing!

VX-2R 2M/440 HT
- World's smallest Dual-band HT w/ wide RX
- 1.5 W RF output
- WIRES compatible
- 1300 Memory channels

Call For Low Price!

FT-60R
- 2m/440 HT
- 5W Wide-band receive
- CTCSS/DCS Built-in
- Emergency Auto ID

Low Price!

VX-7R/VX-7R Black 50/2M/220/440 HT
- Wideband RX - 900 Memories
- 5W TX (300mw 220Mhz)
- Li-Ion Battery
- Fully Submersible to 3 ft.
- Built-in CTCSS/DCS
- Internet WIRES compatible

Now available in Black!

VX-6R 2M/220/440HT
- wideband RX – 900 memories
- 5W 2/440 , 1.5W 220 MHz TX
- Li-ION Battery - EAI system
- Fully submersible to 3 ft.
- CW trainer built-in

NEW Low Price!

VX-150 2M Handheld
- Direct Keypad Entry
- 5w output
- 209 memories
- Ultra Rugged

Call Now For Special Pricing!

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)

Call for Low Price!

FT-7800R 2M/440 Mobile
- 50w 2m, 40w on 440mHz
- Weather Alert
- 1000+ Mems
- WIRES Capability
- Wideband Receiver (Cell Blocked)

Call Now For Your Low Price!

FT-2000 HF + 6M tcvr
- 100 W w/ auto tuner • built-in Power supply
- DSP filters / Voice memory recorder
- 3 Band Parametric Mic EQ • 3 IF roofing filters

Call Now For Low Pricing!

FT-8900R Quadband Transceiver
- 10M/6M/2M/70CM • Wires capable
- 800+ memories • Built-in CTCSS/DCS
- Remotable w/optional YSK-8900

Call Now For Special Pricing

AZ, CA, CO, GA, VA residents add sales tax. Prices, specifications, descriptions, subject to change without notice.

Look for the HRO Home Page on the World Wide Web http://www.hamradio.com

COAST TO COAST FREE SHIPPING
UPS - Most Items Over $100
Rapid Deliveries From The Store Nearest To You!