



PVRC Newsletter

January 2012

Letter from the President – Rich NN3W

On behalf of the Officers Trustees of the Potomac Valley Radio Club, I would like to extend to all the members my greetings and wishes for a happy, prosperous and successful New Year. As we enter into what should be a memorable and exciting year, I cannot help but reflect on a couple of chapters in PVRC's history – both of which have been recently concluded.

As of December 31, 2011, we close a two-year chapter guided by our outgoing president, Mark Bailey, KD4D. Mark has shepherded the club over a successful cycle which entailed numerous contesting victories by individuals within the club (new section or geographic records or category wins) and by the club as a whole – including both the ARRL 10 Meter contest, the Worked All Europe contests, and, most gratifyingly, the ARRL November Sweepstakes competition for both 2009 and 2010. The club has also seen impressive membership growth, a reinvigorated club 5M awards program, the recommencement of our monthly (almost!) newsletter, and a vigorous and

active e-mail reflector. A job well done, Mr. President!

At same time that we express our appreciation for the conclusion of one chapter in the club's annals, we must also undertake the bittersweet duty of concluding another chapter in the club's annals – that of the very founding of PVRC.

As most all of you have undoubtedly heard by now, the sole surviving founding member of PVRC, Bill Schuchman, W7YS, became a silent key on December 23, 2011, after some 70 years as an amateur radio operator, and after nearly 90 years with us on Earth. Along with well known call signs such as W3GRF, W4AAV, W4KFC, N0FFZ, W4LUE, W0DX, W3IKN, and W4KFT, Bill's call (which is actually a vanity call) and history takes us back many generations to a time – just after the conclusion of World War II – when a group of radiosport enthusiasts joined together to form what would be one of the greatest clubs in all of amateur radio.

The leadership and example of our club's founders has passed on from year to year and the standards set by them are standards that every member should strive to uphold. In particular, Bill's spirit of giving, sportsmanship, and knowledge will be greatly missed and we are all better having been in his presence. Farewell OM, and very 73.

Now, a new chapter commences. I came to PVRC back in 1996 – having just finished by collegiate studies at Washington & Lee University. Eager to jump back into “business” I joined up with the club in the Fall of 1996, only to be immediately “sidetracked” by other activities including work, marriage, family, and travel. Not until my wife Amanda and I bought our second home in suburban Virginia in 2004, did I find myself sitting on the back deck of my newly purchased home, looking up at the mighty oaks and poplars and the back yard, and thinking to myself, “those trees would be good supports for wire antennas.” Only a ham would ever think this.....

After several attempts using a piece of rope and a box wrench did I manage to get a line slung over a tree and an

antenna erected (a long wire with no termination “cut” for 40 meters). It performed *terribly* but I was back in business. Somehow along the way, I managed to win a contest or two and managed to turn in a few points for the club's competition. And, somehow I got roped into being a Vice President, and then, President.

Well, now that I am here, I guess it is time for business. There are a lot of things I think the club would like to accomplish over next year. We'll go over them in future newsletters and at future meetings. However, I would to just say that we will work to accomplish much of what was envisioned by our founding members including W7YS and which was continued on by KD4D.

If you have questions or thoughts or complaints or compliments, please feel free to email me or any of the other officers or trustees. My door (e-mail spam filter willing) is always open, and I think the same is true of the others.

73 and good contesting,

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:

[K3MIM](#) [N3OC](#) [N4ZR](#) [W4ZYT](#) [NW4V](#) [K2AV](#) [K4ZA](#)

PVRC Charter Members (* denotes SK):

[W3GRF*](#), [W4AAV*](#), [W4KFC*](#), [N0FFZ*](#), [W4LUE*](#),
[W7YS*](#), [VP2VI/W0DX*](#), [W3IKN](#), [W4KFT](#)

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

Maximizing QSOs/hour While Running or S&Ping – from the PVRC Reflector

Bill N3RR kicked off an interesting discussion on the PVRC email list a while back: “***How can I maximize my QSO rate, ie free up more time to work more stations whether running or S&Ping?***”

This led to a number of inputs from WM3T, WM3O, AA4NC, W3LPL, K1KO, K3TN and K0DQ (and maybe others I missed), summarized here:

- **When running, pick the best frequency** - operate as much as possible below about .025 on CW (in a DX contest) – save the higher frequencies for late in the contest. If you have a good receiver, good ears, a KW and Yagis you can operate down there most of the time. In this day and age of SO2R, don't hesitate to take over a frequency that an SO2R op has left neglected for too long.

Select as clear a frequency as possible so you can be heard (and spotted by skimmers) and so you can copy calls quickly and accurately. Key clicks from adjacent frequencies are often an important problem in clear frequency selection.

- **Feel loud** – best to be loud (especially if you want to run below .025!), but always *feel* loud. If you are running and get a partial call, reply to what you have and trust the station will come back with their call and let the logging software send the acknowledgement of the change vs. asking for a fill or sending “?”
- **Know when to hold ‘em and when to fold ‘em** - Don't stay on a bad frequency for too long. It's not very difficult to find a clearer frequency on 20-10 meters, harder on 80 and 40.
- **Polite brevity is the soul of contesting wit** – minimize the extraneous words you send. Eschew “Please Copy...” Be polite and encouraging but never repeat the other stations exchange or comment on the weather or tell the other station about the computer problems you are having...

On SSB, never repeat the other station's phonetics – always come back to Whiskey Three Linguini Pastrami Linguini as W3LPL. Use the standard ICAO phonetics or the shortest ones you know work. On CW, don't include “TEST” or “SS” in your TU message.

- **Learn the callsigns** – if two stations are calling you and one is a regular contester and the other is not, odds are replying to the contester will result in a quicker QSO – and it is much more likely that the non-contester will hang around and still be there when you are done.

Similarly, if you are familiar with the structure of callsigns in different countries as well as familiar with the ones that are most active, you are much more likely to be able to guess who to come back to if you only heard part of a call. In a RTTY contest, seeing &^5AU on the screen probably means AA5AU called you. In Sweepstakes 9R is probably N9RV and he is probably in Montana. In a DX contest, I4DOH is probably really GI4DOH. You still need to make sure you validate the real call, but sending a probable call vs “?” will always be faster.

- **Minimize repeats and fills** – knowledge of calls will help you increase your ability of getting the callsign right the first time. Practicing in typical pileup

conditions is key, as well. Operating in contests is the best practice, but Morserunner (with QRN, QRM and LID modes on) is great practice. Keep your master.dta up to date and learn to watch that window as you enter a call into your logging software.

- **Answer the fastest station first** – when signals are of comparable strength, it is sort of human nature to lock onto the slowest CW signal or the slowest SSB reply. Fight this tendency! Working faster stations increases your rate, and slower stations are more likely to wait around and try again.
- **Get your callsign known** - The best way to learn the callsigns is to operate lots of contests – including state QSO parties and the various single country contests. That is also the best way to get other stations familiar with your callsign – and most people who are S&Ping are more likely to stop when they hear a familiar callsign, they are more likely to wait around to get through and they are way less likely to end up as a Not In Log (NIL) penalty for you.
- **Know your contesting software like the back of your hand** – update the software long before the contest, have all your function key definitions down pat long before the contest, use the same conventions for shortcuts across all contests. Get the key sequences burned into muscle memory. A great way to do this is get on in the [Thursday Night Sprints](#) that NCCC sponsors.
- **Never wait on someone when S&Ping** – all modern radios have 2 VFOs, if not two separate receivers. If you come across a station you need but they haven't IDed or they are working someone else, switch to the other VFO and check back later. There are always other stations to work.
- **When running you don't have to ID after every QSO** – always controversial, but if you called CQ and three stations came back, work the first one and then just send "TU" and see if one of the others comes back. Then ID after that QSO. N1MM and other logging software support modes to send your call on every other or every third TU.
- **Be skimmer friendly** – make sure you are sending CQ and TEST clearly on CW, without speeding them up compared to your callsign. This will help ensure the skimmers find you. If you are operating assisted and you see a skimmer spotted you, don't leave that run frequency for at least 5 minutes in order to surf the spotting wave.
- **Beware the zero beat blues** – in this day and age of skimmer and cluster spotting, the station running often gets blasted with dozens of stations calling on exactly the same frequency. Logging software often supports putting an offset into spot grabs, or you can have XIT on with a 100 or so Hz offset when S&Ping.
- **Learn to touch type** – being a good typist increase the speed **and** accuracy of entering calls while being able to prepare for the next QSO.
- **Check your code speed** – it really helps to be fluent at 35 wpm or more, so that when you are fatigued or distracted you are still accurate. The ARRL has code practice .mp3 files [online](#), or check out www.lcwo.net.
- **Record the contest** – not too many of us actually have time to do each contest *twice*, but if you can record at least your run periods and then listen through them at your leisure, you will spot many bad habits that can be avoided during the next contest. (*See the following piece by Ken K6LA.*)

UBN Analysis – Ken K6LA/VY2TT (with permission, from CQ-Contest)

I've just completed listening to my recording of the errors in my log flagged by the CQWW CW 2010 Log Checking Report. My conclusion is the LCR software and reviewers do a great job.

Not surprisingly, of the 92 errors flagged as bad calls, only one was actually copied correctly. I had K4BX in my log. The LCR said the correct call was K2AX. K4BX didn't submit a log. K2AX had me in his log with a 2 minute difference. I didn't have K2AX in my log on that band. I don't see any way to avoid that type of bad flag.

I asked for a fill on 7 of those bad calls, and still got it wrong. 15 times the other station corrected me, but I didn't correct my log and still got it wrong. What I found surprising was the number of stations that didn't bother to correct me.

Many of the busted calls were on S / H, D / B and U / V characters. Now if only I can improve on those pairs. Only one was an obvious typo with 4 characters in the suffix

Of the 25 NILs, 13 sounded like good QSOs on the recording. A few of those NILs even confirmed a 2nd time. No idea how to avoid those. Of the remaining, most were NILs because I hit the "TU VY2TT" key too fast and the QSO partner didn't hear me confirm. I know I'm twitchy on the TU key and have to be slow it down. On just one of the NILs did I log the call when there was clearly no QSO. I had a real lid moment on the 2nd radio and started CQing after calling a station that didn't come back to me.

What I did find surprising was of the 28 uniques, 14 were actually good calls. I've always thought about 90% of uniques are copy errors that can't be confirmed as errors.

Percentagewise, not surprisingly, Sunday late afternoon and evening had more errors and lid moments. Nothing like listening to all your lid moments to put a dent in the ego.

73, Ken, K6LA / VY2TT

Floods Devastate HSoAC – How to Help

The recent floods in Thailand devastated the HSoAC club shack. If you would like to make a donation to help RAST get the club station back up and running you can do so using PayPal by sending funds to donate@rast.or.th or go [here](#) to see pictures of the flood's impact on HSoAC and click on the PayPal "[Donate](#)" button.

How Hedy Lamarr Invented Spread Spectrum – Eric W3DQ

From the NPR [Review](#) of the book “*Hedy’s Folly: The Life and Breakthrough Inventions of Hedy Lamarr, the Most Beautiful Woman in the World*”

At the height of her Hollywood career, actress Hedy Lamarr was known as "the most beautiful woman in the world." For most of her life, her legacy was her looks. But in the 1940s — in an attempt to help the war effort — she quietly invented what would become the precursor to many wireless technologies we use today, including Bluetooth, GPS, cellphone networks and more.

An Unlikely Beginning

A new book by Pulitzer Prize-winning author Richard Rhodes sets out to rewrite America's memory of Lamarr. *Hedy's Folly: The Life and Breakthrough Inventions of Hedy Lamarr, The Most Beautiful Woman in the World*, chronicles her life and the inventive side that is not often mentioned.

Rhodes tells Rachel Martin, guest host of weekends on *All Things Considered*, that Lamarr had been fascinated with science as a child growing up in Austria, but pursued acting instead. Her first break into Hollywood came when she heard Louis Mayer of Metro-Goldwyn-Mayer studios was scouting for actors.

"She went to see him in London. He wasn't willing to offer her a very good deal, so she said no and walked out, having great confidence in herself," Rhodes says. When Lamarr found out Mayer was headed back to the United States, she bought a ticket for the same boat.

"Once she was aboard, she found a way to make him long for her — after all, she was an actress. And before the ship landed in New York, she had a much, much better contract — the equivalent of about \$3,000 a week for seven years," he says. "Within a year, with the appearance of her in the film *Algiers* opposite Charles Boyer, she was a superstar."

Un-Hollywood

Rhodes says Lamarr was most often cast based on her looks and had few lines. She quickly grew bored in Hollywood. "Hedy didn't drink. She didn't like to party," he says. "Her idea of a good evening was a quiet dinner party with some intelligent friends where they could discuss ideas — which sounds so un-Hollywood, but Hedy had to find something else to do to occupy her time."



Rhodes says she had a drafting table installed in her house and started inventing. Among her projects was an improved spotlight and a tablet that, when dissolved in water, created a soda similar to Coca-Cola. "She laughed later and said, 'Well, it never really worked.' It probably tasted like an Alka-Seltzer tablet, which is basically what it was," he laughs. "But she was constantly looking at the world and thinking, 'Well, how could that be fixed? How could that be improved?'"

Inspired By War

As she was inventing, Rhodes says, Lamarr was simultaneously glued to the events of World War II. When German submarines began targeting passenger cruise liners, he says, she felt compelled to invent something to help the Allied cause. She zeroed in on torpedoes, which were powerful weapons but hard to control. Rhodes says she thought that if they could be radio-guided, there was a better chance they would hit their target. "She understood that the problem with radio signals was that they could be jammed. But if you could make the signal hop around more or less randomly from radio frequency to radio frequency, then the person at the other end trying to jam the signal won't know where it is," he says. "If they try to jam one particular frequency, it might hit that frequency on one of its hops, but it would only be there for a fraction of a second."

Thus, her take on "spread-spectrum radio" was born. Lamarr and her co-inventor, composer George Antheil, submitted their idea to the National Inventor's Council and received a patent for their "[Secret Communication System](#)" in 1942. They were anxious to share their invention with the Navy, but got a lackluster response. "The Navy being the Navy, if it hadn't been able to make a torpedo that worked, obviously it wasn't going to be receptive to ideas coming in from outside," Rhodes says. "The Navy basically threw it into the file."

Untouched For Years

The Navy classified the patent as top secret and it remained untouched for years. But after World War II, the Navy was interested in developing a so-called "sonobuoy" that would use sonar to detect submarines in the water and transmit the information to an airplane above. However, it needed a way to jam-proof the signal between the buoy and the plane.

"They resuscitated the idea of frequency-hopping and built it into the sonobuoy. And after that, the whole system just spread like wildfire," Rhodes says. The military and private companies all started developing their own technologies around Lamarr's invention. Today, vestiges of her frequency-hopping technique are found in most digital devices that communicate wirelessly.

But Rhodes says Lamarr's contribution was "lost in the noise" for decades. In the 1990s when she was in her early 80s, one of the pioneers of wireless communications for computers came across Lamarr's patent and realized she'd never been honored. "He started the ball rolling so that one of the major communications organizations would give her one of its awards. She by then had had so much bad plastic surgery that she didn't like to go out in public so she received the award by telephone," he says. "When they called her up to tell her she would get the award her first words were, Hedy Lamarr being Hedy Lamarr, 'Well, it's about time.'"

Silent Keys

Fred K3ZO reports that Ben Shaver AA4XU became a Silent Key in early December at age 81.

Howie N4AF reports that Bill W7YS passed away on December 23rd after complications from emergency surgery. A vintage picture of Bill can be seen [here](#).

Welcome New Members – W3LL

Please welcome the following new members who were voted into PVRC during the months of November and December: In the Tidewater Chapter, Thomas K4AEN

Upcoming Contests and Log Due Dates

Contests This Month

- Jan 7 – ARRL RTTY Roundup
- Jan 14 – NAQP CW
- Jan 21 – NAQP SSB
- Jan 21 – ARRL VHF SS
- Jan 27 – CQ WW 160 CW

Logs Due This Month

- Jan 3 – ARRL 160M
- Jan 10 – ARRL 10M

See WA7BNM's [Contest Calendar](#) for more detail and the latest information.

The Editor's Last Word – John K3TN

It is time for those 2012 contesting New Year's Resolutions. Mine are going to be to (1) reduce my error rates in my contest logs; (2) get an actual resonant, directional and rotatable antenna up at my house; and (3) pick one domestic and one DX contest where I carve out the time to fully compete. Of course, I've been resolute about (2) and (3) for about 20 years now, but hope springs eternal. On (1), I've been tracking my UBN reports and have been doing pretty well, except for a crappy performance in the WPX CW for some reason. But there is still room for improvement there.

Thanks to Eric W3DQ for a submission for this month's newsletter and to Rich NN3W for his president's column. If you have any post-contest write-ups, or cold weather antenna projects you are proud of, drop me line [here](#).

– 73 John K3TN

Member Classified Ads

Your Ad Here!



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: Topolino's, 6320 Old Branch Avenue, Temple Hills, MD. Tel: 301-449-6160. Meets at this location during the months of January, March, May, September and November.

Contact: Mark [KD4D](#)

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 about 10-12 attendees. Contact Mark Sihlanick N2QT, Tel: 434-525-2921

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](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



- Free Ham Radio Classifieds (most popular ham swap site)
- Low Cost Web Hosting, E-mail & Domain Name Services
- Web Design & Development

<http://www.QTH.com>

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, W17YN, 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, K4JVO, Mgr.
Doraville, 1 mi. no. of I-285
atlanta@hamradio.com

WOODBRIIDGE, VA
(Near Washington D.C.)
14803 Build America Dr. 22191
(703) 643-1063
(800) 444-4799
Steve, W4SHG, Mgr.
sales@hamradio.com
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, N1UJ, Mgr.
sales@hamradio.com
Exit 1, I-93.
28 mi. No. of Boston
saalem@hamradio.com

Special Holiday Discounts Off Our Already Low Prices!



HAM RADIO OUTLET

WORLDWIDE DISTRIBUTION

GREAT YAESU WINTER SPECIALS Through 12/31/06



FT-897D VHF/UHF/HF Transceiver

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



FT-817ND HF/UHF/HT 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-U/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

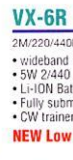
Low Price!

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 2440, 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-557D

- 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!

