Potomac Valley Radio Club Newsletter April 2007

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

Thanks to all of our members for the great contest season. GO PVRC!

FROM THE PRESIDENT -- Jim, WX3B

I hope that many of you had a chance to participate in the recent CQWW WPX SSB contest – one that continues to be a favorite at WX3B! It signals the beginning of the season 20 meter propagation returns to the evening hours, as was the case in the contest. We worked Europeans AFTER 7:00pm, and Asia was alive and well until at well after 9:00pm.

Several folks have approached me asking if we have an "organized" effort or meeting place for PVRCers at this year's Dayton Hamvention this year. I suggest that we use the Super-Suite at the Crowne Plaza as our gathering location, as there is usually *[Ed- **always!**]* a lively group of contesters chatting and indulging in the Pizza Bash both Friday and Saturday nights. I am looking for that "one magical volunteer" each night that will maintain the PVRC sign-up list. That person could be YOU! please let me know.

While our April contesting activities seem somewhat limited, there are two very exciting DX-Peditions to rare countries that are about to unfold.

Dr. Hrane Milosevic, YT1AD is leading an international team to Swain's Island. Starting on Sunday, April 8, they'll be heard using the callsign N8S. PVRC member David Collingham, K3LP is the Co-Leader, and one of our Newsletter advertisers and PVRC member, Joel, K3RFC and the RF Connection has donated equipment. In spite of the GREAT demand for this entity, I expect many of us will have good fortune in the pileups – due to the relatively 'easy' path. You can read more about their operation at: **http://www.yt1ad.info/n8s/index.html**

Towards the end of April, look for the often talked about 2007 Scarborough Reef DXPedition. The location of this reef and the fact that it is somewhat 'polar' path to make contact will create a rather BIG challenge as we in the mid-Atlantic area attempt to work this rare island, more easily described as a gathering of rocks. For more information go to their website:

http://www.scarboroughreef.com/index.html

Thank you John Evans, N3HBX for giving an outstanding presentation last month at the Capitol College on the Ionosphere and why it works the way it does. John studied the Ionosphere for many years and got to use some very sophisticated equipment to do so.

Now that the weather is getting warmer – we can all start thinking about the potential improvements we plan to make to our stations! I hope everyone is having an enjoyable spring season.

73, Jim Nitzberg X3B

EDITOR'S NOTE -- Eric, W3DQ

I trust everyone has made it through the strange weather, propagation and band conditions, and the early changeover to Daylight savings time.

This issue is a bit "light," but contains excellent contributions and features from you, our talented and insightful members. Thanks to Kevin, W3DAD, and Kam, K3KS for their contributions.

Some of you have asked questions about posting scores. I've proposed that the PVRC publish a special "scores only" edition of this newsletter, and (discretely) asked for volunteers to take on this effort. The silence was deafening! The PVRC Reunion scores are in the works, and I hope to get them out in the May Newsletter. Apologies for the delays.

As always, I encourage you to participate in this effort by contributing your thoughts, ideas, experience, concerns and comments to this publication. I'm always looking for short (approximately 250 words) contributions on contest and station-related subjects If there's anything in particular you'd like to see -- or not -- in the Newsletter, please let me know!

Please pass along interesting websites and other resources that would be interesting and valuable to our membership. I'm hoping to publish a list in the May Newsletter, along with a list of PVRC members who are planning to be at Dayton. If you want to be listed email me with your hotel info.

See you in Visalia, Dayton and on the air!

MINI- REVIEWS -- Brian, WV4V

Although he became a Silent Key over two decades ago, the media continues to produce articles on the legendary Don Wallace, W6AM.

"*Antenna of the Universe; Grandpa had a thing about good reception*," by Don Wallace, Harper's Magazine, May 2006. A memoir by a grandson also named Don Wallace, who is a successful modern day author. He relates how, because of his brash outspokenness, he was banished on weekends by his parents to Grandma's, W6MA, and Grandpa's, W6AM, 120 acre Radio Ranch in Palos Verdes, California.

At the age of 11, he was more interested in nature and literature than the technical features of one of the world's most famous ham shacks, but he did recognize his grandfather as a tall, historical figure. From the eyes of this adolescent, one gets a very good description of the sights and sounds of a typical day in the life of W6AM. Don would fire up the radios and listen to 12 receivers at the same time, leaving them on critical frequencies that might capture a rare DX signal or a long cherished overseas acquaintance. The cacophony would be enough to drive most people up the wall! Grandson also drove in the Lincoln with a kilowatt rig while Grandpa would send "45 WPM at 55 MPH." Talk about multitasking! And finally, Grandson noted the QSO's with the celebs of the day such as Senator Goldwater and JY1.

Tom Lally, W1NSS, writes about a chance encounter with W6AM in the 1950's in the *July 2005 edition of YORFO, the publication of the MVARC*. Invited up the hill to Radio Ranch, Tom teases the reader with the possibility that W6AM was running power way above the legal limit, and that Don hired a security guard to warn of unexpected visits by FCC inspectors. In the Harper's article, the Grandson noted the Ranch contained a Nike missile site within it at that time which may have explained the guard.

Don was also remembered in a whimsical short story by Hugh Cassidy, WA6AUD, 1980 entrant to the CQ DX Hall of Fame. Entitled "*The Stone that Knows DX,"* it was written ten years ago, but more recently published on the Internet by Paul M. Dunphy, VE1DX, in his DX Stories series.

Hugh relates the now famous story of how Don, the 1978 entrant to CQ's DX Hall of Fame, and who was at or near the top of the DX Honor Roll, missed the rare CR8 - Damao, a colonial territory in India, that was on the air for a very brief time. Hugh, writing a truly West Coast amateur radio fantasy supposed that a stone made of quartzite jasper had magical properties that could detect rare DX signals. Are today's DX packet clusters and the online DX Summit not a modern day jasper stone fantasy come true?

Take the opportunity to read these contemporary articles remembering Don, all of which are accessible on the Internet.

1959 FILM ON AMATEUR RADIO
from the Phil-Mont Mobile Radio Club
http://www.phil-mont.org

In 1955, The Phil-Mont Mobile Radio Club provided emergency communications during the devastating flooding along the Delaware River and in the Pocono Mountains following Hurricane Diane, the sixth costliest U.S. hurricane of the 20th century...fifty years before Hurricane Katrina.

In 1959, the club produced this short film to explain amateur radio, and especially mobile communications as practiced by the club.

http://video.google.com/videoplay?docid=2943570522939177086&hl=en

RTTY CONTESTING -- Mike K3GMH

Band Strategies:

There are two RTTY contests in April, the EA and SP RTTY Contests, similar in many ways, yet each needing a different band strategy.

A review of the rules shows the reason for the difference. The EA Contest emphasizes the lower bands and the SP Contest rules seem to favor upper bands (20-10) operation. My reasoning for this difference is the points per QSO awarded for each contest.

The EA Contest awards one point for each QSO within own continent and two points for each QSO outside own continent. And here is the reason for the emphasis on the low bands, three points for each QSO within own continent and six points for each QSO outside own continent. In addition, the USA and Canadian call area are multipliers as well. Again, the lower bands will award us East Coast types with more USA and Canadian call areas.

The SP Contest awards two points for working USA stations, five points for other North American countries, and ten points for each QSO with a station on another continent. Off continent QSOs are emphasized which seems to favor upper HF band operation. Unfortunately, only the DXCC listed countries plus Polish provinces count as multipliers - no USA/Canadian call area benefit.

Rules for the both Contests can be viewed through:
http://www.rttycontesting.com/records.html

The EA RTTY Contest will be held from 1600 UTC April 7 to 1600 UTC April 8.

The SP RTTY Contest will be held from 1200 UTC April 28 to 1200 UTC April 29

THE TOOLBOX -- Don, K4ZA

Gadgets—I like 'em as much as the next guy! Indeed, I sometimes find building a gadget will solve a problem better than anything I can buy, or there's no time to do anything else. This month, some simple little boxes, adapters, or gadgets I've found useful.

? **The Universal I/O box**

This ultra-simple box remains invaluable. It's simply a collection (okay, a bunch) of jacks all wired together. Stereo phone jacks, RCA jacks, mini-jacks, mono phone jacks. But if you need to connect up a bunch of stuff, this little box will save time and perhaps a run to the store to buy the "proper" cables. Laptop audio IN/OUT, headphone breakouts, mixers, can all be interconnected easily.

? **Sex Change Plug**

I know, it sounds like a bad movie from 1950, but I don't know what else to call this. I carry it whenever I head to someone else's shack with my own paddle (a G4ZPY single-lever model). Sometimes their keyer is wired so my paddle sends CW backwards—the dots and dashes are reversed, in other words. Insert the sex change plug, and voila, my paddle keys correctly. It's a simple stereo jack with the two "hot" leads reversed. Beats turning the paddle upside down or breaking out the soldering pencil any time you encounter this situation.

? **Stereo/Mono Breakout**

A title almost as bad—a prison movie from the 1970s, huh? But it's simply a way to get mono gear to interface with stereo jack-equipped gear. Despite numerous warnings against this on various audiophile reflectors I've read over the years, I have never experienced any problems simply combining the two hot channels. The ORION is the only radio I've encountered whose manual specifically states one must use stereo headphones for proper audio use.

? **Keying Adapter**

Many of us have faced this dilemma—our modern solid-state radio isn't capable of keying an older amp, with its attendant high voltage. (*SB-220 owners take note*) I've found this little circuit board (he calls it a "universal keying adapter," and it truly is) from N0XAS to be especially handy. Check out Dale's webpage for further details. http://www.hamgadgets.com

But, if the solution, but not the workshop approach appeals to you (you're looking for more of a "plug and play" approach, this product may be to your liking:

http://www.theheathkitshop.com/_ampkeyer.html

? **Playing with PVC Pieces 'n Parts**

I can always count on K4BVQ (the owner of Charlotte Pipe & Foundry) to help me or answer my questions regarding this oft-used material. I see it a lot in the homebrew world. Invariably, it seems to be misunderstood and often misused, specifically when building antenna projects. Especially when used as a coil form. Any material that's in close proximity to the coil will reduce its Q. Meaning the form as well as any end fittings (if used). This explains why the very large end caps used by Hustler for their high power coils have lower Q than the smaller coils. But I digress…and find a lot of homebrewers using PVC for coil forms. On lower frequencies, white PVC works okay, but its dielectric strength goes down as you go past 15M. And forget gray PVC for any RF application. Both Lexan® and Delrin® work great, but are somewhat more expensive, and can be harder to find (although McMasters carries a good selection).

I sometimes see the PVC end caps drilled way off center. I admit that finding the center of the PVC pipe cap can be annoying. But simply filing the rounded end flat (use a bench sander if you have one) will help. Then, you can use a drawing compass and make arcs across the flat. At the intersection of these arcs, drill your hole. Spade bits will drill very neat and clean holes in PVC. Again, a drillpress helps immensely in such work. High speeds, sharp bits and slow going are the key to success.

And while you can use regular PVC cement to secure things, it's sometimes easier to just use acetone. A hobby shop syringe will allow you to apply it precisely. Indeed, you can usually make you own "plastics glue" simply by dissolving tiny shavings or bits of the plastic you wish to glue in the acetone—the result will be a cement that's perfect for the material you're working. Be careful when using acetone—it's highly flammable and will stain or dull almost any finish it comes in contact with.

What's in your toolbox?

Long-term readers of K4ZA's various columns and radio writings have wanted them collected into book form several times, or to have them organized on a webpage, or otherwise gathered in one place. While I was always pleased to receive such queries, I was concerned about maintaining some control over the material, and the ability to keep things "up to date," so I hesitated to do anything, at all.

I've finally collected over 20 years of writing on to one CD-ROM, organized as follows:

1) Wit
2) Wisdom
3) Tools & Workshop Notes
4) Carolina DX Association Newsletter Editorials
5) Carolina DX Association Member Profiles
6) Reviews (Products & Publications)
7) Tower & Antenna Notes
8) Contesting
9) *QST*, *CQ*, published articles, presentations, speeches
10) Images

There are currently over 300 pages of material--all in MS WORD *.doc format.

Selling these CDs for $20, postpaid. Shipping May 1st.

WHERE CAN YOU FIND PVRC MEMBERS?

? *THE 2007 W3LPL Annual Open House*
Saturday June 16th at noon (rain or shine).

? *The PVRC NW Region*
Meetings are 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.

73, Bud W3LL

? *The Annapolis Crew*
Meetings are held on the 4th Wednesday of each month at Griffens West in Annapolis. We gather at about 5:30 PM and order dinner about 6. We break up usually before 8 PM. E-Mail W9GE to be put on the e-mail reminder list.

73 Bob W9GE

? *PVRCNC-East*
Meets on the first Thursday of each month. Details are always available on the web site: http://pvrcnc.org/

73,
Jim, K4QPL

Note: The May PVRCNC meeting on May 3rd will be a joint East-West meeting to be held at a midway location to be advised. Probably in the Burlington area.

This will be an opportunity for all NC PVRC'ers to get together, meet new members and eyeball with old friends and competitors.

Highlight of the meeting will be video and pictures from the recent ARRLDX SSB Antigua dxpedition by Henry W2DZO/V26H and Robert KG4NEP/V26RW operating M/S as V26H.

? *PVRC-NC/West*
"The Winston-Salem Courteous Operators Club" (W4WS) meets on the fourth Monday of each month at 7:00 PM in the "Pure Chrome" establishment, 505 Deacon Blvd. Winston-Salem, NC 27105. It's now a biker bar (we came with the building), so feel free to roar in on your Harley. Info at <w4ws.org>.

73 de tom n4ioz

? *Tidewater*
Meetings are on the THIRD MONDAY of each month at the QTH of N4BAA for now. I have a huge home and can handle just about whomever shows up.

? *Over the Hill Bunch*
The group meets for lunch at noon alternately in Maryland at the College PARK Holiday Hotel Route 1and 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, rogerergo(at)netzero.net 703-658-3991 for Virginia meetings; or Bill Leavitt, W3AZ, w3az (at) starpower.net for Maryland meetings.

73 Bill, W3AZ

? *Central Virginia Contest Club*
Meets the second Tuesday of the month at The Henrico Doctors Hospital, Parham Campus, located at 7700 E. Parham Rd. Richmond VA. The Hospital is approximately one mile north of the Parham Rd. and Broad St. intersection. The meeting begins at 7PM in the Hospital cafeteria located on the first floor.

Vy 73,
Ed NW4V

? *Gaithersburg Area*
Several of us get together, much like the downtown lunch group, about every 4 to 6 weeks and visit various restaurants in the Gaithersburg area. Last night we met at Mythos Greek Restaurant.

73, Jeff Embry, K3OQ

? *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 (w3dq at arrl.net) or Brian, WV4V (wv4v at arrl.net) for details and directions.

A 160 METER BALLOON VERTICAL

-- Kam N3KS

I've operated on 160 for less than 1 year. It was last February that some local hams helped me stick a long mast out the top of my 48 foot tower so that an inverted v could be hung off the top of it. A thrust bearing was used at the top of the mast so that the yagi could still turn without twisting the inverted V. While my QTH is pretty favorable and the antenna worked better than expected, it certainly is not a 'good' 160 antenna.

I operated the 2006 ARRL 160 contest last December and enjoyed it. My station in Maryland sure seemed to pound a great signal into Pennsylvania, Virginia and Ohio! For the CQ 160 CW I wanted to try something better. My first thought was to see if I could operate from Frank's, W3LPL, where his full-sized 4-square would certainly be 'something better!' That didn't work out at the last minute....so – what to do?

Serendipitously in the late Fall, I had ordered two 8 ft weather balloons from Edmund Scientific. Now I had the most important component of a balloon vertical. Tossing the idea around with Jim, WX3B resulted in a whole lot of encouragement from him to give it a try. Jim certainly provided more than words of encouragement – he came over on the Thursday before the contest with a radial plate and helped lay about 30 radials of just over 100' length each.

The decision to put the radials down had other implications at my QTH. We live on a small horse farm, and installation of the balloon vertical and radials meant that I would close off one pasture -- horses and wire don't mix well at all!

We completed the radials installation Thursday, as I had other obligations next on Friday morning Fortunately, everything stayed on schedule, and by noon Friday we began the crash program to get a 160 meter balloon vertical installed in time to start the CQ 160 CW contest that evening.

First step – find helium. I'm lucky that that Roberts Oxygen has a store about 15 minutes away. They had helium available in 122 cubic ft tanks, which are smaller tanks that can be handled by one person if necessary. Not having bothered to calculate exactly how much helium would be needed (I thought it was be about 200 cu ft) I decided to rent three tanks with the option of getting a refund on any tanks not used. We loaded them in my vehicle and then went to buy some coax. Then off to Lowes to buy some light wooden dowel rod to attach the vertical wire to the balloon. 2 inch or smaller is fine for this antenna.

By the time I got home it was getting late in the afternoon. Time to cut the vertical radiating element to about 132 feet. Trimming it down would be a lot easier than adding length once it was airborne. We drilled two holes completely through the dowel rod. I routed the radiating wire through the lowest hole and tied it off. Through the upper hole was placed guy lines. YES! this balloon was guyed. The guy 'wire' of choice was the relatively new spectra fiber fishing line sold by Melton Tackle. This is a fiber line with 250 lb breaking strength. It is very, very thin and light. I use it to support my inverted vees – it's nice and invisible, but seems very strong and resistant to the elements. However, it is not cheap.

The original plan was to pull the balloon intake over the dowel rod and then clamp it in place. It soon became apparent that this was not optimal in terms of stress at that attachment point. So the final solution was to wrap the balloon intake to the dowel *without* inserting the dowel inside – and then use lots of electrical tape to hold it in place. A lot of tape was placed at the top end of the dowel to dull its edge in case the balloon started digging against it in a breeze.

It was now time to inflate the balloon. Since it was still a bit breezy, I recruited my wife Melanie to help hold the balloon in place while I fed helium into it. We quickly discovered that the helium entering the balloon is really, <u>really</u> cold. Combine that with 30 degree outdoor temperatures and Melanie needed to find her warmest gloves in order to keep holding the balloon. We did this on our deck in order to not have to lug the helium tanks to the pasture (it should be less effort to carry a helium balloon than a tank!) After about 10 minutes of feeding helium into the balloon, we thought it had enough lift for the job. This also happened to be exactly one tank full.

It was now around 5:30PM. The contest starts in 90 minutes. I grabbed the balloon and headed to the pasture. Suddenly – KABOOOM! I must have let the balloon touch a pine tree branch in the backyard. After regaining my wits, I realized that it was a good thing I ordered two balloons and extra helium. Time to do it all over again. This time we did not put as much helium in the balloon – probably 100 cu ft or less. We re-used the dowel assembly from the first balloon.

Very carefully, I took the balloon over to the pasture and attached the wire with Melanie's help. It was surprising how much lift it had. It was dark now, so I used a head mounted flashlight to keep my hands free.

My ground support for the radiating wire was a large plastic garden spike. I used the same thing for the guy line ground supports. I also put a 6 ft ground rod through the middle of the radial plate and arranged it so that the rod made solid connection with the radial plate.

I attached the radiating wire to the garden spike support and let the balloon go. Since it was dark, I couldn't really tell what was happening, but all the wire slack was taken up. That was a great sign. The preferences was to use 16 gauge wire, but didn't have enough left, so I used 18 gauge insulated. I then adjusted the guys by feel – I had no idea where the balloon really was.

(continued on the next page)

A 160 METER BALLOON VERTICAL, cont.

Since time was now a big constraint, I took a gamble and only placed a single guy to the northwest – hoping that the wind would remain constant from that direction all weekend. Fortunately the gamble paid off. I then direct fed the coax to the wire and shield to the ground rod/radial plate.

I sprinted inside to check the SWR. It was not bad – resonant a bit too low – which was good. Outside again and cut about 3 feet off, and then the SWR was 1.5:1 at about 1.810 MHz. Still a bit low, but I could go to about 1.85 before the SWR went over 2:1. It turns out I probably should have cut it even shorter – I definitely noticed that the resonant frequency dropped slightly as the contest went on – probably due to wire stretch.

By the time I was done with all that, it was 23:51Z – only 9 minutes till contest start. I quickly got my radio and logging software setup, amplifier set and it was time!

Impressions and Lessons:

The balloon vertical played very well. After nearly a year using a relatively low inverted V, it was a nice change to feel pretty loud at low angles. I spent the first few hours of the contest running, and averaged 120+ per hour for the first two hours. S&P results were nice, usually only one or two calls to get through. I think that there were a couple more dB to be had by adding more radials, but all in all it was a very nice performer. I was most surprised at how well the vertical listened – I expected it to be more noisy than it was.

Less than a small tank (122 cubic feet) of helium is more than enough to support a 160 quarter wave and lightweight spectra line guys for a weekend. The balloon was inflated to between 5 or 6 feet diameter. The idea is to make it as small as possible because it is surprising how much force the wind applies to the balloon.

The balloon is re-usable. However we re-used it in a different way for its second function – as a huge birthday balloon for a neighbor.

The balloon material costs broke down as follows:

Balloon: $24.95 each
Helium: $65.00 per 122 cu ft tank (and deposit)
One tank is enough barring mishaps.
Tank Balloon Adapter: $15.00 to rent
Garden Spike Supports: $2.00 each
SpectraFibre Fishing Guy Line: $35.00

Additionally, there is radial wire (3,000 ft used), radiating wire (130 ft), radial plate, coax, ground rod, wood dowel, electrical tape and other miscellaneous small items.

Guess what – I liked it so much that the horses are still out of that pasture, the radials are still on the ground!

DO'S AND DON'TS OF GUEST OPERATING
-- Bernie, W3UR (from a 1993 PVRC meeting)

For the first time, your Editor planned to host small multi-op efforts from his small QTH for the ARRL DX and CQ WPX contests. While only the ARRL DX CW effort actually took place, it was an interesting and fulfilling experience nonetheless. In the course of planning, I ran across the following item presented at a 1993 PVRC meeting by Bernie, W3UR (then WR3E)

The following tips are recommended when operating a contest at someone else's QTH, be it a multi—op or single op, especially if you want to be invited back. Some of these may actually sound stupid but have actually happened.

? **Do' s**

1. Bring food, snacks & drinks, or at least offer.
2. Make arrangements to shower, nothing like smelling your host or his XYL out!
3. Do all your equipment test the week before the contest, 30 minutes before the test.
4. Plan on brushing your teeth, both before and during the contest.
5. Thank your host & especially his XYL.
6. On one of your breaks mention a word of appreciation to family members.
7. Do familiarize yourself with the owner's equipment.
8. Do make sleeping arrangements.
9. Be prepared to help the owner fix anything that broke while you were operating.
10. Do give the owner a copy of the log.
11. Agree before the contest who will handle the QSL's.
12. Make sure everyone knows what callsign will be used in before the contest starts.
13. If you rearrange the equipment, put it back when finished.
14. Bring your own set of headphones.

? **Don'ts**

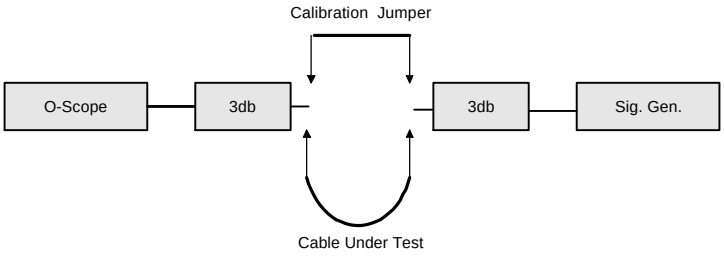
1. Don't roam the house!
2. Don't raid the refrigerator.
3. Don't go watching TV, you're supposed to be contesting!
4. Don't park behind the owners car, or his wife's.
5. Don't smoke.
6. Don't talk in to the mike with your mouth full.
7. Don't dress like a slob.
8. Don't torment the owner's pets.
9. Don't purge files off the owner's computer.

Testing RF Cable -- Kevin, W3DAD

At around 80 cents per foot new, that pile of used RG8 may be hard to throw away. But how do you know that any of it is good. Here is the way I test my cable.

If you have an antenna analyzer, such as the MFJ or Autek Research units, the cable can be tested directly. This is especially handy if you buy cable at a hamfest. The technique is to connect the analyzer to one end of the cable with the other end either shorted or open. I prefer shorted. Scan the cable with the analyzer set to read Z on the highest band. At some point you will see a low Z reading. Tune for the lowest impedance (Z(min) and record the frequency and Z value. The loss can be calculated for 50 ohm cable using the formula L(db) = 8.69 x Z(min)/Zo.[1] Where L(db) is the loss at the measurement frequency and Zo is the characteristic impedance of the cable. For a Z reading of 4 ohms and 50 ohm cable the loss would be .7 db. Use a published cable loss chart to compare this value with what is expected for the length of cable tested. It may be difficult to measure small losses using this method because of the inability of the instrument to read small values of Z; however, there are ways around this problem as well.

Another method is by substitution. This method requires the use of an oscilloscope, signal generator, terminations and cable adaptors. The antenna analyzer mentioned above makes a good signal generator for this purpose. You will need a pair of 3db in-line coaxial attenuators, one to terminate the scope input and the other to terminate the signal generator output. The impedance of the attenuators must match the impedance of the cable under test. Tune the signal generator to the test frequency (30 MHz) and connect through the attenuators into the scope. Adjust the scope for a full or almost full scale display. Record this value as RF1. Break the connection between the two attenuators and substitute the cable under test. Read the resulting value of the RF display and record as RF2. The attenuation is calculated by using the formula L(db) = 20 log RF2/RF1. For example if the RF1 reading is 6 units and the RF2 reading is 5.5 units, then the loss is.76 db.



The attenuators may be obtained from Mini-Circuits, model HAT+ (50 ohm) for 9.95 each. These have BNC connectors; N-style connectors are available as well. Obtaining coaxial attenuators with PL-259 type connectors may be difficult, so a set of adaptors will be necessary.

[1] ARRL Antenna Book, 18th Edition, p27-28.

ABBREVIATED NUMBERS - CUT NUMBERS

Like many of us who are casual contesters, your Editor often finds the use of cut numbers confusing. I thought the most common were **1 (A), 9 (N), and 0 (T)**, but the ARRL DX contest proved me wrong! Here's a translation table

A	**•-**	**1**
U	**••-**	**2**
W	**•--**	**3**
V	**•••-**	**4**
S	**•••**	**5**
B	**-•••**	**6**
G	**--•**	**7**
D	**-••**	**8**
N	**-•**	**9**
T	**-**	**0** (typically a long dash)

TOP TEN REASONS WHY SOME CHANGE THEIR CONTESTING CATEGORY AFTER THEIR LOG IS SUBMITTED OR POSTED ON 3830

-- Jim Niger, N6TJ (from the Internet)

10. I saw that my score in the new category would be No. 1
9. I knew I could get away with it
8. Special friends deserve special favors
7. I knew the contest committee doesn't like to DQ anyone, so why not take a chance?
6. I was a WRTC competitor and everyone must know that I'm an amazing operator and as pure as the arctic snow
5. I was really a multi-operator but Assisted sounded plausible, too.
4. The Emperor of the contest threatened to change it for me if I didn't send in a new log
3. No one really cares if people cheat
2. My original posting of World No. 1 SO/AB was attracting too much attention because my multiplier was higher than the five-man Multi-2 in my country...and they had packet!!

And the No. 1 reason why categories are sometimes changed:

1. When submitting my score on 3830 I hit the wrong key on the computer!

ANAHEIM, CA
(Near Disneyland)
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Eric, KA6IHT, Mgr.
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Dan K6DN, Co-Mgr.
Howard, W6HOC, Co-Mgr.
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Leon, W7AD, Mgr.
Tigard-99W exit
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portland@hamradio.com

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(800) 444-9476
John, N5EHP, Mgr.
denver@hamradio.com

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(800) 444-9476
Gary, N7GJ, Mgr.
1 mi. east of I-17
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(800) 444-7927
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Doraville, 1 mi. no. of I-285
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(800) 444-4799
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woodbridge@hamradio.com

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