

SOLID COPY™



FrostFest 2004

The Bulletin of the
Richmond Amateur Telecommunications Society
P. O. Box 14828 - Richmond, Virginia 23221



R.A.T.S. - FROSTFEST

Hold it right there! Have you dialed (804) 271-1998 and asked Jim, "What can I do?" Have you sent an email to volunteers@frostfest.com or have you gone online at www.frostfest.com, clicked on Volunteers and filled out the form? If you have, then "thank you so much!" If you haven't, what are you waiting for?

We're just looking for three hours of your time. That gets you free admission to the show and makes you eligible for a volunteer's prize.

Then, when you're talking on the new 88 machine or the new 442.55 UHF machine, you can claim credit for making that possible.

New? If you've been attending the monthly meetings you know both repeaters are being replaced and are moving up on a new tower. 146.880 is going up about 200 feet in elevation, and the 442.55 is moving across town to the same tower and up almost 600 feet. Both repeaters will have a PL tone which will eliminate much of the QRM we currently contend with, and the coverage area will be greatly enhanced.

FrostFest is what makes these upgrades possible. It is our only fundraising effort of the year. So three hours out of each year is not too much to ask.

MESSAGE FROM THE PRESIDENT

by Jerry Williams, KJ4IT, President

Happy New Year to all! I hope everyone had a Joyous Christmas. I would like to thank all of those who attended the Christmas Dinner, and especially Marie and Jerry Long for preparing the delicious meal we all enjoyed.

By the time you receive this it will be February and the *FrostFest* will be fast approaching. This is the Society's only fund raising event and the proceeds go toward the operation of the repeater. In fact proceeds from past *FrostFests* are now making it possible for the 146.88 repeater to continue be the most technologically advanced amateur repeater in the Central Virginia Area.

I have been told that we cannot get the majority of RATS members to volunteer for a shift or the more desirable 2 shifts to help run the

'Fest. Life events such as job requirements or health and family matters notwithstanding, every member should find the time to come out and support the event that supports your repeater. You may volunteer by logging onto the RATS web page and clicking on the *FrostFest* link. Here you will find an electronic sign in sheet. Assistant *FrostFest* Director Pat Wilson will be providing me with a list of names to call soliciting for assistance at the event soon so if you haven't volunteered expect a call from me. Please come out to support your club. By the way, worker prizes include two new handheld radios this year.

In addition to the *FrostFest*, work is progressing on the new repeater system. Antennas for vhf and uhf have been installed at approximately the 700' level on the new tower. This represents an almost 200' increase in antenna height above ground level. Computerized coverage predictions using the Longley-Rice modeling show that we can expect to have improved coverage both in repeater range and signal strength in the coverage area over our current vhf repeater. According to calculations for system gain our effective radiated power on vhf will be about 114 watts

and about 140 watts on uhf. The technical committee is quite pleased with the improved venue we now have at Channel 23 from our previous location. Plenty of pictures are being taken of the repeater work and we plan to have a presentation on the new repeaters at the appropriate time.

Finally, recently there was another mind-boggling statement from the FCC, this time on the use of the 'F' word on the airwaves. Be informed that the Board has set standards for repeater use in a resolution adopted on April 18, 2003. The short version of this resolution is that any profane or indecent language is not accepted on the 88 repeater. We have teenagers on our repeater and everyone should set a good example. In addition it has been noted that for whatever reason some ops are slurring their call signs to the point of intelligibility and misinterpretation. This too is not acceptable—each letter should be clearly heard.

The RATS was originally formed as a repeater club with the idea of providing communications in time of need and to advance the art and skill of amateur radio operators. Since 9/11, the Department of Homeland Security is looking to amateur radio to play an important role in this so many eyes are upon us looking at how we act and what we do. One thing the 88 repeater is not is a high tech extension of the Citizens Band Radio Service; it never has and never will be. Those beginning in amateur radio coming from CB should leave the *personas, the lingo, the illegal, and the other bad operating* habits there – these are not appreciated or desired on amateur radio. Learn to be a good amateur join the ARRL and read *QST*; get a copy of the ARRL Operating Guide. There are many of us 'old timers' who know the ropes and know what is expected and we insist that you do the same. Follow our lead, if you have questions ask, and we would be glad to help. Becoming a good amateur requires direct involvement – *YOURS!*

Well this is all for now – please come out to the *FrostFest* and help your club by volunteering your time and be sure to stop by our table.

73, Jerry, KJ4IT

GUY RINGS FOR AB-577

By Mike Gabbert, K4AUR

Last summer I was lucky enough to get two incomplete circa 1967 military masts designated as AB-577 and called the "Rocket Launcher." I got these through eBay from a local guy. Since I knew they would not be complete, I got two—hoping to piece together a complete unit from the parts of two different sets. Lucky me: This fellow must have had about 20 of these things, and *every* one had the same parts and missed the same parts.

Naturally.

Since then I've been trying to complete these portable masts. Basically, all I got were the eight tubes, five feet long each and the "launcher" which is a combination base and elevator with which to raise the tube-mast. This is eight feet high to give a combined height when assembled of 48 feet.

I needed the winch to operate the elevator. I got a boat trailer winch to serve. I needed couplers for the tubes. I got these through Ontario Surplus in New York. I needed guy anchors. I got these through eBay. I needed the assembly to cinch up the guy wires—something called a "snubber." I got cable hoist/pullers for this use. I may also use one of these cable hoists in place of the winch mentioned earlier.

One thing I did not have and could not figure out how to implement were the guy rings, how to attach the guy wire to the mast, yet still allow it to rotate. This mast will rotate *a la* the armstrong method.

I had queried the tower reflector on the internet. One fellow responded that he used muffler

clamps. My problem is that the largest muffler clamp I could find was 3.5 inches. These tubes are five inches in diameter. Even if I could find one, it would defeat the whole purpose of the rotating feature of the mast.

Buy the way, Ontario Surplus does have these guy rings in stock. They are \$90 EACH! Thanks, but NO THANKS! Ontario had to have them custom made for the Army. Yep, they're Army surplus, but sometimes the Army sees the error of their ways, and tries to buy these things back. The rings were not available so Ontario had some custom machined to supply Uncle Sam. Ergo, \$90. Your tax dollars at work.

Below is the solution I came up with, a simple assembly of one inch square perf tube of 14-gauge steel, some washers, nuts and eye bolts.

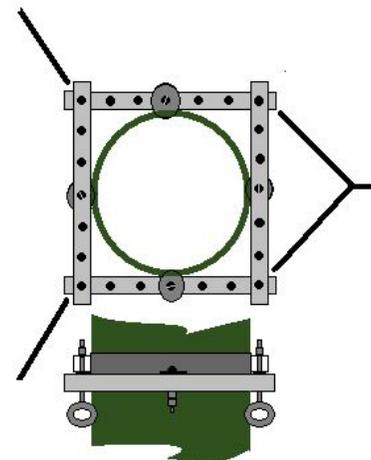


Figure: AB-577 Guy Ring

This "ring" is five inches square with 1.5 inch washers at the middle of each side. These washers protrude past the edge of the perf tube 1/4 inch. They ride in the groove created between the tube and the clamp ring that connects two tubes. Eye bolts at the corners anchor the guy lines. Above is a three point guy configuration. A four point system is another obvious arrangement. And the mast can still rotate within this

assembly. These can be made for less than \$20 with the perf tube being over half that expense.

All I need now are the guy lines. I plan to get 3/16" wire rope so this is going to be my biggest single expense to add on to my original purchase.

THE STIFF-WIRE QUAD

by Mike Gabbert, K4AUR

Last issue I talked about fox hunting or the sport of radio frequency direction finding. RFDF is a practical and occasionally lifesaving discipline of amateur radio, but in fox hunting it is used as a sport—a way of having fun while honing these skills.

The DF'ing antenna I want to explore this time is the stiff-wire quad. This is an easy to build four element quad made from Schedule 40 PVC pipe and connectors—tee and crosses. One 10-foot section of pipe will just be enough for the boom and element arm supports. So, as that short Texan used to say, measure twice and cut once. Otherwise, you'll have to spring for another 10-foot section of pipe like I did. Don't throw away any scraps. Put them in your junk box for a future project.

All parts for this antenna are readily available from a builder's supply like Lowe's or Home Depot except one. You will need a trimmer capacitor with a range of 7 to 45 pF. I couldn't find this anywhere in town so had to go online to order. I got mine from Newark InOne which shipped quickly out of Gaffney, SC. I will warn you that if this is all you order, the shipping will be much more than the part itself. Mouser Electronics is another online resource.

One thing I will say about the trimmer cap is that it is *tiny!* The tuning tools you get from Radio Shack are too big to fit. Even the smallest will have to carefully be shaved with an X-Acto knife to a small square shape to fit the

component. I don't know if there was a bigger part available. The catalogues have pictures, but they are definitely not indicative of size.

Tuning is detailed in the Moell and Curlee book. I will probably try that one Thursday night while the *Elmer Hour* is going on (or some other net) when there is sustained activity on the repeater. I don't know how effective it would be to try to tune up on the transmit frequency of the repeater, but the input might work better.

I used #8 bare copper wire for my antenna elements. The thicker gauge wire helps to make this a more broadband antenna and gives it its stiffness to maintain its shape.

If it is bumped or dropped and the elements deformed, it is an easy matter to straighten and reshape and be back in the hunt.

I will not go into construction details here—just to let you know how easy it was to build and about the few problems I encountered. As mentioned last month, the source is *Transmitter Hunting: Radio Direction Finding Simplified* by Joseph Moell, K0OV and Thomas Curlee, WB6UZZ. This is available through HRO or ARRL and others at \$24.95.

VE EXAMS

Exams for licensing or upgrading are as follows. There are two locations, the W5YI VEC sessions in Chester and the ARRL VEC testing in Richmond. Bring \$12.00 cash (exact change) and two forms of ID, one of which must be a photo ID. If you are upgrading, you must bring the original of your current license *and* a photocopy of it.

If you have credit for previously passed element(s) bring your original CSCE *and* a photocopy of it unless your current license reflects these endorsements. Arrive 15 minutes early. Preregistration is preferred, but not required (unless you are taking the CW element in Chester,

then required). Walk-ins are welcome if seating and materials are available.

The first exam is February 14th at 9:00 AM at J. Sargeant Reynolds Community College, 1651 E. Parham Road, Richmond, Building B. For more info contact Patrick Wilson, W4PW, (804) 932-9424 or go to:

<http://www.w4pw.org/hamtests.htm>

The next testing will be on March 3rd at Pietro's Restaurant at the corner of Jeff Davis Highway and Osborne Road in Chester. For more info call (804) 768-2255 or visit:

http://www.kr4uq.org/V_E_EXAMS/v_e_exams.html

The following test session will be at the J. Sargeant Reynolds location on April 10th at 9:00 AM.

CQ, CQ, SEEK YOU! AT THE NEXT RATS MEETING

The Richmond Amateur Telecommunications Society meets the third Friday of the month at 7:30 PM at the West End Volunteer Rescue Squad building at 1802 Chantilly Street, Richmond.

From Broad Street, Chantilly is the first block east of Staples Mill Road. The WEVRS building is 1/2 block south of Broad on Chantilly.

In February the meeting will consist of FrostFest activities at the Showplace, 3000 Mechanicsville Turnpike Sunday, February 22nd.

RATS ONLINE:

<http://www.rats.net/>

<http://membership.rats.net/>

<http://www.rats.net/forums/>

<http://www.frostfest.com/>

Solid Copy™ is published by the Richmond Amateur Telecommunications Society, Inc., PO Box 14828, Richmond, VA 23221.
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The purpose of **Solid Copy™** is to provide club information and amateur radio news to members of the Richmond Amateur Telecommunications Society. Information or articles for inclusion must be received no later than the first of the publication month. Submit via the Internet at editor@rats.net. Opinions expressed in **Solid Copy™** do not necessarily represent the views of the officers, directors, or members of RATS, Inc. Material in this data file may not be reproduced or distributed **IN ANY FORM** without express written permission from RATS, Inc.

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