



PCARA Update



Volume 4, Issue 11

Peekskill / Cortlandt Amateur Radio Association Inc.

November 2003

It's that time of year again! - KB2CQE

Nominations for office (President, Vice President and Secretary/Treasurer) are due at the November 2nd meeting. If you are interested, please think about placing your name on the ballot. This is an excellent time and opportunity to become involved.

The December Meeting/Holiday Dinner is scheduled for 3:00 PM on December 7, 2002 at *The Reef Restaurant* in Annsville (Annsville Circle). Arrangements were once again made courtesy of Ray, W2CH and Marylyn, W2CH-XYL. For those who wish to participate in the election but are unable to attend the meeting/dinner, provisions can be made for you to cast your vote in absentia. Please consider attending, to share the joy of the Holiday season in the company of friends who enjoy such a wonderful hobby.



The Reef Restaurant, location of the 2003 PCARA December meeting/Holiday dinner.

The PCARA IRLP link (node 4214) has been getting a bit more use. The Gremlins in the 449.925 machine seem to be quite active as well! I guess the increased activity has got them all riled up! They've been showing their displeasure by generating intermittent crackling on the output of the repeater. In an attempt to counteract their mischievous behavior, Malcolm, NM9J and Bob, N2CBH have been working overtime figuring out how to quiet them down. There will be a few changes made in the coming weeks that



Greg discovers Gremlins in the 449.925 MHz repeater

should help restore peace and quiet. Remember to give IRLP a try!

I hope to see each of you at the November meeting at Hudson Valley Hospital Center.

- 73 de Greg, KB2CQE

2 meter autopatch

Investigations into the "new" controller for the 146.67 MHz PCARA repeater have revealed why the autopatch function had stopped working. Autopatch slots on the 2 meter machine are now available to members, with no additional contribution. If you haven't signed up already, just bring your telephone details along to the next meeting.

PCARA Officers

President:

Greg Appleyard, KB2CQE

kb2cq@arrl.net

Vice President:

Bob Tarsio, N2CBH;

n2cbh@arrl.net

Secretary/Treasurer:

Mike Aiello, N2HTT

n2htt@arrl.net

G5RV? Nope, W5GI

here – Mike N2HTT

I am always searching for the perfect easy-to-install killer antenna for “less than \$25 if you have a well stocked junk box.” I don’t see a tower in my future — too much fuss, cost, aggravation. No, an excellent, all band wire antenna that you can hang at an arbitrary height that performs like a mono-band yagi at 150 feet — that’s the antenna for me. I haven’t found it yet.

So you can imagine my excitement when the July issue of CQ Magazine



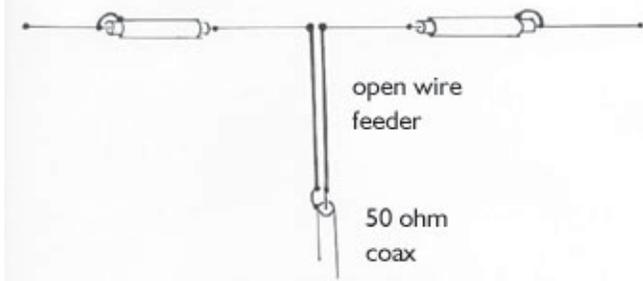
featured a cover article on the W5GI Mystery Antenna.

Why does it work so well? *No one knows, it's a mystery.* I was immediately hooked — I love a mystery — and besides, even with new materials it handily met the \$25 cost threshold. I had to build one.

The Mystery

The article, which is really very informative, explains that the W5GI is a colinear array consisting of three in-phase half-waves on 20 meters. It has some gain on 20 meters and functions as a random dipole on the other bands, much like the G5RV. It has a nice, low angle omni-directional radiation pattern. The antenna is easy to construct out of wire, coax and ladder line.

Its construction is similar to that of a 20 meter dipole, but with each leg consisting of two quarter wave lengths of wire separated by a quarter wave length coax inserted between them. The coax has both the shield and center conductor connected to the outer wire leg, but only the center conductor connected to the inner wire leg. This odd configuration forces the coax to become a phasing line and produces the gain on 20 meters.



The W5GI multiband “Mystery” antenna is claimed to offer better performance than a G5RV antenna.

Construction at the Remote QTH

We recently acquired a property in upstate New York, where we spend a lot of time over the summer

and on weekends. Naturally, I had to set up a ham station at the upstate QTH. Although the property is large, there are few trees near the house, and the best I had been able to do for an antenna was a half-sized G5RV, strung as an inverted vee in a tree, with the apex at about 50 feet. It worked well enough, but did not load well on 80 meters, and was very touchy on 20, with the best match about 2:1.

When I read the W5GI article, the antenna seemed like the ideal solution, if it performed as promised. During the second week in July, I built one. Here are some photos of the construction details:

This is the center conductor construction. The red stuff smeared all over it is a sealer called Liquid Electrical Tape – it is not blood. I actually did not hurt



W5GI center conductor

myself during the construction of this antenna.

Here is a detail shot of the connection between the coax and the ladder line. I surrounded the soldered connections with a short length of PVC pipe, and filled it with hot-melt glue from both sides. This makes a waterproof and mechanically strong connection between the dissimilar cables.



Connection between coax and twin feeder

This is the entire antenna, coiled and ready for deployment.

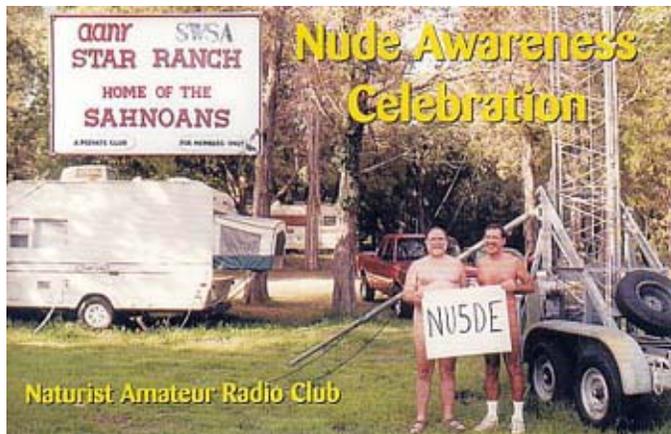


The First QSO

I was not ready to dismount my G5RV to put an untried antenna up in its place, so I lofted the W5GI into a nice tall tree that is located inconveniently far from the house. Using a gel cell battery, my FT-817, and a flashlight, I tuned around on 20 meters late on the evening of July 12th. To my surprise, the band sounded quite active, even though it was nearly midnight local time.

Out of the ether came a clear, strong call, announcing a special event station **NU5DE**. Summoning up my mighty 5-watt flamethrower, I answered – got him on the first try! And he gave me a 59 for 5 watts SSB. I was delighted.

It turns out that the special event was the Nude Recreation Week Operation (I am not making this up), and I just received their QSL:



QSL from NU5DE

Funny how you can tell radio guys, even with no clothes.

Anyway, my W5GI has replaced the half-sized G5RV. It loads easily on all bands from 80 to 10 meters using an MFJ manual antenna tuner, and gets out like gangbusters on 20. My installation is still an inverted vee, but now the ends are torqued around a bit because the W5GI is a little longer, and I run out of room on the side by the road. The antenna runs roughly north-south, but doesn't seem to favor any particular direction.

How to Build Your Own

Although your best bet is to look up the CQ Magazine article, here is a brief description of how to build your own W5GI Mystery Antenna:

Materials

- 4 lengths of wire, 17' long
- 2 lengths of coax, 16.5' long
- 35' of twin lead or ladder line (impedance not critical, 300, 450 or whatever)

- Center insulator
- 2 end insulators
- Enough coax to reach your radio

Construction

1. Determine the velocity factor of your twin lead (borrow Joe's MFJ-259) and cut a piece one half-wavelength long on 20 meters. This will vary between 27 and 35 feet, depending on the VF of your twin lead.
2. Attach one end of the twin lead to the center insulator, and connect one 17' length of wire to each leg. At this point, you have something looking very much like a 20 meter dipole, fed with twin lead.
3. Now you are ready to add the coax to each leg. Notice that we don't cut the coax inserts taking the VF into account. The coax pieces should be exactly 16.5' long.

Connect only the *inner* conductor of one of the 16.5' lengths of coax to each end of your 20 meter dipole. That's only the inner conductor, right? Check again.

4. At the other end of each piece of coax, connect the braid and the shield to the remaining pieces of wire. Try to distribute the braid around the outside of the shield-to-wire connection. Go ahead, put lots of solder on this one.
5. Now connect the feed line coax to the end of the twin lead, braid to one side and center to the other. The feed line length is not critical, make it as long as you need.
6. Seal all the connections to keep moisture out.
7. Hang the antenna with the center insulator at least 25' off the ground. Horizontal, inverted vee, and arbitrarily bent because you are too close to the road are all configurations that will work.

Complete directions for the construction of the W5GI can be found in the July 2003 issue of CQ Magazine. If you are curious, and can't get your hands on a copy, drop me an email at n2htt@arrl.net and I'll lend you mine. I can attest to the fact that this antenna works well, even with your clothes on.

– 73 de Mike N2HTT

A tale of two Cs

Let me relate a couple of recent experiences keeping vintage electronic equipment “alive”. My first story concerns a Hewlett Packard LaserJet printer. I’ve been a fan of LaserJets since the mid 1980s when they were large, expensive and very heavy. The LaserJet IIP was HP’s first junior model suitable for home office use, with a price less than \$1,000. I purchased mine in September 1989 while in Illinois and put it to immediate use producing *CQ BARS*, the newsletter of Bolingbrook Amateur Radio Society.

Various printers succeeded the IIP, but I kept it around as a second printer for the older PCs that accumulated in the radio room. It sat under the table for many a year, ready to print out pages in crisp black and white whenever called upon — until the day when the error message “12 OPEN OR NO EP” began to



Error message on the LaserJet IIP's control panel.

appear on the LCD display and printing became impossible. The official explanation from the manual was that the front door to the printer had been left open, or the EP-L toner cartridge was missing. In my case, neither explanation was correct. I found that replacing the toner cartridge very firmly would temporarily fix the problem, but after a while the firmest of whacks failed to remove the error.

I started thinking about a new printer. Prices had dropped significantly since 1989 and speed has increased, but some of the features of my solidly engineered early LaserJet had been dropped along the way.

Finally, I had a browse around the Internet – it’s amazing what a Google search will find. I came across an article explaining that my error message could be caused by a problem with the print density board, and the do-it-yourself fix was to change out C702. That’s all I needed! I popped the top off the printer, located the board and removed C702, a tiny green 10 μ F electrolytic capacitor. Just to be on the safe side, I used a rugged tantalum capacitor as the replacement. That nasty error message has never been seen again.



Original C702

My second experience was with a ten year old Mitsubishi TV set that had performed admirably ever since I struggled with installing it onto the entertainment center. The problem appeared shortly after switch

on, when the video signal would flicker, then disappear from the screen for a few minutes before returning. A few days later the video disappeared after switch-on, and did not return. I found a clue – if I turned on the “Picture in Picture” (PIP) control, the video signal might come back. When the signal did return, the picture-in-picture video looked distinctly odd – it was either a sickly yellow color, or changing rapidly from red to green.

I resigned myself to junking the Mitsubishi and started looking around the local stores for a replacement. I had almost decided on one of the new Sony Wega TV models... but the price was high, and I’d had a lot of unexpected expenditure this past summer. So I started searching on the Internet again — and found a recommendation to check the Mitsubishi’s PIP module. Apparently the surface-mount electrolytic capacitors in the module have a habit of leaking electrolyte all over the printed wiring and upsetting operation. I was fired with enthusiasm again, though I did take suitable precautions before working on a TV set... completely unplug the 120V power cord, don’t touch the set for 15 minutes to let high voltages discharge, then keep fingers clear of all high voltage components. I pulled out the picture-in-picture module, which was on its own circuit board. Close inspection showed signs of corrosion under one of the tiny SMD electrolytic capacitors – but how to fix it? The connections under the component were



Mitsubishi PIP module

completely inaccessible... what to do? The Internet gave an alternative solution – bypass the PIP module entirely with a pair of capacitors. I plugged a 0.047 μ F polyester and a 22 μ F electrolytic capacitor into the recommended holes on the empty PIP connector, switched on and — my picture was back! The PIP feature wasn’t working anymore but I hardly ever used it anyway.

Hurrah for the Internet! With its help I had fixed two separate problems caused by faulty electrolytic capacitors. I saved money on replacement equipment and avoided the chore of installing a large TV set. I also prevented several pounds of electronic items containing toxic metals from being sent to recycling — or worse.

Whether it’s amateur radio, A/V equipment or anything else electronic, it’s always a thrill to pick up a new model, get to know how it operates then enjoy the new features. But I think it’s equally satisfying to give an old piece of equipment a new lease of life and see it continue operating.

- 73 de Malcolm, NM9J

IRLP for me

I was flipping through my copy of *QST* for November 2003 when I came across an “Op-Ed” column entitled “Let’s put *Radio* Back in Ham Radio”. This was a criticism — by Sumner Weisman, W1VIV — of IRLP and similar systems for linking amateur radio over the Internet.

Sumner says these systems are “all clever schemes but they are *not* ham radio!”



W1VIV argues that an IRLP QSO between a radio amateur in Boston and another amateur in Australia has

a ham radio content of only 0.1%, while the Internet provides the remaining 99.9% of the distance. He thinks that IRLP will remove the incentive for the newly licensed Technician to learn more about radio and upgrade.

I can sympathize with W1VIV’s point of view, but I do not agree with it. I began thinking of various arguments why IRLP is a good thing rather than a problem. First of all, nobody is *compelling* W1VIV or anybody else to use Internet linking. For the most part, IRLP is available on simplex channels and repeaters that are lightly used. You can have a ‘normal’ simplex or repeater contact anytime you like. Or, if you have an HF station, you can have a ‘traditional’ amateur radio contact with somebody in the next county, the next country or the next continent — if conditions allow.

Ay, there’s the rub! Conditions have to be **right**. I’ve worked friends in England on the HF bands on a very few occasions, but most of the time the sunspots have been against us, or it’s the wrong time of day, or (most likely) one of us is away from the fixed HF station with its necessary large antenna.

Then along came IRLP — and it became relatively easy to have good quality contacts with friends in England — or Michigan — or Canada — or wherever your friends happen to be. I can have contacts from the radio room, or from the static mobile station, or with a hand-talkie at the club meeting.

Getting the IRLP equipment to operate correctly has been a challenge — but a very interesting one. And persuading the IRLP link to work correctly with the KB2CQE repeater on 449.925 MHz is an ongoing task that isn’t finished yet. All grist for the amateur radio mill and evidence that “the Radio Amateur is... progressive”.

But my final proof that W1VIV is incorrect came from November’s *CQ* magazine. A news report there states that Internet Repeater Links were crucial during Hurricane Isabel in maintaining communications be-

tween the affected areas, the Hurricane Watch Net on HF and the National Hurricane Center in Florida, while HF conditions were poor.

— Exactly! As radio amateurs we can choose from a variety of frequencies, a variety of operating modes and who we want to talk to. Some modes and frequencies are popular and some are not. Some modes die out with time (like spark) and others can grow suddenly in strength (like PSK31). But at the end of the day the real test is — did the message get through? And if it got through with IRLP, or one of the other linking methods, then the mode has its place in the broad-church of amateur radio methods and techniques.

— Malcolm, NM9J

Photo Gallery



Greg, KB2CQE and Joe, WA2MCR man PCARA’s club table at the Bergen Amateur Radio Association hamfest in Washington Township, NJ on October 11.



Greg, KB2CQE and Bob, N2CBH inspect a giant reel of ultra-low loss coaxial cable left over from installation of new cell phone antennas at the repeater site, October 18.

Peekskill / Cortlandt Amateur Radio Association

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Newsletter contributions are always very welcome!

PCARA Information

PCARA is a **Non-Profit Community Service Organization**. PCARA meetings take place the first Sunday of each month at 3:00 p.m. in Dining Room B of the Hudson Valley Hospital Center, Route 202, Cortlandt Manor, NY 10567. Drive round behind the main hospital building and enter from the rear (look for the oxygen tanks). Talk-in is available on the 146.67 repeater.

PCARA Repeaters

W2NYW: 146.67 MHz -0.6, PL 156.7Hz

KB2CQE: 449.925MHz -5.0, PL 179.9Hz
(IRLP node: **4214**)

N2CBH: 448.725MHz -5.0, PL 107.2Hz

PCARA Calendar

Sun Nov 2: November meeting, 3:00 P.M. HVHC.

Sun Dec 7: Holiday dinner & December meeting, The Reef Restaurant, 3:00 P.M.

Hamfests

Sun Nov 30: Jersey Shore ARS Tailgate Hamfest, 8:00 am, St. Joseph Knights Of Columbus, Whittier & Tennyson Aves., Toms River NJ.

Sun Jan 18: ARRL New York/Long Island Section Convention, Long Island Mobile ARC, East Woods School in Oyster Bay, Long Island.

VE Test Sessions

Oct 31: Orange County ARC, Munger Cottage Riverlight Park, Hudson St., Cornwall, NY. 6:00 p.m. Contact Ronald Torpey, (845) 783-1692.

Nov 2: Yonkers ARC, Yonkers Police Dept., 1st Precinct, E Grassy Sprn Rd, 9:00 A.M. Contact: D. Calabrese, 914 667-0587.

Nov 21: Bergen ARA, Westwood HS, 701 Ridgewood Rd, Washington Twnshp, NJ. 7 p.m. D. Younger, 201 265-6583.

Nov 17: Columbia Univ ARC, Watson Labs, 612 W 115th St. New York, NY, 6:30 p.m. Contact Alan Crosswell, 212 854-3754.

Nov 18: W5YI VEC Pel Hams, Pelham Doronco Town House, 20 5th Ave., Pelham, NY. 7:30 p.m. Contact Michael Ciferri, (914) 738-5775.

Dec 7: Yonkers ARC, Yonkers Police Dept., 1st Precinct, E Grassy Sprn Rd, 9:00 A.M. Contact: D. Calabrese, 914 667-0587.

Dec 11: WECA, Fire Training Cntr, Dana Rd., Valhalla, NY. 7 p.m. Register with Sanford Fried, (914)273-2741, N2SF@weca.org.



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