



SQUELCH TALES



MERRYMEETING AMATEUR RADIO ASSOCIATION NEWSLETTER FOR MARCH 2016



A Junque-box 220 antenna ~ W1DYJ

I was cleaning out my “Workshop Storage Closet” -- Maren calls it my junk closet – and rediscovered my Dad’s (WA1NL – SK) 30 year-old TM3530A 220 FM transceiver. I had tried it a number of years ago and it didn’t work, so into storage it went. But now, before I threw it out, I decided to try once again. After connecting up 13.8 v. and rotating the on/off/volume knob it lit up – a good start. Connecting an SWR meter and dummy load and hitting the push-to-talk showed it had output! Although there was no audio, at least it was alive. Playing with it some more showed that it had an intermittent volume control. There was one place in its rotation where I did hear the usual hiss. It worked! (Sort of.)

Some of you know that I am involved with the MMRA (not MARA) in the Boston area (Minuteman Repeater Association) as their Net Manager – but I have no way of monitoring the 220 repeaters during our nets. Perhaps this was a solution, but I didn’t have a 220 antenna. Nor did I want to spend any money. Here was an opportunity to clean some stuff out of my “Workshop Storage Closet” and actually use it!

Turning to one of my favorite ham radio books, the ARRL Antenna Book, I found the ground-plane design shown to the left. (Mine is the 21st edition from 2007, on page 18-24.)

Since this was going to be used inside, I didn’t need to worry about weatherizing it, so it actually was easy to build. The parts needed:

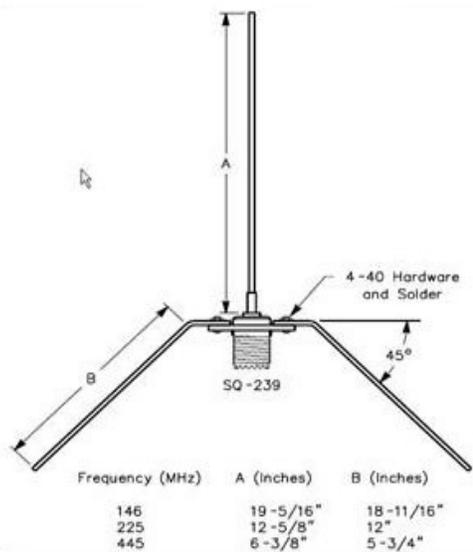
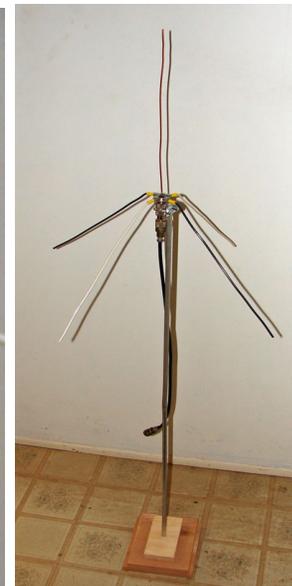
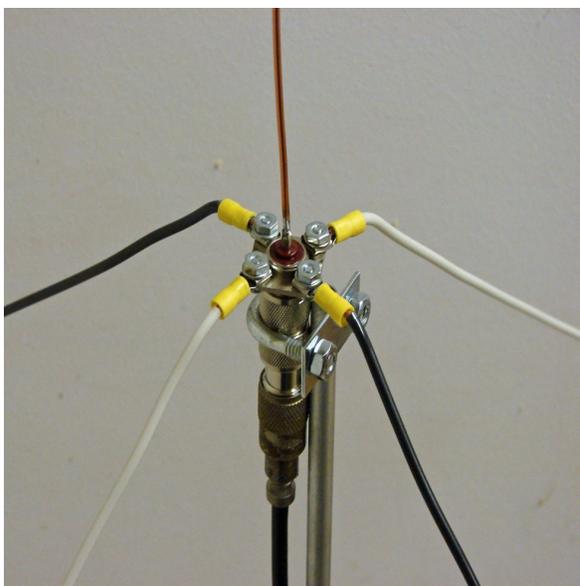


Fig 32—Simple ground-plane antenna for the 144-, 222- and 440-MHz bands. The vertical element and radials are 3/32- or 1/16-in. brass welding rod. Although 3/32-in. rod is preferred for the 144-MHz antenna, #10 or #12 copper wire can also be used.



- An SO-239 panel mount UHF connector.
- 30” of 10-2 Romex (#12 would also work)
- Some #6 hardware
- Crimp ring terminals for #10 wire
- Various UHF adaptors

Construction steps:

. Drill out mounting holes on SO-239 to #6 (I don’t like #4 hardware).

- Cut the 30” of Romex in half and take off the outer insulation to have 6 pieces 15” long.
- Crimp ring terminals to the 4 insulated pieces, screw onto the mounting holes of the SO-239, bend down 45°, and cut to 12” for the radials, as shown in the diagram and Photo 1.
- Solder a remaining bare wire to the SO- 239 center pin and cut to 13 ½” for the vertical radiator.

Above closeup photo shows construction Detail.

Next I had to test this antenna. First I had to build a test stand. Using some “junque-box” wood, a salvaged 3/8”dia. element from an old 2M yagi, some UHF coax adaptors, and a small U-bolt I mounted the antenna as shown in above photo. It turned out this was also useful later when I put this on my operating desk for actual use.

The 220 band is from 222.000 to 225.000. Since I didn’t want to cut the radiator too short – measure twice and cut once applies here too – I started testing at 222.100 where the radiator will be the longest. Here was my process:

- Using 5W, I measured the SWR at 222.1. It will probably be too high as the radiator, at 13 ½” as built, is too long.
- Cut about 1/8” off and document the SWR again. The SWR may or may not decrease. If it does drop some, it will not be at a minimum.
- Continue to cut about 1/8” off the radiator until the SWR drops to about 1.0:1.
- Check and record the SWR at 223.1 / 224.1 / 224.99. It will probably be OK as a ground plane is fairly wide-band. If not, tweak it again at 223.1. Don’t cut too much!

NOTE: do not place the antenna within about 15-20” of any metal. After I finished tuning the antenna I moved it and the SWR became worse. It turns out I had moved it close to the metal grid holding up the acoustic ceiling in my workshop and this detuned it. When I placed it on my desk it was also worse. This time I had placed it near a photo on my wall and the photo was in an aluminum frame!

If you are using an 2M HT with a rubber duck to get into the MARA Monday night net, build one using the 2M dimensions shown in the diagram. It will work better!

73, Larry, W1DYJ

Editors Note: I built Larry's 222 MHz wire GP antenna for use here in Poway, CA and it works slick. I am using it with my el-cheap-o Chinese 222 MHz HT and I'm able to access most all the 1¼-meter repeaters in western San Diego County with only five watts and the ground-plane mounted on a PVC pipe the rear corner of the carport roof. Many thanks for the article Larry!



MARA has new Pres & VP

Topsham: At the January 28th MARA Executive Board meeting held just prior the monthly ARES & MARA meetings, two board members were appointed to the positions of President and Vice President by the board members in attendance. They are:

- **President is - Harry McNelley, N1TTT of Brunswick**
- **Vice President is - Norm Bosse, W1MKD of East Booth Bay**

Continuing in their present position are:

- **Treasurer - Marjorie Turner, KX1I of Brunswick**
- **Secretary - Don Wakeman, KA1WAL of Durham**

Thank you outgoing Association President Dan Lindsley, N5AGG for your two years of keeping the MARA ball rolling. Well done.



Working Your First Amateur Radio Satellite: It's Easier Than You Think

Some of you that are new to Ham Radio and still exploring the various facets of the hobby, and for those of you that have been around for a while and want to try something new, why not Satellite communications? You don't need a fancy all-mode transceiver with VHF and UHF capabilities and big antenna arrays, all you need is a dual-band HT and a modest dual-band antenna that you can buy or build yourself.



In this column we will not go into a long tutorial but will redirect you to a very informative group of articles on the AMSAT website that should provide you with enough information to get you started. That website is:

http://www.amsat.org/?page_id=1869

With the new Cube-Sats and other low Earth Orbit (LEO) FM satellites you can have a lot of fun at minimal expense.





Walk MS: Brunswick 2016

Saturday, April 9, 2016

If you are interested in volunteering to help provide communications and course support for this years MS Walk, log onto the below link to register as a Ham Radio communicator volunteer.

http://walkmam.nationalmssociety.org/site/TR/Walk/MAMWalkEvents?fr_id=27579&pg=entry

After you have registered please send Harry McNalley, N1TTT an e-mail at harry.mcnelley@yahoo.com letting him know that you have volunteered.

We hope you can volunteer for a few hours that Saturday morning.



Eighth Annual Maine Partners in Emergency Preparedness Conference

Online Registration is now open for attendees, and exhibitors!

- Tuesday and Wednesday, April 19 and 20, 2016
- Augusta Civic Center, Augusta, Maine
- The Conference will feature more than 30 individual workshops and meetings offered over the two days.

The two highlighted areas for this conference are Power Grid Failure and Cyber Threats. Additional workshops of interest to emergency management and responders are also on the agenda. The agenda will continue to be refined as the Conference draws closer.

The keynote speaker panel for day one will focus on cyber security threats. The keynote speaker panel for day two will focus on power grid failure. Both sessions will include a variety of subject matter experts with expertise on the topics.

There is no charge for attending the conference. There is a small fee for exhibitors, but no charge for not-for-profit and government exhibitors.

A draft agenda, information on lodging and links for registration can be found here:

<http://www.maine.gov/mema/prepare/conference/> on our Maine Prepares Conference page.

Don't miss this two-day learning experience with statewide and national preparedness partners.



How cops are catching weed grow ops with AM radios



Many hams can locate a marijuana grow operations simply by taking a radio and portable antenna out into their neighborhood and using the radio to triangulate the exact location of the grow.

Check out the below article written by San Francisco police Sargent Keith Graves

<http://www.policeone.com/drug-interdiction-narcotics/articles/8224280-How-cops-are-catching-grow-ops-with-AM-radios>



Why Modern Makers Are Bringing Back Ham Radio

Larry Banks, W1DYJ send us an article by [Wayne Rash](#)

More than a hundred years ago, a few intrepid amateurs began experimenting with a new means of communications known then as “wireless.” These protohackers — soon to be known as *hams* — for [etymologically obscure reasons](#) — began building their own electronics gear, hoping to use it to communicate with others. By the early 1920s, amateur radio operators were talking with and even transmitting images to complete strangers on the other side of the world.

By the 1980s, ham radio was in decline. But the spirit of those early tinkerers survived: They were the first makers, who — like the makers of today — built technological gizmos for themselves that they just couldn’t buy.

Read the rest of the article at:

<https://www.yahoo.com/tech/why-modern-makers-are-bringing-1363811879927862.html>



New ARRL/Red Cross MoU Signed

The ARRL and the American Red Cross have signed a new *Memorandum of Understanding (MoU)*. The document, signed in January, succeeds one agreed to in 2010; it will remain in place for the next 5 years. The MoU spells out how League Amateur Radio Emergency Service (ARES) volunteers will interface with the Red Cross in the event that ARES teams are asked by the Red Cross to assist in a disaster or emergency response.

"Whenever there is a disaster requiring the use of Amateur Radio communications resources and/or facilities, the local Red Cross region or chapter may request the assistance of the local ARES organization responsible for the jurisdiction of the scene of the disaster," the *MoU* provides. Such assistance would include mobilization of ARES personnel in accordance with a prearranged plan, and the establishment of communication as necessary during a disaster or emergency. "Both ARRL volunteers and American Red Cross workers will work cooperatively at the scene of a disaster and in the disaster recovery, within the scope of their respective roles and duties" within the scope of the *MoU*, the agreement says.

Generally, the *MoU* sets the parameters of the partnership between the ARRL and the Red Cross to provide assistance to communities affected by disasters. It calls upon both organizations to encourage and maintain open lines of communication at the state and local levels, sharing current data regarding disasters, situational and operational reports, changes in policy or personnel, and any information pertaining to disaster preparedness, response, and recovery.

For its part, the League will encourage ARES units to engage in discussions with local Red Cross entities to develop plans for local response or disaster relief operations. The Red Cross will encourage its field units to engage in discussions with the ARRL Field Organization to develop plans for local response or disaster relief.

Facilitating this is a *Statement of Cooperation* to provide methods of cooperation between the two organizations on the local level in providing services to communities during or after a disaster event, "as well as other services for which cooperation may be mutually beneficial." The ARRL signatory is either the appropriate ARRL Section Manager or Section Emergency Coordinator.

The new *MoU* also clarifies that ARES volunteers assisting the Red Cross but not registered as Red Cross volunteers do not have to undergo a prior background check. Radio amateurs who register as Red Cross volunteers, though, must abide by the Red Cross's background check requirement.

Then-ARRL President Kay Craigie, N3KN, signed the *MoU* on behalf of the League on January 7, while ARC Senior Vice President-Disaster Cycle Services Richard Reed, signed for the American Red Cross on January 22. -- *ARRL*

