

MORE LISTENING ON 160

FRED HOPENGARTEN, K1VR

Since writing on the subject of listening on 160, for an article which appeared in the February, 1985 issue of *RADIOSPORTING*, I've kept up my attack on improving my reception on that band. Here's the update.

Birdie

In the first article, I mentioned local broadcast station garbage and cordless telephone as sources of birdies across the band.

A problem with a third layer of birdies, not solved until K1MEM gave me the answer, was a weak birdie every 15 kHz or so. Actually, it is a birdie every 15.75 kHz. The source? Our household TV sets, even the three week old Mitsubishi! Why? Try multiplying 30 frames per second, times 525 lines.

K1MEM proved it was a household TV set by simply turning off our living room Sony. And I had always wondered why 160 was so much quieter after everyone went to bed!

My temporary solution? From now on, during contest evenings our family will read. For the long run, however, I'm looking at new EMI/RFI sprays to coat the inside of the TV set. I'm also going to write to the manufacturers to see what they have to say. Dear Reader: Do you have any suggestions?

Noise

Readers of the previous article will recall that W1RR was experimenting with wires under his Beverage antennas to improve the ground even more. Well, here's the disappointing news. He finds no improvements. So discard that thought, and just concentrate on getting a few 20 to 40 foot radials out from the ground rod planted at each end of your Beverages, to make that ground look better.

However, another source of noise was discovered by diligent effort, and with the help of Boston Edison (the local power company). Fortunately, Earl Sunderland, N1AXG, works there as their noise sniffer (though I'm sure his title is more elegant). Whatever his title, he was a tremendous help.

I had been hearing a noise from the northeast. It was from the northeast on all my directional antennas: Beverages, 4 element 40 meter ColAtchCo vertical phased array, and TH6-DXX at 30 meters. I arranged to leave my beam pointed at 60 degrees, the direction from which the noise peaked up on a dead 15 meter band, so that N1AXG would know what direction to look. It didn't take long.

Using a 150 MHz battery powered regenerative receiver, and a hand-held five element yagi, he found the source on the next street toward Europe. After locating the house generating the noise (no, it wasn't coming from a pole), he was able to gain entry and find the culprit--an elderly woman's heating pad, used to keep her warm when sitting in her living room.

Of course, in gaining her confidence to let him in and look around, it helped that he was driving a yellow car, wearing a yellow hard-hat and jacket, and carrying appropriate identification. He also has a warm, non-threatening manner (as well as 15 years of experience in doing this sort of thing!).

One reason that I had always been unsuccessful in locating the interference source was that I had always waited for good weather (in New England, that means warm). During warm weather, she was turning the pad off.

The conclusion to the story is that the power company man convinced the lady that one day her noisy heating pad could catch fire and that she should discard it. He was also able to point out that when the pad was off, her TV reception improved.

For the non-professional, N1AXG suggests finding an old CAP radio because it will have an AM detector (FM detectors ignore noise), and fashioning a small hand-held yagi from a broom stick with #10 wire elements.

For those with a further interest in the outdoor splice protection I mentioned in the previous article, the manufacturer has finally printed an advertisement on this new product. Such protection will prevent loss due to water ingressing into a splice.

It is interesting to learn how CWY decided that they had a reliable splice protector. They simply filled the splice protector with a non-dairy creamer powder and dumped the coax into some water. A few days later, they removed the splice protector, with its splice, from the water, and the powder was still dry.

The tale may be made up strictly for sales purposes, but it sounds nice doesn't it?

Weak Signals

Through a small editing error, the citation in my previous article to a piece by Joe Reiser W1JR, in which a nice preamp circuit appears, was wrong. Correctly, see *Ham Radio*, November, 1984, p. 101.

On the subject of preamps, friends hereabouts are touting the usefulness of a very inexpensive device, the NE41632B, made by NEC and selling for something in the two dollar (U.S.) neighborhood. One of them yields 9 dB gain, so a two stage preamp yields 18 dB without any noticeable intermod problems. Since a Beverage is typically 20 dB less efficient than a dipole on 160 (or 80), 18 dB gain results in good comparisons of signal-to-noise ratios with apples-to-apples signal levels.

For a small difference in performance at the upper end of HF usage (noise figure of 1.5-2 instead of 1 dB at 30 MHz), it is possible to substitute the commonly available 2SC2644, or a 2N5109 for the above mentioned NEC device. Of course, at 1.8 MHz, there would be no difference.

Thanks to Carl Huether, KMIH, for the above tip and discussion.

Conclusion

I'm grateful to all who've made suggestions on improving reception on 160. It is certainly a challenge. Remember, the better you hear, the less likely you will be to transmit while that rare one is coming back to me.

Fred Hopengarten, who wouldn't dream of building his own preamp, despite the above suggestions, is currently trying to figure out how to make his two element ColAtchCo vertical phased array for 80 meters work on 160--perhaps by making it think that it is just a short, fat single element vertical on 160.