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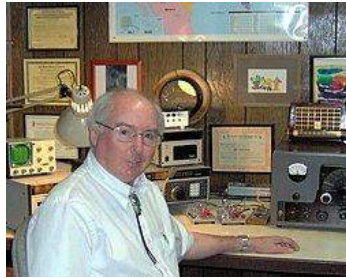
Broadcasters' Desktop Resource

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... edited by Barry Mishkind – the Eclectic Engineer

From the Radio Trenches

Curing Interference with a 2x4



By Mike Langner

[July 2013] Few things are more unnerving than getting a call where the FAA is claiming interference. Add in the FCC and other agencies, and solving the problem becomes top priority. As you will see, it seems important to make sure you have some lumber on hand.

Years ago, after building an FM facility atop New Mexico's Sandia Crest I was asked to appear before a meeting of representatives of the FCC, the FAA, the Forest Service, and the permittee in whose building the station was constructed.

The issue was the FAA was claiming our FM was causing interference to their operations.

CHASING A GHOST

However, although they were certain the problem was coming from our transmitter, even the FAA's own spectrum analyzer – with a 30 dB fundamental frequency notch – could not see the interference.

Yet, at the very same time, one of their in-flight communications receivers at an adjacent site was indeed "playing the hits!"

Since I knew, from the tests run during the recent installation, that the transmitter was clean I quickly started rolling through my mind each of the various possible interference causes I had encountered over the years.

After a moment's thought, I said, "You guys, please excuse me for about five minutes – I have an idea."

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Going outside, I grabbed a stout 2x4 and with all my strength beat the several towers on our site as hard and ferociously as I could.

GONE!

When I returned to the meeting of technical folks, the interference was completely gone.

Why and how did my unorthodox action solve the problem?

Oxidized joints in one or more of the towers had been acting as a non-linear junction (diode) and

mixing all the signals that strobed it. Our transmitter was and had been clean all along.

For all the years since, that 2x4 has been kept "on site" for use when the FAA calls. While the 2x4 and ones like it will not fit into my toolbox, it sure fits in my definition of essential broadcast engineering tools!

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Mike Langner is a long time engineer and station owner in the Albuquerque market, now serving as an ABIP Inspector. Contact Mike at mlangner@swcp.com

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