Make Your Own Base-Station Antenna

You'll be amazed how much better your radio will hear with this $25 plumber's delight.

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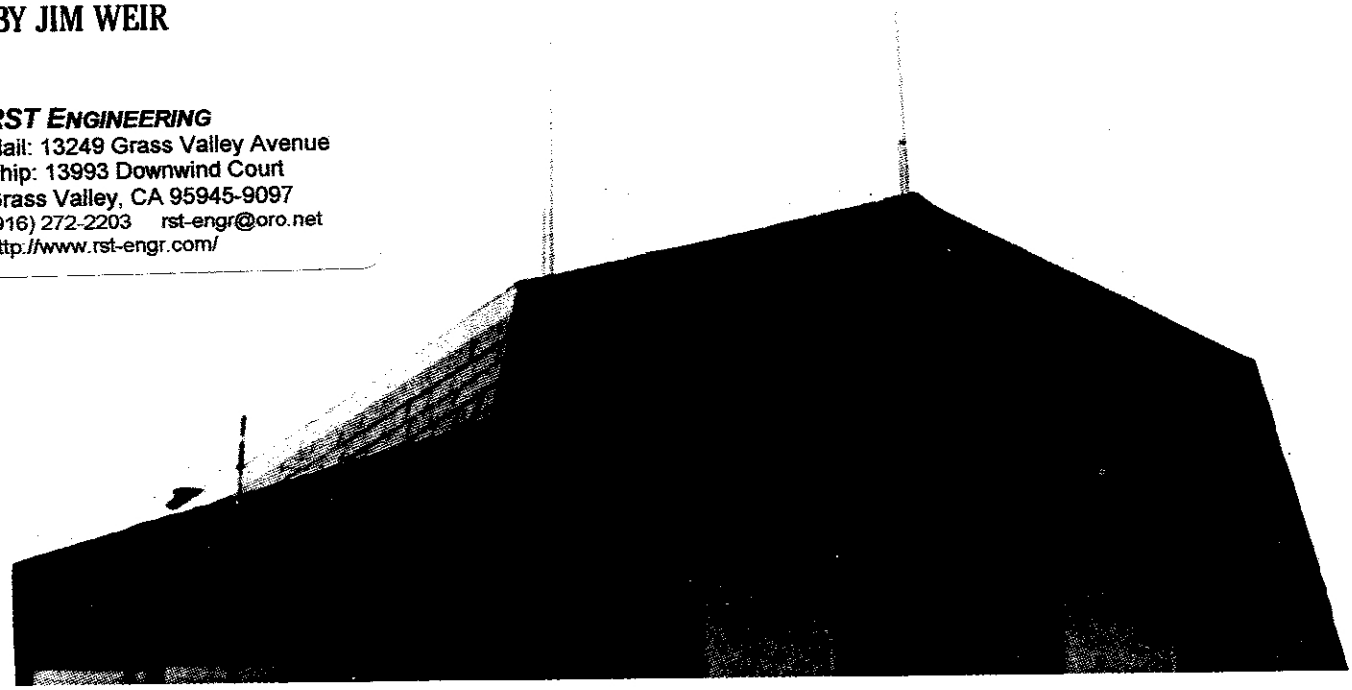

The Weir antenna farm includes several J-pole antennas. These omni systems work well and exhibit a wide bandwidth.

How would you like to build an antenna for your home or airport station that is easy to build, easy to tune, easy to mount, very broadband, virtually impervious to precipitation static, resistant to lightning strike, almost immune to wind damage, has the same gain as an airborne dipole and will cost you less than a double sixpack of Mexican beer?

How, you ask? Let me introduce you to the wonders of the water-pipe J-pole antenna.

Before I begin, let me make a personal observation. During 25 years of flying, I have examined the antennas at FBOs, repair shops, home installations and hangars throughout the country and no two are the same. Some are really quite elegant, and some of them resemble the antenna that one proud FBO in southern Missouri showed me. It consisted of about 20 turns of No. 22 wire wrapped around his building, across gutters, water pipes and electrical conduit. The operator said this arrangement didn't have quite the range that his "big antenny" on the roof had, but was a "mite easier to keep up in a snowstorm."

I offer you a standard antenna design that is efficient, easy to build, inexpensive and easy to maintain—even in a snowstorm.

As I sit here at my word processor in Grass Valley, California, typing this article, I am listening to my radio desk (see photo) aircraft-band radio attached to my J-pole antenna (see

Table 1

center frequency	matching element	radiating element	tap point
127 MHz	21.8 in.	67.8 in.	2.9 in.
146 MHz	19.0	59.0	2.5 in.
general	K × 0.235	K × 0.730	K × 0.031

where K = 11800 / frequency in Megahertz

Important note: These lengths are measured to the *bottom* of the antenna. Don't forget to allow for the fact that the copper pipe does not fit all the way to the bottom of the "L" and "T" fittings.