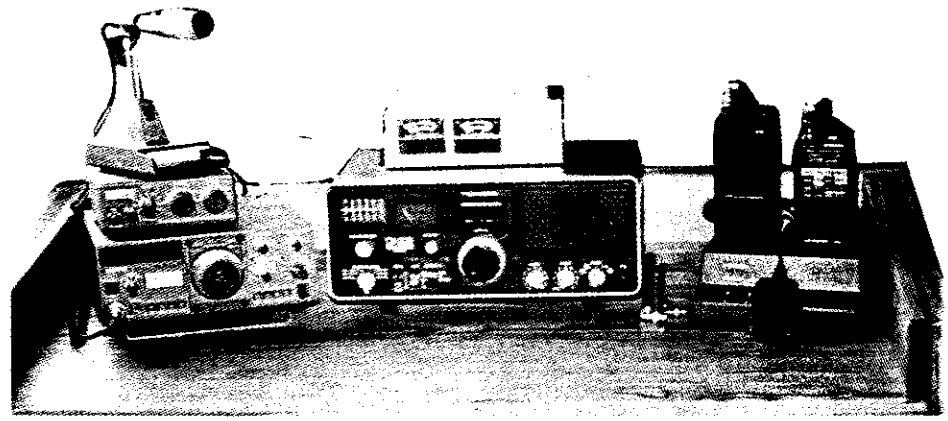
photo) on Unicom 123.0 MHz. Columbia (100 miles south), Angwin (70 miles west) and Weaverville (100 miles north) are coming in clearly. Tuning in San Francisco Bay Approach (90 miles west), I can hear both ground and aircraft transmissions as clearly as if I were in the pilot's seat. The best part of it all is that I started construction on my J-pole antenna about this time yesterday afternoon, soldered it together last night, and tuned it this morning.

The J-pole can be used for any VHF frequency band you like. In particular, you can see in the photo above that my home station uses the J-pole for both two-meter amateur radio (the peak of the roof) and the aircraft band (to the left of the peak). Both antennas were constructed of the same material, and both exhibit all the great characteristics described above. In particular, the aircraft- band antenna has a VSWR (standing-wave ratio) below 2:1 from 118 to 136 MHz, and at the band center, the reflected-



Both VHF amateur radio and aircraft-band radios are hooked to simple J-pole antennas described here.

signal loss is less than my most sensitive instruments can read. I can tune the band center from below 122 to above 130 MHz, and as far as I can tell, the antenna response is equal to all points of the compass. It is, by my picky standards, the best omnidirectional broadband base station antenna I have ever used.

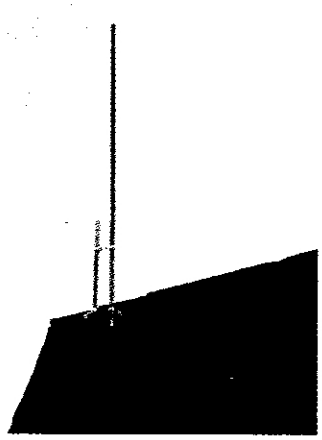
You need a torch of some sort to put this J-pole together. I've tried using a really big soldering iron, and it didn't work; you need direct flame to solder the structure as rigid as I wanted. You also will need a small can of non-acid flux, a roll of plumber's solder, a tubing cutter, and a few lengths of half-inch copper water pipe.

See Table 1 and cut the half-inch copper pipe *driven element* (also known as the radiating element in a transmitter antenna), one half-inch copper-pipe *matching element* and one half-inch *coupler* (it's 0.75 inches long).

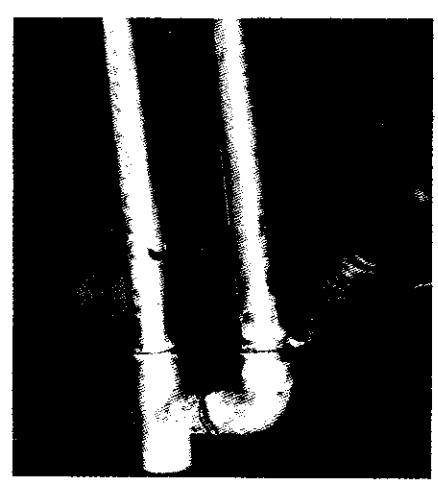
Assemble the antenna as follows, referring to Diagram 1:

1. Drill one copper cap through the top with a ¼-inch bit. Lightly butter a No. 12 brass (or cad-plated steel) nut with flux and center it inside the cap on the ¼-inch hole. Thread a No. 12 stainless steel or aluminum screw

Here's the completed antenna mounted on the side of the Weir residence.



Soldering copper pipe is easy. Use non-acid flux and plumber's solder.



The coax is fed through the copper pipe and attached to solder lugs on the two arms of the J-pole antenna.