



## heatsink cooling fan

Most modern transceivers in the 200 watt class mount the amplifier on the back of the cabinet. The heatsink is exposed, and should be cooled by a breeze. A muffin fan is just right to make that breeze.

Surplus houses sell them for around \$12, but you can pick them up new at ham flea markets for around \$4. These fans run from 120 Vac, but are fast and noisy, masking the speaker signal. To slow the fan down, put a 600 ohm 20/30 watt resistor in series with the 120 volt line. I put mine in front of the breeze to

keep it cool. A four-inch resistor will mount on clips attached to the holes in the fan used for mounting (see fig. 1).

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## HF antenna

Some time ago I tried a 160-meter antenna described in *Editors & Engineers Radio Handbook* by Bill Orr, W6SAI, (21st Ed., Section 27-17, fig. 22). The results were quite gratifying, probably because of the high ground conductivity under the antenna. The ground for the antenna was at the base of a 40-foot TV tower.

I now have a small home at the seashore on a small lot, too small to put up a 120-foot dipole for 75 meters. In the past I had tried a single-wire 1/4-wave antenna, but with only limited success. Then this year I put up the one shown in fig. 2. I first put up the 75-meter portion, made with 300-ohm TV ribbon to the specs given in the *Handbook*. My results on 75 were much better than with the 1/4-wave dipole, but this antenna, of course, worked on only one band.

Next I tried using two lengths of 300-ohm ribbon, cut for 40 meters and 20 meters, and slung under the 75-meter section. Because of the close coupling to the 75-meter section, these did not work. But it was interesting to note that the performance of the 75-meter antenna was not

affected by the addition of these two sections. I replaced the 40-meter and 20-meter sections with wire, to form a 1/4-wave antenna on these bands. Now all three antennas tuned up well. VSWR at 3.825 MHz was 1.4, at 7180 it was 1.2, at 14275 it was 1.4, and at 21.300 it was 1.4. Normally it would not be necessary to use an antenna tuner, but with the TS-120S solid-state transceiver, maximum output occurs at only 50 ohms. Also, by using the tuner I work over the full portion of these phone bands.

## construction

The spacers were made from three plastic clothes hangers purchased at the local discount store for 97 cents. Each hanger was cut up to get the straight sections. Six were cut to 9-inch lengths and these were used for the 40-meter and 20-meter sections. Four were cut to 6-inch lengths for the outer supports of the 40-meter section. Holes were drilled for passing the wires through them, and then the wire was tied to the supports with a piece of fishline. See fig. 3 for details.

Here I might remind you to make sure the grounded portion of the SO-239 cable connector is secured to the tower base with a strap or heavy wire (#14 or larger). The one grounded side of the 300-ohm ribbon is soldered to the SO-239 casing and the other three wires are soldered to the center pin. After soldering, the SO-239 was coated with Dow-Corning DC-9 for weather protection. Connection to the equipment is by means of thirty-five feet of RG8/U.

For use on a small lot, this system seems to work quite well, and it has a high angle of radiation, which I prefer for contacts up to 800 miles on 75. Don't expect this type of antenna to compete with a high half-wave antenna on any of these bands, but it does perform well for reasonable distances — even with its short length.

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