



# The Heath Cantenna

MOST OF US HAVE made dummy loads out of everything from light bulbs to resistors. No problem for the lower amateur bands, or if the power into the load was small. When a dummy load is needed for VHF frequencies however, the problem becomes somewhat more complex. High power finals have also always created a problem.

Heath Company has solved these problems with a new low priced dummy load kit. From the outside it looks just about like a gallon bucket of paint, with the paint can black. A closer look reveals some interesting "guts," as we will see later. The specs on the dummy load are as follows:

<b>Impedance</b>	50 Ohms
<b>VSWR</b>	1.5 up to 300 MC 2.0 up to 400 MC
<b>Power Dissipation Capability</b>	1 Kilowatt max (ICAS)
<b>Size</b>	Gallon Paint Can (8 <sup>7</sup> / <sub>8</sub> " high by 7" diameter)
<b>Weight</b>	1 <sup>1</sup> / <sub>2</sub> lbs. (without oil)
<b>Building time</b>	1 <sup>1</sup> / <sub>2</sub> to 2 hours
<b>Price</b>	9.95

A very special "resistor" is used as the load, which is a special combination of carborundum and other materials. It will withstand considerable amounts of heat, without making any great changes in its resistance. Impedance is

maintained by a special shield placed around the 50 ohm resistor. Transformer oil is placed in the can surrounding the load resistor and stabilizes the heat dissipation of the load.

It is interesting to note that both mineral oil or transformer oil have about the same heat conduction properties up to about 400 watts. Above that power level, transformer oil becomes considerably better. At full input power of one kilowatt, the power can be left connected for only about 2 minutes using mineral oil, while it may remain for almost 10 minutes if transformer oil is being used.

The type of oil you use in your particular "Cantenna" will be determined by the type of oil which is available to you in your locality. If both are available, the price will no doubt help you decide which to use. By the way, a good place to try to secure transformer oil is from your local electric company. I find that most of them use it themselves and in some cases will even let you have the relatively small amount which you need for nothing.

The little dummy load is very easy to assemble, though care should be taken in securing the silver plated connections on the 50 ohm load resistor. Also when mounting the shield tube, as this will have an effect on the over-all impedance. The top of the resistor is connected by tabs to a porcelain feed-through



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terminal, then into a small metal box. The top of the "paint" can is where this box is mounted and contains special circuitry which permits the measurement of a dc voltage for monitoring relative output power.

I have used the load on amateur frequencies (also commercial "CAB" frequencies of 152 mc @ 100 watts), from 3.5 mc to 220 mc. Powers ranged from less than 1 watt to over 600. I have not as yet had a chance to connect a "full gallon" to the load, but I have fed it with the Heath Linear and found that the load can really take it. It's a real aid in checking out a rig, making adjustments, and looking for troubles without causing interference to amateur or other services. At less than ten bucks, it's a real good buy.

## New Product

### 16th Edition Radio Handbook

Bill Orr, W6SAI, has done it again. Never mind the \$9.50 price of this volume, it has over 800 pages and is the best text book for learning about radio that we've ever seen. It covers all aspects of radio theory and practice, is beautifully illustrated and climaxes each section of theory with some of the most up to date construction projects you'll see anywhere. This is like a huge long issue of 73, carefully indexed and integrated . . . and probably without as many mistakes.

The book is particularly strong on higher power transmitters, which is not too surprising since Bill spends his days at Eimac and obviously talked several of the Eimac gang into building up the beautiful rigs in the handbook.

No active ham . . . and particularly no newcomer should be without this monumental reference work. It is available through many parts distributors or Radio Bookshop.

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