**Light Bulb Resistors**

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Ordinary tungsten filament light bulbs make excellent load resistors for radio frequency and audio tests, since they are non -inductive. However, their resistance increases with an increase in power that is applied to them. The table gives the resistance of standard 115 -volt bulbs at various wattages. At approximately one -third rated wattage, the filament will show dull red. At two -thirds rated wattage, the filament is bright yellow. If it is desired to test a 30 -watt audio amplifier having a 500 ohm output, two 40 -watt bulbs could be used in series. At 30 watts output froth the amplifier, the two bulbs will light to a dull red since each tube will be dissipating 15 watts, and the load on the amplifier will be 510 ohms. Light bulb resistors are very useful for terminating untuned feed lines while adjusting coupling to the final amplifier. The bulb will serve as an indicator of maximum r.f. at the same time coupling adjustments are being made. Various series or parallel arrangements of bulbs will enable the user to secure an infinite number of resistance values. One of the most valuable uses for the light bulb resistor is as a dummy antenna for adjustment of the transmitter. The resistor may be either clipped across a few turns of the tank coil in the same manner that an untuned transmission line is coupled, or it may be connected across a tuned circuit which is then coupled to the tank. The transmitter can then be completely chccked for frequency, percentage of modulation, quality and power output without causing QRM or risk of receiving a "pink slip" from the F.C.C. If the resistance of the dummy antenna is reasonably close to that of the radiation re- sistance of the antenna, a double pole, double throw switch can easily be arranged to shift the output of the transmitter from one to the other. The readings on the r.f. ammeters, with the dummy antenna connected, will give a quick check on the performance of the transmitter. In damp weather, the antenna meters will show higher current if the antenna insulation is poor, although the radiation will be less than in dry weather when the antenna current readings are less. A comparison between antenna cur- rents under the two conditions, with the dummy antenna being used to make sure the of the transmitter is the same, will quickly show up poor antenna insulation. The table is reprinted with permission from the Thordarson Transmitter guide.

