# A DEMONSTRATION POWER SUPPLY

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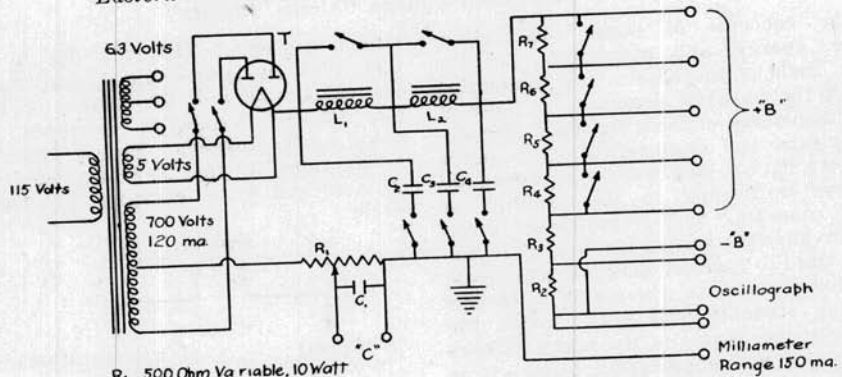


$R_1$ 500 Ohm Variable, 10 Watt
$R_2$ 250 Ohm , 5 Watt
$R_3$ 2,500 " , 50 "
$R_4$ 2,500 " , 25 "
$R_5$ 10,000 " , 10 "
$R_6$ 25,000 " , 5 "
$R_7$ 225,000 " , 1 "

$L_1, L_2$ 8 Hrys., 120 ma.
$C_1$ 40 Mfd., 150 Volts
$C_2, C_3, C_4$ 8 Mfd., 800 Volts
T 5Z3 or 83

In the teaching of an elementary course in Radio it frequently is desirable to show the action of the various parts which go into a standard power supply. The apparatus here described has been planned to make this possible without the necessity of re-wiring circuits each time a new observation is to be made. The circuit diagram shows the arrangement of parts and switches. It is "fool-proof" in the sense that no damage can be done to the unit with any combination of open or closed switches. With this unit the following observations can be made merely with the opening or closing of switches:

1. Half-wave rectification
2. Full-wave rectification
3. The separate effects of each component in the filter section
4. The effect on voltage of condenser or choke in-put
5. The effect of varying load on voltage out-put. Data for six or more points on a calibration curve for a given filter arrangement are available by opening and closing switches.

The effect of using a high vacuum or mercury tube can be shown by interchanging a 5Z3 and 83 type tube.

The unit can be used as a power supply in an amplifier or radio. "A", "B", and "C" voltages are available at binding posts, and the necessary auxiliary instruments are milliammeter, voltmeter, and oscillograph.