

Transmitter Power Supplies

High Voltage Unit

THE power supply of any transmitter is the unit from which all power that is transmitted is taken. The oscillator, amplifier or whatever type of R.F. unit is used in conjunction with the power supply merely converts the power taken from the power supply into high frequency currents. Therefore, the power supply is one of the most important parts of any transmitting set-up and deserves careful attention.

The high voltage power supply shown in the photograph is capable of delivering 1250 volts at 250 ma. to the final stage of the transmitter.

The secondary of the plate transformer is tapped to provide either 1000 or 1250 volts. When the final amplifier is used for phone transmission the 1000 volt tap on the power supply should be employed. For CW or code transmission, the full 1250 volts should be used for increased output. This power supply, while it does not include an abundance of filtering, will provide pure enough DC for the final amplifier. Actual tests have proved this.

Two 866's are employed in the recti-

fier circuit and they are followed by a choke input filter circuit consisting of a single swinging choke and one 2 mf. 2000 volt filter condenser. The filter choke is rated at 250 ma., the same as the transformer. The 50,000 ohm bleeder across the output of the power supply is employed to prevent surges and peaks which may be present while the transmitter is being keyed. The filament transformer for the rectifier tubes is rated at 2½ volts at 10 amperes and is insulated for 10,000 volts. The filament transformer for the power amplifier tube has an output of 7½ volts at



The high voltage power supply unit for use with the final amplifier of the 3-stage all-band ham transmitter.

Parts List

HAMMARLUND

2—S-4, 4-prong sockets
I. R. C.

1—50,000 ohm 75 watt resistor
CORNELL-DUBILIER

1—2mf., 2000 V. filter condenser
STANCOR

1—2.5 V., 10 ampere filter trans.
No. P-3025

1—7.5 V., 8 ampere filter trans.
No. P-4092

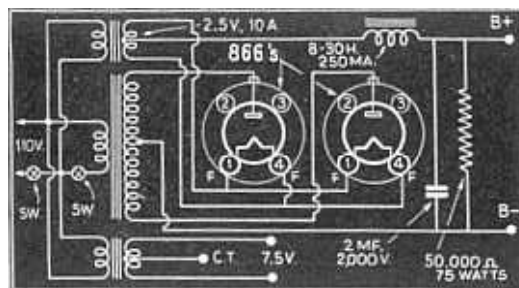
1—1000-1250 V. plate transformer
No. P-5031

1—Filter choke 8-30 H. 250 ma.
No. C-1402

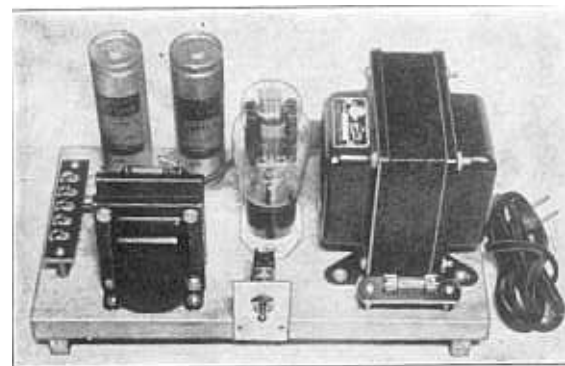
MISC.

2—Toggle switches
1—Baseboard 16" x 11½" x 1".
R. C. A.

2—866 tubes



Wiring diagram and parts values for the high voltage power supply.



Low voltage power supply for the oscillator and buffer stages of the transmitter.

8 amperes. While the current rating of this transformer is greater than necessary for single 808, it permits the use of two 808's in push-pull.

Low Voltage Power Supply

It is possible to use a common power supply for the entire transmitter. However, much better results will be obtained if at least the low power stages are operated from one power supply and the high power stage from another separate power supply.

This power supply delivers 400 volts at 160 ma. and is designed for operating the 6L6 oscillator and buffer-doubler stages of the transmitter featured a few pages back. The large transformer employed delivers 400 volts each side of center tap at 160 ma. It also contains two filament windings. One 6.3 volt, 4.5 ampere winding for the 6L6's and another 5 volt 3 ampere winding for the 33V rectifier tube. Since this power supply is used for the oscillator where

better filtering is necessary, we employ condenser input. Two 8 mf. 500 volt condensers, connected on either side of a 20-henry filter choke provide absolutely pure DC as evidenced by the quality of the note from the transmitter when on the air. The bleeder for this power supply is a 20,000 ohm 50 watt wire wound resistor employed in order to stabilize the output. Only one switch is required in the primary circuit. This is for turning the 110 volt side on and off. An additional switch may be incor-

porated in the center tap lead of the high voltage winding, for turning this part of the circuit on and off.

Both power supplies are constructed on wood base boards. Each power supply has a fuse in the 110 volt line. These can be seen in the photograph although they are not shown in the diagram.

Parts List

HAMMARLUND

1—S-4, 4-prong socket
I. R. C.

1—20,000 ohm, 50 watt resistor
AEROVOX

2—8 mf. 500 V. electrolytic conds.
STANCOR

1—Plate-6L transformer No. P-4081
(see text for rating)

1—Filter choke 20 H. 175 ma.
No. C-1410

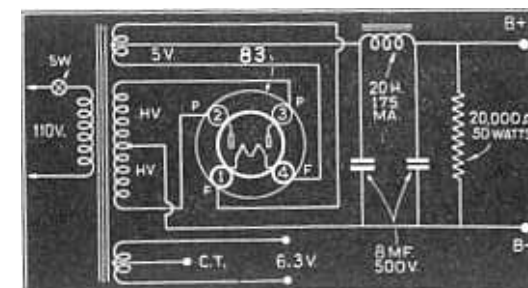
R. C. A.

1—83V tube

MISC.

1—Toggle switch

1—Baseboard 11½" x 6" x 1"



Wiring diagram showing the connection for the low voltage power supply unit.