

# WIRE RECORDER MODEL 79 FOUNDATION UNIT

WEBSTER



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The impedance of the head without the matching network is 15,000 ohms at 1,000 cycles.

The oscillator develops 5 volts at 1.0 ampere (R.F.) at 35-40 kc. This may be tested by shorting a 6.3 volt pilot light across the secondary of the oscillator coil, since most meters will not accurately measure radio frequency values. The pilot light should light to a medium brilliance if the oscillator is functioning properly.

The circuit shown is unusual in one respect, a 6SN7 is used in cascade for the second stage. This inversion circuit permits taking off the recording signal out of phase with the 6SJ7 grid, eliminating any tendency toward oscillation when the plate-grid circuits are controlled by a common switch.

The .25 megohm volume control for the second triode section of the 6SN7 may be mounted with the shaft protruding from the top of the chassis. It should be adjusted so that the output of the second section is approximately 10 volts with .005 volts input at terminal 2 on P-1, Fig. 3 and the volume control on full.

**NOTE:** The power supply shown in the diagram will not accommodate additional tubes. Select a heavier power transformer and associated parts if a transformer coupled push pull stage is to be added for direct speaker operation.

Switch SW-1 is a rotary wiper switch such as a Mallory No. 1312L or equivalent. When using the Mallory switch, the connections indicated on the diagram are recommended.

Many circuit variations will occur to the experi-

enced constructor, including power supplies, choice of rectifier tube, input circuits and additional amplification. Two examples of alternate input circuits are shown on page 10.

## CONSTRUCTION NOTES

The usual care must be exercised in dressing the leads. Keep plate leads as far from grid leads as possible. Keep grid leads as far from AC leads as possible. Use a toggle "on-off" switch; do not use a switch on the volume control for this purpose. A metal cover over the bottom of the chassis helps to eliminate hum pickup from surrounding apparatus.

A high inductance in the plate lead of the 6V6 oscillator permits operating it as a pentode with increased output. The primary of an inexpensive output transformer was used because of its relatively high inductance and availability. Cut off and ignore the voice coil leads.

The transformer T-1 has a 5 volt filament which will permit the use of a 5Y3G rectifier if desired.

If a glass 6SJ7 must be used, be certain it is shielded. A metal tube is preferred.

Connecting the volume control between the 6SJ7 and the 6J5 avoids thermal noises inherent in circuits placing the volume control ahead of the first tube.

Condenser C-2 must be shielded by the constructor if a shielded input condenser cannot be purchased. Use foil and insulate it with waxed paper.

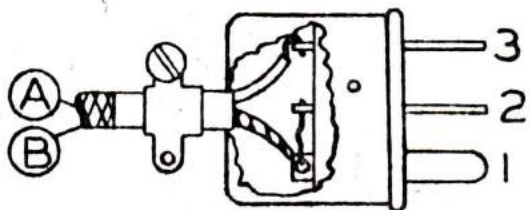


Fig. 1 — Radio-phonograph Input Connections

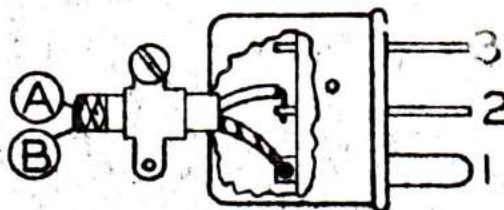


Fig. 2 — Microphone Input Connections

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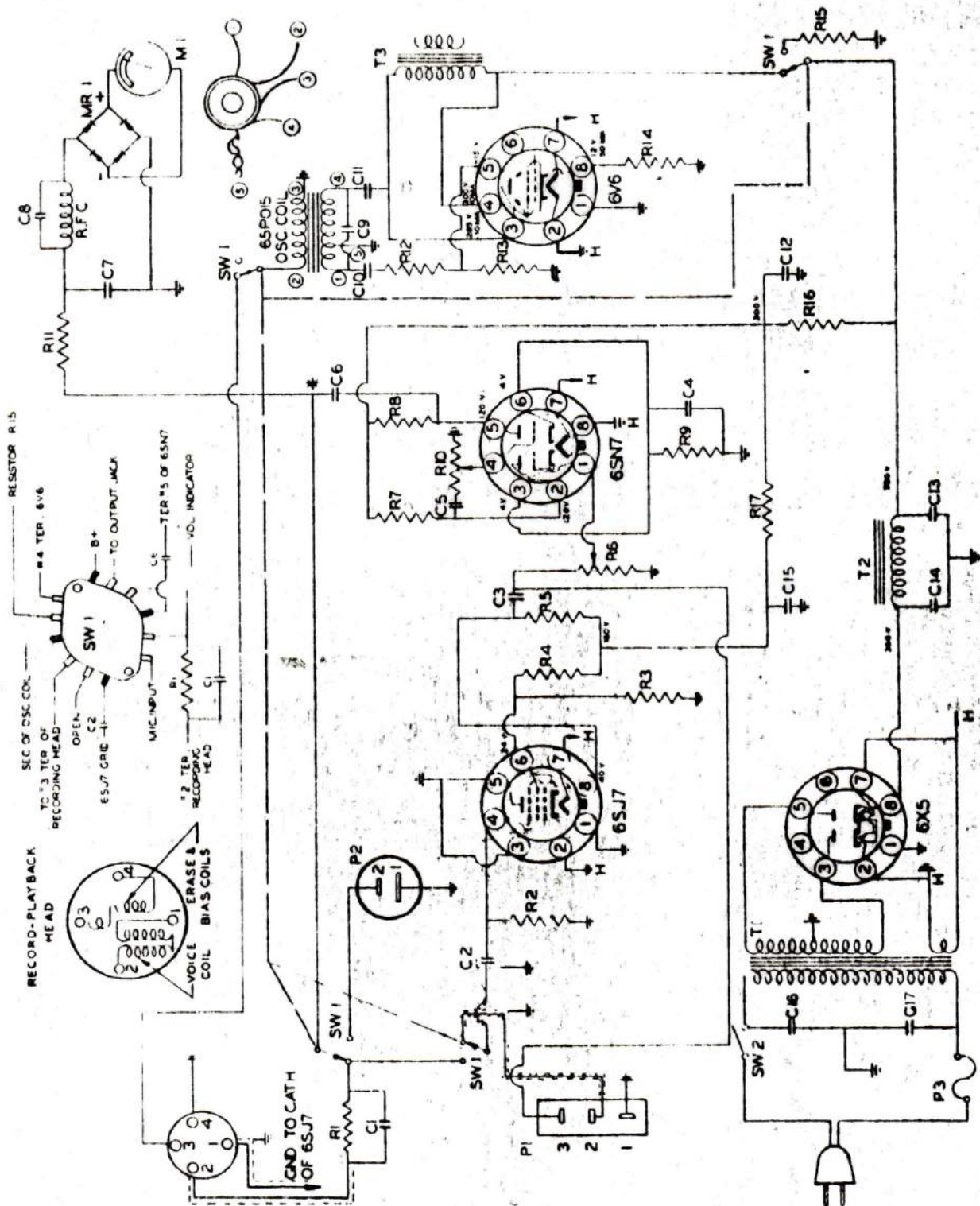


Fig. 3 -- Suggested Circuit Diagram



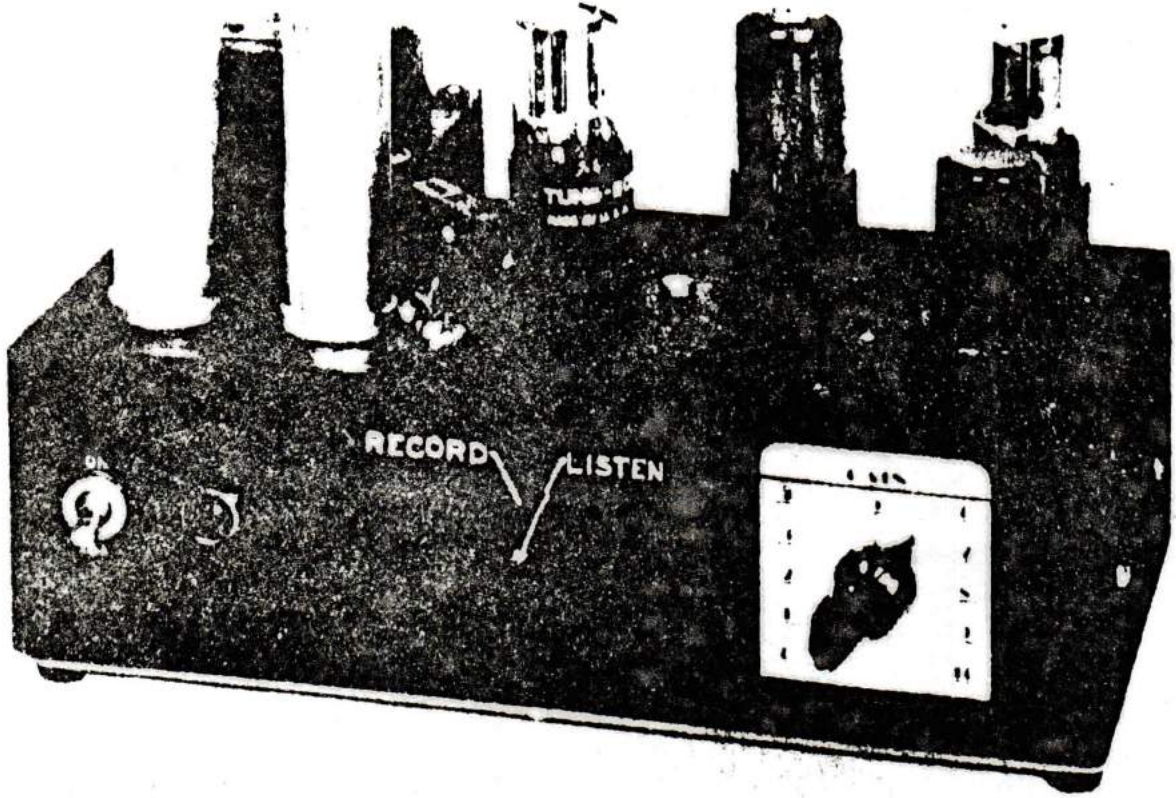


Fig. 4 -- Parts Layout of Laboratory Model of Amplifier Described in Fig. 3

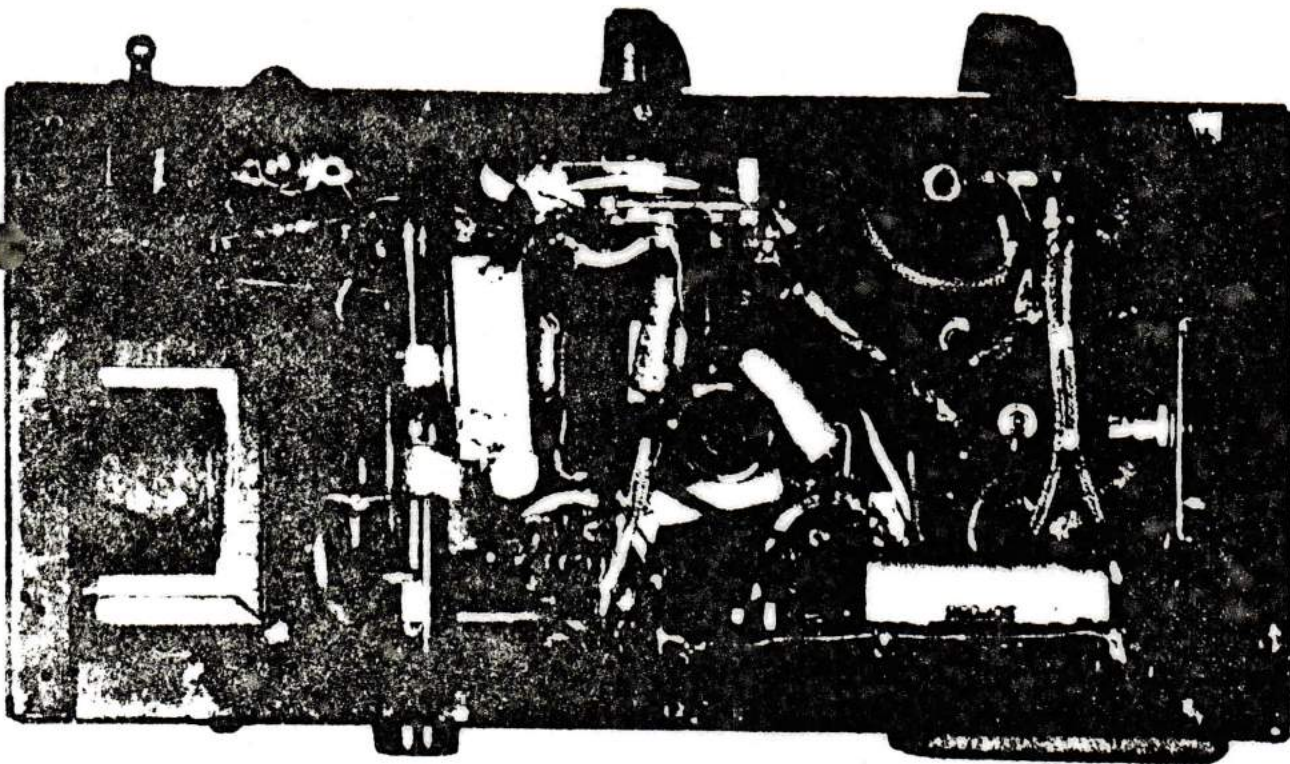


Fig. 5 -- Wiring View of Laboratory Model Described in Fig. 3