

Useful 10-Watt Amplifier

by W. D. HAYES, W6MNU

ONE of the most useful pieces of equipment for the radio builder and experimenter is a simple, medium-powered audio amplifier—free of bugs and flexible with regard to input requirements. Such an amplifier can be used in conjunction with an r.f. tuner to make a complete receiver. It makes an excellent phono amplifier for use with either ordinary records or special sound-effect records for home movie productions. It can act as the principal unit of a small public address system with either phonograph or microphone input.

The amplifier described provides 10 watts output from a pair of push-pull 6V6-GT's, and has sufficient gain to give full output from any high-impedance microphone. Provision is made for two phonograph pickups so that sound effects can be faded in and out in case the amplifier is used with home movies. If two phonos are used, each must have a volume control. Two gain controls are incorporated in the amplifier itself, one in the microphone channel, and one in the phono channel.

The microphone signal is amplified by a 6SJ7-GT pentode, which is resistance-coupled to one half of a 6SN7-GT. The other half of the 6SN7-GT cathode-couples the phono channel into the first

half. This provides a very simple and effective mixing arrangement. Transformer coupling is employed both in the input and output of the push-pull 6V6-GT's, and output impedances of 4, 8 and 16 ohms are available.

The amplifier and its power supply are built on an aluminum chassis $5\frac{1}{2}$ inches wide, $10\frac{1}{2}$ inches long, and 2 inches deep. There is ample room below the chassis for the few parts required. To reduce the possibility of hum, the power transformer is mounted at right angles to the two audio transformers. Across the rear of the chassis from left to right are the microphone jack, the two sets of phono input terminals, the speaker socket, the fuse holder, and the 117-volt line cord.

Across the front are the microphone gain control on the extreme left, followed by the phono gain control, the pilot light, and the on-off switch.

MATERIALS FOR AMPLIFIER

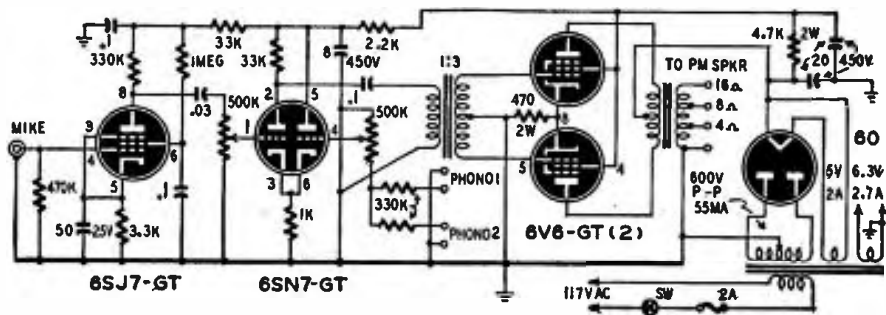
Resistors: 1—470-ohm, 2-watt; 1—1,000-ohm, 1—2,200-ohm, 1-watt; 1—3,300-ohm, 2—33,000-ohm, 3—330,000-ohm, 1—470,000-ohm, 1—1-megohm, $\frac{1}{2}$ -watt; 2—500,000-ohm potentiometers.

Capacitors: 1—.03- μ f, 3—0.1- μ f, 400-volt, paper; 2—20- μ f, 450-volt, 1—8- μ f, 450-volt, 1—50- μ f, 25-volt, electrolytic.

Transformers: 1—power, 600-volt, center-tapped, 55-ma, 5-volt, 2-amperes, 6.3-volt, 2.7-amperes; 1—interstage, 1:3 turns ratio; 1—output, 8,000-ohm, push-pull, to voice coil.

Tubes: 1—6SJ7-GT, 1—6SN7-GT, 2—6V6-GT, 1—80.

Miscellaneous: 1—2-ampere fuse and holder assembly; 1—s.p.s.t. toggle switch; 4—octal, 1—4-prong tube sockets; 1— $5\frac{1}{2} \times 10\frac{1}{2} \times 2$ -inch chassis; necessary hardware.



RADIO-ELECTRONICS for