

A Simple One-Tube Receiver

A Straightforward Set for the Beginner

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INCREASING circuit complications to make more amplification possible with two- and three-tube receivers have so enlarged the difficulties with which the beginner is confronted that the usual "beginner's" sets of to-day seem almost as complex as the most elaborate sets of a few years ago. This means that a new amateur nowadays is almost compelled to make a study of set design and construction before he is ready to build even the smaller receivers.

The receiver described here was built expressly for beginning amateurs; it may easily be constructed at a surprisingly small cost by anyone with a very limited knowledge of radio. Because of its simplicity and freedom from freakish circuits, the set is almost certain to work properly at first trial, however inexperienced the builder.

Although only one tube is used, all of the requirements for satisfactory amateur-band operation are met. Sufficient amplification is provided on all of the frequencies covered, and the band-spread condenser simplifies the problem of tuning through the narrow amateur bands. In addition, the receiver is well-adapted to emergency and portable operation, and for this reason, the small amount of effort necessary to build it for an extra receiver is justified.

CONSTRUCTION

The receiver is built on a soft pine base $6\frac{3}{4}$ inches long, $5\frac{1}{2}$ inches deep, and 1 inch thick. The $\frac{1}{8}$ -inch aluminum panel for the set measures 6 inches high by 7 inches long. The panel is fastened to the base by two $\frac{3}{4}$ -inch wood screws, and in addition, two dime-store angle brackets with $1\frac{1}{2}$ -inch legs are screwed to base and panel to increase the rigidity of the assembly and thus prevent tuning difficulty.

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The 3-inch vernier dial on the center of the front panel is the band-spread tuning control. The pointer knob at the operator's left is on the band-setting condenser, C_1 , while that at the right is the regeneration control condenser knob. The three are mounted in a straight line, with holes centered $2\frac{1}{2}$ inches apart, three inches above the bottom edge of the panel.

After the panel has been attached to the base-board and the condensers are in place, the tube socket is mounted on the center of the base. This socket is held to the base by two $1\frac{1}{4}$ -inch wood screws through the socket holes and $\frac{5}{8}$ -inch tubing pillars supplied with the socket. The key slot is pointed directly toward the rear of the base-

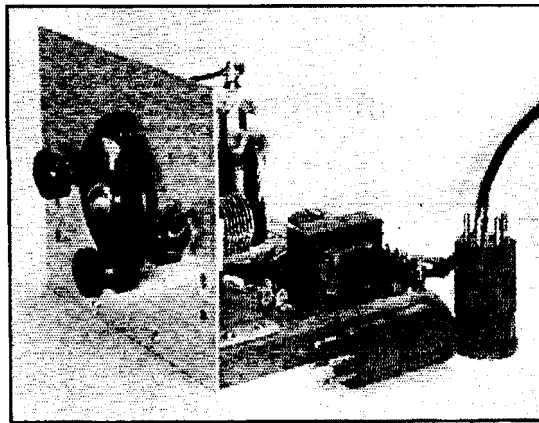
board, as it is shown in the circuit diagram.

The audio transformer and the coil socket are placed somewhat nearer the rear edge of the base. The audio transformer is mounted with primary connections at the side of the receiver and secondary connections near the tube socket. The spaced pin of the coil socket is located at side of the receiver opposite the primary connections of the audio transformer, so that it is possible to make direct connections to the terminals used.

The three condenser rotors are grounded to the aluminum panel, and are connected to the ground end of L_1 , to the audio amplifier cathode terminal of the tube socket (pin No. 1), to the ground end of the audio transformer secondary, and to the B-wire in the power cable.

The stators of C_1 and C_2 are connected together; a short wire is used to connect the C_1 stator to the grid end of L_1 ; and the grid leak and grid condenser, R_1 and C_6 , with terminal leads connected in parallel, are soldered to the stator of C_2 at one end and to the grid cap of the tube at the other.

For convenience in following the wiring of the set, the diagram is arranged with the socket con-



FRONT VIEW OF THE ONE-TUBE RECEIVER

Coils for the 80- and 40-meter bands are shown at the side. The dial in center of panel is the band-spread tuning control, with regeneration control knob at right and band-setting control at left.