

300-MC TRANSCEIVER

? I would like a diagram of a portable one-meter transceiver, using battery tubes. The range should be about three miles. I would like the set to be as small as possible.—J. M., Barnesville, Ohio.

A. Radio transmission is prohibited to the general public without a license. The possession of an amateur radio license permits transmission in certain bands, but 300 mc is not included at the present time. The set shown will operate on 2½ meters. See Fig. 1.

In the diagram the HY114 is used both as super-regenerative receiver and transmitting oscillator. The antenna coil is one turn of No. 14 wire and the secondary has two turns, both with a diameter of ¼". The spacing of the secondary must be determined by experiment, as with Lecher wires, for example.

More than three miles can be covered from a suitably high location with a good antenna. The latter should be about 9 inches long, using the system shown. If a dipole is desired, each half should be 9 inches long and the center goes to a twisted pair or coaxial cable.

A carbon microphone is used, and operated from the "C" battery.

A diagram of a transmitter for working on these short waves appears on page 319. The use of Lecher wires are also explained in the same article.



The Question Box is again undertaking to answer a limited number of questions. Queries will be answered by mail and those of general interest will be printed in the magazine. A fee of 50c will be charged for simple questions requiring no schematics. Write for estimates on such questions as require diagrams or research.

6-TUBE AMPLIFIER

? I would like to build an amplifier using the following tubes: 56, 53, 2A5's in push-pull, and an 80. The input side of the amplifier should be equipped to handle a phono pickup and a mike.—B.S.N., Stratford, Conn.

A. The diagram shows an amplifier using the tubes requested. However, there would be insufficient gain for a microphone, so an additional 57 high-gain stage has been added. With reasonable care, there should be no difficulty in construction and operation. The usual problems in shielding can be solved in the ordinary manner. Leads should be kept close to the chassis and as short as possible. (See Fig. 2.)

A.C. AMPLIFIER

? Please print a diagram of a small A.C.-operated amplifier that uses as few parts as possible yet will give ade-

quate power for a portable phono. W.F., Blairstown, N. J.

A. The amplifier shown is designed to give you the most power with a minimum of parts and reasonably high

fidelity. The values of all parts are given on the diagram. (Fig. 3.) Choke should be one of about 200-ohms resistance. A phono pickup with an output of about one volt should drive the amplifier to

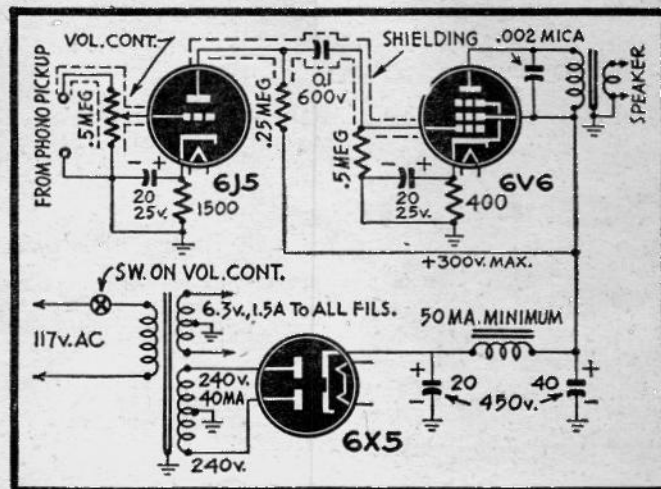


Fig. 3—A two-tube amplifier for A.C. use.

full power output. Very little shielding should be necessary if the input leads and the 6J5 are kept away from the power and output transformers.

ALIGNMENT TROUBLES

? I have built the two-tube radio shown in the Radio-Electronic Circuits last September. This set is very weak at one end of the dial only. Can this be remedied?—S. F. L., Indianapolis, Ind.

A. This, or any other TRF set using a two-gang condenser, may be aligned easily. You need a dial calibrated in kilocycles and an extra variable condenser of about the same capacity as one section of your gang.

Disconnect one of the gang sections from its coil, tuning the coil with the temporary variable. Tune in several stations, using both condensers. Check their positions on the dial, and add or remove turns from the coil still connected to the gang section till they come in at the correct points. This will align one coil, which is then connected to the temporary condenser, while the other coil is attached to its gang section and similarly aligned.

In other words, you simply adjust each circuit with the help of the calibrated dial, using the temporary condenser to tune the other circuit while doing so.

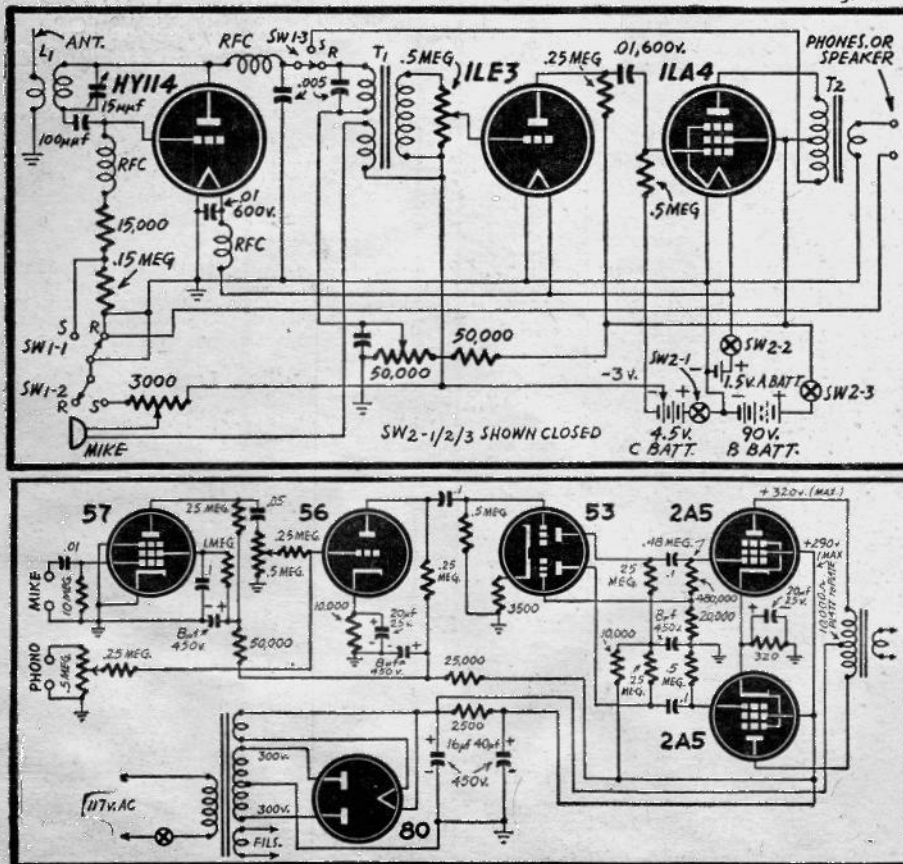


Fig. 1, above—Transceiver for 2 meters. Fig. 2, below—Amplifier for 2½-volt tubes.