

The TRF Midget is compact but very efficient. It makes an ideal personal receiver in the bedroom, den, office, etc.

New Pilot Midget Receiver Has Novel Features

Selectivity, Sensitivity and Tone Quality Obtained From Small Chassis; Special Model for European Use Tunes to 2000 Meters.

TO meet the demand for a small but efficient radio receiver of low price, for use in offices, dens, private living rooms, summer camps, etc., where the expense and size of a large set is not justified, the Pilot company has brought out a compact little five tube set of pleasing appearance and great effectiveness. Complete with dynamic loud speaker and built-in power supply, it measures only 12 by 16 by 8 inches in its handsome walnut finish cabinet.

HAS BIG-SET FEATURES

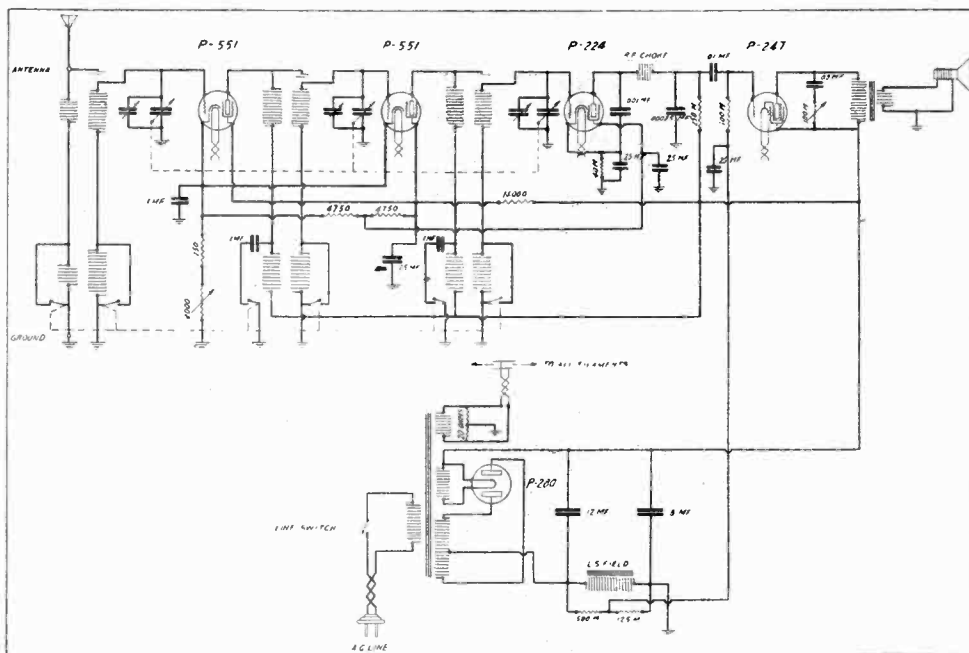
It has a full-vision illuminated dial, calibrated directly in kilocycles, a smooth volume control, and a tone control. The chassis is of the same rigid, all-metal construction characteristic of all Pilot receivers, and the workmanship is of the same high order. Not much higher than a book, it affords the same radio enjoyment obtainable from many higher-priced and more complicated instruments.

CIRCUIT USES NEW TUBES

There are three 551 variable-mu, one 224 screen-grid, one 247 pentode and one 280 rectifier in the set. Two stages of tuned radio frequency amplification feed into a screen-grid power detector, which in turn works directly into the pentode output stage through a resistance-capacity network. The use of variable-mu tubes in the R. F. circuits provides a degree of selectivity and sensitivity not heretofore achieved in TRF hook-ups.

Detector distortion is avoided by the power detector arrangement, wherein the usual grid condenser and leak is eliminated and the tube made to operate on the bottom bend of its grid voltage-plate current curve. The 247 pentode, which is the only audio amplifier, gives more than enough volume for all ordinary purposes.

Volume control is obtained by a 4000 ohm variable resistor in the cathode circuit of the R. F. tubes. The tone control consists of a



This schematic diagram of the Pilot TRF Midget shows the long-wave loading transformers, which give the set a wavelength range from 800 to 2000 meters in addition to the regular 200-550 meter coverage.



Mr. A. M. Morgan, of the Pilot engineering staff, showing the chassis construction of the TRF Midget. The RF transformers for the 200-550 meter range are in the shield cans next to the three-gang tuning condenser.

100,000 ohm variable resistor and a .03 mf. fixed condenser across the primary of the output transformer in the audio stage.

SPECIAL LONG-WAVE MODEL

The wavelength range of the standard TRF Midget is 200 to 550 meters, which takes in all the American broadcasting stations. To make the set usable in Europe, where many of the important stations operate on much higher wavelengths, a special model is being made that tunes from 800 to 2000 meters in addition to covering the 200-550 meter range. In external appearance this model is like the standard one. The tone control is absent, its space being occupied by a wave changing switch which controls a set of three R. F. loading transformers. These are mounted on the under side of the chassis, and, of course, are enclosed within suitable shield cans.

COILS CONNECTED IN SERIES

Examination of the schematic diagram on page 60 will reveal that these loading transformers are connected in series with the respective primaries and secondaries of the transformers used for the 200-550 meter range. With the switch in the 200-550 meter position, the loading transformers are simply short circuited through to ground. When the switch is turned to the 800-2000 meter setting, the short circuit is opened, and the tuning circuits then each consist of two coils in series, with a section of the three-gang variable condenser across the combination. The arrangement is simple but effective and fool-proof.

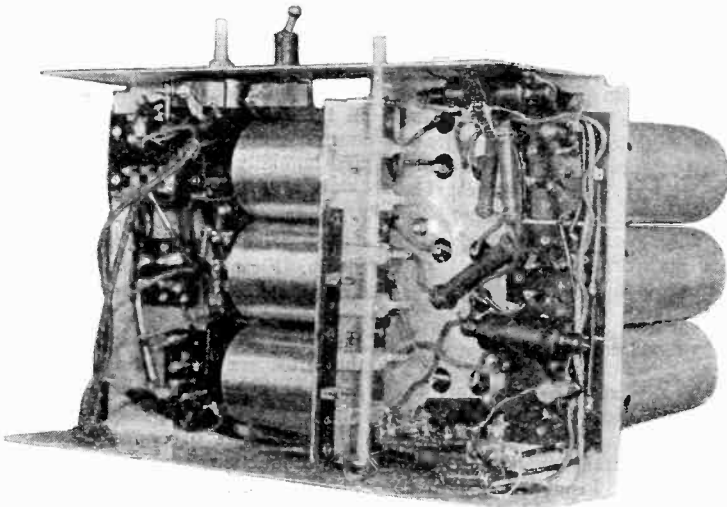
GET A GLOBE

As pointed out in previous issues of RADIO DESIGN, an ordinary flat map gives a very distorted idea of the appearance of the earth. As the owner of a short-wave receiver you will jump around a great deal from one country to another, and you must have a globe to figure distances and to get a true conception of the position of one country in relation to another.

To give an idea of how far apart certain places are, the writer measured distances carefully on a twelve-inch globe and obtained the following figures:

New York to London.....	3630 miles
New York to Eindhoven.....	3800 miles
Boston to San Francisco.....	2800 miles
New York to Sydney.....	10,230 miles
Manila to San Francisco.....	7000 miles
Buenos Aires to New York....	5200 miles
Khabarovsk to Ohio.....	6105 miles
Costa Rica to New York.....	2310 miles
Georgetown to Ohio.....	2970 miles
South Pole to New York.....	9200 miles
Bangkok to New York.....	8910 miles
Berlin to San Francisco.....	5940 miles
Berlin to New York.....	4125 miles
Kansas City to London.....	4620 miles

Short-wave stations are springing up in remote places, because those are the very places that need short-wave radio for communication purposes. Your enjoyment of your short-wave receiver will increase if you spend a few minutes during the evening with your son's or younger brother's geography book.



Under view of the TRF Midget chassis, with the long-wave coils and wave-changing switch in position along the center