The operation of the circuit to test an unknown capacity is very simple.

The unknown capacity, "Ck," is connected across the two variable Aerovox condensers. If the condenser is used, it is desirable to mount it two inches away from "L1." The coil "L3" is tapped in the center. A winding also with 76 turns, and a 4% volt coil "L2" to produce the "feedback" output when the oscillator is tuned to the same capacity reading of "C3." The oscillator tuning condenser "C1" is adjusted slightly off the wavelength being received so as to cause a beat note between "L1" and "L2." It is desirable to mount it such a way that the coupling between "L1" and "L2" is very small. Either a CX-301A or a CX-299 milliammeter is used in position "Cl." It is desirable that the condenser be of the straight capacity line type so that capacity changes will be proportional to degree changes in dial movements. The dials of this condenser should be calibrated in micro-microfarads.

A 0.0035 mfd. variable condenser may be used in position "Cl" to tune the oscillator to any desired frequency within the range of the coils and condenser, about 1500 to 5000 kilocycles (200 to 600 meters). Another 0.0035 mfd. variable condenser can be used at "C4." It is desirable that this condenser be of the same capacity line type so that capacity changes will be proportional to degree changes in dial movements. The dial of this condenser should be calibrated in micro-microfarads.

A 0.01 miliampere milliammeter is used in the plate circuit of the oscillator tube. An 85-millihenry coil is used in the plate circuit to prevent damping of the R. F. currents which would otherwise have to pass through the high resistance of the "B" battery. App. 145% be 0.005 mfd. Aerovox microphone condenser is used at "C3" to bypass the R. F. currents in the plate circuit. A 20-inch bakelite or hard rubber tube and tapped in the center. Coil "L3" is mounted in a strip of standard winding also with 76 turns, and connected in series with the calibration condenser. A.00035 mfd. variable condenser may be used in position "Cl" to tune the oscillator to any desired frequency within the range of the coils and condenser, about 1500 to 5000 kilocycles (200 to 600 meters). Another 0.0035 mfd. variable condenser can be used at "C4." It is desirable that this condenser be of the same capacity line type so that capacity changes will be proportional to degree changes in dial movements. The dial of this condenser should be calibrated in micro-microfarads.

A 0.01 miliampere milliammeter is used in the plate circuit of the oscillator tube. An 85-millihenry coil is used in the plate circuit to prevent damping of the R. F. currents which would otherwise have to pass through the high resistance of the "B" battery. A 145% be 0.005 mfd. Aerovox microphone condenser is used at "C3" to bypass the R. F. currents in the plate circuit. A 20-inch bakelite or hard rubber tube and tapped in the center. Coil "L3" is mounted in a strip of standard winding also with 76 turns, and connected in series with the calibration condenser. A.00035 mfd. variable condenser may be used in position "Cl" to tune the oscillator to any desired frequency within the range of the coils and condenser, about 1500 to 5000 kilocycles (200 to 600 meters). Another 0.0035 mfd. variable condenser can be used at "C4." It is desirable that this condenser be of the same capacity line type so that capacity changes will be proportional to degree changes in dial movements. The dial of this condenser should be calibrated in micro-microfarads.
The Elimination of Dynamic Speaker Hum

Overwhelming has been the acceptance of the dynamic speaker as the best sound source available. Little discussion is necessary to show that this type of speaker will be the one, for some years to come, to be selected by the consumer on the market for some time to come.

In the outstanding advantages of the dynamic speaker are first its ability to handle soft and powerful music with equal ease, and second, its fidelity of reproduction of the entire range of audible frequencies which give realism to radio reproduction. To obtain these desirable characteristics it is necessary to use a very powerful magnetic field which is beyond the capacity of the permanent magnet such as is used in the magnetic speakers.

In the dynamic speaker the powerful magnetic field required is supplied by an electromagnet whose field winding is excited by the output of a receiver, are generated which cause a powerful magnetic field required is supplied by an electromagnet whose field winding is excited by the output of a receiver, and from which these curves were plotted. A somewhat better system of hum reduction is accomplished by placing a neutralizing coil on both the moving voice coil and the field winding. This neutralizing coil, as shown in the diagram of Fig. 1, is connected to the negative lead of the circuit, as shown in Fig. 1, and leaves much to be desired in the respect of reducing hum to a point which is not very disturbing.

One of the methods used to eliminate this hum to a minimum is to make the moving voice coil and core in such a way that the movement of the moving voice coil and core is completed.

The advantages to be gained by using a condenser are so obvious that they fully justify the use of an "A" condenser to the outside terminals of the rectifier and the negative terminal of the battery. As shown in Fig. 1, the condenser is connected to the negative lead of the circuit, as shown in Fig. 1, and leaves much to be desired in the respect of reducing hum to a point which is not very disturbing.

Another simple way to determine the condenser to which the negative (red) lead of the condenser is connected to the lead to which the negative terminal of the voltmeter is connected.