

# I N S T R U C T I O N S

## PHILCO

REG. U.S. PAT. OFF.

### Balanced-Unit RADIO

### Models 90, 90A and 90E

**T**HESE models are complete AC electric screen grid superheterodyne Receivers using the new Philco electro-dynamic Speaker.

The Receiver is shipped with the tubes installed in their respective sockets. Before inserting the attachment plug of the Receiver in the A.C. line outlet, see that all the tubes are seated in their sockets and that the speaker plug is connected to the Receiver. The terminals of the three wires must be connected to the terminals on the top of the screen grid tubes. The tube shields must be in place over the tubes as shown in Fig. 1. Connect only to a source of alternating current within the limits of voltage and frequency (cycles) as listed in the license notice on the radio chassis.

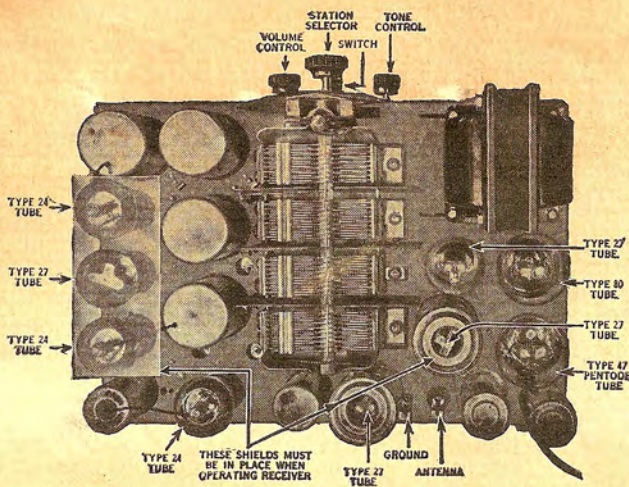


FIG. 1

Nine tubes are supplied. They are:

- 3 Philco type 24 screen grid tubes
- 4 Philco type 27 tubes
- 1 Philco type 47 Pentode power amplification tube
- 1 Philco type 80 rectifier tube

**Use Only Philco Tubes in This Receiver for 100 Per Cent. Balanced-Unit Performance**

#### **Aerial**

An outdoor aerial, consisting of a single copper wire 50 to 100 feet long, usually gives the best results. The lead-in wire is an active part of the aerial, and the aerial length should always be measured from the insulator at the far end. The outer end of the aerial should be as high as possible and the entire aerial should be spaced well away from trees and buildings and supported by glass or porcelain insulators.

Good results can also be obtained with an indoor aerial 25 feet or more in length. A shorter aerial usually will not be satisfactory.



# PHILCO RADIO INSTRUCTIONS

## Ground

A suitable ground clamp and wire must be securely attached to a radiator pipe or water pipe and the bare wire end connected to the "GND" terminal.

## Operating the Receiver

After all connections have been made, turn the "on-off" switch clockwise. After the tubes heat up, turn the volume control clockwise about one-half the total range of movement. Turn the station selector and different stations will be tuned in at various points on the scale.

Tune the desired station accurately to the point where it is clearest, and reduce or increase the volume with the volume control—never by detuning, as detuning will spoil the tone quality.

The figures on the Philco scale represent channel numbers which, by the addition of a cipher, correspond with the station broadcast frequencies in kilocycles as listed in newspapers and other station logs. For example: 85 on the scale represents channel 85 and a frequency of 850 kilocycles.

## Automatic Volume Control

The automatic volume control incorporated in this Receiver tends to equalize the volume of all stations at the sound level for which the manual control has been set. This prevents the blaring of strong stations during tuning and reduces the fading of distant stations. With the volume control in a given position, the reproduction will not vary greatly in volume, even if the tuning is changed from a weak station to a strong one, or vice versa.

## Control of Station Tone

The left-hand control knob operates the new Philco Tone Control which enables the user to adjust the tone quality of the reception from any broadcasting station to suit his taste.

There are four settings of the tone control which are felt as notches when the knob is turned. These have been named: (1) brilliant, (2) bright, (3) mellow and (4) deep. The approximate position of the dot on the tone control knob for each setting is shown in Figure 2.

With this control it is possible to compensate for differences in the quality of broadcasting from different stations and for differences in the human ear.

Setting 1 emphasizes the high notes and thus makes speech particularly sharp and clear. Setting 4 emphasizes the low notes and gives a deep character to the reproduction. Setting 2 will usually be found the most pleasing for music, although, under conditions where static or in-

terferences noises are bothersome, setting 3 (or in some cases 4) will be best as it will subdue these background noises.

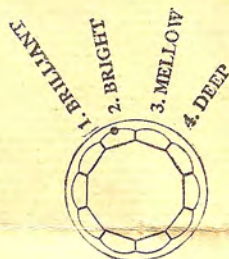


FIG. 2

PHILADELPHIA STORAGE BATTERY COMPANY

Ontario and C Streets

PHILADELPHIA, PA., U. S. A.