MODEL 41-246, CODE 121

SPECIFICATIONS

TYPE OF CIRCUIT: Model 41-246, Code 121, is a seven (7) tube A.C. operated super-heterodyne radio with electric push button tuning. In addition, the radio employs the Philco Built-in American and Overseas Aerial system for operation without an outside aerial. Provisions are also provided for an outside aerial for sections where signal strength is weak, such as in steel reinf. forced buildings and other shielded locations. For installations of this type the Philco 1941 Outdoor Aerial, Part No. 45-2817, is recommended. This aerial can be conveniently connected to the radio by inserting the plug attached to the transformer unit into the socket provided at the rear of the chassis. A ground is not required with either type of installation. Other features of design included in the radio are three tuning ranges; covering standard, police, and shortwave frequencies; two I.F. stages, Philco Loktal tubes; variable tone control; automatic volume control; and a pentode audio output stage. Six (6) electric tuning push buttons are provided for automatically selecting stations. Five of the push buttons are used for broadcast stations, and one for turning the power of the set “on” and “off”.

TUNING RANGES: 540 to 1720 K.C.; 9.0 to 12 M.C.; 15 to 18 M.C.

INTERMEDIATE FREQUENCY: 455 K.C.

POWER SUPPLY: 115 volts A.C., 60 cycles. To operate the radio on 115 volt, 25 cycle current, it is necessary to change the power transformers as indicated in the parts list.

AUDIO OUTPUT: 2 watts.

PHILCO TUBES USED: One XXL, 1st detector; one XXL oscillator; one 7B7, 1st I.F.; one 7B7, 2nd I.F.; one 7C6, 2nd detector, 1st audio; A. V. C.; one 7B5, audio output and a 7Y4 rectifier.

CABINET DIMENSIONS: Height, Width, Depth
11-13/16 16 - 9/16 9 1/8

ADJUSTING ELECTRIC TUNING PUSH-BUTTONS

The procedure for adjusting the push-buttons for reception of stations is the same as that given in radio Service Bulletin No. 360.

ALIGNING R.F. AND I.F. COMPENSATING CONDENSERS

EQUIPMENT REQUIRED

1. SIGNAL GENERATOR: Covering the frequency range of the receiver, such as Philco Models 070 or 177.
2. ALIGNING INDICATOR: Either a vacuum tube voltmeter or an audio output meter may be used as an aligning indicator. Philco Models 027 and 028 Circuit Testers contain both these meters.
3. TOOLS: Philco Fiber Screw Driver, Part No. 45-2610.

CONNECTING ALIGNING INSTRUMENTS

AUDIO OUTPUT METER: If this type of aligning meter is used, connect it to the voice coil terminals of the speaker or from the plate of the 7B5 tube to the chassis. Adjust the meter for the (0 to 10) volt scale.

VACUUM TUBE VOLTmeter: To use the vacuum tube voltmeter as an aligning indicator, make the following connections: Attach the negative (—) terminal of the voltmeter to any point in the circuit where the A.V.C. voltage can be obtained. Connect the positive (+) terminal of the vacuum tube voltmeter to the chassis.

SIGNAL GENERATOR: When adjusting the I.F. padders, the high side of the signal generator is connected through a .1 mfd. condenser to the aerial section (stator plates) of the tuning condenser. Connect the ground or low side of the generator to the chassis.

When aligning the R.F. padders a loop is made from a few turns of wire and connected to the signal generator output terminals, the signal generator is then placed close to the loop of the radio.

The receiver can be adjusted in the cabinet or removed from the cabinet.

When adjusting the radio outside the cabinet the loop aerial should be placed in approximately the same position around or near the chassis as when assembled.

After connecting the aligning instruments, adjust the compensators as shown in the tabulation for each model below. Locations of the compensators are shown in the schematic diagram. If the indicating meter pointer goes off scale when adjusting the compensator, reduce the strength of the signal from the generator.

MODEL 41-246

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NOTE A—Compensator (28A) must be adjusted before (28B), and should be done in the following manner: Turn 28A all the way up, then slowly turn down and select the first I.F. peak. Padder 28B is now adjusted to maximum.

NOTE B—DIAL CALIBRATION: In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, proceed as follows: Turn the tuning condenser to the maximum capacity position (plates fully meshed). With the condenser in this position, set the tuning pointer on the extreme left index line at the low frequency end of the broadcast scale.

NOTE C—Adjust padder (12A) to the first signal peak from the tight position (maximum capacity).

NOTE D—Adjust padder (12B) to the second signal peak from the tight position (maximum capacity).

PRODUCTION CHANGES

To eliminate oscillation in the R. F. Circuit the excess lead length of Electrolytic Condenser 19A and 19B on schematic diagram should be twisted.

To operate Model 41-246 on 120 volts, 60 cycle current, the power transformer should be changed to Part No. 32-8093.