



## FOR MEMBERS OF RADIO MANUFACTURERS SERVICE A PHILCO SERVICE PLAN

SERVICE BULLETIN  
No. 269-C

### Electrical Specifications

**Type Circuit:** Superheterodyne, with pentode audio output, battery operated.

#### Batteries Required:

"A" Supply—A 2-volt storage battery, or an air cell battery, type A-600, or a 3-volt dry "A" battery may be used, providing proper means, such as a voltmeter, is provided for adjusting the voltage to 2 volts.

"B" Batteries—Two 45-volt, heavy-duty, plug-in type "B" batteries are required.

"C" Batteries—No "C" batteries are required.

**Connections for Use with 2-Volt Storage "A" Battery:** Connect the black wire to the negative (—) terminal of the "A" battery. Connect the red wire to the positive (+) terminal of the "A" battery. Tape up the air cell lead, the only remaining lead, in such a manner that it cannot come in contact with any of the batteries.

**Connections for Use with Air Cell Battery:** If an air cell battery is used in place of a storage battery, connect the black wire to the negative (—) terminal of the air cell. Connect the brown wire to the positive (+) terminal of the air cell. Tape up the red wire in such a manner that it cannot come in contact with any of the batteries.

**Current Drain:** "A" battery—420 M.A.; "B" battery—12 M.A.

**Tubes Used:** 1A6, detector-oscillator; 1A4, I.F. amplifier; 1B5, second detector and first audio; 1G5G, power output pentode.

**Frequency Range:** 540 to 1550 K.C.

**Intermediate Frequency:** 470 K.C.

**Speaker:** Quam Magnetic.

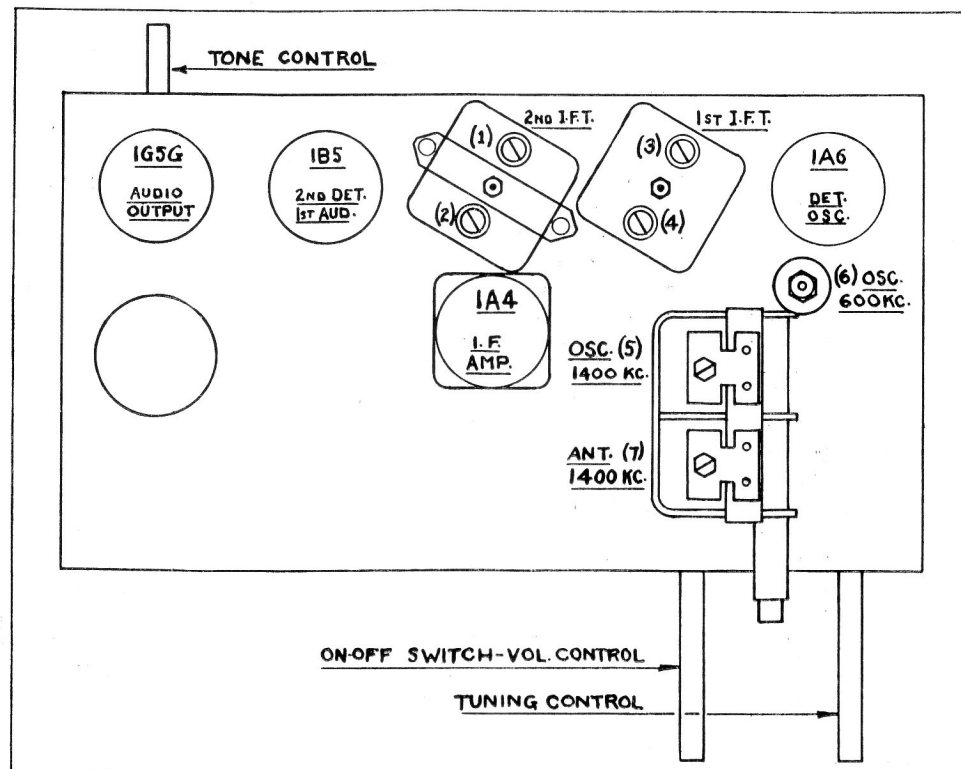


Fig. 1.—Location of Compensators

### Aligning Compensators

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the Philco Model 088, covering from 110 to 20,000 K.C., is recommended for adjusting the various compensators at the frequencies specified. A visual indication of the receiver output is also necessary. Philco Model 025 Circuit Tester contains a sensitive output meter and is recommended for this purpose.

Philco fibre handle screw-driver No. 27-7059 and wrench Part No. 3164 complete the equipment necessary for the following adjustments. The locations of the various compensators are shown in Fig. (1).

**Output Meter:** The 025 output meter is connected between the plate contact of the 1G5G tube and ground. Adjust the meter to use the 0 to 30-volt scale.

### Intermediate Frequency Circuit

#### Frequency 470 K.C.

1. Connect the 088 Signal Generator output lead through a .1 mfd. condenser to the control grid of the 1A6 tube and the ground connection of the output lead to the chassis. Then turn the tuning condenser to approximately 580 K.C., and adjust the generator for 470 K.C.
2. Now adjust compensators (1) and (2) on the second I.F. transformer, and (3) and (4) on the first I.F. transformer, for maximum output.

#### Radio Frequency Circuit.

530 to 1550 K.C.

1. Remove the signal generator output lead from the 1A6 tube and connect it through a 200 mmfd. condenser to the white antenna lead of the receiver, and the generator ground lead to the brown ground lead on the chassis.

2. Turn the signal generator to 1400 K.C. Rotate the receiver tuning condenser to the minimum capacity position (counter-clockwise). Make sure that the dial pointer is  $\frac{1}{8}$ " below the 1500 K.C. mark. Then turn the receiver dial to the 1400 K.C. mark and adjust compensators (5) and (7) for maximum output.
3. Turn the signal generator and receiver dials to 600 K.C. and adjust compensator (6) as follows:

First tune compensator (6) for maximum output. Then vary the tuning condenser for maximum output. Now re-tune the compensator (6) and again vary the tuning condenser back and forth about 600 K.C. for maximum output. This operation of first tuning the compensator and then the tuning condenser is continued until maximum output is obtained at the 600 K.C. frequency.

4. Re-adjust the 1400 K.C. end of the dial as given above. The receiver will then be properly adjusted.

**Note:** This receiver will oscillate if not connected to an antenna and ground.

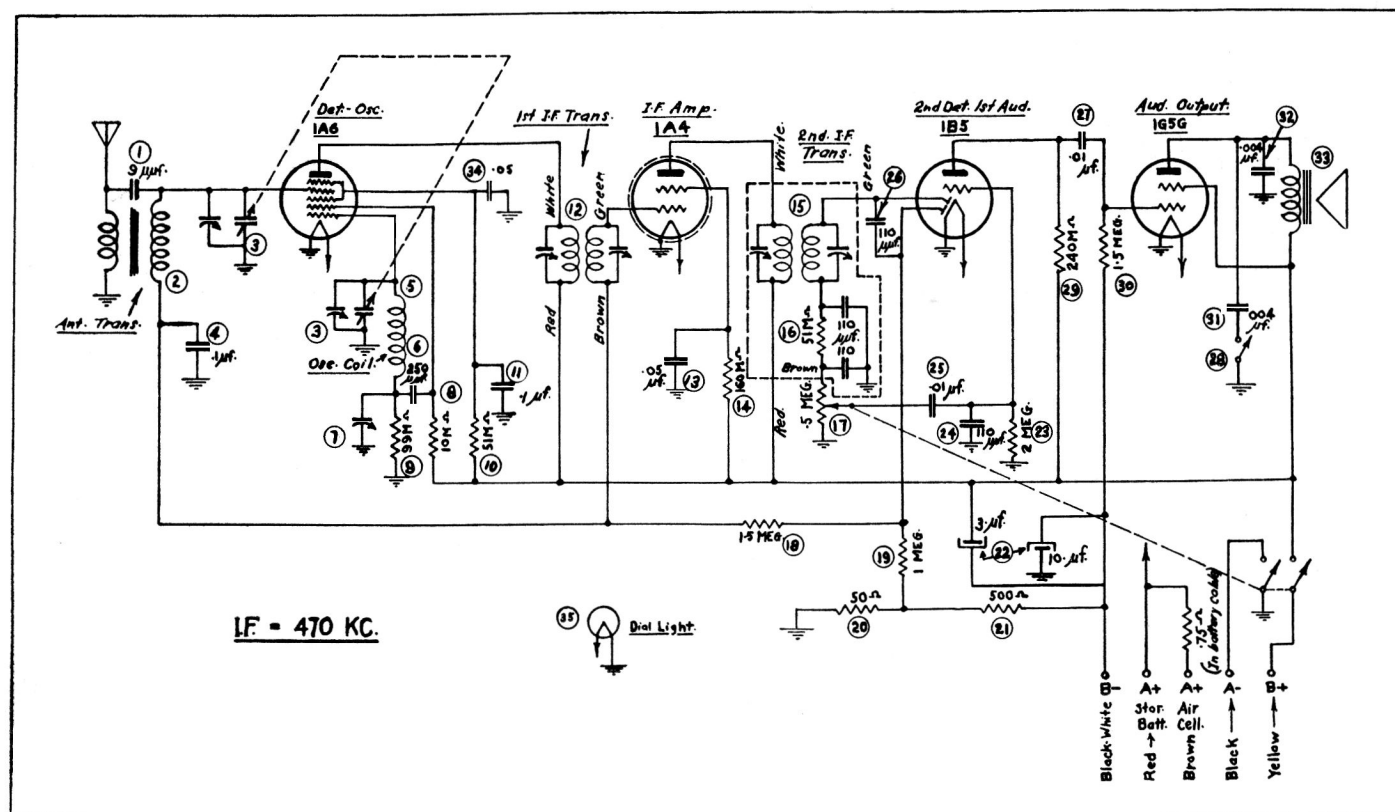


Fig. 2.—Schematic Diagram, Model 38-C324

## Replacement Parts—Model 38-C324

Schem. No.	Description	Part No.	Schem. No.	Description	Part No.
1	Condenser (9 mmfd.)	31-6198	23	Resistor (2 Megohms)	33-520344
2	Antenna Transformer	32-2641	24	Condenser (110 mmfd.)	30-1031
3	Tuning Condenser	31-2059	25	Condenser (.01 mfd.)	30-4479
4	Condenser	4989HG	26	Condenser (110 mmfd.)	30-1031
5	Oscillator Coil	32-2654	27	Condenser (.01 mfd.)	30-4479
6	Condenser (250 mmfd.)	5858	28	Tone Control Switch	42-1357
7	L.F. Padder (Part of 5)		29	Resistor (240,000 ohms)	33-424344
8	Resistor (10,000 ohms)	33-310344	30	Resistor (1.5 Megohm)	33-515344
9	Resistor (99,000 ohms)	33-399344	31	Condenser (.004 mfd.)	30-4334
10	Resistor (51,000 ohms)	33-351344	32	Condenser (.004 mfd.)	30-4334
11	Part of 4		33	Complete Speaker	36-1347
12	1st I.F. Transformer	32-2635	34	Condenser (.05 mfd.)	30-4519
13	Condenser (.05 mfd.)	30-4444	35	Pilot Lamp	34-2150
14	Resistor (160,000 ohms)	33-416344		Dial Pointer	28-5185
15	2nd I.F. Transformer	32-2636		Dial Scale	27-5347
16	Resistor (51,000 ohms)	33-351344		Knob	27-4282
17	Volume Control	33-5227		Tone Control Knob	27-4604
18	Resistor (1.5 Megohm)	33-515344		Battery Cable	41-3316
19	Resistor (1 Megohm)	33-510344		4-Prong Socket	27-6044
20	Resistor (50 ohms)	33-1260		6-Prong Socket	27-6036
21	Resistor (500 ohms)	33-1213		7-Prong Socket	27-6087
22	Electrolytic Condenser	30-2224		Dial Drive Cord	31-2083