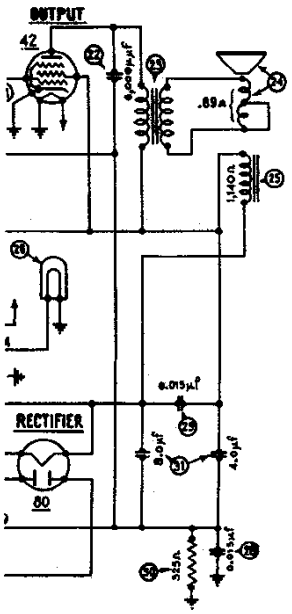
# Philco Radio & Television Corp.

| | | |
|---|---|---|
| Model: 630 | Chassis: | Year: Pre October 1937 |
| Power: | Circuit: | IF: |
| Tubes: | | |
| Bands: | | |

| Resources |
|---|
| Riders Volume 8 - CHANGES 8-2 |
| Riders Volume 11 - CHANGES 11-3 |
| Riders Volume 6 - PHILCO 6-31 |
| Riders Volume 6 - PHILCO 6-32 |
| Riders Volume 6 - PHILCO 6-33 |
| Riders Volume 7 - PHILCO 7-97 |
| Riders Volume 7 - PHILCO 7-98 |
| Riders Volume 7 - PHILCO 7-149 |

### Philco 59

The schematic, furnished by the manufacturer and shown on *page* 5-30 *of Rider's Volume V*, has an error in the field coil circuit, Part No. 25. Compare




Partial schematic of Philco 59, showing correct wiring of the field coil, Part No. 25.

the partial schematic shown here with the one mentioned above and you will see the difference in the connections to the field coil.

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### Philco 37-33

Starting with Run No. 3, the filament wiring of the 1D5G i-f. tube was reversed, thus improving operation of the set. In Fig. 1 on *page* 7-16 *of Rider's Volume VII*, the left-hand filament terminal of this tube is marked "2 volts." This terminal is now grounded to the chassis.

Referring to Fig. 3 on the same page, resistor No. 8 has been removed from the r-f. terminal panel and connected directly from the oscillator grid contact on the 1D7G socket to ground. This change improved the sensitivity in the center of the broadcast band.

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### Philco 630

The schematic of this receiver shown on *page* 6-31 of *Rider's Volume VI* indicates a ld-coil resistance of 1140 ohms. This is incorrect and should be 640 ohms. Please make this change in your Volume VI.

### Philco 65

The schematic of this receiver was published on the following pages of *Rider's Volume I: page 1-16 of the revised edition and page *459 of the early edition; and on page 1638 of the Rider-Combination Manual.* At the time of publication the values of the parts were unobtainable and these are now given in the list below. The first column is the identifying number used on the schematic; the second column is the part number; and the third column is the value.

| *Schematic Number* | *Part Number* | *Value* |
|---|---|---|
| 1 | 3524 | 10,000 ohms |
| 5 | 3292A | .1 mf. — 250 ohms |
| 6 | 3584A | .05 mf. — 250 ohms |
| 13 | 3583 | .5 mf. |
| 14 | 3525 | 32,000 ohms |
| 21 | 3422 | 200 " |
| 22 | 3526 | 5,000 " |
| 23 | 3518 | 4,000 " |
| 24 | 3512 | 2700 ohms (700,2000) |
| 25 | 3528 | 2,000 ohms |
| 26 | 3628 | 6 " |
| 27 | 3292B | .05 mf. 00 250 ohms |
| 29 | 2850 | 3200 " |

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### Philco 645

The schematic of this set will be found on *page* 7-109 *of Rider's Volume VII*. Several changes have been made, as follows:

Starting with Run No. 3, the 51,000-ohm resistor, No. 16, has been removed. A 32,000-ohm resistor, ½ watt, Part No. 33-332334, has been connected from the oscillator grid of the 6A7 to the suppressor grid of the 78 r-f. tube. The 0.05-mf. condenser, No. 61, has been removed. The 25,000-ohm resistor, No. 60, has been replaced with one having a value of 240,000 ohms, ¼ watt, Part No. 33-424143.

A 0.06-mf. condenser, Part No. 30-4114, has been connected from the —C end of the B.C. resistor, No. 64, to the junction of the 1-megohm and 490,000-ohm resistors, Nos. 66 and 67.

The filament voltage of the 80 rectifier is shown as 6.3 volts in Fig. 3 on *page* 7-108 *of Rider's Volume VII*. This should be 5.0 volts.

Beginning with Run No. 4, the green and yellow leads of the a-f. input transformer, No. 52, were reversed to reduce hum.

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### Philco 651

The leads of the i-f. transformer should be separated as widely as possible from each other, in order to reduce the possibilities of i-f. oscillation. This means, too, that the leads from one of these transformers should be as far as possible from the leads of the other.

The -B lead from the suppressor plate terminal of the 78 r-f. tube to the wiring panel mounted on the 0.05-mf. condenser, No. 72, should be run close to the baseboard and away from the wave trap coil. This should eliminate motor-boating at 540 kc.

For schematic, see *page* 7-111, *Rider's Volume VII*.

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### Philco 655

In the paragraph titled "Police" of the alignment instructions on *page* 7-116 *of Rider's Volume VII*, it reads that the detector trimmer No. 11 should be adjusted for maximum output. This should be trimmer No. 12 to conform with the layout of Fig. 4 at the top of the page.

In Fig. 1, the designations of the r-f. transformers on *page* 7-114 should be changed as follows: 15-A, oscillator, to 16; 9, antenna, to 3; and 14, detector, to 10. To correct the lead designations of the oscillator transformer, No. 16 on the schematic, change No. 3 to 7; 7 to 5; 5 to 4; and 4 to 3.

Another error in the manufacturer's data was in the tube layout shown on the top of *page* 7-115 *of Rider's Volume VII*. The second detector is a 75, not an 85. The designation on the schematic on this same page is correct. Please make these changes in your Volume VII.

Beginning with Run No. 2, the 51,000-ohm resistor, No. 14, was removed and a 32,000-ohm resistor, Part No. 33-332334, ½ watt, was connected from the oscillator grid of the 6A7 to the suppressor of the 78 r-f. tube.

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### Philco I-F. Peaks

In certain localities it has been found advisable to align certain two- and three-gang Philco sets at some other i-f. peak than the one for which they were designed, i.e., 470 kc. This change has been found necessary because of some interference that is peculiar to these localities: Portland, Maine; Miami, Fla.; New Haven, Conn.; San Diego, Cal.; about one third of northern Long Island; Newark and southern New Jersey.

Therefore, if you are operating in any of these places and are bothered by code interference, align either of the two type sets mentioned above at 456 kc., 465 kc., or 480 kc. The i-f. peaks just mentioned are to be used depending on the location and type of interference.

### Remler 49, 171

The Remler Model 171 is identical with Model 49, shown on *page 9-3 of Rider's Volume IX*. The following additional information, not included on *page 9-3*, is now available.

The antenna-RF coil is located near the back of the chassis and is trimmed by the trimmer on the rear section of variable condenser. The detector coil is located under the chassis and is trimmed by the trimmer on the front section of the variable condenser.

The following table shows the d-c voltages to ground with no signal and the volume control at full volume.

| Tube | Plate | Screen | Cathode |
|---|---|---|---|
| 6D6 | 180 | 180 | 4.5 |
| 6C6 | 70 | 180 | 9.0 |
| 41 | 170 | 180 | 0 |

The d-c voltage of the bias supply for the 41 grid is a 15-volt drop across resistor (9) in the negative side of the power supply.

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### Airline 62-362 Issue B

Several changes are included in Issue B of the Model 62-362 Airline receiver (above serial number 8J285-200) as compared with the Model 62-362 shown on *Montgomery-Ward pages 9-45 to 9-47 of Rider's Volume IX*. Fig. 1 shows that condensers C1, C4, C5, C6, and C9 are mounted in the same unit in Model 62-362, Issue B. Fig. 1 of course corresponds to the layout shown in the upper left-hand corner of *page 9-45*.

Fig. 2 shows the output end of the schematic for Issue B of Model 62-362. By comparing Fig. 2 with the corresponding portion of the schematic shown on *page 9-45*, you will notice the new position of the tone control consisting of R14 and C20, and also the two resistors R16 and R17 added across the winding of the phonograph pickup coil.

The accompanying table lists the part numbers and descriptions for Model 62-362 Issue B which are different from those listed on *page 9-45*.

| Schematic Reference | Part Number | Description |
|---|---|---|
| R5 | BE130144 | 15,000 ohms, 1 w. |
| R16 | BE130238 | 400,000 ohms, ½ w. |
| R17 | BE13020 | 100,000 ohms, ½ w. |
| C1 | BE12456 | 3-35 mmf adjustable trimmer |
| C4 | BE12456 | 2-15 mmf " " |
| C5 | BE12456 | 2-15 mmf " " |
| C6 | BE12456 | 2-15 mmf " " |
| C9 | BE12456 | 450 mmf working capacity, series pad |
| C20 | BE1292 | .0005 mf, mica |
| C22 | BE10092 | .001 mf, 600 v |

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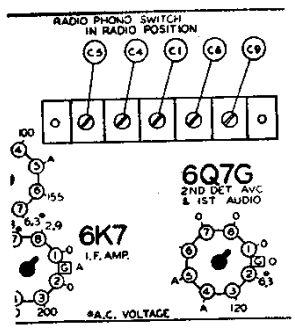
### Philco 630, 630PF

Certain oscillator trimmers are incorrectly numbered on *pages 6-32 and 6-33 of Rider's Volume VI* (early model 630 Philco). In Fig. 2 and in the alignment instructions, both on *page 6-32*, the reference numbers should be changed as follows: Change 13 to 16; change 14 to 17; change 16 to 13; change 17 to 14. The same changes should be made in the parts list on *page 6-33*. These changes must be made so that the reference numbers will agree with those shown on the schematic which appears on *page 6-31*. Do NOT alter the numbers on the schematic.

These errors in numbering also appear in the parts list for the late Model 630 and the Model 630PF Philco. Therefore the reference numbers on *page 7-98 of Rider's Volume VII* must be changed as follows: Change 13 to 16; change 14 to 17; change 16 to 13; change 17 to 14.



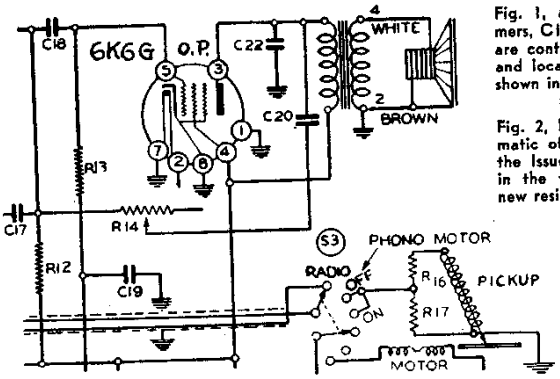
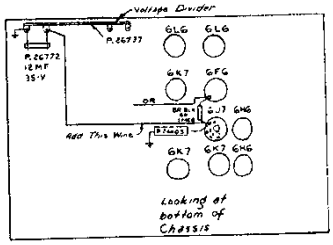




Fig. 1, above. The five trimmers, C1, C4, C5, C6, and C9 are contained in a single unit and located on the chassis as shown in Issue B of the Airline model 62-362.

Fig. 2, left. The partial schematic of the output circuit of the Issue B shows the change in the tone control and two new resistors across the pickup coil.

### Stromberg 160-L

Variations in new 6J7 tubes have occasionally caused distortion in the automatic tone-control circuit of the Stromberg Model 160-L receiver as first released. These tubes function correctly after "aging" a few hours.




**By adding the wire indicated, distortion can be eliminated from the automatic tone control circuit of the Stromberg Model 160-L**

This possibility of distortion can also be eliminated by adding a wire as shown in the accompanying layout. This change stabilizes the screen voltage; it was put in effect at the factory in all 160-P and 180-L receivers, and in all 160-L receivers produced after October 23, 1936.

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### Philco 37-62

In order to eliminate oscillation, the screen resistor, No. 11, has been changed from 25,000 ohms to 32,000 ohms. See schematic on *page 8-19 in Rider's Volume VIII*.

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### Fairbanks-Morse 12A

Refer to the schematic shown on *page 8-11 of Rider's Volume VIII*. During production, the 47,000-ohm resistor in the AVC line which was connected to the bottom of the antenna coil secondary, and the condenser (4) were removed. The r-f secondary was then grounded directly, thus removing AVC from the 6L7G mixer tube, and the bottom of the antenna coil secondary was connected directly to the resistor (16). The condenser (33) in the grid circuit of the 6C5G oscillator was changed from 50 mmf to 100 mmf to increase sensitivity on the u-h-f band.

PHILCO RADIO & TELEV. CORP.

MODEL 630
Schematic

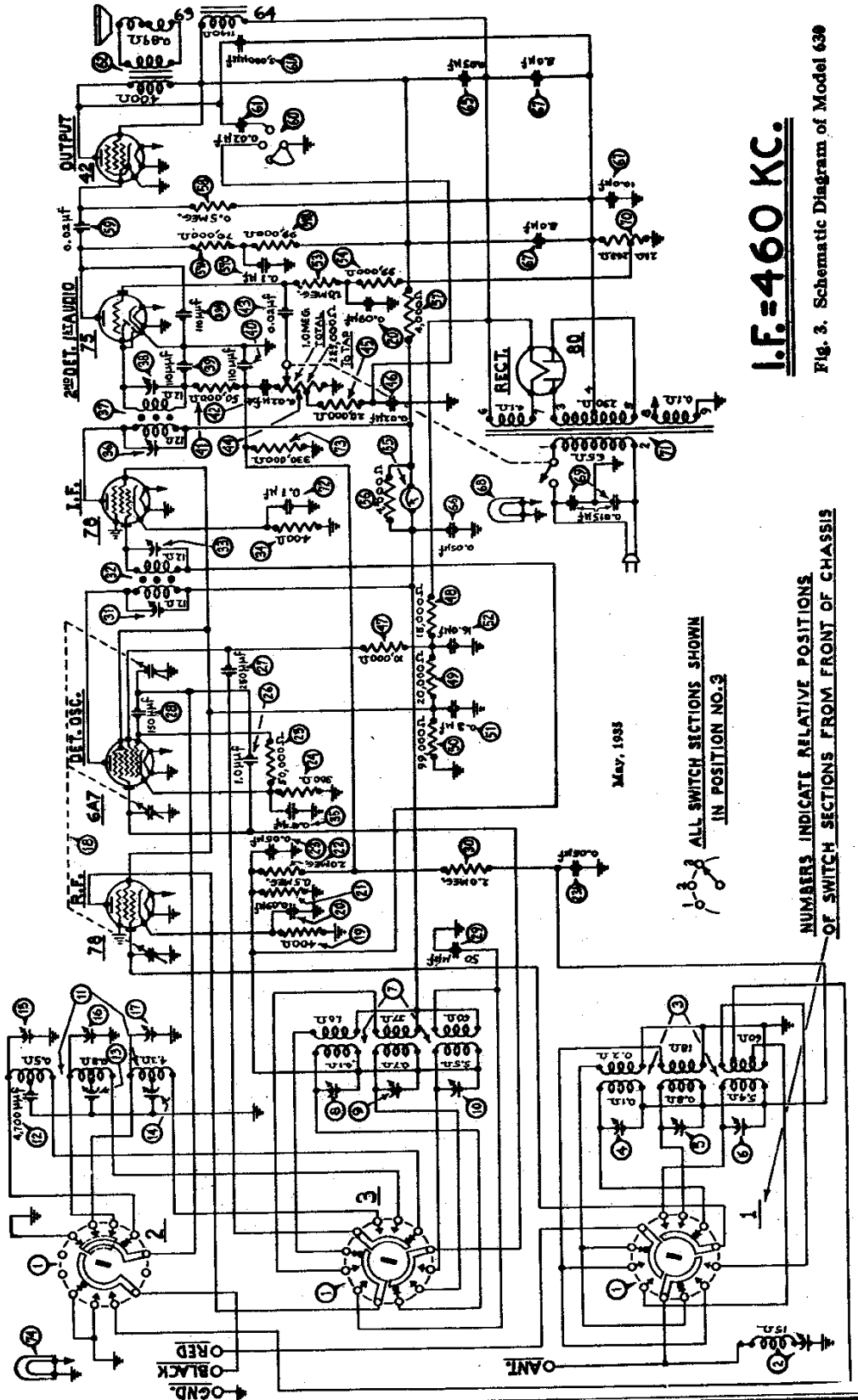



Fig. 3. Schematic Diagram of Model 630

MODEL 630
Voltage, Trimmers
Chassis, Alignment
Data

# PHILCO RADIO & TELEV. CORP.

**Type Circuit:** Superheterodyne, with preselector R.F. amplifier, and pentode output (5 watts); built in connections for Philco All-wave aerial; aerial selector built into and operated by wave-band switch.

**Power Supply:** Alternating Current. Voltage and frequency as specified on chassis nameplate.

**Tubes Used:** 1 type 78, R.F.; 1 type 6A7, Detector-Oscillator; 1 type 78, I.F.; 1 type 75, 2d Detector and 1st A.F.; 1 type 42 Output; 1 type 80 Rectifier.

**Wave Bands:** Three—(1) standard (with some Police); (2) Police, Aircraft and Amateur; (3) Short-wave.

**Coverage of Each Band:** Band 1, 540-1720 K.C.; Band 2, 1750 to 5800 K.C. (1.75-5.8 megacycles); Band 3, 5700-18000 K.C. (5.7 to 18.0 megacycles).

**Tuning Drive:** Two-speed gear drive, ball bearing. 50 to 1 ratio for slow-speed tuning.

**Tone Control:** 3-position, with bass compensation effective in first position.

**Intermediate Frequency:** 460 K.C.

**Power Consumption:** 70 watts.

## Tube Socket Voltages
### Measured to Ground

| Tube | 78 R.F. | 6A7 Det. Osc. | 78 I.F. | 75 2d Det. | 42 Output |
|---|---|---|---|---|---|
| Point P | 245 | 245 | 245 | 188 | 298 |
| SG | 102 | 102 | 102 | ... | 311 |
| K | 2.7 | 2.6 | 2.6 | ... | ... |
| | 6A7: $G_{3\&5} = 175$ | | | | |

Above voltages were obtained by using a PHILCO type 025 Circuit Tester (or 048A All-purpose Tester), using test prods applied to underside of chassis. Volume control at maximum; dial at 55; waveband switch counter-clockwise (band 1). Use Fig. 1 for test points. Line voltage 115 volts.

## Adjustment of High and Low Frequency Compensators

1. With the wave-band switch still at Range No. 1 (broadcast band), set the dial at 1700 K.C. Set the signal generator at this frequency and adjust compensators ⑭, ⑧ and ⑩ for maximum output. These are the oscillator, antenna, and R.F. "standard" compensators respectively.

2. Tune the receiver and the signal generator to 600 K.C and adjust compensator ⑰ (screw) for maximum output This is the oscillator L.F. standard compensator.

3. Turn the waveband switch to the second (middle) position. Set the dial at 3.6 M.C. at which point the fundamental of the 091 signal will be heard. If the Model 088 Signal Generator is being used, set it at 3.6 M.C. Adjust condensers ⑬, ⑤ and ⑨ in succession. These are the oscillator, antenna and R.F. police band adjustments.

4. Turn the tuning dial to 1.8 M.C., and set the signal generator (Model 026 or Model 088) at 1800 K.C. Adjust condenser ⑱ (Osc. L.F., police) (nut), to maximum signal.

5. Turn the wave-band switch to Band 3 (extreme right) and adjust the station selector to 18.0 megacycles. Set the signal generator at 18 M.C. By means of the Philco wrench, part No. 3164, adjust the oscillator S.W., antenna S.W. and R.F. S.W. compensators for maximum reading in the output meter. These are numbered ⑮, ④ and ⑧ respectively in figure No. 2.

## Power Transformer Data

| Terminals | A.C. Volts | Current | Circuit | Color |
|---|---|---|---|---|
| 1–2 | 120 | ..... | Primary | White |
| 3–5 | 746 | 78 M.A. | Secondary | Yellow |
| 6–7 | 5.0 | 2.0 A. | Fil. Rect. | Blue |
| 8–9 | 6.3 | 2.25 A. | Filaments | Black |
| 4 | ... | ..... | Center Tap of 3-5 | Yellow, Green Tracer |

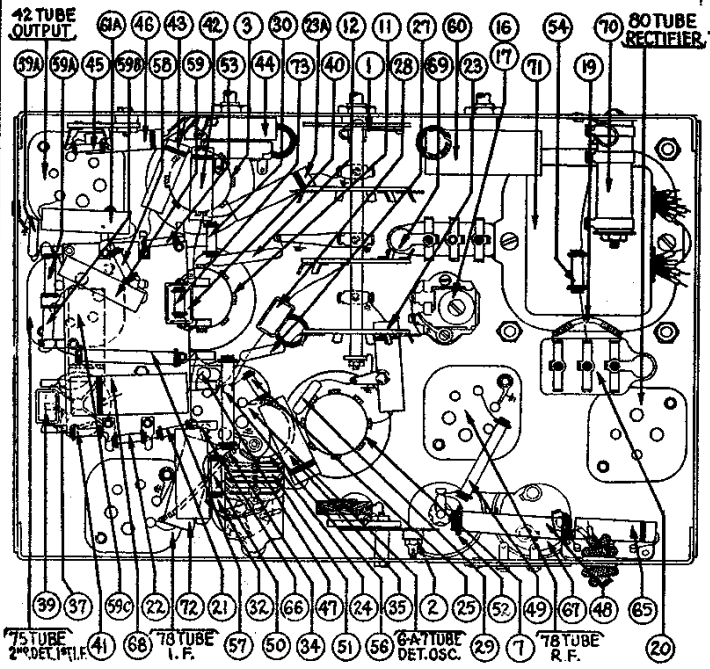



Fig. 4. Bottom View of Chassis

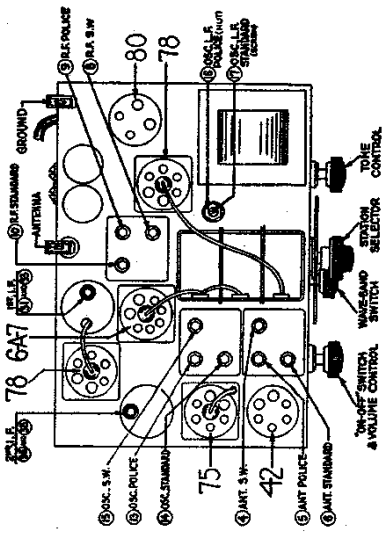



Fig. 2. Location of Compensating Condensers

# Replacement Parts—Model 630

| | Description | Part No. | List Price |
|---|---|---|---|
| (1) | Wave Band Switch | 42-1107 | $1.75 |
| (2) | Wavetrap | 38-6850 | 1.10 |
| (3) | Antenna Transformer | 32-1699 | 3.00 |
| (4) | Compensating Condenser (Ant. S.W.) | Part of (3) | .... |
| (5) | Compensating Condenser (Ant. Police) | Part of (3) | .... |
| (6) | Compensating Condenser (Ant. Standard) | Part of (3) | .... |
| (7) | R. F. Transformer | 32-1636 | 3.25 |
| (8) | Compensating Condenser (R.F. Short-Wave) | Part of (7) | .... |
| (9) | Compensating Condenser (R.F. Police) | Part of (7) | .... |
| (10) | Compensating Condenser (R.F. Standard) | Part of (7) | .... |
| (11) | Oscillator Transformer | 32-1637 | 2.50 |
| (12) | Condenser (.0047 Mfd. Mica) | 30-1052 | .60 |
| (13) | Compensating Condenser (Osc. Police) | Part of (11) | .... |
| (14) | Compensating Condenser (Osc. H. F. Standard) | Part of (11) | .... |
| (15) | Compensating Condenser (Osc. S. W.) | Part of (11) | .... |
| (16) | Compensating Condenser (Osc. L.F. Police) | Part of 31-6027 | .70 |
| (17) | Compensating Condenser (Osc. L.F. Standard) | Part of 31-6027 | |
| (18) | Tuning Condenser Assembly | 31-1526 | 2.75 |
| (19) | Resistor (400 ohms Flexible) (Yellow, Black, Brown) | 33-3016 | .20 |
| (20) | Condenser (.09 Mfd. Twin Bakelite Block) | 4989-DG | .40 |
| (21) | Resistor (.5 Meg.) (Yellow, White, Yellow) | 6097 | .20 |
| (22) | Resistor (2 Megs.) (Red, Black, Green) | 33-1025 | .20 |
| (23) | Condenser (.05 Mfd. Tubular) | 30-4020 | .35 |
| (23a) | Condenser (.05 Mfd. Tubular) | 30-4020 | .35 |
| (24) | Resistor (300 ohms Flexible) (Orange, Black, Brown) | 33-3010 | .20 |
| (25) | Resistor (50000 ohms) (Green, Brown, Orange) | 6098 | .20 |
| (26) | Condenser (1 Mmfd.) | Part of (18) | .... |
| (27) | Condenser (.00025 Mfd. Mica) | 30-1032 | .35 |
| (28) | Condenser (.00015 Mfd. Mica) | 30-1033 | .35 |
| (29) | Condenser (.00005 Mfd. Mica) | 30-1029 | .35 |
| (30) | Resistor (2 Megs.) (Red, Black, Green) | 33-1025 | .20 |
| (31) | Compensating Condenser (1st I.F. Primary) | Part of (32) | .... |
| (32) | 1st I.F. Transformer | 32-1646 | $2.25 |
| (33) | Compensating Condenser (1st I.F. Secondary) | Part of (32) | .... |
| (34) | Resistor (400 ohms Flexible) (Yellow, Black, Brown) | 33-3016 | .20 |
| (35) | Condenser (.1 Mfd. Tubular) | 30-4122 | .35 |
| (36) | Compensating Condenser (2nd I.F. Pri.) | Part of (37) | .... |
| (37) | 2nd I.F. Transformer | 32-1647 | 2.25 |
| (38) | Compensating Condenser (2nd I.F. Sec.) | Part of (37) | .... |
| (39) | Condenser (.00011 Mfd. Mica) | 30-1031 | .35 |
| (39a) | Condenser (.00011 Mfd. Mica) | 30-1031 | .35 |
| (40) | Condenser (.00011 Mfd. Mica) | 30-1031 | .35 |
| (41) | Resistor (50000 ohms) (Green, Brown, Orange) | 6098 | .20 |
| (42) | Condenser (.02 Mfd. Tubular) | 30-4215 | .30 |
| (43) | Condenser (.02 Mfd. Tubular) | 30-4215 | .30 |
| (44) | Volume Control and On-Off Switch | 33-5105 | 1.45 |
| (45) | Resistor (20000 ohms) (Red, Black, Orange) | 33-1178 | .20 |
| (46) | Condenser (.02 Mfd. Tubular) | 30-4215 | .30 |
| (47) | Resistor (10000 ohms) (Brown, Black, Orange) | 4412 | .20 |
| (48) | Resistor (15000 ohms) (Brown, Black, Orange) | 5718 | .35 |
| (49) | Resistor (20000 ohms) (Red, Black, Orange) | 6649* | .20 |
| (50) | Resistor (99000 ohms) (White, White, Orange) | 6099‡ | .20 |
| (51) | Condenser (.3 Mfd. Bakelite Block) | 6287-DG | .40 |
| (52) | Condenser (16 Mfd. Electrolytic) | 30-2118 | 1.65 |
| (53) | Resistor (1 Meg.) (Brown, Black, Green) | 33-1096 | .20 |
| (54) | Resistor (99000 ohms) (White, White, Orange) | 6099 | .20 |
| (55) | Shadow Tuning Meter | 45-2086 | 2.00 |
| (56) | Resistor (4000 ohms) (Yellow, Black, Red) | 33-1040 | .20 |
| (57) | Resistor (4000 ohms) (Yellow, Black, Red) | 7832 | .20 |
| (58) | Resistor (.5 meg.) (Yellow, White, Yellow) | 6097 | .20 |
| (59) | Condenser (.02 Mfd. Tubular) | 30-4113 | .30 |
| (59a) | Resistor (70000 ohms) (Violet, Black, Orange) | 5485 | .20 |
| (59b) | Resistor (99000 ohms) (White, White, Orange) | 6099 | .20 |
| (59c) | Condenser (.1 Mfd. Tubular) | 30-4122 | .35 |
| (60) | Tone Control (3 position) | 30-4332 | .75 |
| (61) | Condenser in Tone Control | Part of (60) | .... |
| (61a) | Condenser (.003 Mfd. Tubular) | 30-4042 | .25 |
| (62) | Output Transformer | 32-7178 | 1.60 |
| (63) | Voice Coil & Cone Assembly (K-32) | 36-3159 | .80 |
| (64) | Field Coil & Pot Assembly (K-32) | 36-3498 | 3.25 |
| (65) | Condenser (.05 Mfd. Tubular) | 30-4020 | .35 |
| (66) | Condenser (.05 Mfd. Tubular) | 30-4020 | .35 |
| (67) | Condenser (8 Mfd., 8 Mfd., 10 Mfd. Electrolytic) | 30-2073 | 2.15 |
| (68) | Pilot Lamp (Shadow Tuning Meter) | Part of (55) | .... |
| (69) | Condenser (.015 Mfd. Twin Bakelite Block) | 3793-DG | .40 |
| (70) | Resistor (BC Wirewound—21 ohms, 263 ohms) | 33-3069 | .25 |
| (71) | Power Transformer (115 Volts 60 Cycles) | 32-7384 | 5.50 |
| | (115 Volts 25 Cycles) | 32-7385 | 7.75 |
| | (230 Volts 50 Cycles) | 33-7386 | 5.75 |
| (72) | Condenser (.1 Mfd. Tubular) | 30-4122 | .35 |
| (73) | Resistor (330,000 ohms) (Orange, Orange, Yellow) | 33-1200 | .20 |
| (74) | Pilot Lamp | 34-2064 | .09 |

*After Run 2, this is 10000 ohms, Part 3524.
‡After Run 2, this is 20000 ohms, Part 6650

# Adjusting Compensating Condensers

The adjustment of the compensating condensers in Model 630 requires a signal generator covering the broadcast and police band, and also one capable of producing a signal at certain frequencies in the short wave band. Philco Model 088 All-wave signal generator is ideal for these requirements. Or you can use the Philco Model 024 or 048A instrument for the broadcast frequencies, and the Model 091 crystal controlled short wave signal generator for the "short wave" frequencies. The location of all compensating condensers is shown in Fig. 2. An output meter is also needed, such as in Philco Model 025

## Adjustment of I. F.

1. Remove the antenna connection from the receiver, disconnect the grid clip from the first detector (type 6A7 tube), and connect the "ANT" output terminal of the broadcast signal generator to the grid cap of this tube; connect the "GND" terminal of the signal generator to the "GND" terminal of the receiver.

2. Connect the 0 to 30 volt range of the output meter in the Philco 048A or 025 unit to the plate and cathode of the output tube or to the two bottom prongs of the speaker plug.

3. Adjust the signal generator to a frequency of 460 K.C. Place the receiver in operation with the dial turned to the low frequency end of the standard broadcast band, wave band switch to extreme left (clockwise), and have the volume control adjusted near its maximum setting. Adjust the signal generator attenuator for approximately half-scale reading of the output meter.

4. The I.F. compensating condensers are located at the tops of the I.F. coil shields. The primary is adjusted by turning the screw in top and the secondary by the nut. Adjust condensers (36) and (38) (2d I.F. primary and secondary) for maximum reading in the output meter, and then condensers (31) and (33) (1st I.F. primary and secondary).

## Adjustment of Wave-Trap

1. Connect the signal generator leads to the antenna and ground terminals of the receiver. Replace the grid clip on the 6A7 grid cap.

2. With the wave-band switch of the receiver still in the extreme left (standard band), (540-1720 K.C.), turn the station selector to 55.

3. With the signal generator in operation at 460 K.C., adjust the wave-trap (2) condenser until a MINIMUM reading is obtained on the output meter. The Philco fibre wrench, part No. 3164, is used for this adjustment. The wave-trap compensator is reached from rear of chassis.

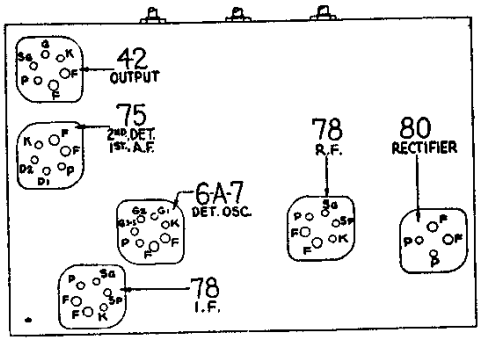
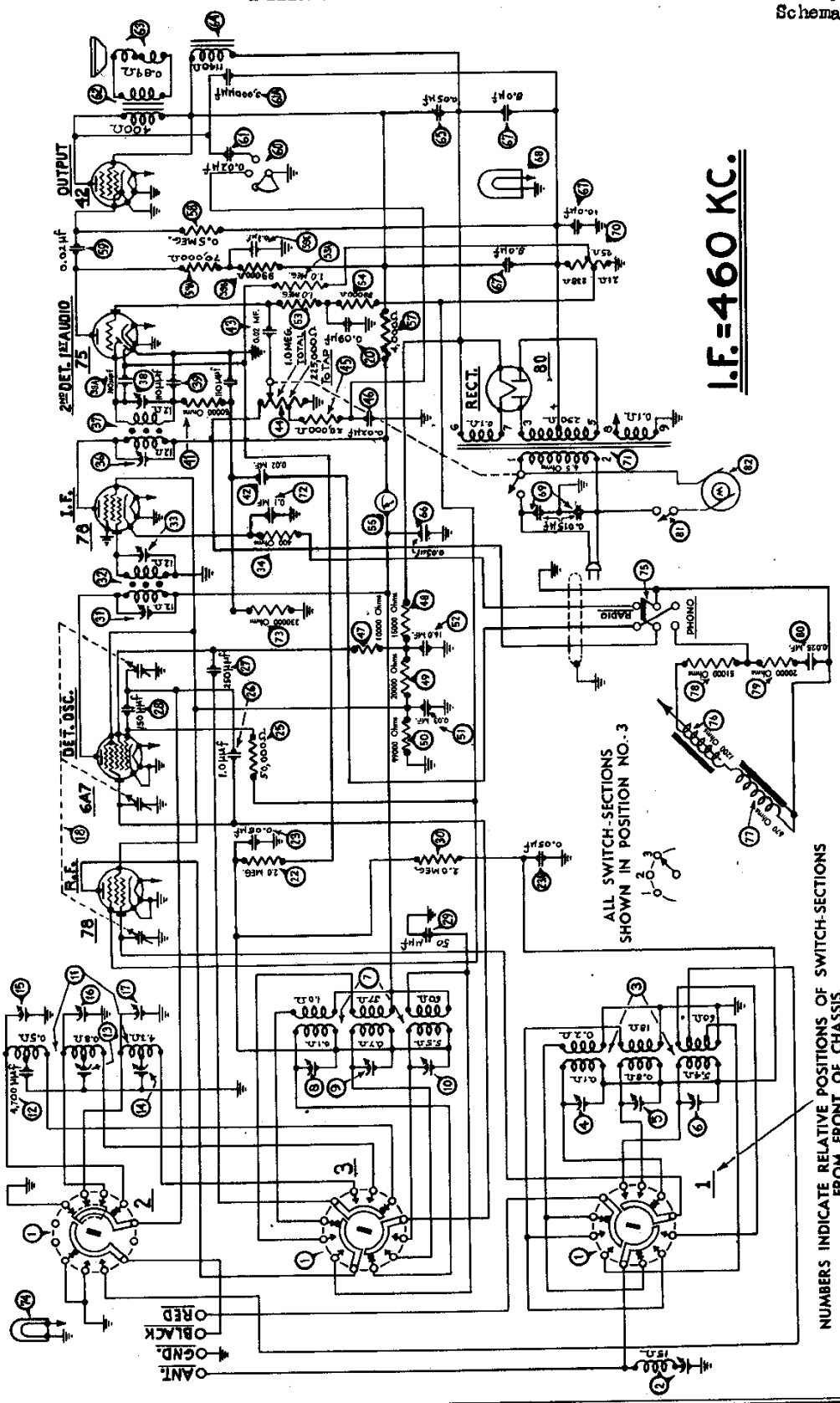



Fig. 1. Tube Sockets as viewed from bottom

PHILCO RADIO & TELEV. CORP.

MODEL 630, 630PF
2nd Type
Schematic



MODELS 630, 630PF
Changes, Parts

PHILCO RADIO & TELEV. CORP.

## Later 1935 Production Runs

This sheet supplements the regular bulletin No. 219 on the Philco 630 and also covers the Philco Radio-Phonograph 630PF. All circuit and part number changes up to date have been included.

Beginning with run No. 5 the grid bias arrangement for the 78 R.F. and 6A7 1st detector was changed. A fixed bias from the B.C. resistor is fed through the AVC circuit to the grids of these tubes.

# PARTS LIST

| | Description | Part No. | List Price |
|---|---|---|---|
| ① | Wave Band Switch | 42-1152 | $1.75 |
| ② | Wavetrap | 38-6850 | 1.10 |
| ③ | Antenna Transformer | 32-1699 | 3.00 |
| ④ | Compensating Condenser (Ant. S.W.) | Part of ② | .... |
| ⑤ | Compensating Condenser (Ant. Police) | Part of ③ | .... |
| ⑥ | Compensating Condenser (Ant. Standard) | Part of ④ | .... |
| ⑦ | R. F. Transformer | 32-1636 | 3.25 |
| ⑧ | Compensating Condenser (R.F. Short-Wave) | Part of ⑦ | .... |
| ⑨ | Compensating Condenser (R.F. Police) | Part of ⑦ | .... |
| ⑩ | Compensating Condenser (R.F. Standard) | Part of ⑦ | .... |
| ⑪ | Oscillator Transformer | 32-1637 | 2.50 |
| ⑫ | Condenser (.0047 Mfd. Mica) | 30-1052 | .60 |
| ⑬ | Compensating Condenser (Osc. Police) | Part of ⑪ | .... |
| ⑭ | Compensating Condenser (Osc. H.F. Standard) | Part of ⑪ | .... |
| ⑮ | Compensating Condenser (Osc. S.W.) | Part of ⑪ | .... |
| ⑯ | Compensating Condenser (Osc. L.F. Police) Part of | 31-6027 | .70 |
| ⑰ | Compensating Condenser (Osc. L.F. Standard) Part of | 31-6027 | |
| ⑱ | Tuning Condenser Assembly | 31-1741 | .... |
| ⑲ | Condenser (.09 Mfd. Twin Bakelite Block) | 4989-DG | .40 |
| ⑳ | Resistor (1 Meg.) (Brown, Black, Green) | 33-1096 | .20 |
| ㉑ | Condenser (.05 Mfd. Tubular) | 30-4020 | .35 |
| ㉑a | Condenser (.05 Mfd. Tubular) | 30-4020 | .35 |
| ㉒ | Resistor (50000 ohms) (Green, Brown, Orange) | 6098 | .20 |
| ㉓ | Condenser (1 Mmfd.) | Part of ⑱ | .... |
| ㉔ | Condenser (.00025 Mfd. Mica) | 30-1032 | .35 |
| ㉕ | Condenser (.00015 Mfd. Mica) | 30-1033 | .35 |
| ㉖ | Condenser (.00005 Mfd. Mica) | 30-1029 | .35 |
| ㉗ | Resistor (51000 ohms) (Green, Brown, Orange) | 6098 | .20 |
| ㉘ | Compensating Condenser (1st I.F. Primary) | Part of ㉙ | .... |
| ㉙ | 1st I.F. Transformer | 32-1646 | 2.25 |
| ㉚ | Compensating Condenser (1st I.F. Secondary) | Part of ㉙ | .... |
| ㉛ | Resistor (400 ohms Flexible) (Yellow, Black, Brown) | 33-3016 | .20 |
| ㉜ | Compensating Condenser (2nd I.F. Pri.) | Part of ㉝ | .... |
| ㉝ | 2nd I.F. Transformer | 32-1647 | 2.25 |
| ㉞ | Compensating Condenser (2nd I.F. Sec.) | Part of ㉝ | .... |
| ㉟ | Condenser (.00011 Mfd.) (Twin Bakelite) | 8035-DG | .35 |
| ㉟a | Condenser (.00011 Mfd. Mica) | 30-1031 | .35 |
| ㊱ | Condenser (.00011) | Part of ㉟ | .... |
| ㊲ | Resistor (50000 ohms) (Green, Brown, Orange) | 6098 | .20 |
| ㊳ | Condenser (.02 Mfd. Tubular) | 30-4215 | .30 |
| ㊴ | Condenser (.02 Mfd. Tubular) | 30-4215 | .30 |
| ㊵ | Volume Control and On-Off Switch | 33-5105 | 1.45 |
| ㊶ | Resistor (20000 ohms) (Red, Black, Orange) | 33-1178 | .20 |
| ㊷ | Condenser (.02 Mfd. Tubular) | 30-4215 | .30 |
| ㊸ | Resistor (10000 ohms) (Brown, Black, Orange) | 4412 | .20 |
| ㊹ | Resistor (15000 ohms) (Brown, Black, Orange) | 5718 | .35 |
| ㊺ | Resistor (20000 ohms) (Red, Black, Orange) | 3524 | .20 |
| ㊻ | Resistor (20000 ohms) (Red, Black, Orange) | 6649 | .20 |
| ㊼ | Condenser (.15 Mfd. Tubular) | 30-4191 | .40 |
| ㊽ | Condenser (16 Mfd. Electrolytic) | 30-2118 | 1.65 |

| | Description | Part No. | List Price |
|---|---|---|---|
| ㊾ | Resistor (1 Meg.) (Brown, Black, Green) | 33-1096 | $0.20 |
| ㊾a | Resistor (1. Meg.) (Brown, Black, Green) | 33-1096 | .20 |
| ㊿ | Resistor (99000 ohms) (White, White, Orange) | 6099 | .20 |
| (51) | Shadow Tuning Meter | 45-2086 | 2.00 |
| (52) | Condenser (.05 Mf. Twin Bakelite) | 3615-DG | .40 |
| (53) | Resistor (4000 ohms) (Yellow, Black, Red) | 33-1031 | .20 |
| (54) | Resistor (490,000 ohms) (Yellow, White, Yellow) | 33-1097 | .20 |
| (55) | Condenser (.02 Mfd. Bakelite) | 8318-SU | .30 |
| (56)a | Resistor (70000 ohms) (Violet, Black, Orange) | 5385 | .20 |
| (56)b | Resistor (99000 ohms) (White, White, Orange) | 6099 | .20 |
| (56)c | Condenser (.09 Mf. Bakelite) | 4989-SG | .35 |
| (57) | Tone Control (3 position) | 30-4332 | .75 |
| (58) | Condenser in Tone Control | Part of (59) | .... |
| (59)a | Condenser (.003 Mfd. Tubular) | 30-4042 | .25 |
| (60) | Output Transformer | 32-7178 | 1.60 |
| (61) | Voice Coil & Cone Assembly (K-32) | 36-3159 | .80 |
| (62) | Field Coil & Pot Assembly (K-32) | 36-3498 | 3.25 |
| (63) | Condenser (.05 Mfd. Tubular) | 30-4020 | .35 |
| (64) | Condenser (.05 Mfd.) Part of | (63) | .... |
| (65) | Condenser (8 Mfd., 8 Mfd., 10 Mfd. Electrolytic) | 30-2073 | 2.15 |
| (66) | Pilot Lamp (Shadow Tuning Meter) | Part of (51) | .... |
| (67) | Condenser (.015 Mfd. Twin Bakelite Block) | 3793-DG | .40 |
| (68) | Resistor (BC Wirewound—22 ohms, 25 ohms, 210 ohms) | 33-3222 | .20 |
| (69) | Power Transformer (115 Volts 60 Cycles) | 32-7384 | 5.50 |
| | (115 Volts 25 Cycles) | 32-7385 | 7.75 |
| | (230 Volts 50 Cycles) | 33-7386 | 5.75 |
| (70) | Condenser (.05 Mf.) | Part of (63) | .... |
| (71) | Resistor (330,000 ohms) (Orange, Orange, Yellow) | 33-1200 | .20 |
| (72) | Pilot Lamp | 34-2039 | .09 |
| (73) | Phono Switch Cable Assy. | 35-3014 | 1.30 |
| (74) | Pickup Head Assy. | 35-2014 | 7.25 |
| (75) | Hum Bucking Coil Assy. | 32-1940 | 1.10 |
| (76) | Resistor (51,000 ohms) | 6098 | .20 |
| (77) | Resistor (20,000 ohms) | 33-1178 | .20 |
| (78) | Condenser (.025 Mf.) | 7653-SU | .35 |
| (79) | Automatic Stop | 6345 | 3.15 |
| (80) | Phono. Motor (115 V. 60 Cycle) | 35-1112 | 20.00 |
| | Dial Scale | 27-5098 | .25 |
| | Dial Hub & Set Screw | 31-1550 | .15 |
| | Dial Front Spring | 28-2837 | .10 |
| | Knob (Station Selector) | 27-4206 | .12 |
| | Knob (Fine Tuning) | 27-4207 | .10 |
| | Knob (Waveband) | 27-4219 | .10 |
| | Knob (Volume Control, Tone Control) | 27-4208 | .10 |
| | Tube Shield | 28-2726 | .10 |
| | Tube Shield Base | 28-2725 | .03 |
| | Tube Socket (4-Prong) | 27-6034 | .10 |
| | Tube Socket (6-Prong) | 27-6036 | .11 |
| | Tube Socket (7-Prong) | 27-6037 | .11 |
| | Speaker Plug Socket | 27-6033 | .08 |
| | Chassis Mfg. Screw | W-1495 | 1.50perC. |
| | Chassis Mtg. Washer (Rubber) | 27-4198 | .01 |
| | Electric Cord & Plug | L-943-A | .60 |

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

# PHILCO RADIO & TELEV. CORP

MODELS 623,623B,623F
630,630(121)
640(121)640B
641,642,643,650

**Changes**

## MODEL 623 (Continued)

| Approximate Date of Change | Run No. | CHANGES |
|---|---|---|
| .. | 9 | **S. W. SECTION OF OSC. TRANSFORMER**<br>Condenser (48) and Resistor (54) were removed and the wires connected to the ends of these parts were connected together. The wires between the police tap at the left of Switch Section No. 2 and the joint in the wire just above that was broken and Condenser No. 30-1049 inserted.<br>The connection between the bottom (S. W.) primary and secondary of the Oscillator Transformer was broken and condensers (14) and (16) connected between the bottom of the secondary and ground. Resistor (18) removed. The lead connected to the top of the primary disconnected and brought down to the bottom of the secondary. Resistor (9) also removed.<br>A lead from the bottom of the primary was connected to the lead running from Condenser (6) to Resistor (53). The oscillator plate wire was disconnected from this lead and brought down to the top of the primary.<br>**BROADCAST AND POLICE SECTION OF OSC. TRANSFORMER**<br>Resistor (17) was disconnected from the bottom of the upper section of the Osc. Transformer and connected to the switch side of the Condenser (5). |

## MODEL 623-B and 623-F

| | | |
|---|---|---|
| 9-1-35 | .. | Remove bezel glass gasket, Part No. 27-7981, and replace with Part No. 27-8036. |

## Model 630 (Code 121)

| | | |
|---|---|---|
| 10-1-35 | 4 | |

| | Old Part | New Part |
|---|---|---|
| Resistor (52) | 33-1040 (½ watt) 4,000 ohms | 33-1031 (¼ watt) |
| Resistor (59) | 6650 (½ watt) 20,000 ohms | 6649 (1 watt) |

| | | |
|---|---|---|
| 11-1-35 | 7 | Remove Shadowmeter Shunt Resistor (59), Part No. 33-1040 (4,000 ohms). |

| Part | Schematic No. | Old Part | New Part |
|---|---|---|---|
| Shadowmeter | (53) | 45-2086 | 45-2083 |

## MODEL 630

| Schematic No. | Old Part No. | New Part No. |
|---|---|---|
| Ant. Transformer (3) | 32-1699 | 32-1867 |
| Det. Transformer (7) | 32-1636 | 32-1868 |
| Osc. Transformer (11) | 32-1637 | 32-1869 |

## MODEL 640 (Code 121)

| | | |
|---|---|---|
| | | Replace Resistor (5), Part No. 6650 (20,000 ohms) with Part No. 33-1177. |
| 8-1-35 | 6 | Replace speaker plug socket, No. 27-6033 with No. 27-6043. |
| | 4 | Replace 1st I. F. Transformer, Part No. 32-1835 with No. 32-1917 to prevent microphonics.<br>Remove rubber bumper, No. 27-4150 to prevent microphonics.<br>Remove Bezel Light Guard No. 27-8001.<br>Part (59) on base view in bulletin should be 2nd I. F. Part (47), 1st I. F.<br>Replace Bezel Glass Gasket No. 27-7981 with No. 27-8036.<br>Add No. 27-7972 Bezel Frame Gasket. |

| | | |
|---|---|---|
| 11-1-35 | 9 | |

| Part | Schematic No. | Old Part | New Part |
|---|---|---|---|
| Tuning Condenser | (62) | 31-1556 | 31-1671 |
| Run No. 10 | | | |
| Shadow Meter | (61) | 45-2089 | 45-2083 |
| Resistor | (63) | 33-1040 | Removed |

## MODEL 640-B

| Approximate Date of Change | Run No. | CHANGES |
|---|---|---|
| 9-1-35 | .. | Uses K31 instead of K21 Speaker. |

## MODEL 641

| | | |
|---|---|---|
| 9-1-35 | .. | Connect an 8,000 ohm resistor, Part No. 33-1114, across shadow meter. |
| 10-1-35 | .. | **Corrections in Replacement Parts List**<br>Part (6) .015 mf. Condenser is part of (64-A).<br>Part (58) should be .03 mf. and the correct Part Number is 30-4025.<br>Part (43) should be 3615-DG.<br>Referring to bottom view of chassis, condenser marked (43) should be (10) and condenser (50) changed to (53).<br>Capacity of sections in (53) is (.05 — .2 — .75 — .09 — .25).<br>Part Number of B-C Resistor is 33-3214. List Price 25c.<br>Price of No. 27-4225 Wavehand Knob, List 10c. |

| | | | | |
|---|---|---|---|---|
| 11-1-35 | .. | Part | Old Part | New Part |
| | | Bezel Assembly | 40-5722 | 40-5724 |

| | | |
|---|---|---|
| 12-1-35 | 2 | A .00011 Mf. Condenser, Part No. 30-1031 is connected from the plate of the 85 Detector Tube to the Cathode Circuit. |

## MODEL 642

| | | Old Part | New Part |
|---|---|---|---|
| 9-1-35 | Tone Control (2) | 30-4316 | 30-4332 |

| | | |
|---|---|---|
| 12-1-35 | 2 | The Dial and Mask Assembly were changed to the Glowing Arrow Wave Band Indicator Type. |

| Part | Schematic No. | Old Part No. | New Part No. |
|---|---|---|---|
| Tuning Condenser | (38) | 31-1526 | 31-1741 |
| Hub and Set Screw Assembly | | 31-1550 | 31-1724 |
| Mask Assembly | | | 27-5137 |
| Glowing Arrow Screen | | | 27-5166 |
| Screen Bracket | | | 31-1760 |
| Glowing Arrow Mask | | | 27-5167 |
| Mask Arm | | | 29-3274 |
| Link | | | 29-3285 |
| Coupling | | | 29-3586 |
| Pilot Lamp Assembly | | 38-7032 | |
| Wave Switch | (2) | 42-1107 | 42-1152 |

## MODEL 643

| | | |
|---|---|---|
| 9-1-35 | .. | Filament current reads (point) .750MA., it should read 750MA. |
| | | Part No. 33-5119 (59) in Model 643, Bulletin No. 226, listed at $1.10 changed to $1.45. |
| 12-1-35 | .. | Change Chassis Mounting Washer (rubber) listed as 27-4021 to 27-4201. |
| | | Pilot Lamp (58), Part No. 5316, should be Part No. 34-2065. |
| 11-1-35 | 3 | |

| Part | Schematic No. | Old Part | New Part |
|---|---|---|---|
| Condenser | (48) | 6359 (.006 mf.) | 30-1031 (.00011 mf.) |

## MODEL 650

| | |
|---|---|
| 11-1-35 | 13 |

| Part | Schematic No. | Old Part | New Part |
|---|---|---|---|
| Tuning Condenser | (51) | 31-1556 | 31-1671 |
| Code 121, Run No. 15. | | | |
| Code 122, Run No. 13. | | | |
| Shadow Meter | (53) | 45-2086 & 45-2082 | 45-2088 |
| Resistor | (55) | 6096 | Removed |