



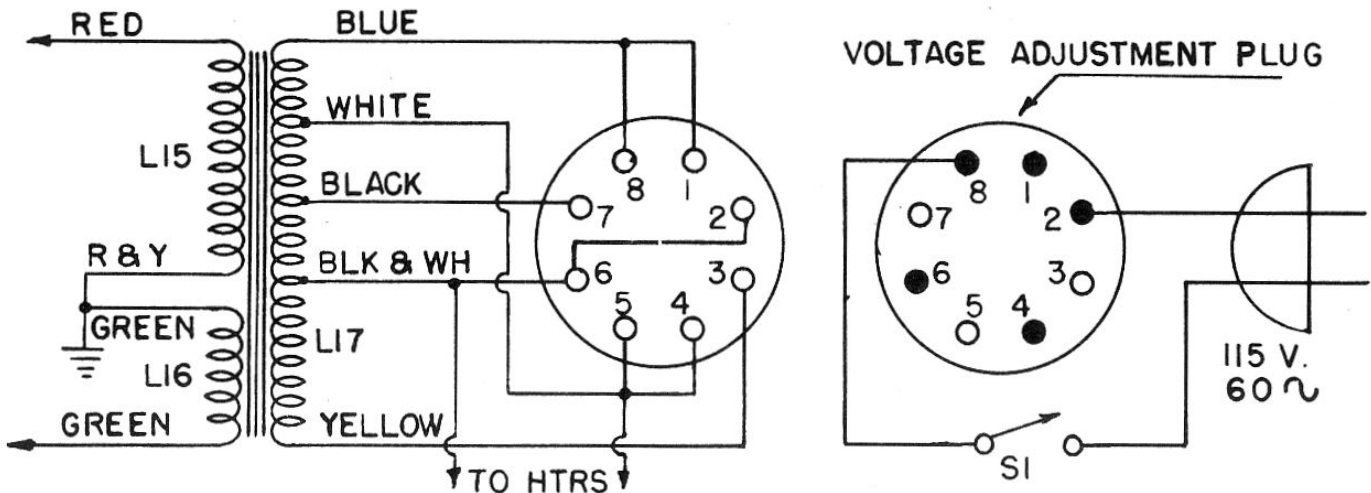
# MODEL CM50A6 SERVICE NOTES

The model CM50A6 is identical to the CM50A receiver, except that it is suitable for 60 cycle operation only. The CM50A6 power transformer incorporates a voltage adjustment plug and has a frequency rating of 60 cycles.

Refer to the CM50A Service Notes for specifications, alignment instructions, schematic diagram, replacement parts, etc.

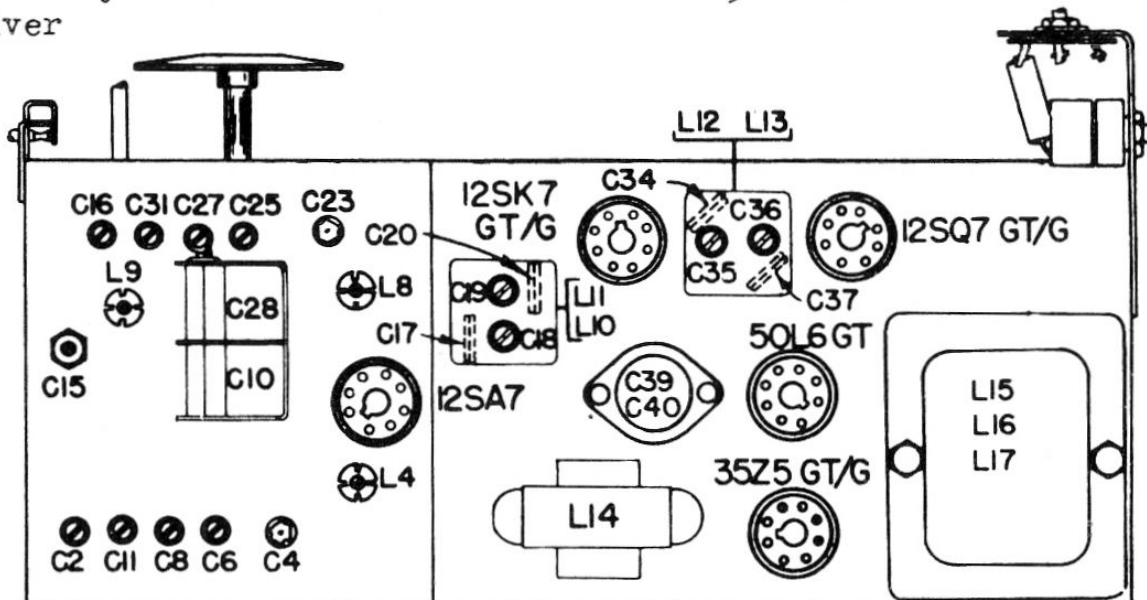
Voltage Adjustment Plug - The voltage to which the receiver is set, is indicated by the voltage adjustment plug, which is located on the power transformer. The receiver is shipped with the plug set at 125 volts. The receiver should be operated at this setting when the line voltage is higher than average. The plug should be set at 110 volts when the receiver is to be operated on a line voltage that is normally average, or lower than average. Once the receiver has been adjusted to correspond with the average requirements of a local power line it should be left at that adjustment.

Details of the internal wiring of the primary of the power transformer, covering the voltage adjustment plug connections, are shown below.



## Replacement Parts

The replacement power transformer for this receiver has a 115 volts, 25 to 60 cycle rating (and no voltage adjustment plug). The use of this 25 to 60 cycle transformer will make the CM50A6 identical to the CM50A receiver



# SERVICE DATA

**WAVE RANGE SWITCH:** The schematic diagram shows each section of this switch in a straight line form. The short stator contacts are represented as solid squares; the long contacts as solid rectangles; and the rotor contacts as bars. All sections are shown in the extreme counterclockwise (14.6 to 22.0 Mc range or 6th)

position of the switch or the extreme clockwise rotation of the switch knob. As the switch rotates clockwise (knob counterclockwise) the rotor contacts move upwards through the 5th to the 1st Wave Range Switch positions as listed above. The exact location of each stator contact on its wafer is shown on a front view drawing of a switch wafer on the schematic diagram.

## TO REMOVE CHASSIS

1. Disconnect the plug from power socket.
2. Remove Antenna and Ground connections.
3. Remove Back Cover and Control Knobs.
4. Disconnect the speaker from the chassis.
5. Remove chassis mounting screws.

## ALIGNMENT OF RECEIVER

See that the Phonograph Switch is in the left position (from rear of chassis) for radio reception. With the variable capacitor fully closed, adjust the dial pointer on the beginning of the dial scale to the left of the 550 kc calibration mark. Place the tone

switch in the second position (one position to the right of full counterclockwise) and turn the volume control to the maximum volume (clockwise) position.

## Equipment Required

**OUTPUT INDICATOR:** A high resistance A.C. voltmeter and an output transformer.

**SIGNAL GENERATOR:** A generator capable of supplying modulated signals between 455 kc and 22 Mc.

## Equipment Connections and Alignment Procedure

**OUTPUT INDICATOR:** Connect the A.C. voltmeter across the voice coil of the speaker. During alignment, keep the output below 1.25 A.C. volts across the voice coil. If the meter is not sensitive enough to indicate 1.25 volts, connect the secondary of an output transformer across the speaker voice coil and connect the A.C. voltmeter across the primary. When using the latter method, the maximum output reading should be kept below 30 A.C. volts.

When the output indication increases, regulate the signal generator attenuator to restore the original indication.

**SIGNAL GENERATOR:** Connect the ground lead of the signal generator to the ground jack in the rear of the receiver and the output lead to the points indicated in the chart below, in series with the specified resistor or capacitor.

## ALIGNMENT PROCEDURE

SIGNAL GENERATOR				RECEIVER		
Operation Steps	Output Connections to Receiver	Frequency	Range Switch	Tuning Capacitor	See Notes	Adjust in stated order for Maximum Output
1	To 12SK7GT Control Grid (4) through .05 mfd. Capacitor	455 kc	Pos. 2	Min.		2nd I.F. Trimmers C36, C35.
2	To Stator C10 through .05 mfd. Capacitor	455 kc	Pos. 2	Min.	A	1st I.F. Trimmers C19, C18.
3	To Antenna Contact through 200 mmf. Capacitor	600 kc	Pos. 2	600 kc		Broadcast Padded C15
4	To Antenna Contact through 200 mmf. Capacitor	1500 kc	Pos. 2	1500 kc	B	BC-Osc. Trimmer C16 BC-Ant. Trimmer C2
5	To Antenna Contact through 400 ohms Resistance	7.0 Mc	Pos. 3	7.0 Mc	C	SW-Osc. Trimmer C31 SW-Ant. Trimmer C11
6	To Antenna Contact through 400 ohms Resistance	2.9 Mc	Pos. 3	2.9 Mc	D	SW-Osc. Coil L9
7	To Antenna Contact through 400 ohms Resistance	21.5 Mc	Pos. 6	21.5 Mc	C	BS-Osc. Trimmer C23
8	To Antenna Contact through 400 ohms Resistance	15.2 Mc	Pos. 6	15.2 Mc	D	BS-Osc. Coil L8
9	To Antenna Contact through 400 ohms Resistance	21.5 Mc	Pos. 6	21.5 Mc	E	BS-Ant. Trimmer C4
10	To Antenna Contact through 400 ohms Resistance	15.2 Mc	Pos. 6	15.2 Mc	F	BS-Ant. Coil L4
11	To Antenna Contact through 400 ohms Resistance	11.6 Mc	Pos. 5	11.6 Mc	C	BS-Osc. Trimmer C25 BS-Ant. Trimmer C6
12	To Antenna Contact through 400 ohms Resistance	9.6 Mc	Pos. 4	9.6 Mc	C	BS-Osc. Trimmer C27 BS-Ant. Trimmer C8

## ALIGNMENT NOTES

Note "A"—After step 2 has been completed, do not make any further adjustments of the 2nd I.F. Trimmers C36 and C35.

Note "B"—Return to 600 kc and tune receiver for maximum output, vary padder adjustment slightly and turn the tuning capacitor back and forth through maximum peak. Repeat until the greatest output is obtained.

Note "C"—Unscrew oscillator trimmer capacitor to minimum capacity (counterclockwise). Turn adjustment clockwise until the first

output peak is obtained. Make adjustments using this peak.

Note "D"—Check high frequency end of dial for accuracy. Adjust oscillator trimmer if necessary.

Note "E"—Rock tuning capacitor while adjusting antenna trimmer for maximum output.

Note "F"—Repeat operation 9.

**PHILIPS CM50A, CM50A6**