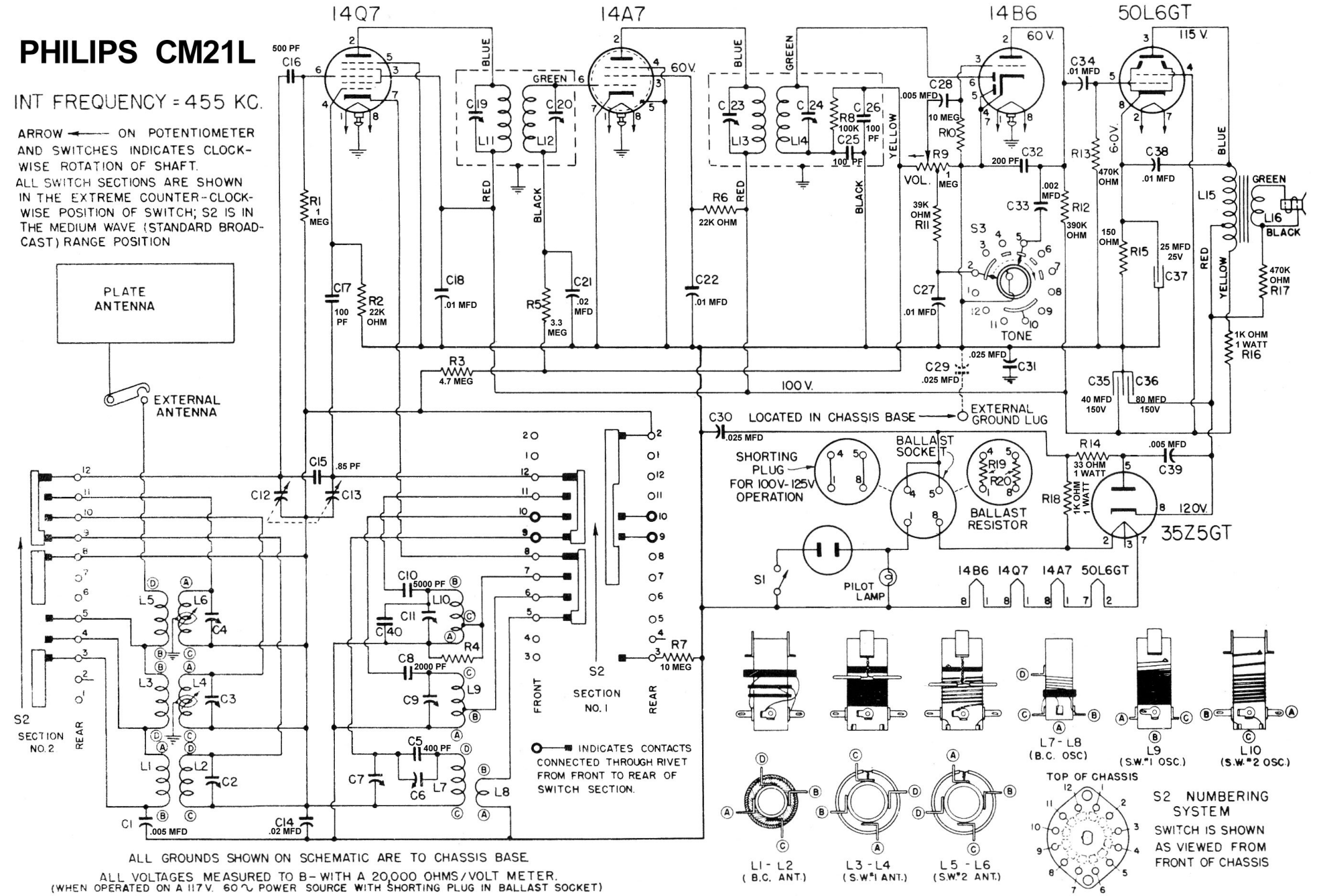
PHILIPS CM21L

INT FREQUENCY = 455 KC.

ARROW ← ON POTENTIOMETER AND SWITCHES INDICATES CLOCK-WISE ROTATION OF SHAFT.
ALL SWITCH SECTIONS ARE SHOWN IN THE EXTREME COUNTER-CLOCK-WISE POSITION OF SWITCH; S2 IS IN THE MEDIUM WAVE (STANDARD BROAD-CAST) RANGE POSITION



ALL GROUNDS SHOWN ON SCHEMATIC ARE TO CHASSIS BASE.

ALL VOLTAGES MEASURED TO B- WITH A 20,000 OHMS/VOLT METER.
(WHEN OPERATED ON A 117V. 60 ~ POWER SOURCE WITH SHORTING PLUG IN BALLAST SOCKET)

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 14A7 Control grid (6) through .05 µfd capacitor	455 kc	Pos. 1	Min.		2nd I.F. Trimmers C24, C23
2	To stator of C13 through .05 µfd capacitor	455 kc	Pos. 1	Min.	A	1st I.F. Trimmers C20, C19
3	To Antenna Contact through 100 µµf capacitor*	1600 kc	Pos. 1	1600 kc		No.1 Osc. Trimmer C7 No.1 Ant. Trimmer C2
4	To antenna contact through 100 µµf capacitor*	600 kc	Pos. 1	600 kc	B	No.1 Osc. Padder C6
5	To antenna contact through 400 ohms resistor*	5 Mc	Pos. 2	5 Mc	C	Sw. #2 Osc. Trimmer C9 Sw. #2 Ant. Trimmer C3
6	To antenna contact through 400 ohms resistor*	2.4 Mc	Pos. 2	2.4 Mc approx.	D	Sw. #2 Osc. Coil L4 (adjust loop position)
7	To antenna contact through 400 ohms resistor*	17 Mc	Pos. 3	17 Mc	C	Sw. #3 Osc. Trimmer C11 Sw. #3 Ant. Trimmer C4
8	To antenna contact through 400 ohms resistor*	6 Mc	Pos. 3	6 Mc approx.	D	Sw. #3 Osc. Coil L6 (adjust loop position)

* or a standard dummy antenna with a 200 µµf condenser in series.

NOTE A - After completing operation 2, leave signal generator on C13 and carefully read just C24 and C23.

NOTE B - After completing operation, return to 1600 kc and repeat operation 3, then repeat operation 4.

NOTE C - Unscrew Oscillator trimmer approximately 3 turns from tight. Then turn adjustment clockwise until first output peak is obtained. Make adjustments using this peak. Rock the tuning capacitor slowly back and forth while adjusting antenna trimmer

NOTE D - Adjust position of loop with non-metallic rod. Then repeat previous operation for maximum output.

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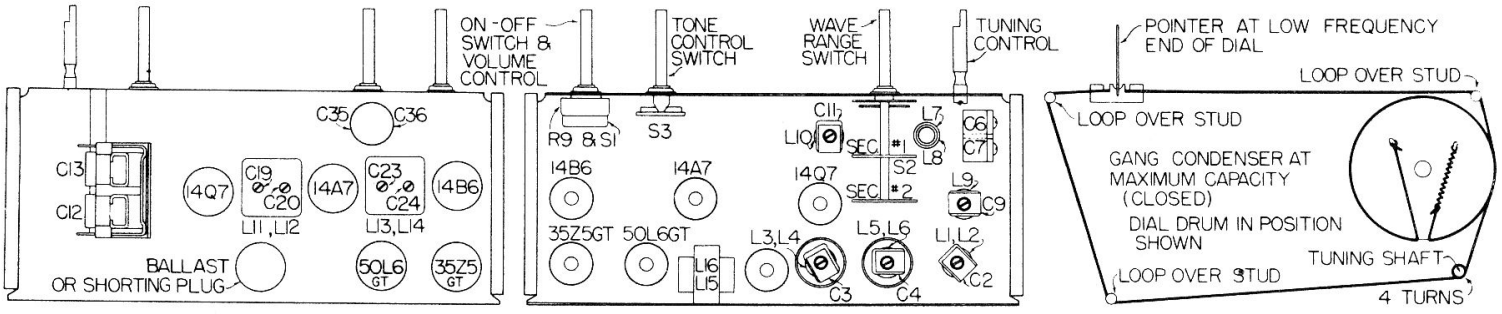
GROUND

An external ground should be used with this receiver only when interference prevents good reception. To install an external ground to the receiver, remove the chassis and thread the ground lead through the same hole as the line cord, and connect it to the free lug,(nearest the front of chassis) of the three terminal strip which is located in the center of the chassis.

A .025 mfd condenser (C29 on schematic diagram) is to be connected between the above ground lug and B- (preferably #4 lug of the 14A7 Tube).



ALIGNMENT OF RECEIVER

With the variable capacitor fully closed, adjust the center of the dial pointer to the edge of the dial opening (clear area) to the left of the 550 kc calibration mark. Set the tone switch to the full clockwise position and the volume to the full clockwise (maximum) position.

Equipment Connections & Alignment Procedure

Output Indicator: Connect the A.C. voltmeter across the voice coil of the speaker. During alignment, keep the output below 1½ A.C. volts across the voice coil. If the meter is not sensitive enough to indicate 1 volt, 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 25 A.C. volts. When the output indication increases, regulate the signal generator attenuator to restore the original indication.

Signal Generator: Connect the output lead of the signal generator to the points indicated in the chart below, in series with the specified resistor or capacitor. Connect the return lead of the signal generator to the B- lead of the receiver through a .05 mfd condenser. The B- connection to the receiver is to be made to the end lug(nearest the 14Q7 socket) of the three lug terminal strip located in the center of the chassis. Do not connect a grounded lead to B- unless a line isolating transformer is used.