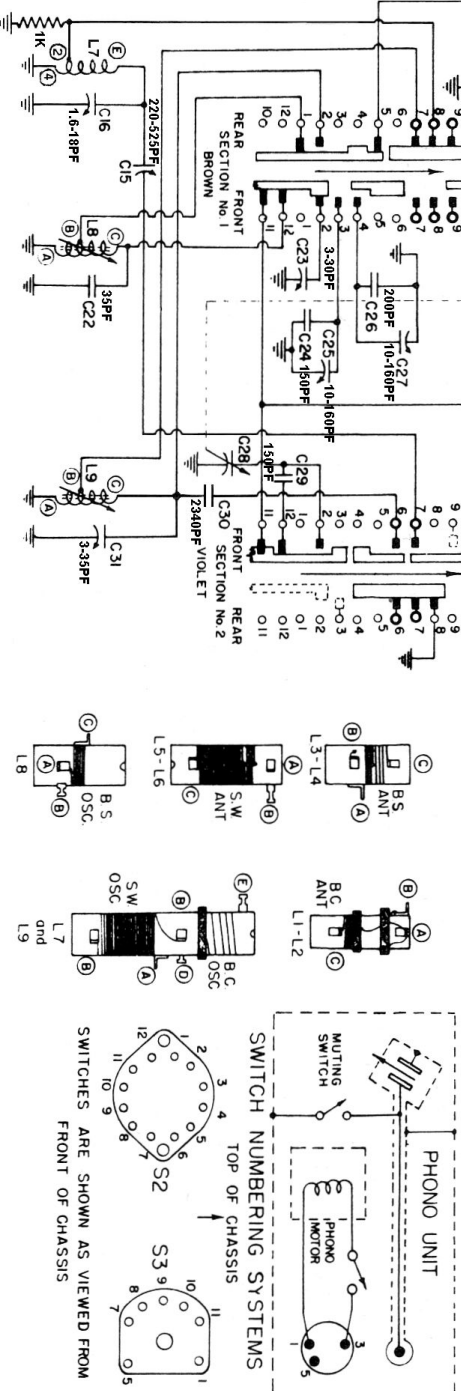
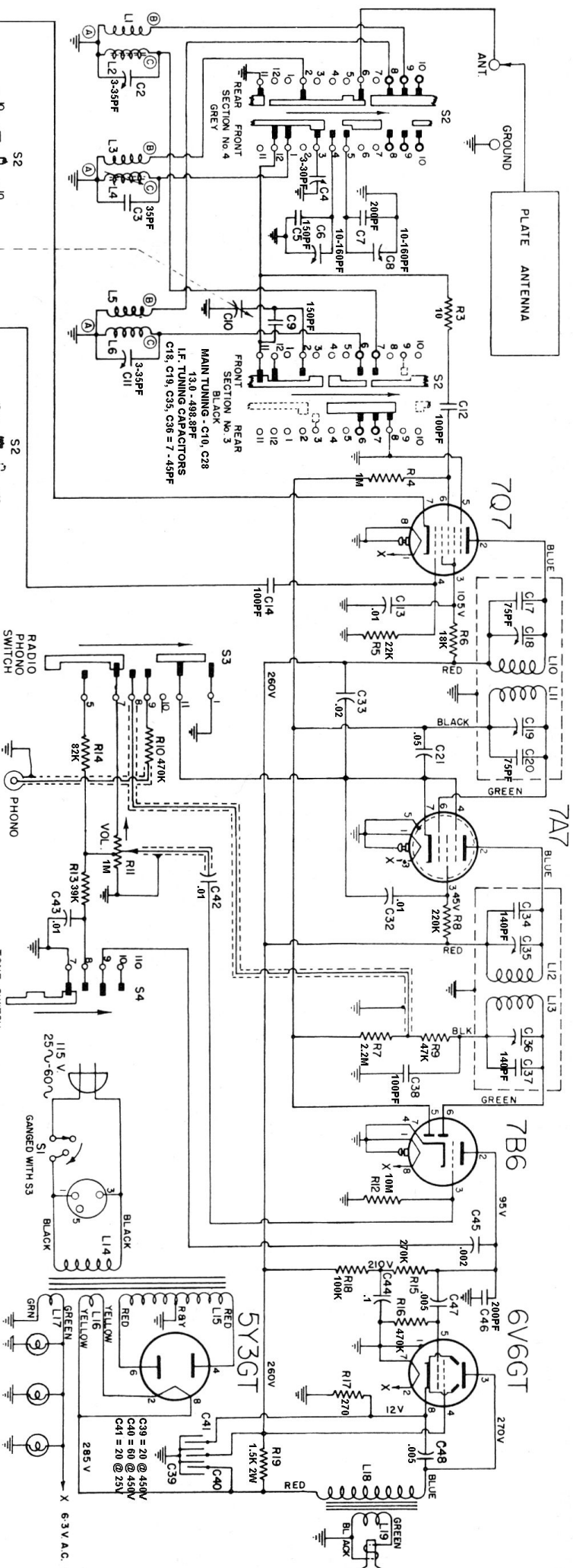


L	1	2	7	3	4	8	5	6	9	10	11	12	13	14	15	16	17	18	19					
C	2	4	3	5	7	6	8	9	10	11	12	13	14	19	20	32	34	35	36	37	45	46	47	48
C	16	15	22,23,24,25,26,27					28	29	30	31	17	18	33	21	42	43	38	44	39,40,41				
R	2	3	4	5	6	10	14	11	13	8	7	9	12	15	18	16	17	19						



A ROW — INDICATES CLOCKWISE ROTATION OF POTENTIOMETER AND SWITCHES WHEN VIEWED FROM SHAFT END.

RANGE SWITCH SECTIONS OF 52 ARE SHOWN IN THE FIFTH POSITION (14.6 to 22 Mc.), WHICH IS THE EXTREME COUNTERCLOCKWISE POSITION OF SWITCH (FULL CLOCKWISE POSITION OF KNOB) WHEN VIEWED FROM FRONT OF CHASSIS.

53 B 54 ARE SHOWN IN THE EXTREME COUNTERCLOCKWISE POSITIONS, 53 IS IN THE "OFF" POSITION, 54 IS IN THE POSITION NO. 1.

ALL VOLTAGES ARE MEASURED TO THE CHASSIS WITH A 20,000 OHMS PER VOLT METER, WITH S3 IN THE RADIO POSITION AND NO SIGNAL APPLIED. TEST VOLTAGE = 117 volts, 25 or 60 cycles.

INDICATES CONTACTS CONNECTED THROUGH RIVET  
FROM FRONT TO REAR OF SWITCH SECTION

# Philips CM91A (AKA 91A)

# ALIGNMENT OF RECEIVER

See that the Radio-Phonograph switch is in the radio position (centre position). With the variable capacitor fully closed, adjust the dial pointer on the alignment marks on the sides of the dial scale below the 550 calibration mark, (approximately 530 kc).

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 7A7 Control Grid (6) through .05 ufd. Capacitor	455 kc	Pos. 1	Min.		2nd. I.F. Trimmers C36, C35.
2	To Stator C10 through .05 ufd. Capacitor	455 kc	Pos. 1	Min.	A	1st. I.F. Trimmers C19, C18.
3	To Antenna Contact through 200 uuf. Capacitor	600 kc	Pos. 1	600 kc		Broadcast Padder C15
4	To Antenna Contact through 200 uuf. Capacitor	1500 kc	Pos. 1	1500 kc	B	BC-Osc. Trimmer C16 BC-Ant. Trimmer C2
5	To Antenna Contact through 400 ohms Resistance	7.0 Mc	Pos. 2	7.0 Mc	C	SW-Osc. Trimmer C31 SW-Ant. Trimmer C11
6	To Antenna Contact through 400 ohms Resistance	2.9 Mc	Pos. 2	2.9 Mc	D	SW-Osc. Coil L9
7	To Antenna Contact through 400 ohms Resistance	21.5 Mc	Pos. 5	21.5 Mc	C	BS-Osc. Trimmer C23
8	To Antenna Contact through 400 ohms Resistance	15.2 Mc	Pos. 5	15.2 Mc	D	BS-Osc. Coil L8
9	To Antenna Contact through 400 ohms Resistance	21.5 Mc	Pos. 5	21.5 Mc	E	BS-Ant. Trimmer C4
10	To Antenna Contact through 400 ohms Resistance	15.2 Mc	Pos. 5	15.2 Mc	F	BS-Ant. Coil L4
11	To Antenna Contact through 400 ohms Resistance	11.6 Mc	Pos. 4	11.6 Mc	C	BS-Osc. Trimmer C25 BS-Ant. Trimmer C6
12	To Antenna Contact through 400 ohms Resistance	9.6 Mc	Pos. 3	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 (counter clockwise). Turn adjustment clockwise until the first output peak is obtained. Make adjustment 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.

