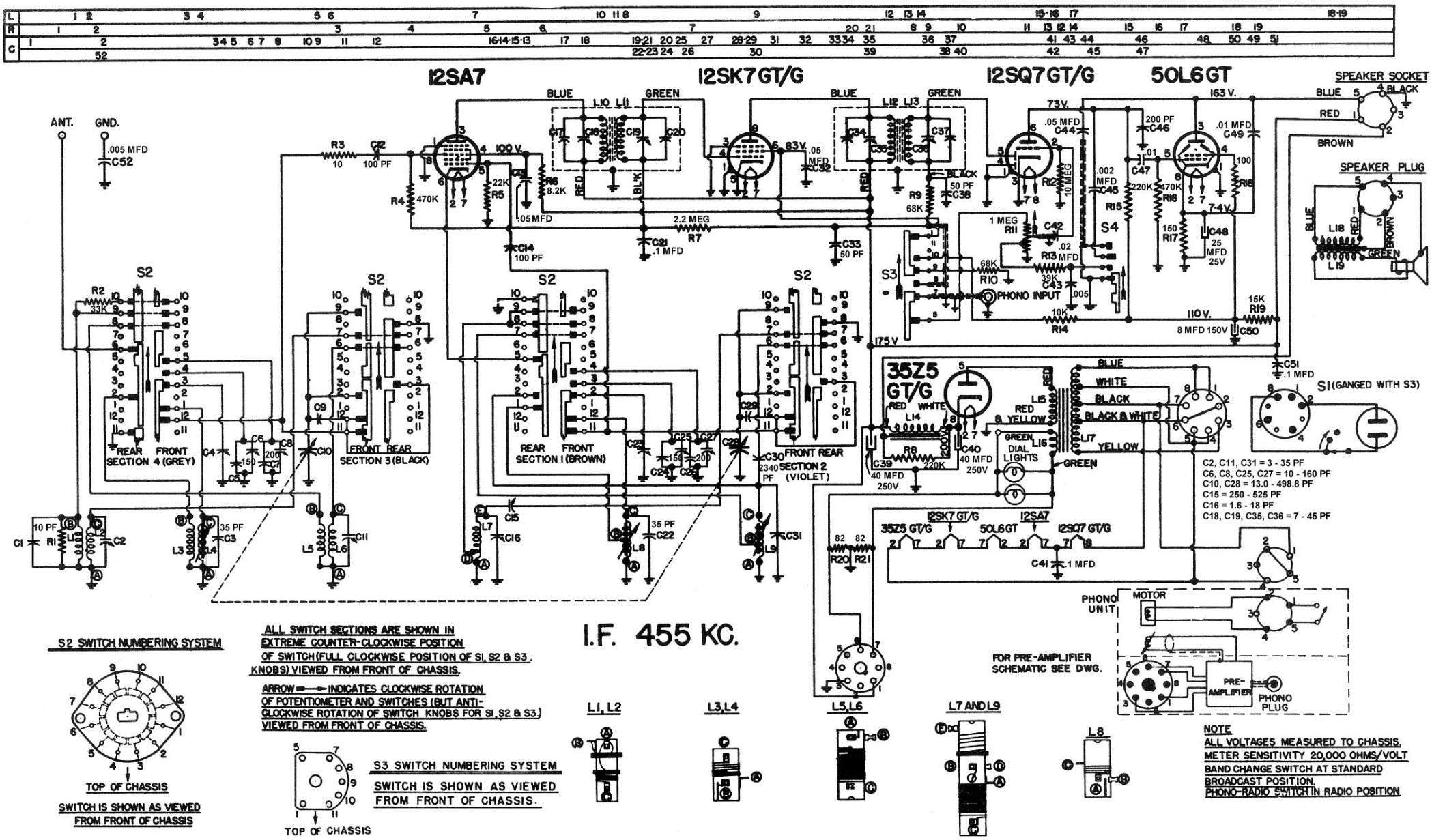
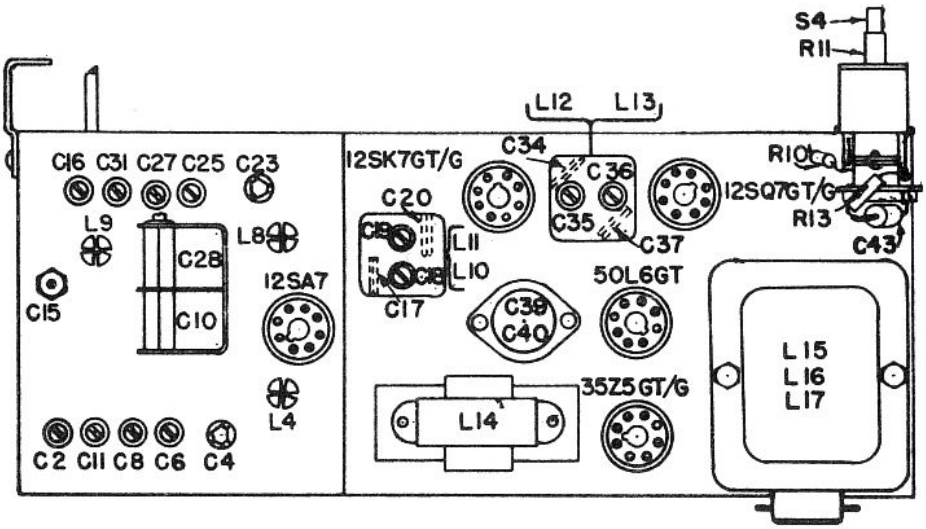
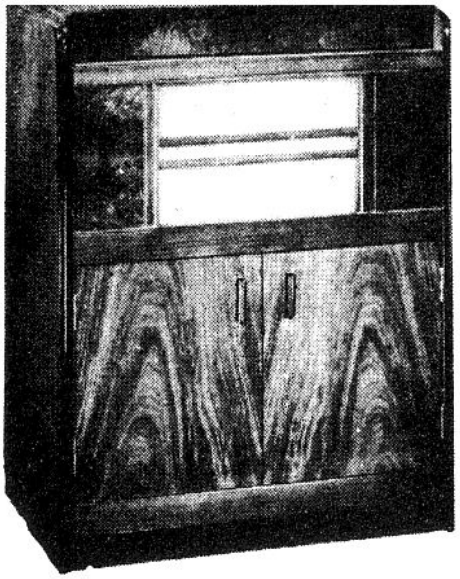
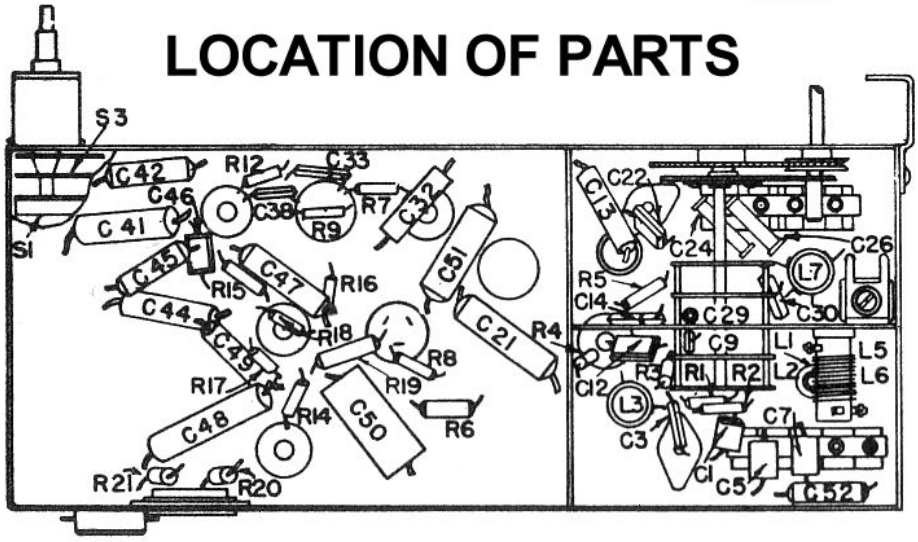

12SA7
12SK7GT/G
12SQ7GT/G
50L6GT
35Z5 GT/G
SPEAKER SOCKET
SPEAKER PLUG
ANT.
GND.
.005 MFD C52
S1 (GANGED WITH S3)
S2
S3
S4
REAR SECTION 4 (GREY)
FRONT SECTION 3 (BLACK)
REAR SECTION 1 (BROWN)
FRONT SECTION 2 (VIOLET)
PHONO INPUT
DIAL LIGHTS
PHONO UNIT
MOTOR
PRE-AMPLIFIER
PHONO PLUG
I.F. 455 KC.
C2, C11, C31 = 3 - 35 PF
C6, C8, C25, C27 = 10 - 160 PF
C10, C28 = 13.0 - 498.8 PF
C15 = 250 - 525 PF
C16 = 1.6 - 18 PF
C18, C19, C35, C36 = 7 - 45 PF
S2 SWITCH NUMBERING SYSTEM
TOP OF CHASSIS
SWITCH IS SHOWN AS VIEWED FROM FRONT OF CHASSIS
ALL SWITCH SECTIONS ARE SHOWN IN EXTREME COUNTER-CLOCKWISE POSITION OF SWITCH (FULL CLOCKWISE POSITION OF S1, S2 & S3 KNOBS) VIEWED FROM FRONT OF CHASSIS.
ARROW ⟹ INDICATES CLOCKWISE ROTATION OF POTENTIOMETER AND SWITCHES (BUT ANTI-CLOCKWISE ROTATION OF SWITCH KNOBS FOR S1, S2 & S3.) VIEWED FROM FRONT OF CHASSIS.
S3 SWITCH NUMBERING SYSTEM
SWITCH IS SHOWN AS VIEWED FROM FRONT OF CHASSIS.
TOP OF CHASSIS
L1, L2
L3, L4
L5, L6
L7 AND L9
L8
FOR PRE-AMPLIFIER SCHEMATIC SEE DWG.
NOTE
ALL VOLTAGES MEASURED TO CHASSIS.
METER SENSITIVITY 20,000 OHMS/VOLT
BAND CHANGE SWITCH AT STANDARD BROADCAST POSITION.
PHONO-RADIO SWITCH IN RADIO POSITION



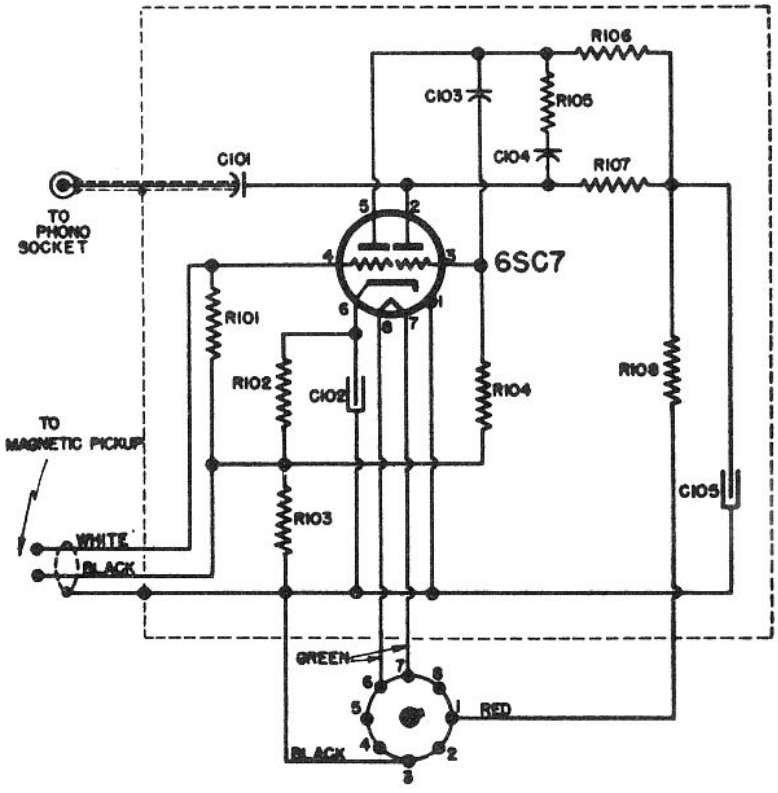


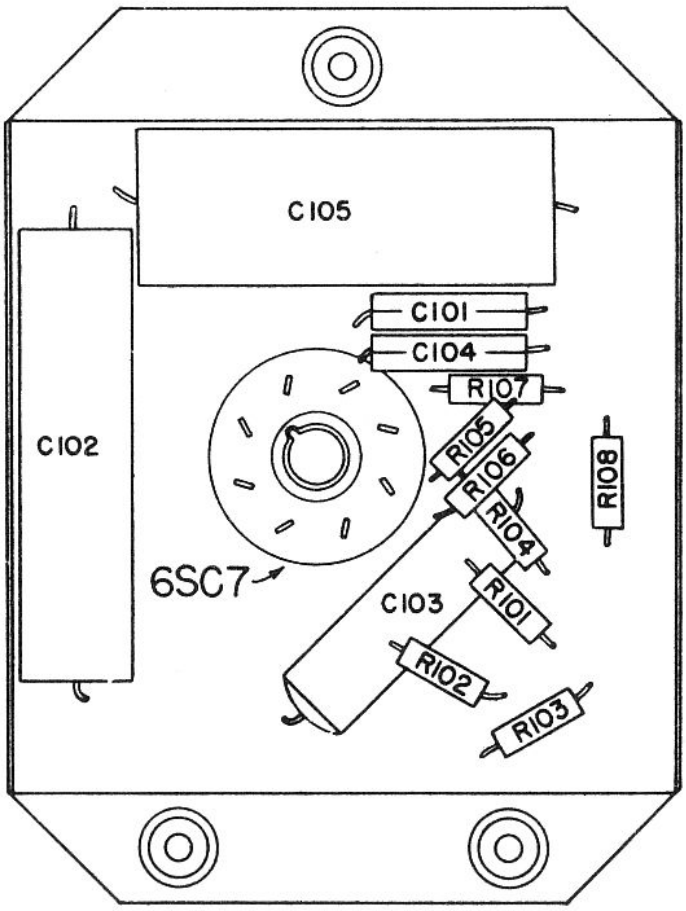
LOCATION OF PARTS



PRE-AMPLIFIER COMPONENTS

C101	1000 uuf.	Mica
C102	25 ufd.	25V.
C103	.002 ufd.	600V.
C104	700 uuf.	Mica
C105	8 ufd.	350V.
R101	470 ohms	½ watt
R102	1500 ohms	½ watt
R103, R108	10,000 ohms	½ watt
R104	1 Megohm	½ watt
R105, R106, R107	330,000 ohms	½ watt





PHILIPS C56A

ALIGNMENT OF RECEIVER

See that the Radio-Gramophone 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.

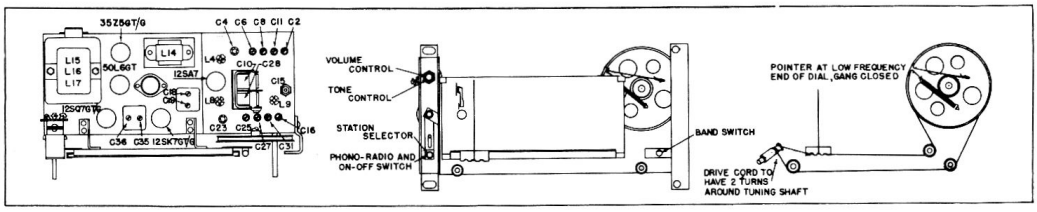
SIGNAL GENERATOR: A generator capable of supplying modulated signals between 455 kc and 22 Mc.

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.

CAUTION: Before connecting the receiver to the mains make certain that the receiver is adjusted to your mains voltage. Refer to "MAINS" on first page.



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 ufd. Capacitor	455 kc	Pos. 2	Min.		2nd. I.F. Trimmers C36, C35.
2	To Stator C10 through .05 ufd. Capacitor	455 kc	Pos. 2	Min.	A	1st. I.F. Trimmers C19, C18.
3	To Antenna Contact through 200 uuf. Capacitor	600 kc	Pos. 2	600 kc		Broadcast Padder C15
4	To Antenna Contact through 200 uuf. 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 (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.

VALVE SOCKET VOLTAGES

PIN	12SA7	12SK7	12SQ7	50L6	35Z5	6SC7
1	—	—	—	—	—	—
2	*12 AC	*12 AC	—	*50 AC	*35 AC	79
3	175	—	—	163	—	—
4	100	—	—	110	—	—
5	—	—	—	—	190 AC	78
6	—	83	73	—	—	5.7
7	*12 AC	*12 AC	*12 AC	*50 AC	*35 AC	3.15 AC
8	—	175	*12 AC	7.4	200	3.15 AC

Voltages specified obtained by using a 20,000 ohms per volt, voltmeter.

*The heater voltages are measured across the heater terminals of each valve all other voltages measured to the chassis.

All voltages are D.C positive except where noted.

All valves must be in their sockets during test.

Readings may vary plus or minus 10% due to mains voltage fluctuations.

SPECIFICATIONS

MODEL C56A: is a six valve superheterodyne receiver combined with an automatic record changer gramophone, utilizing a magnetic type pickup and pre-amplifier designed for use on A.C. mains only. Five tuning ranges cover from 13.6 to 560 meters, 22 Mc to 535 kc with the bandspread on three short wave ranges.

PHILIPS VALVES: Converter 12SA7, I.F. Amplifier 12SK7GT, Detector, A.V.C. and 1st A.F. Amplifier 12SQ7GT, Audio Output 50L6GT, Rectifier 35Z5GT or 34Z5GT, Audio (Gramophone) Pre-Amplifier 6SC7.

RANGE SWITCH POSITIONS AND TUNING RANGES:
1st—560-170 m—535-1635 kc (Special)
2nd—560-170 m—535-1635 kc (Normal)
3rd—120-37.5 m—2.5-8.0 Mc
4th—32.2-28.5 m—9.3-10.5 Mc Bandspread
5th—28.8-24.6 m—10.4-12.2 Mc Bandspread
6th—25.5-13.6 m—14.6-22.0 Mc Bandspread

INTERMEDIATE FREQUENCY: 455 kc

AUDIO POWER OUTPUT: 2 watts

LOUDSPEAKER: Is an 8 inch—20 cm., permanent magnet dynamic with a voice coil D.C. resistance of 2.9 ohms.

ANTENNA & GROUND: For optimum results an outside antenna is necessary. A secure earth connection should be made to a cold water pipe or to an earthing plate buried in damp ground.

CONTROLS: Left front to right rear (looking at front)
1. Volume Control (Outer)
2. Tone Control Switch (Inner)
3. On-Off and Radio Gramophone Switch (Inner)
4. Tuning Control (Outer)

GRAMOPHONE: The gramophone unit is a Philips Model P-54-C utilizing a Caltron Magnetic Pickup unit 104P. The gramophone motor requires 110V. which is supplied automatically from the mains transformer, providing the voltage adjustment plug (see MAINS) is set correctly.

The gramophone motor is suitable for either 50 or 60 cycle operation, but the speed of the record turntable is governed by the size of the drive pulley on the motor shaft. A 50 and a 60 cycle drive pulley are supplied with the record changer. When changing from one frequency to another, it will be necessary to remove the record turntable and insert the correct pulley.

MAINS: 110V, 125V, 150V, 200V, 220V, 245V, 50 or 60 cycles. The voltage adjustment plug on the power transformer must be adjusted to correspond with the mains voltage on which the receiver is to be used. The voltage setting of the voltage adjustment plug is indicated by the arrow on the power transformer. Always set the voltage indicator disc (on the back cover) to correspond with the setting on the power transformer.

POWER CONSUMPTION: 80 watts maximum.

CABINET DIMENSIONS: Width 64.4 centimeters—25⅜ inches
Height 81.3 centimeters—32 inches
Depth 45 centimeters—17¾ inches

WEIGHT: 36.5 kilograms—80.5 pounds.

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 plug from mains.
2. Remove antenna and ground connections.
3. Remove back cover and control knobs.
4. Disconnect the speaker, gramophone motor and gramophone pickup cables from the chassis.
5. Remove the screws securing receiver top panel to the cabinet.
6. Remove chassis mounting screws.