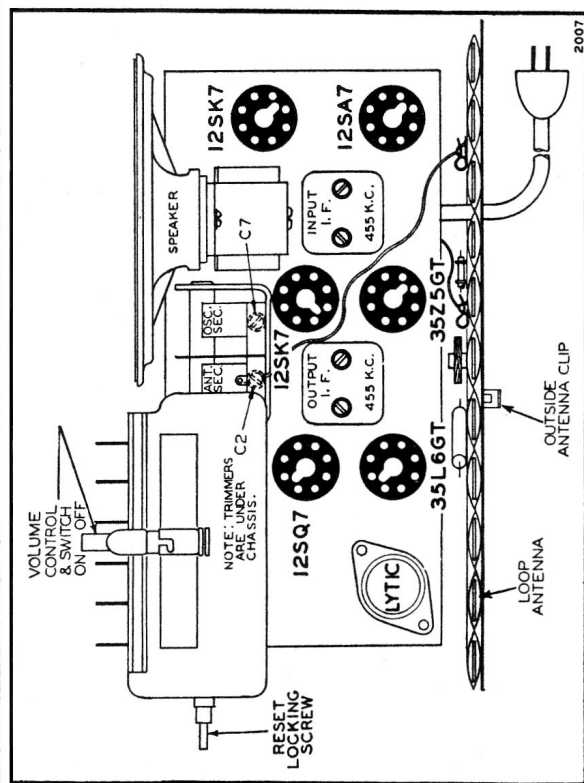
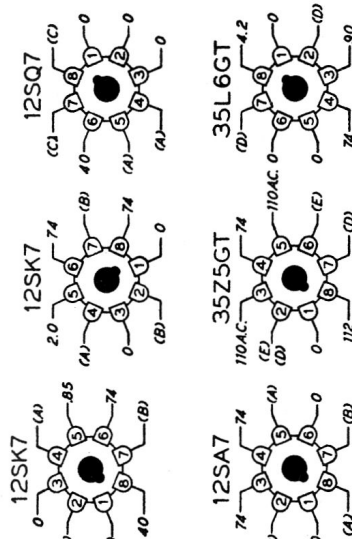




CHASSIS VIEW, SHOWING TUBE LOCATIONS

A - CANNOT BE MEASURED WITH VOLTMETER.
B - 12 VOLTS A.C. MEASURED ACROSS PINS 2 & 7.
C - 12 VOLTS A.C. MEASURED ACROSS PINS 7 & 8.
D - 30 VOLTS A.C. MEASURED ACROSS PINS 2 & 7.
E - 117 VOLTS A.C. MEASURED ACROSS PINS 2 & 6.

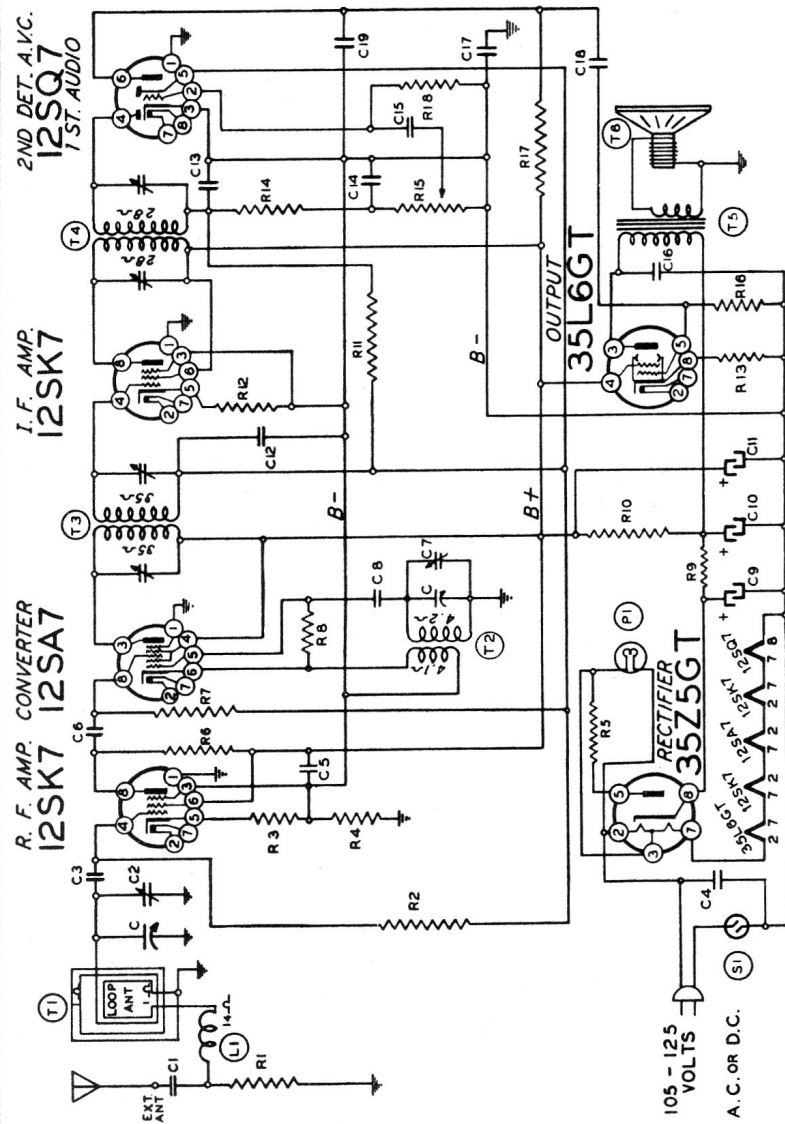
VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS & B+ LINE VOLTAGE 117 VOLTS AC. VOLUME CONTROL AT MINIMUM.



BOTTOM VIEW OF CHASSIS

VOLTAGES AT TUBE SOCKET TERMINALS

Selectivity	55 Kc. broad at 1000 x signal at 1000 Kc.
Power output (in voice coil)	Undistorted.....0.8 watt Maximum.....1.0 watt Voice coil impedance.....3.2 ohms



RESISTORS

- R1 4700 ohms, $\frac{1}{2}$ w., $\pm 10\%$
- R2 1 megohm, $\frac{1}{2}$ w., $\pm 20\%$
- R3 100 ohms, $\frac{1}{2}$ w., $\pm 10\%$
- R4 150,000 ohms, $\frac{1}{2}$ w., $\pm 20\%$
- R5 22 ohms, $\frac{1}{2}$ w., $\pm 10\%$
- R6 22 ohms, $\frac{1}{2}$ w., $\pm 10\%$
- R7 100,000 ohms, $\frac{1}{2}$ w., $\pm 20\%$
- R8 47,000 ohms, $\frac{1}{2}$ w., $\pm 20\%$
- R9 180 ohms, 1 w., $\pm 10\%$
- R10 1200 ohms, 1 w., $\pm 10\%$
- R11 3.3 megohms, $\frac{1}{2}$ w., $\pm 20\%$
- R12 390 ohms, $\frac{1}{2}$ w., $\pm 10\%$
- R13 150 ohms, $\frac{1}{2}$ w., $\pm 10\%$
- R14 47,000 ohms, $\frac{1}{2}$ w., $\pm 20\%$
- R15 Volume control, 1 megohm
- R16 470,000 ohms, $\frac{1}{2}$ w., $\pm 20\%$
- R17 220,000 ohms, $\frac{1}{2}$ w., $\pm 20\%$
- R18 4.7 megohms, $\frac{1}{2}$ w., $\pm 20\%$

CONDENSERS

- C1 2 gang variable
- C2 .002 x 500 volts
- C3 Antenna trimmer on gang
- C4 .0005 mica
- C5 .1 x 400 volts
- C6 .25 x 200 volts
- C7 Oscillator trimmer on gang

MISCELLANEOUS

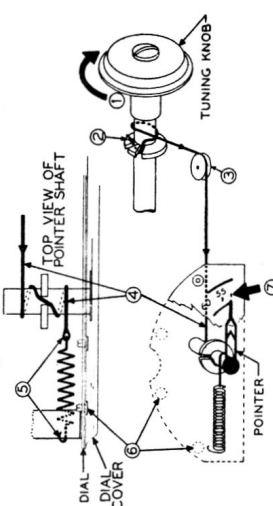
- L1 Loading coil
- P1 Pilot light bulb, type T-47
- S1 On-off switch on volume control
- T1 Loop antenna, complete
- T2 Oscillator coil
- T3 Input I.F. coil, 455 Kc.
- T4 Output I.F. coil, 455 Kc.
- T5 Output transformer for speaker
- T6 5-inch P.M. speaker

Sensitivity (for 0.05 watt output)	10 microvolts average
Intermediate frequency	455 Kc.
Power consumption	35 Watts

REPLACING DIAL POINTER DRIVE CORD

Six inches of cord are required in the set. Use a piece slightly longer so that knots may be tied at each end. Numbers below correspond to circled numbers in diagram.

1. Rotate tuning knob to extreme clockwise position. This closes tuning condenser. Knob should remain in this position until installation is completed.
2. Tie knot at one end of cord and place it in key washer as shown. Wind cord one turn around shaft in direction shown.
3. Pass cord over idler pulley.
4. Pass cord over pointer shaft; wind it one turn around shaft; pass it through key washer; wind it one more turn around shaft.
5. Hook spring over end of dial support. Tie cord to spring. **IMPORTANT:** Before tying knot stretch spring enough so that full contraction of spring will rotate pointer shaft at least one-half turn.
6. Remove dial crystal by removing Cinch buttons.
7. Make sure tuning knob is in extreme clockwise position. Then rotate pointer clockwise, against friction of shaft, until it is in horizontal position, as shown.



SETTING THE PUSHBUTTONS

The pushbuttons may be used, after proper adjustment, for the automatic tuning of any six stations which you select. They can be set up in any order.

1. Turn on the radio. Allow it to warm up for at least one minute.
2. Push out the call letters of the six stations from the call-letter sheets supplied with this manual. Press an acetate tab (supplied in small envelope) into each of the pushbuttons.
3. Insert one call-letter tab in the rectangular opening in each of the pushbuttons, in any sequence.
4. Check to see that the locking screw in the center of the tuning knob (see illustration) is loose. If it is not, turn it several turns to the left (counterclockwise). A coin may be used for this purpose.
5. Press the first pushbutton down all the way. With one hand hold the button down firmly and with the other carefully tune in the desired station. Release the pushbutton.
6. Follow this procedure for each of the five other buttons, adjusting each one for a different station.
7. Rotate the tuning knob on the side of the cabinet as far to the right as it will go. Tighten the locking screw in the center of the knob. **IT IS IMPORTANT THAT THIS SCREW BE TIGHTENED VERY FIRMLY.**

ALIGNMENT PROCEDURE

- No aligning adjustments should be attempted until all other possible causes of trouble have been checked.
- Chassis must be removed from cabinet for proper alignment. Solder joints must be checked.
- Antenna circuits can be made without removing the chassis, through two holes provided on the bottom of the cabinet. The two adjusted screws can be reached with a long insulated screwdriver.
- It is important that during alignment the loop antenna be maintained at the same distance from the chassis as when the chassis is installed in the cabinet.
- Turn volume control to maximum for all adjustments.
- Connect tuning knob to extreme clockwise position. This closes tuning condenser.
- Connect dummy antenna value in series with generator output meter across primary of output transformer.

Band	Signal Generator Frequency Setting	Dummy Antenna	Connection to Radio	Tuning Condenser Setting	Adjust for Maximum Output (see chassis view)
I.F.	455 Kc.	0.1 mfd.	Grid of 12SA7	Rotor full open (plates out of mesh)	4 trimmers on input and output L.F. transformers
Broadcast	1650 Kc.	0.1 mfd.	Grid of 12SA7	Rotor full open (plates out of mesh)	Oscillator trimmer C7 on bottom of radio
	1400 Kc.	None	See note A	Set dial at 1400 Kc.	Antenna trimmer C2 on bottom of radio

Note A: Lay output lead of generator in back of loop antenna. Turn up generator output. Loop antenna will pick up energy.

REPLACEMENT PARTS LIST

When ordering parts, specify part number, schematic symbol when applicable, receiver model number, and series. Use only genuine factory replacement parts.

NOTE ON TUBE REPLACEMENT
Replace a defective metal 12SK7 tube with another metal tube or with a glass 12SK7 tube with either in the set.

Part No.	Schematic Symbol	Description
CONDENSERS		
10025	C1, C15	.002 x 400 volts, $\pm 25\%$
1292	C3	.0005, mica, $\pm 20\%$
1001	C4	.1 x 400 volts, $\pm 50\%$, -10%
1006	C5	.25 x 200 volts, $\pm 20\%$
1007	C6	Electrolytic, 20 mfd., 20 mfd. x 150 volts, 20 mfd. x 150 volts, 20 mfd. x 150 volts.
11394	C8, C10, C11	Electrolytic, 20 mfd., 20 mfd. x 150 volts, 20 mfd. x 150 volts.
11995	C9, C10, C11	Electrolytic (for 25-cycle sets) 20 mfd., 20 mfd. x 150 volts, 20 mfd. x 150 volts.
1009	C12	.05 x 200 volts, $\pm 25\%$
129161	C13	Dual .0001, mica, $\pm 10\%$
10025	C17	.02 x 400 volts, $\pm 10\%$
10010	C18	.004 x 600 volts, $\pm 10\%$
RESISTORS		
A-9B1-70	R1	4700 ohms, $\frac{1}{2}$ watt, $\pm 10\%$
A-9B1-71	R2	100 ohms, $\frac{1}{2}$ watt, $\pm 10\%$
A-9B1-72	R3	100 ohms, $\frac{1}{2}$ watt, $\pm 10\%$
A-9B1-26	R4	150,000 ohms, $\frac{1}{2}$ watt, $\pm 20\%$
A-9B1-42	R5	22 ohms, $\frac{1}{2}$ watt, $\pm 10\%$
A-9B1-17	R6	4700 ohms, $\frac{1}{2}$ watt, $\pm 20\%$
A-9B1-18	R7	4700 ohms, $\frac{1}{2}$ watt, $\pm 20\%$
A-9B1-23	R8	47,000 ohms, $\frac{1}{2}$ watt, $\pm 20\%$
A-9B1-53	R9	150 ohms, 1 watt, $\pm 10\%$
A-9B1-53	R10	1200 ohms, 1 watt, $\pm 10\%$
A-9B1-34	R11	3.3 megohms, $\frac{1}{2}$ watt, $\pm 20\%$
A-9B1-34	R12	3.3 megohms, $\frac{1}{2}$ watt, $\pm 20\%$
A-9B1-52	R13	150 ohms, $\frac{1}{2}$ watt, $\pm 10\%$
A-9B1-29	R16	470,000 ohms, $\frac{1}{2}$ watt, $\pm 20\%$
A-9B1-27	R17	220,000 ohms, $\frac{1}{2}$ watt, $\pm 20\%$
A-9B1-35	R18	4.7 megohms, $\frac{1}{2}$ watt, $\pm 20\%$
COILS		
12310	L1	Load coil
B-13E-10242	T1	Loop antenna assembly, complete on back
A-13D-10215	T2	Output I.F. coil in can, 455 Kc.
10840	T3	Output I.F. coil in can, 455 Kc.
10845	T4	Output I.F. coil in can, 455 Kc.
SOCKETS		
12910		8-prong metal tube sockets, molded
12171		8-prong socket for 12SK7, laminated
12126		Socket base, bakelite
10771		Socket light socket assembly
SPEAKER		
114197	T6	5-inch P.M. speaker
105104	T5	Output transformer for speaker
DIAL PARTS		
115448		End plate (right hand bracket)
115448C		End plate (left hand bracket)
115446		Cams
MISCELLANEOUS		
10798	R15	Line cord and plug
101218		Volume control and switch, 2-gang, megohmable condenser
B-8A-10211	C	Pilot light bulb, type T-47
132108	P1	Chassis screws, No. 6 x $\frac{1}{2}$ " hex. head
131192		Rubber bumper (bottom of cabinet)
131193		Cardboard back, ivory
131194		Cinch buttons, for fastening back to cabinet
13141		Cinch buttons to cover trimmer
128292-17		Pushbuttons, walnut
128292-8		Station call letters, set
112784		Acetate tabs for call letters
131509		Chassis trimmer, ivory
128413-9		Cabinet, bakelite, ivory
128413-9		Knob, bakelite, walnut
128496-17		Knob, volume, ivory
128496-8		Knob, tuning, ivory
128496-9		Knob, tuning, walnut
117454		Locking screw for tuning knob. (Specify walnut or ivory.)
120338		Locking spring for tuning knob