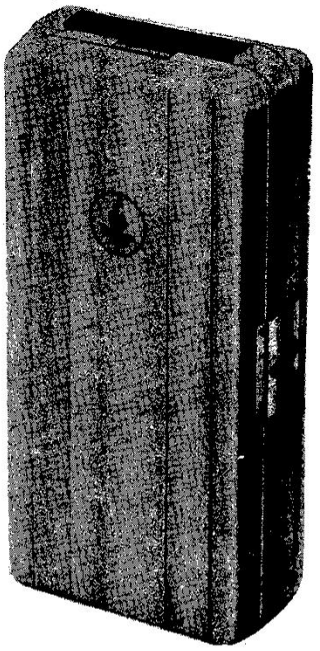
MODEL 640,
Ch. 120112



DESCRIPTION

TYPE: Pocket portable (battery operated) superheterodyne.

FREQUENCY RANGE: 540-1600 kc.

TYPE OF TUBES:

1—1R5, converter
1—1T4, i-f amplifier
1—1U5, detector, a.v.c., a-f amplifier
1—3S4, power output

POWER SUPPLY: "A" and "B" batteries.

VOLTAGE RATING:

"A" Battery—1.5 volts
"B" Battery—67.5 volts

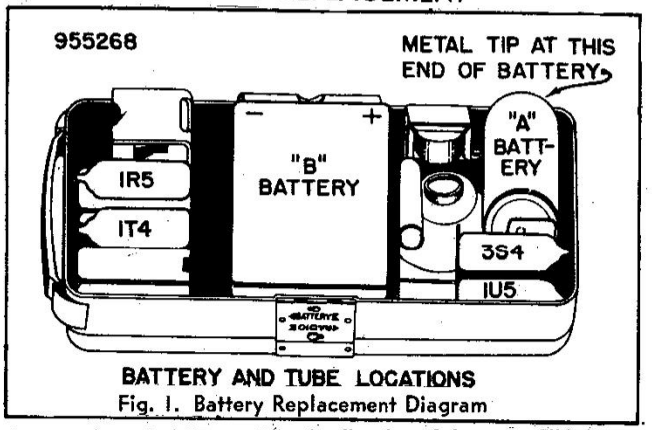
CURRENT DRAIN:

"A" Battery—0.25 amp.
"B" Battery—0.0075 amp.

GENERAL NOTES

1. If replacements are made in the r-f section of the circuit, the receiver should be carefully realigned.
2. The receiver has a self-contained antenna and does not require additional antenna or ground connections.
3. The self-contained loop antenna has directional properties. It is important, therefore, once the station is tuned in, to rotate the cabinet back and fourth through a quarter of a circle (90 degrees), leaving it at the position where the station is received with maximum volume.
4. The receiver is turned on when the lid is open and turned off when the lid is closed. Always close the lid when the set is not in use.
5. Remove batteries as soon as they are exhausted. The "A" battery will require more frequent replacement than the "B" battery.
6. Replace the 1.5 volt "A" battery with standard D-size flashlight cell (1—5/16" dia.). Replace 67.5 volt "B" battery with Eveready Minimax No. 467 or equivalent.

BATTERY REPLACEMENT



BATTERY AND TUBE LOCATIONS
Fig. 1. Battery Replacement Diagram

1. Slide the button on the release catch marked "Battery" in the direction of the arrow. This loosens the bottom shell and permits it to be swung open on the hinge, making the batteries accessible.
2. Insert the batteries as shown in the above diagram.
3. To reassemble, hold the chassis face down with the batteries in place. Close the bottom shelf over the chassis and press the rear shell so that it snaps into place.

MODEL 640,
Ch. 120112

ALIGNMENT INSTRUCTIONS

1. To position pointer, turn variable condenser fully closed and set pointer to reference mark at low-frequency end of dial backplate.
2. Volume control should be at maximum; output of signal generator should be no higher than necessary to obtain an output reading.
3. Maintain loop in same position relative to chassis, if chassis is removed from cabinet.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 mfd.	High side to pin 6 (grid) of 1R5. Low side to chassis.	455 KC.	Tuning condenser fully open.	Across voice coil.	T2 and T1	Adjust for maximum output.
2		Loop	1620 KC.	"	"	C4 (osc. trimmer)	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3		"	1400 KC.	Tune for maximum output.	"	C3 (Ant. trimmer)	Adjust for maximum output.

REPLACEMENT PARTS LIST

Symbol	†Part No.	DESCRIPTION	Symbol	†Part No.	DESCRIPTION
C1, C2	900068	Two gang variable condenser	R2	340470	820 ohms, ½ watt, ±10%
C3	Part of C1	Trimmer, antenna	R3	390117	1 megohm, volume control
C4	Part of C2	Trimmer, oscillator	R4	351450	10 megohms, ½ watt, ±20%
C5, C6	Part of T1	Trimmers	R5	351330	3.3 megohms, ½ watt, ±20%
C7, C8	Part of T2	Trimmers	R6	351130	470,000 ohms, ½ watt, ±20%
C9	928013	100 mmf., ceramic	R7	351330	3.3 megohms, ½ watt, ±20%
C10	920495	.001 mfd., 200 volt	R8	340730	10,000 ohms, ½ watt, ±10%
C11	920496	.005 mfd., 200 volt	R9	351330	3.3 megohms, ½ watt, ±20%
C12	928104	212 mmf., ceramic	SP1	180064	PM speaker
C13	920495	.001 mfd., 200 volt	T1	720111	I-F transformer
C14	928013	100 mmf., ceramic	T2	720111	I-F transformer
C15	920494	.05 mfd., 200 volt	T3	734056	Ouptut transformer
C16	920120	.02 mfd., 100 volt	T4	716047	Oscillator coil
C17	925164	16 mfd., 100 volt elect.	V1	800110	1R5, converter
C18	920485	.01 mfd., 100 volt	V2	800130	1T4, i-f amplifier
L1	700048	Loop antenna	V3	800019	1U5, det., a.v.c., a-f amp.
R1	350970	100,000 ohms, ½ watt, ±20%	V4	800170	3S4, power output

CABINET AND DIAL PARTS

955309

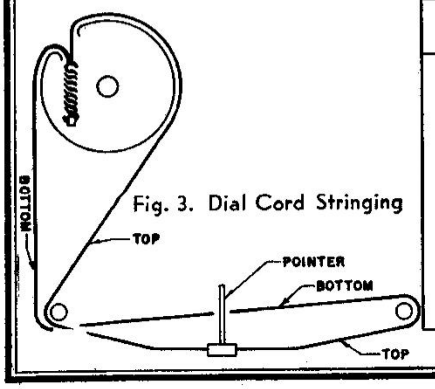


Fig. 3. Dial Cord Stringing

†PART No.	DESCRIPTION	†PART No.	DESCRIPTION
140312	Case shell—saddle tan	460148	Handle
140313	Top cover—sand	410845	Snap latch—male
460144	Knob—sand	410850	Dual snap latch assembly
140314	Bottom cover—sand	587008	Spring
460147	Handle catch—saddle tan	700048	Loop
140336	Case shell—sand	630110	Loop cover
140337	Top cover—saddle tan	575528	Grille and baffle assembly
460145	Knob—saddle tan	520121	Dial crystal
140338	Bottom cover—saddle tan		
460149	Handle catch—sand		

†Specify part number when ordering.

MODEL 640,
Ch. 120112

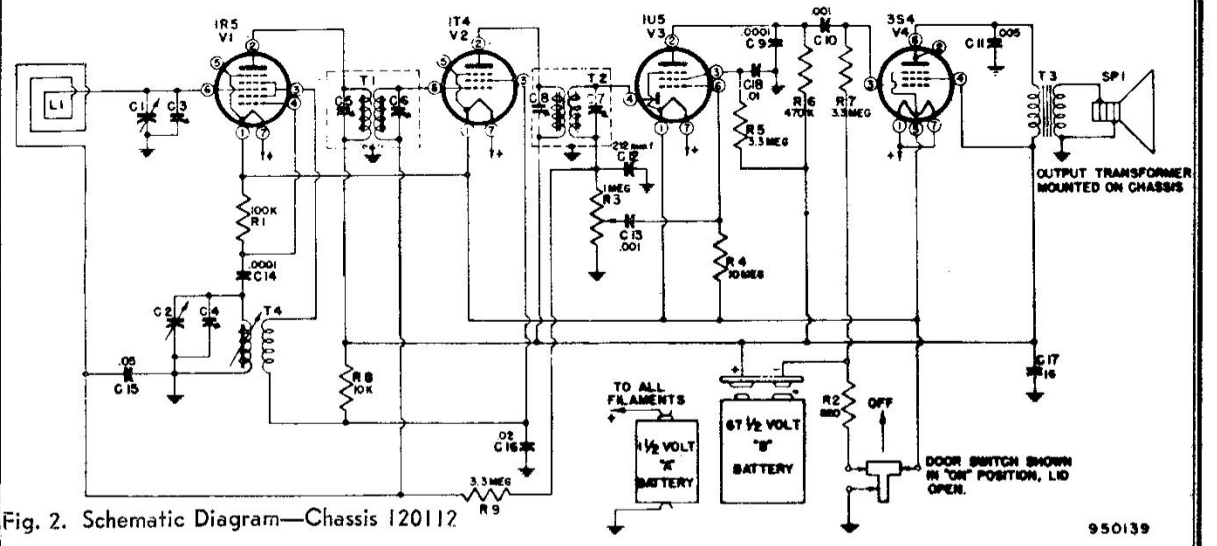


Fig. 2. Schematic Diagram—Chassis 120112

CONDITIONS FOR VOLTAGE AND RESISTANCE READINGS

1. Voltages indicated are positive d.c., resistances in ohms, unless otherwise noted.
2. Measurements made with voltohmyst or equivalent.
3. Socket connections are shown as bottom views, with measurements from pin to chassis.
4. Volume control at maximum, no signal applied, for voltage measurements.
5. Nominal tolerance in component valves makes possible a variation of ± 15% in readings.
6. On the diagram, upper valves are voltage, lower valves are resistance; K is Kilohms, MEG is megohms. Resistance marked * are measured to B+.

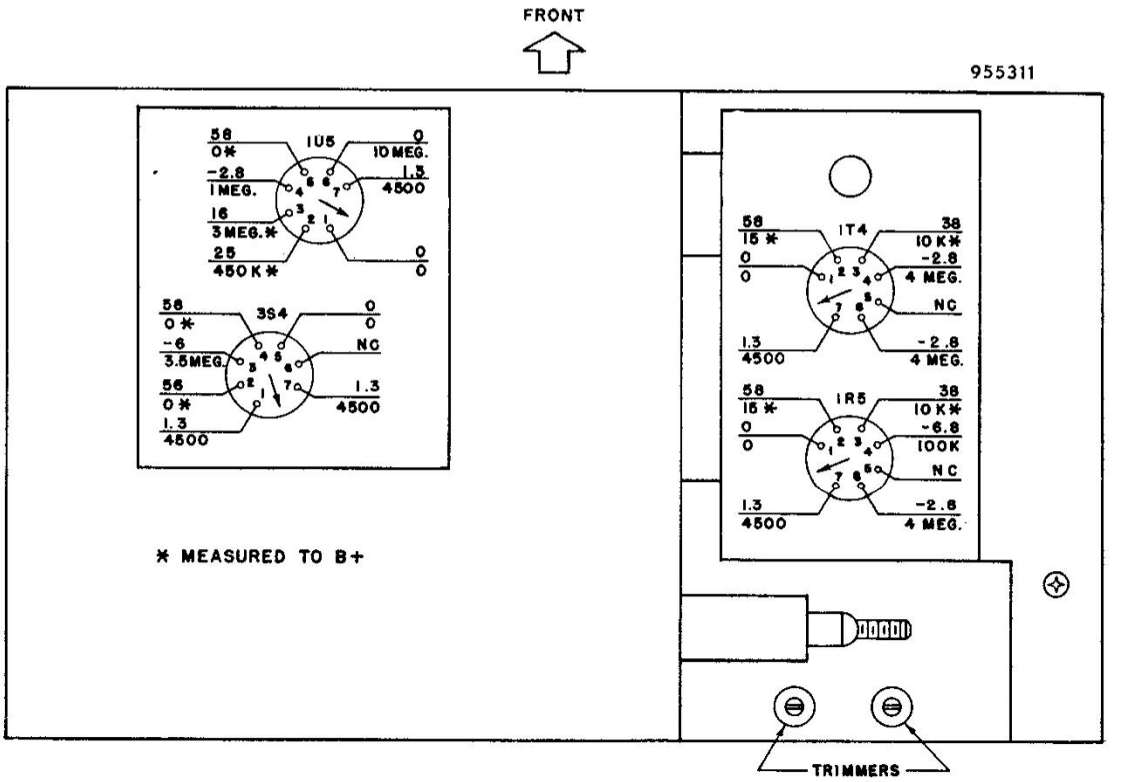


Fig. 4. Voltage and Resistance Diagrams, Chassis 120112