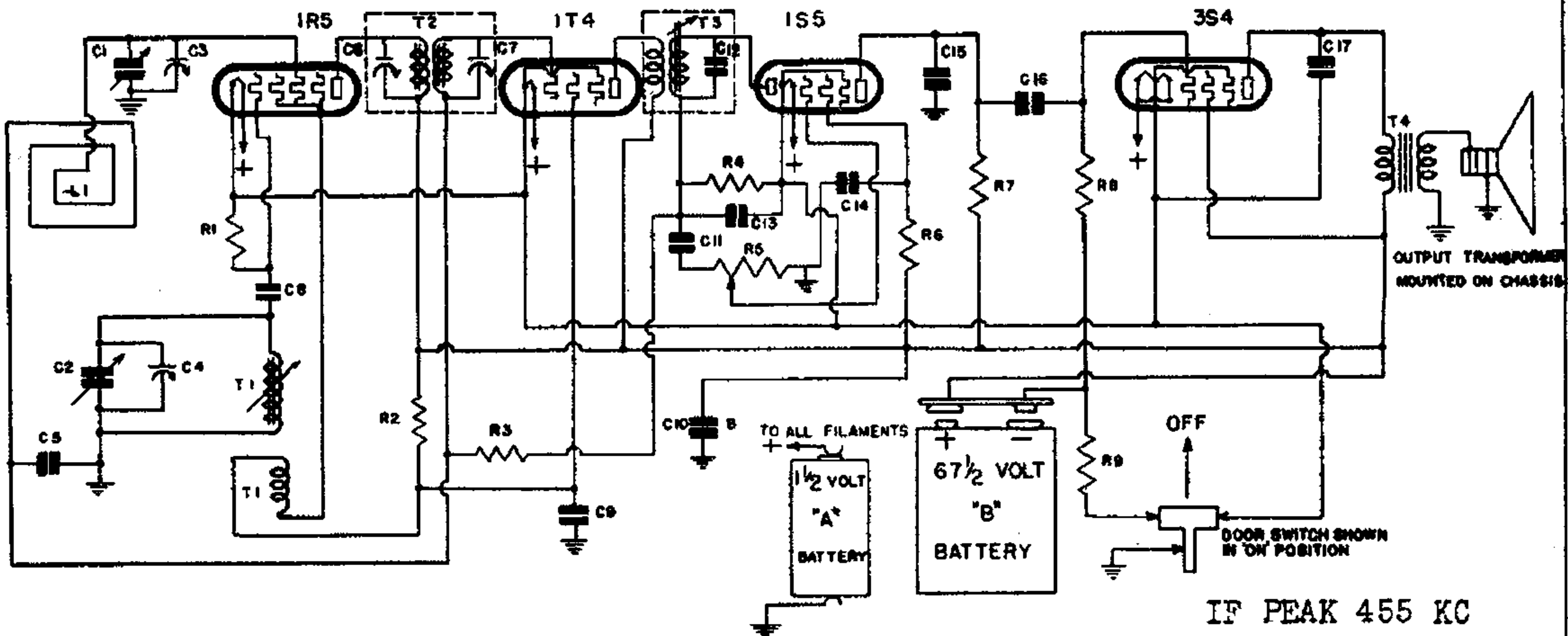
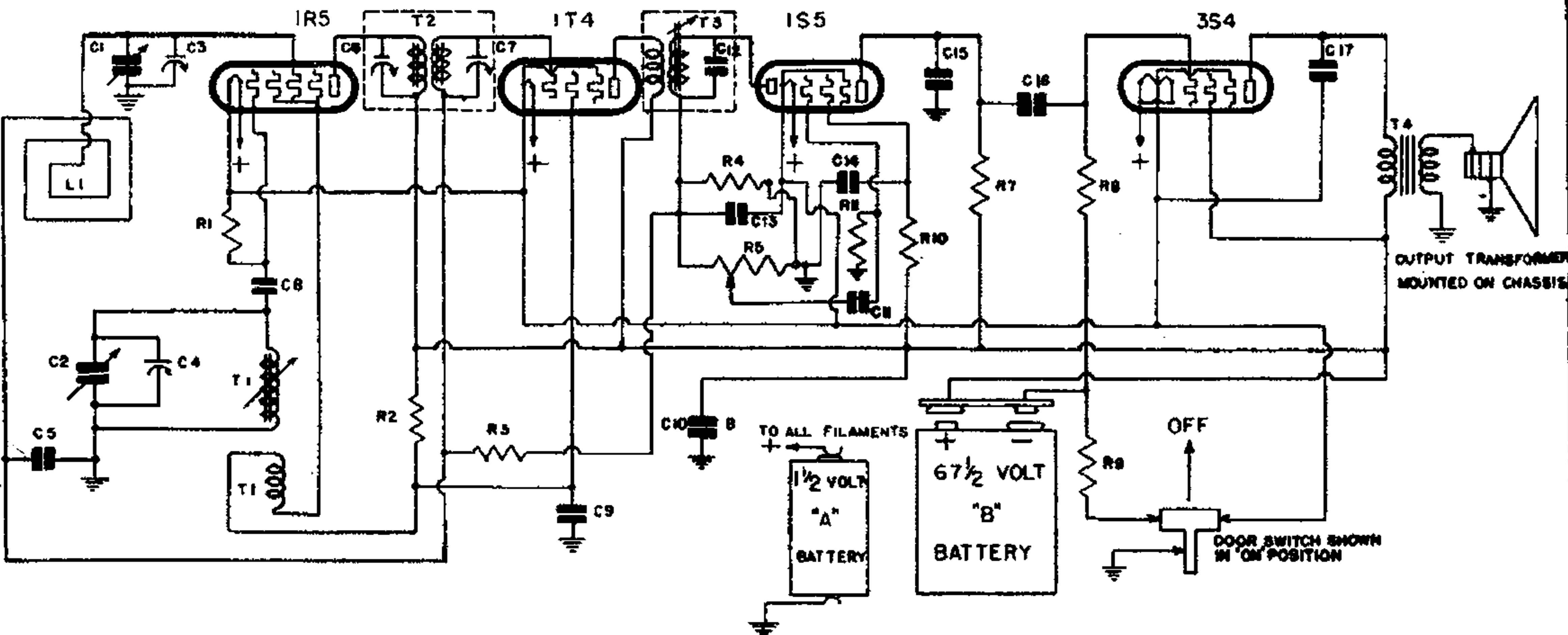


EMERSON RADIO & PHONOGRAPH CORP.

MODEL FR432
Chassis FR
Early, Late



FR SCHEMATIC DIAGRAM FOR CHASSIS BEARING SERIAL NUMBERS BELOW 4,818,700



FR SCHEMATIC DIAGRAM FOR CHASSIS BEARING SERIAL NUMBERS ABOVE 4,818,700

VOLTAGE ANALYSIS

Readings should be taken with a 1000 ohms-per-volt meter. Voltages listed are from point indicated to chassis with volume control turned on full and no signal. The battery voltages for these readings were: "A" 1.5 volts, "B" 67.5 volts. All readings except filaments were taken on the 250 volt scale.

Tube	Plate	Screen	Fil.
1R5	57	35	1.5
1T4	57	35	1.5
1S5	*12	*3	1.5
3S4	55	60	1.5

Bias for the 3S4 tube is obtained across the resistor R9. The voltage drop across this resistor should be 7.5 volts.

*The operating voltage of this tube cannot be measured because of the high resistor in the circuit.

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REPLACEMENT PARTS LIST

When ordering state part number. List price each as of June 15, 1941. (Subject to change without notice.)

*Item	Part No.	DESCRIPTION	PRICE
L1	9RW-350A	Loop antenna	\$.60
T1	9RT-622	Oscillator coil .....	.75
T2	9RT-623	Double-tuned 455 kc first i-f transformer	1.70
T3	9RT-624	Single-tuned 455 kc second i-f transformer	1.40
T4	9RT-625	Output transformer .....	.90
R1	KR-54	100,000 ohm $\frac{1}{4}$ watt carbon resistor .....	.16
R2	KR-63	15,000 ohm $\frac{1}{4}$ watt carbon resistor .....	.16
R3, R6, R8	NNR-220	3 megohm $\frac{1}{4}$ watt carbon resistor .....	.16
R4, R7	KR-57	1 megohm $\frac{1}{4}$ watt carbon resistor .....	.16
R5	9RR-449	Volume control, 3 megohm .....	.65
R9	9RR-458	980 ohm $\frac{1}{2}$ watt wire-wound resistor .....	.16
R10		5 megohm $\frac{1}{4}$ watt carbon resistor .....	.16
C1, C2	9RC-535G	Two-gang variable condenser	2.50
†C3, C4		Trimmers, part of variable condenser.	
C5, C9, C14	9RC-537	0.02 mf, 100 volt tubular condenser .....	.12
†C6, C7		Trimmers, part of first i-f transformer.	
C8	9RC-539	0.00005 mf, ceramic condenser .....	.20
C10	9RC-536	8 mfd, 100 volt dry electrolytic condenser .....	.50
C11, C17	9RC-552	0.003 mf, 150 volt tubular condenser .....	.12
†C12		Part of second i-f transformer.	
C13, C15	9RC-540	0.0001 mf, ceramic condenser .....	.20
C16	9RC-538	0.001 mf, 100 volt flat tubular condenser .....	.12
	9RS-553	Permanent magnet dynamic speaker	3.75

*Item number locates the article on the schematic diagram.

†Not supplied separately.

ADJUSTMENTS

An oscillator with frequencies of 455 and 1600 kc is required.

An output meter should be used across the voice coil or output transformer for observing maximum response.

Always use as weak a test signal as possible when aligning the receiver.

Location of Coils and Trimmer Adjustments

The first i-f transformer is located next to the output transformer.

The trimmers are accessible through holes in top of the can.

The second i-f transformer is located between the 1T4 and 1S5 tubes. The single trimming core screw extends from the end of the can.

The oscillator coil is located next to the first i-f transformer. The trimmer for the oscillator is located on the smaller variable condenser section.

The 600 kc oscillator core adjustment is the brass screw protruding from the end of the oscillator coil.

The loop antenna acts as the antenna coil. Trimmer for the loop is located on the larger section of the variable condenser.

I-f Alignment

Swing variable condenser to minimum capacity position.

Feed 455 kc to the grid of the 1R5 tube through a 0.01 mf condenser. Adjust the three i-f trimmer screws for maximum response. (Clip the i-f input to the stator lug of the larger variable condenser section.)

R-f Alignment

Set the dial pointer at 160. Set the signal generator at 1600 kc and feed its output into a loop of wire about one foot in diameter. Hold this radiating loop about one foot away from and parallel to the receiver loop antenna. Advance the output of the generator until deflection is obtained on the output meter. Adjust first the oscillator trimmer (smaller section of variable condenser) then the antenna trimmer (larger section of variable condenser) for maximum response. Set the dial pointer at 60. Feed 600 kc and rock the variable condenser while adjusting the oscillator core adjustment for maximum response. Return to 1600 and check alignment. If re-adjustment is necessary return to 600 and repeat entire procedure.