



RCA Victor

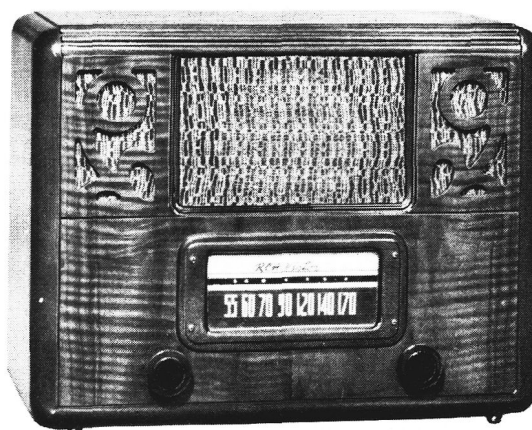
MODEL B417

Four-Tube, Single-Band, Battery-Operated Superheterodyne Receiver

TECHNICAL INFORMATION AND SERVICE DATA

1946 No. 5

SERVICE DIVISION • RCA VICTOR COMPANY LIMITED • MONTREAL



Electrical Specifications

Frequency Range 540—1,700 k.c. Alignment Frequencies 600 k.c., 1500 k.c., (osc., ant.)
Intermediate Frequency 455 k.c.

RADIOTRON COMPLEMENT

(1) Type 1A7G First Detector—Oscillator (2) Type 1N5G I. F. Amplifier
(3) Type 1H5G Second Det., A.F. and A.V.C. (4) Type 1C5G Power Output

BATTERIES REQUIRED

"A" one 1.4 Volt Air Cell or 1.5 Dry Cell; "B" two 45 Volt heavy duty "B" Batteries

CURRENT CONSUMPTION

"A" at 1.4 Volts 0.25 Amp.
"B" at 90 Volts 9.6 Ma.

POWER OUTPUT

Undistorted 115 Milliwatts
Maximum 260 Milliwatts

LOUDSPEAKER

Type Permanent Magnet Dynamic
Diameter 5 inches
Voice Coil Impedance 3 Ohms at 400 Cycles

Mechanical Specifications

	Height	Width	Depth
Cabinet Dimensions	11 $\frac{1}{8}$ inches	14 $\frac{1}{8}$ inches	7 $\frac{5}{8}$ inches
Operating Controls	(1) Power Switch—Volume; 2 Tuning		
Tuning Drive Ratio	8 to 1		

General Description

This Model contains a four-tube chassis, battery operated, mounted in a table type cabinet. The superheterodyne type of circuit is employed, incorporating such features of design as the new low-drain 1.5 volt tubes thus reducing the physical size of the batteries, magnetite core I.F. transformers, Auto-

matic Volume Control; diode detection; resistance coupled audio system; Record Player Attachment Socket; sensitive, five-inch, permanent-magnet, dynamic loudspeaker; exceptionally low current drain; and a large, easy-to-read dial.

Service Data

The various diagrams of this booklet contain all information necessary to quickly isolate causes for defective operation if such develops. The ratings of resistors, capacitors, coils, etc., are indicated adjacent

to the symbols signifying these parts on the various diagrams. Identification titles such as R1, L1, C1, etc., provide ready reference between the illustrations and Replacement Parts List.

Alignment Procedure

Calibrate the tuning dial by adjusting dial pointer to the horizontal position when the gang tuning-condenser plates are in full mesh.

Perform alignment in proper order, tabulated below, starting with Step No. 1 and following all operations across, then Step No. 2, etc. Adjustment locations are shown on Figures 1 and 3.

Output Meter Alignment.—If this method is used, connect the meter across voice coil, and turn the receiver volume control to maximum.

Test-Oscillator.—For all alignment operations, connect the low side of the test-oscillator to the receiver chassis, and keep the output as low as possible to avoid A.V.C. action.

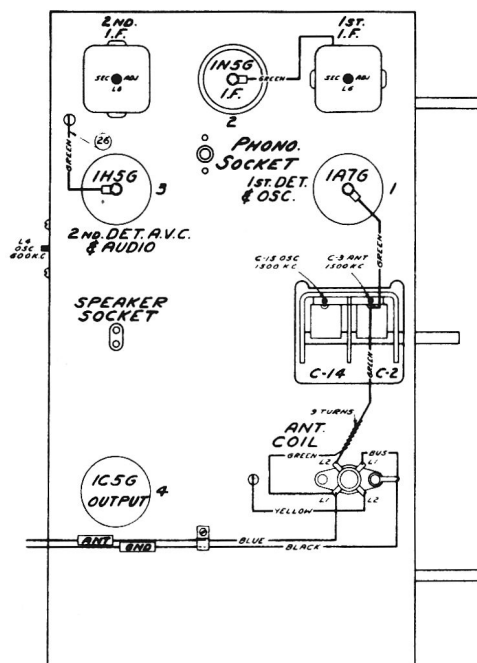


Fig. 1 Radiotron and Trimmer Locations

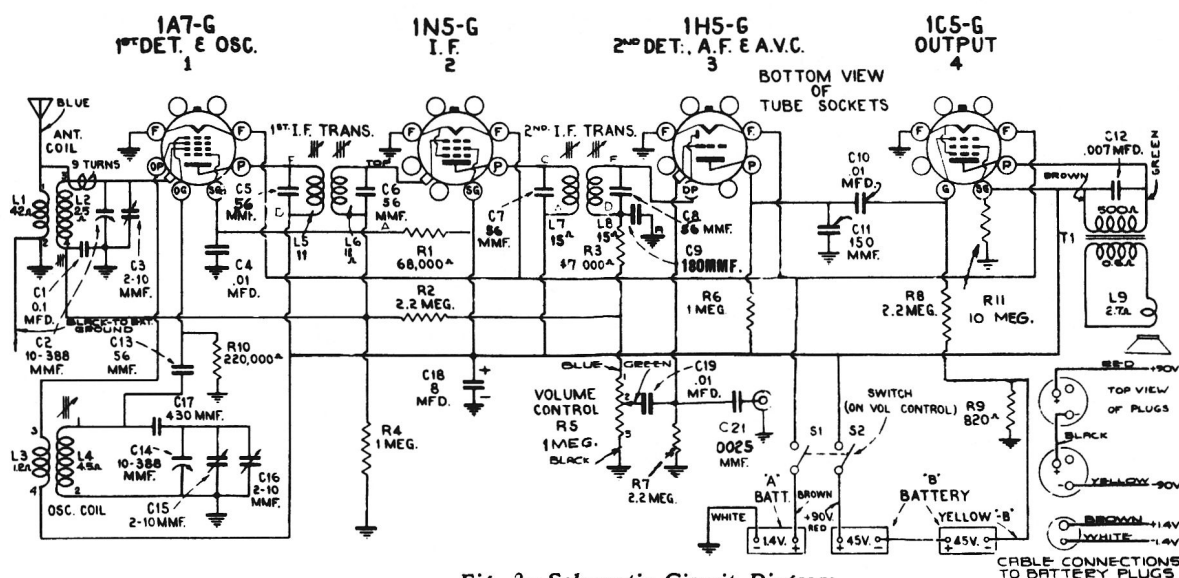


Fig. 2—Schematic Circuit Diagram

Alignment Procedure

Steps	Connect the high side of test-oscillator to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. peak output
No. 1	1N5-G I-F grid cap, in series with 0.01 mfd.	455 kc	Quiet point between 550-750 kc	L7 and L8 (2nd I-F transformer)
No. 2	1A7-G 1st-det. grid cap, in series with 0.01 mfd.	455 kc		L5 and L6 (1st I-F transformer)
No. 3	Antenna lead, in series with 200 mmfd.	600 kc	600 kc	L4 (oscillator) L2 (antenna)
No. 4	Antenna lead, in series with 200 mmfd.	1,500 kc	1,500 kc	C15† (oscillator) C3 (antenna)

† Trimmer C16 on gang condenser should be unscrewed one complete turn from tight, before adjusting C15.

Precautionary Lead Dress

1. Red lead from second i-f transformer to screen terminal of 1N5-G must be dressed close to and along edge of chassis.
2. Twisted green wire from antenna coil to gang must be 9 turns and kept clear of rotor.
3. Blue and green leads to volume control must be dressed close to chassis and between gang and front apron.

Radiotron Voltages

Readings taken with a receiver supply of 90 Volts "B" and 1.4 Volts "A".

Radiotron	Plate	Screen Grid	Grid	Filament
(1) 1A7G Converter 1A7G Oscillator	83V 83V	45V*	—	1.4V
(2) 1N5G I.F.	83V	83V	—	1.4V
(3) 1H5G Detector and Audio	64V	—	—	1.4V
(4) 1C5G Output	80V	83V	—7.4V*	1.4V

NOTE—Values with asterisk () are operating voltages in circuits with high series resistance. The actual measured value will be lower, depending on the voltmeter loading.

Measurements are made to chassis, with set tuned to a quiet point and the volume control at minimum. Values should hold within approximately plus or minus 20% with rated battery voltage.

REPLACEMENT PARTS FOR MODEL B417

Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers.

STOCK NO.	DESCRIPTION	STOCK NO.	DESCRIPTION
	RECEIVER ASSEMBLIES		
S-1997	Cable-Four conductor battery cable and plugs.....	13601	Resistor-10 megohm-1/4 watt(R11)
30949	Capacitor-56 mmfd.(C5,C6,C7,C8)...	14887	Retainer-Tuning shaft retainer (Pkg.10).....
12723	Capacitor-56 mmfd.(C13).....	S-3490	Shaft-Station selector shaft.....
12725	Capacitor-150 mmfd.(C11).....	32595	Shield-Tube shield(in 5G tube)...
13003	Capacitor-180 mmfd. (C9).....	31251	Socket-Tube Socket.....
32599	Capacitor-430 mmfd. (C17).....	14278	Socket-Phono Socket.....
34459	Capacitor-.0025 mfd. (C21).....	31418	Spring-Drive cord tension spring.
5148	Capacitor-.007 mfd. (C12).....	S-3299	Transformer-1st I.F. Transformer.
4937	Capacitor-.01 mfd. (C4,C10,C19)...	35628	Transformer-2nd I.F. Transformer.
4939	Capacitor-.1 mfd. (C1).....	S-3495	Volume control and power switch (R5,S1,S2).....
S-3221	Capacitor-8 mfd.Dry Electrolytic (C18).....		SPEAKER ASSEMBLIES (CRL 500-1)
32150	Coil-Antenna Coil (L1,L2).....		
32148	Coil-Oscillator Coil (L3,L4).....	32907	Cap-Dust cap for cone centre (Pkg.5).....
S-3489	Condenser-Two Gang Variable tuning (C2,C3,C14,C15,C16).....	35440	Cone-Speaker cone assembly (L9)...
32634	Cord-Drive Cord 26-1/4".....	S-2376	Speaker-complete.....
S-3468	Dial-Station selector dial scale..	S-2377	Transformer-Output (T1).....
S-3539	Drum-Condenser drive drum ass'y...		MISCELLANEOUS ASSEMBLIES
31420	Indicator-Stn.selector indicator pointer.....		
32208	Plug-2 prong-male plug (Battery cable).....	30956	Board-Speaker terminal board.....
12827	Plug-3 prong-male plug (Battery cable).....	S-3491	Crystal-Station selector dial crystal.....
14076	Resistor-820 ohms-1/4 watt (R9)...	S-3101	Knob-Tuning and volume control knob.....
5132	Resistor-47,000 ohms-1/10 watt(R3)	S-3540	Screw-Chassis Mtg. screw and washer assembly.....
14138	Resistor-68,000 ohms-1/4 " (R1)	30900	Spring-Knob retaining spring(Pkg.5)
14583	Resistor-220,000 ohms-1/4 watt(R10)		
13730	Resistor-1 megohm-1/4 watt(R4,R6).		
12679	Resistor-2.2 megohm-1/4 watt (R2,R7,R8).....		

All parts and prices subject to change or withdrawal without notice.