

R.C.A. Victor Co., Inc.

Model: 9K1

Chassis:

Year: Pre October 1937

Power:

Circuit:

IF:

Tubes:

Bands:

Resources

[Riders Volume 8 - RCA 8-59](#)

[Riders Volume 8 - RCA 8-60](#)

[Riders Volume 8 - RCA 8-63](#)

[Riders Volume 8 - RCA 8-64](#)

[Riders Volume 8 - RCA 8-65](#)

[Riders Volume 8 - RCA 8-66](#)

RCA MFG. CO., INC.

MODEL 9K1
Schematic, Socket
Trimmers

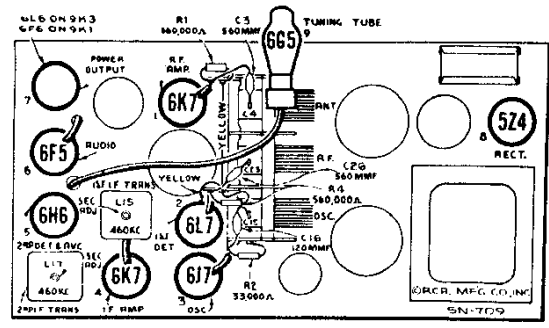
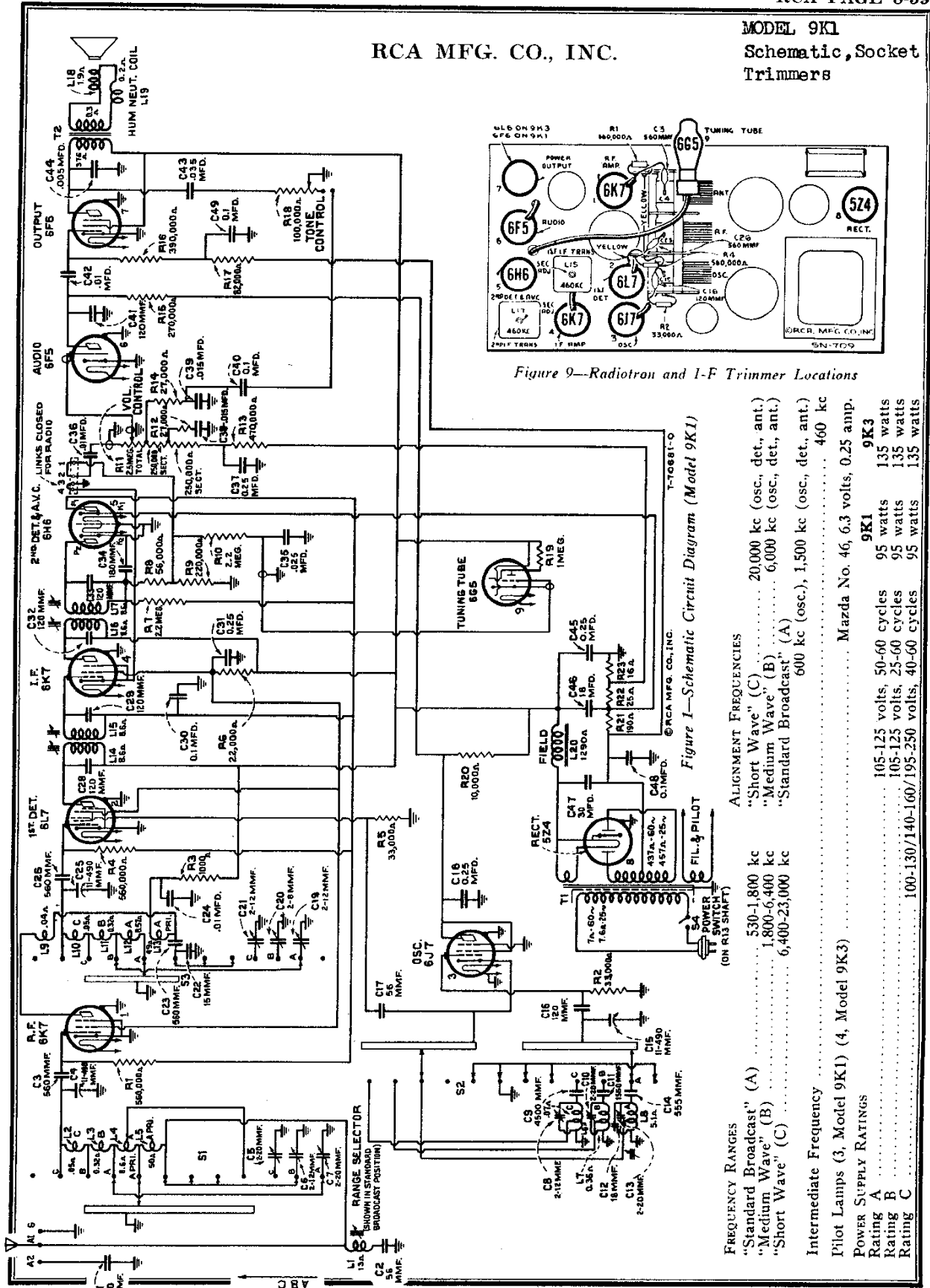


Figure 9—Radiotron and I-F Trimmer Locations

Figure 1—Schematic Circuit Diagram (Model 9K1)

ALIGNMENT FREQUENCIES	
"Short Wave" (C)	20,000 kc (osc., det., ant.)
"Medium Wave" (B)	6,000 kc (osc., det., ant.)
"Standard Broadcast" (A)	600 kc (osc.), 1,500 kc (osc., det., ant.)
Intermediate Frequency	460 kc
Pilot Lamps (3, Model 9K1) (4, Model 9K3)	Mazda No. 46, 6.3 volts, 0.25 amp.
Power Supply Ratings	9K1
Rating A	105-125 volts, 50-60 cycles 95 watts 135 watts
Rating B	105-125 volts, 25-60 cycles 95 watts 135 watts
Rating C	100-130/140-160/195-250 volts, 40-60 cycles 95 watts 135 watts

MODEL 9K1
Chassis Wiring

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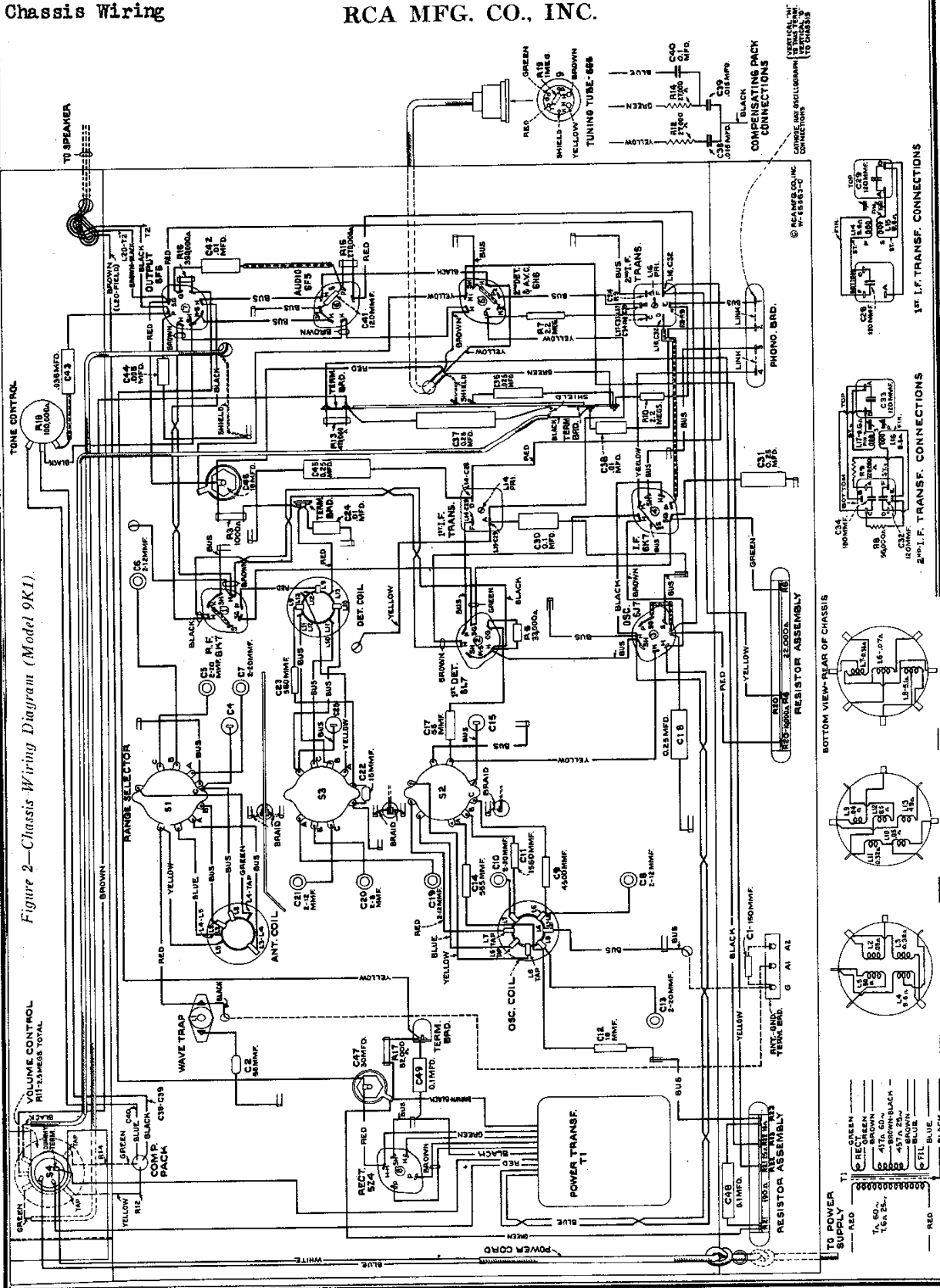


Figure 2—Chassis Wiring Diagram (Model 9K1).

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MODELS 9K1, 9K3
Voltage, Socket
Trimmers

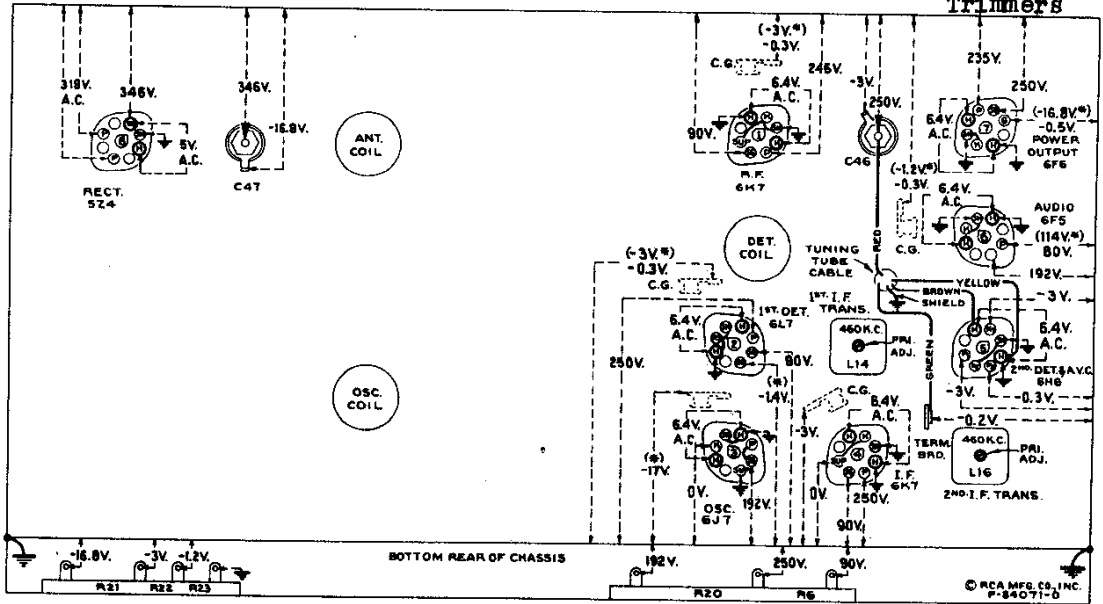


Figure 6—Radiotron Socket Voltages and I-F Trimmer Locations (Model 9K1)

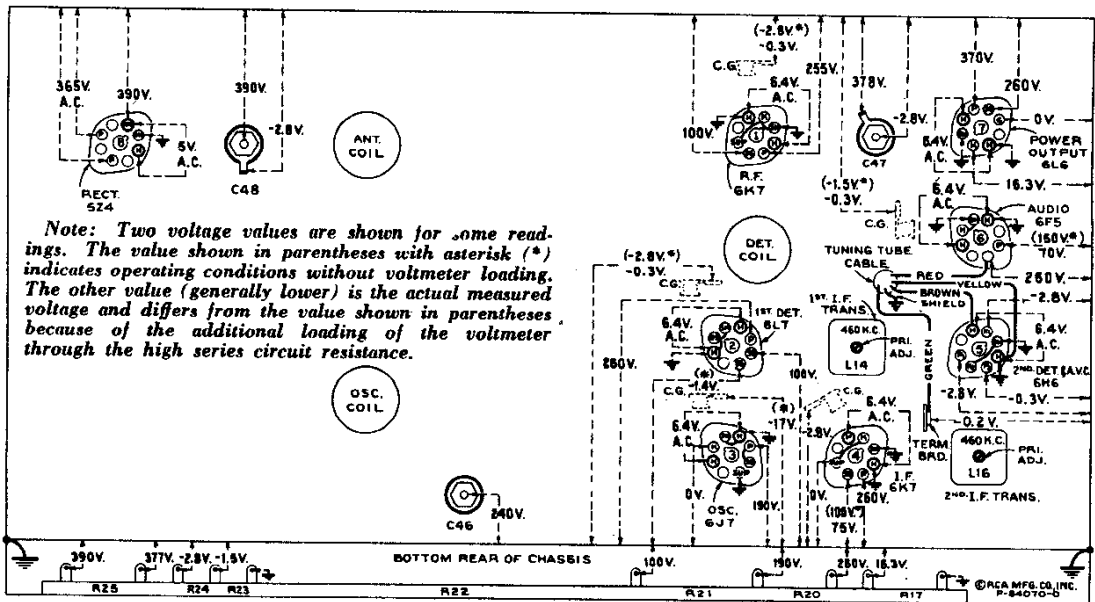


Figure 7—Radiotron Socket Voltages and I-F Trimmer Locations (Model 9K3)

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Standard broadcast")—
No signal being received—Volume control minimum

Radiotron Cathode Current Readings

Measured with Milliammeter Connected at Tube
Socket Cathode Terminals Under Conditions
Similar to Those of Voltage Measurements

	9K1	9K3	9K1	9K3
(1) RCA-6K7—R-F Amp.	7.5	7.5 ma.	(6) RCA-6F5—1st Audio	0.3
(2) RCA-6L7—1st Det.	6.4	7.2 ma.	(7) RCA-6F6—Output	41
(3) RCA-6J7—Osc.	5.4	6.3 ma.	(8) RCA-6L6—Output	60
(4) RCA-6K7—J-F Amp.	7.5	7.5 ma.	(9) RCA-5Z4—Rectifier	72*
(5) RCA-6H6—2nd Det. & A.V.C.	—	—	(9) RCA-6G5—Tuning Tube	2.0

(*Cannot be measured at socket.)

MODEL S 9K1, 9K3

Alignment, Trimmers

RCA MFG. CO., INC.

Alignment Procedure

Calibrate the tuning dial by adjusting dial pointer to the low-frequency (end) calibration mark on "Standard broadcast" scale with the gang tuning-condenser plates in full-mesh position. This is a friction adjustment.

Perform alignment in proper order, tabulated below, starting with No. 1 and following all operations across, then No. 2, etc. Adjustment locations are shown on Figures 5, 6, 7, and 9.

Cathode-ray alignment is preferable; the connections to the chassis are shown in Figures 2 and 4. If an output indicator is used, connect it across the loudspeaker voice-coil and advance the receiver volume control to full-volume position.

Connect the "low" output terminal of the test oscillator to the receiver chassis for all alignment operations. Regulate the output of the test oscillator so that minimum signal is applied to the receiver to obtain an observable output indication. This will avoid a-v-c action.

The term "Dummy antenna" means the device which must be connected between the "high" test-oscillator output and the point of connection to the receiver in order to obtain ideal alignment. "No signal, 550-750 kc" means that the receiver should be tuned to a point between 550 and 750 kc where no signal or interference is received from a station or local (heterodyne) oscillator.

For further details on alignment, refer to booklet "RCA Victor Receiver Alignment."

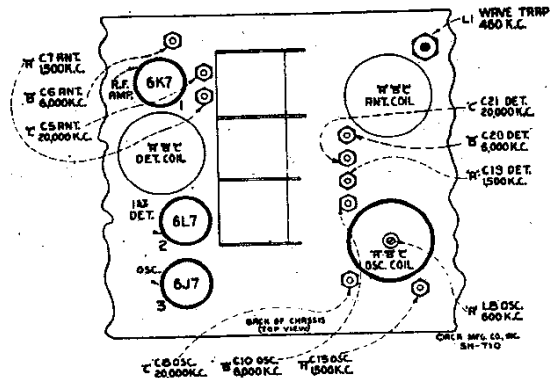


Figure 5—R-F Trimmer Locations

Note.—The locations of C20 and C21 are interchanged on some chassis of Model 9K1.

Order of Alignment	Test Oscillator			Receiver Dial Setting	Circuit to Adjust	Adjustment Symbols	Adjust to Obtain
	Connection to Receiver	Dummy Antenna	Frequency Setting				
1	6K7 I-F Grid Cap	.001 Mfd.	460 kc	No Signal 550-750 kc	2nd I-F Trans.	L16 and L17	Max. (peak)
2	6L7 Det. Grid Cap	.001 Mfd.	460 kc	No Signal 550-750 kc	1st I-F Trans.	L14 and L15	Max. (peak)
3	"A1" Ant. Term.	200 Mmfd.	460 kc	No Signal 550-750 kc	Wave Trap	L1	Minimum Output
4	"A1" Ant. Term.	300 Ohms	20,000 kc	20,000 kc	"C" Osc.	C8	Max. (peak)*
5	"A1" Ant. Term.	300 Ohms	20,000 kc	Rock thru 20,000 kc	"C" Det.	C21	Max. (peak)†
6	"A1" Ant. Term.	300 Ohms	20,000 kc	20,000 kc	"C" Ant.	C5	Max. (peak)‡
7	"A1" Ant. Term.	300 Ohms	6,000 kc	6,000 kc	"B" Osc.	C10	Max. (peak)
8	"A1" Ant. Term.	300 Ohms	6,000 kc	6,000 kc	"B" Det.	C20	Max. (peak)
9	"A1" Ant. Term.	300 Ohms	6,000 kc	6,000 kc	"B" Ant.	C6	Max. (peak)
10	"A1" Ant. Term.	200 Mmfd.	600 kc	600 kc	"A" L-F Osc.	L8	Max. (peak)
11	"A1" Ant. Term.	200 Mmfd.	1,500 kc	1,500 kc	"A" H-F Osc.	C13	Max. (peak)
12	"A1" Ant. Term.	200 Mmfd.	600 kc	Rock thru 600 kc	"A" L-F Osc.	L8	Max. (peak)
13	"A1" Ant. Term.	200 Mmfd.	1,500 kc	1,500 kc	"A" H-F Osc.	C13	Max. (peak)
14	"A1" Ant. Term.	200 Mmfd.	1,500 kc	1,500 kc	"A" Det.	C19	Max. (peak)
15	"A1" Ant. Term.	200 Mmfd.	1,500 kc	1,500 kc	"A" Ant.	C7	Max. (peak)

* Use minimum capacity peak if two peaks can be obtained.

† Use maximum capacity peak if two peaks can be obtained.

‡ After this adjustment, check for image signal by shifting receiver dial to 19,080 kc.

General Description

These receivers each employ a nine-tube, three-band superheterodyne circuit. Model 9K1 uses an RCA-6F6 power-output tube, delivering a maximum output of 4.5 watts, while Model 9K3 uses an RCA-6L6 beam-power-output tube, delivering a maximum output of 12.5 watts. The tuning range for each model is continuous from 530 to 23,000 kc, which includes the standard broadcast band and the important short-wave bands at 49, 31, 25, 19, 16, and 13 meters, along with channels assigned for police, aviation, and amateur communication.

Features of design include an r-f amplifier stage; magnetite-core adjusted i-f transformers, wave-trap, and low-frequency oscillator tracking; full automatic volume control; phonograph terminal board; "Magic Eye" tuning tube; 12-inch electrodynamic loudspeaker; new plunger-type, air-dielectric trimming capacitors; aural-compensated audio volume control; continuous high-frequency tone control; and a two-point low-frequency tone control. In addition, Model 9K3 has a cabinet incorporating the "Magic Voice."

Service Data

The various diagrams of this booklet contain such information as will be needed to isolate causes for defective operation if such develops. The ratings of the resistors, capacitors, coils, etc., are indicated adjacent to the symbols signifying these parts on the diagrams. Identification titles such as R1, L1, C1, etc., provide reference between the illustrations and Replacement Parts List. The coils, transformer windings, and reactors are rated in terms of d-c resistance to permit continuity checks.

Phonograph Attachment.—A terminal board is provided for connecting a phonograph into the audio-amplifying circuit. RCA Victor Models R-93, R-93-2, R-93-A, or R-94 Record Players should be connected as follows: Remove the two links from the phonograph terminal board. Connect green wire in Radio-Record switch cable to terminal 2; yellow to terminal 1; red to terminal 4; and both the blue lead and shield to terminal 3. Connect a 2-conductor twisted cable between the Record Player binding posts and the screw terminals on Radio-Record switch.

Loudspeaker.—Centering of the loudspeaker is made in the usual manner with three narrow paper feelers

after first removing the front dust cover. This may be removed by softening its cement with a light application of acetone, using care not to allow the acetone to flow into the air gap. The dust cover should be cemented back in place with ambroid upon completion of adjustment.

Selector Dial (Model 9K3).—Figure 10 illustrates the relation of the various parts of the dial mechanism when in its "Standard broadcast" position with the range switch likewise turned to its "Standard broadcast" position. In re-assembling the dial after repairs, see that the gears are meshed in accordance with the diagram, at the same time noting that the range switch is in its "Standard broadcast" position and the lever attached to the range-switch shaft placed in the position shown.

To adjust the dial mechanism, set the range switch to its "Standard broadcast" position. Place a straight-edge across the center of the dial so that its edge is even with the lower (end) marking at both the low-frequency and high-frequency ends of the dial. Under such conditions the straight-edge should be parallel with the top of the chassis base. If the straight-edge is not parallel with the top of the chassis base, loosen the nut on the rear of the roller link pivot stud and move the stud up or down until the link roller moves the dial to the desired position so that the end calibration marks obtain the position mentioned above. Tighten the nut on the roller link pivot stud.

Set the gang tuning condenser to its maximum capacity position. Adjust the dial pointer to the low-frequency (end) mark on "Standard broadcast" scale. This is a friction adjustment.

With the gang tuning condenser plates still in full mesh, loosen the two set screws on the vernier-dial hub. Rotate the vernier dial until the "0" marking is in a vertical plane above the center of the shaft. Tighten set screws.

Antenna and Ground Terminals.—These receivers are equipped with an antenna-ground terminal board having three terminals. These terminals are marked "A2," "A1," and "G," the latter being the ground terminal and should always be connected to a good external ground. The transmission-line leads of the RCA RK-40A antenna system should be connected to terminals "A2" and "A1." The receiver coupling units of the RCA RK-40 and the RCA Spider-Web antenna systems should be connected to terminals "A1" and "G." Connect a single-wire antenna to terminal "A1."

POWER OUTPUT	9K1	9K3
Undistorted	2.0 watts	7.0 watts
Maximum	4.5 watts	12.5 watts

LOUDSPEAKER	
Type	12-inch Electrodynamic
Impedance (v. c.)	2.2 ohms at 400 cycles

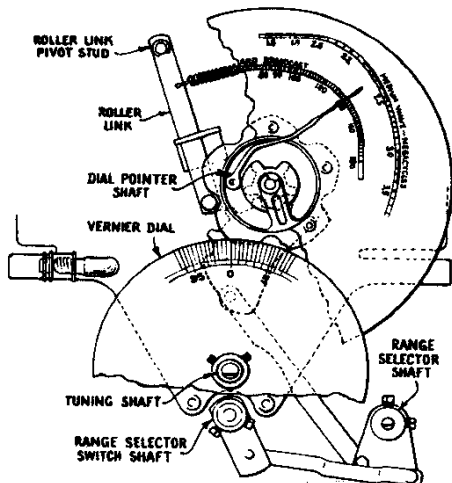


Figure 10—Selector Dial Mechanism (Model 9K3)

STOCK No.	PARTS
REPRODUCER ASSEMBLIES (Model 9K1 Only)	
12641	Board—3-contact reproducer terminal board
12640	Bracket—Output transformer mounting bracket and clamp
12012	Coil—Field coil (L20)
11469	Coil—Neutralizing coil (L19)
12667	Cone—Reproducer cone and dust cap (L18)
5118	Connector—3-contact male speaker cable connector
9696	Reproducer—Complete
11253	Transformer—Output transformer (T2)
11886	Washer—Spring washer to hold field coil securely
REPRODUCER ASSEMBLIES (Model 9K3 Only)	
12914	Board—Reproducer terminal board
13842	Bracket—Output transformer mounting bracket and clamp
13660	Coil—Field coil (L20)
11469	Coil—Neutralizing coil (L19)
12667	Cone—Reproducer cone and dust cap (L18)
5118	Connector—3-contact male speaker cable connector
9778	Reproducer—Complete
12913	Transformer—Output transformer (T2)
11886	Washer—Spring washer to hold field coil securely

Prices quoted above are subject to change without notice.

