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RCA RZF 395 Service Manual (1969 No. 33)
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FILE
1969
No. 33

Transceiver Service Data

RZF 395

RCA Sales Corporation

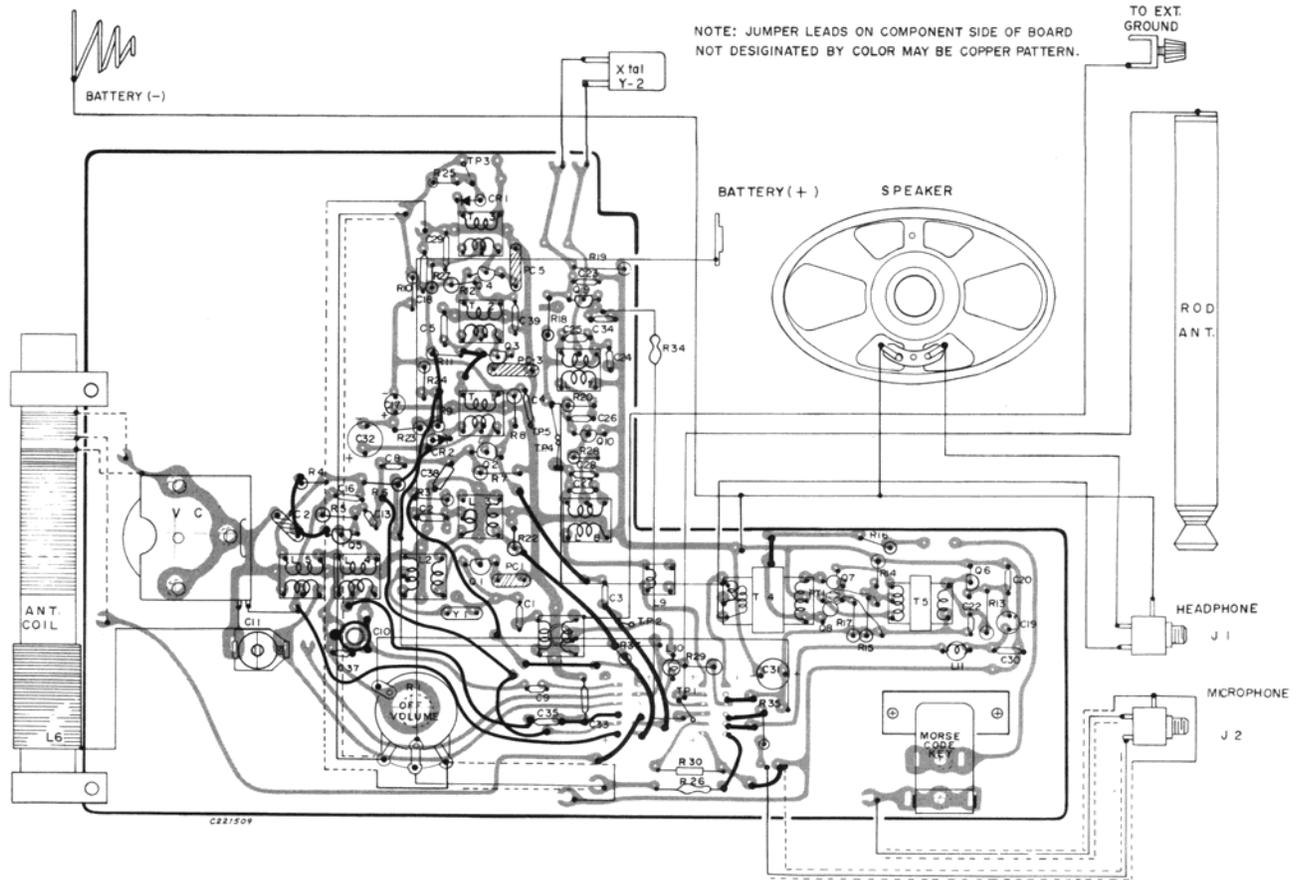
An RCA Corporation Subsidiary

Product Performance

600 North Sherman Drive, Indianapolis, Indiana 46201



Model RZF 395A—Blue

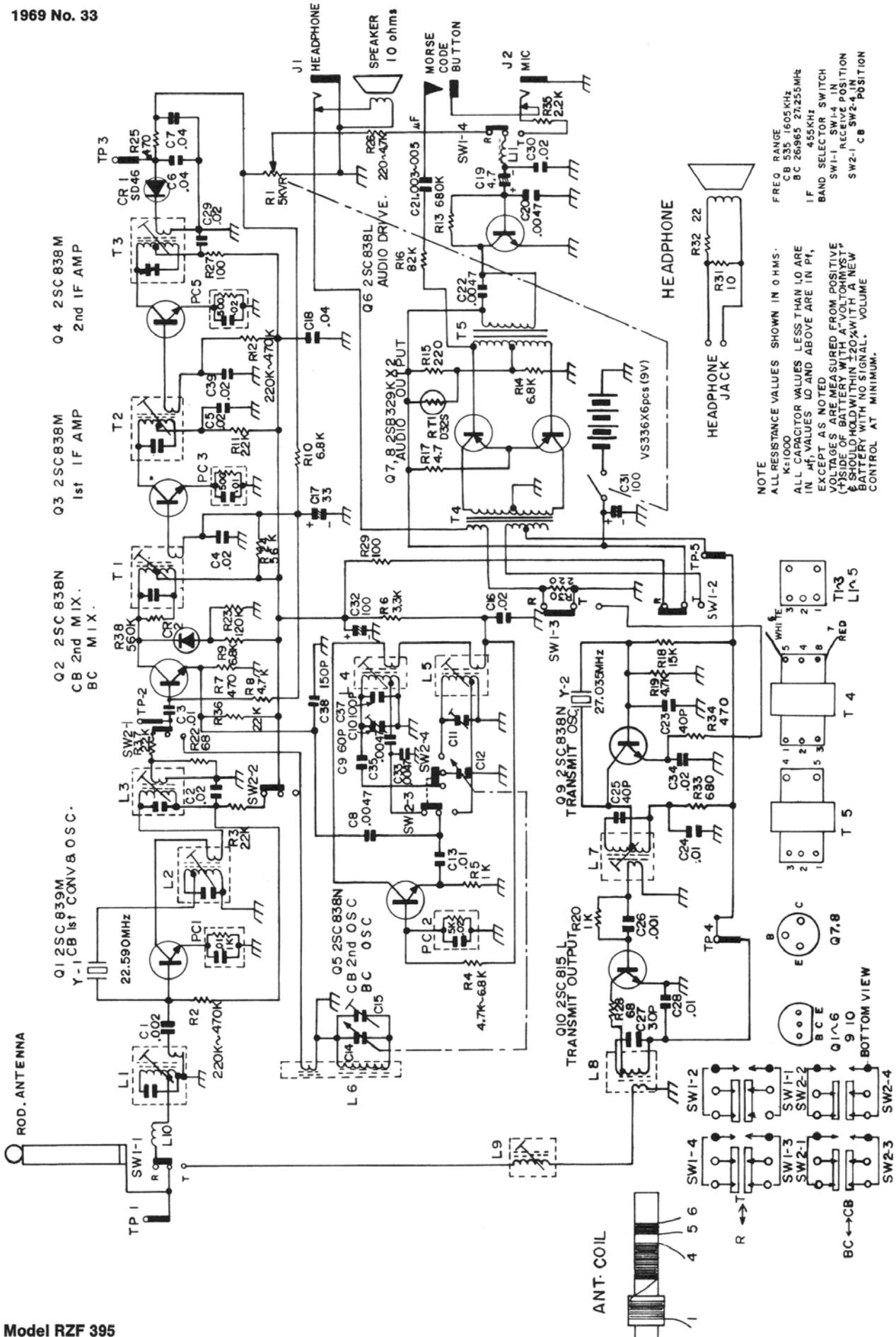


Component Location (Circuit Wiring)

1969 No. 33

First Edition—First Printing
Copyright 1969—RCA Sales Corporation
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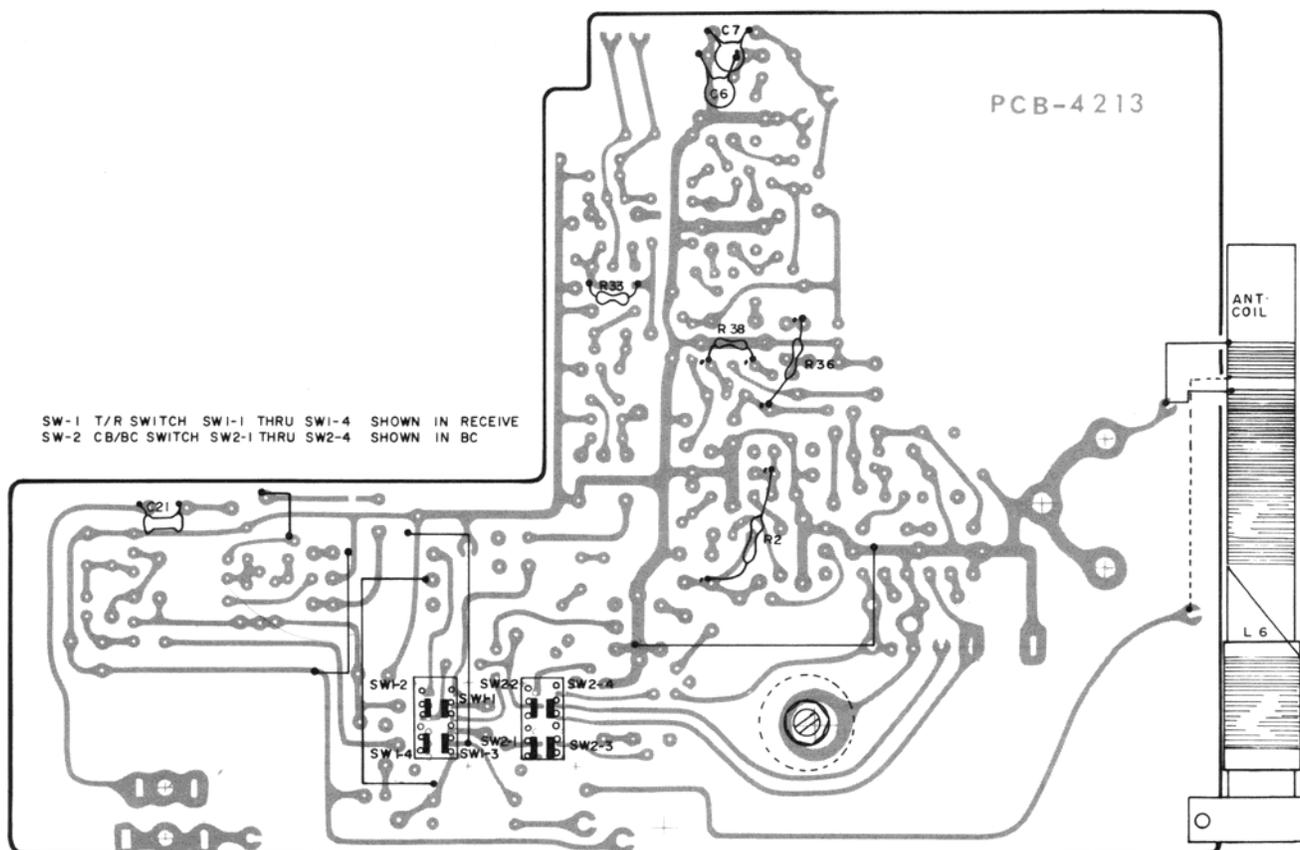
Model RZF 395



NOTE
 ALL RESISTANCE VALUES SHOWN IN OHMS.
 K=1000
 ALL CAPACITOR VALUES LESS THAN 10 ARE
 IN PF, VALUES 10 AND ABOVE ARE IN PF,
 EXCEPT AS NOTED
 VOLTAGES ARE MEASURED FROM POSITIVE
 (+) SIDE OF BATTERY WITH A VOLTOHMST
 SHOULD HOLD WITHIN 120 μ A WITH A NEW
 BATTERY WITH NO SIGNAL. VOLUME
 CONTROL AT MINIMUM.

FREQ RANGE
 CB 535-1605 KHZ
 BC 26965-27255 MHz
 IF 455 KHZ
 BAND SELECTOR SWITCH
 SW1-1 SW1-4 IN
 RECEIVE POSITION
 SW2-1 CB SW2-4 IN
 POSITION

Schematic Diagram



Circuit Wiring—Bottom View

TRANSISTOR VOLTAGE & STAGE

Q NO.	TYPE	Coll (V)	Base (V)	Emitt (V)	STAGE
Q 1	2 SC 839 (M)	6.1	1.8	1.1	CB 1st CONV & OSC
Q 2	2 SC 838 (N)	8.4 8.5	0.94 0.94	0.32 0.36	CB 2nd MIX. BC MIX.
Q 3	2 SC 838 (M)	7.4	0.99	0.28	1st IF AMP
Q 4	2 SC 838 (M)	8.4	1.4	0.71	2nd IF AMP
Q 5	2 SC 838 (M)	4.0	1.6	1.1	CB 2nd OSC BC OSC
Q 6	2 SC 838 (L)	8.5	0.69	0	AF AMP
Q 7	2 SB 329 (K)	0	8.8	9.0	AF OUTPUT
Q 8	2 SB 329 (K)	0	8.8	9.0	AF OUTPUT
Q 9	2 SC 838 (N)	7.1	1.9	2.1	CB TRANSMIT OSC
Q 10	2 SC 815 (L)	8.0	0	0	CB TRANSMIT OUTPUT
CR 1	SD 46				DET
CR 2	SD 46				AGC
RT -1	D 32 S				THERMISTOR

A201465

GENERAL DESCRIPTION

This portable base station transceiver/tunable citizens band receiver and AM receiver is fully transistorized. A single channel CB transmitter for use in the class D citizens band is incorporated.

The transmitter is crystal controlled and CB receiver is crystal controlled in the 1st conversion stage and tunable in 2nd conversion stage. Transmitter crystal originally supplied with this unit is for operation on channel 7 (27.035MHz). Receiver crystal is factory installed and no installation changes are necessary for other channel operation. Operation on any of the other 22 channels can be accomplished by substituting the proper crystals. Realignment is not normally required when crystals are changed.

This unit has been clarified to comply with Part No. 15, Subpart E, Section 5, 205 of the FCC regulations.

Battery Replacement

The source voltage for this instrument is 9 volts, six size D cells; RCA VS336 or equivalent. These are housed in a sub-panel compartment and access is through removable lid on front panel.

To Install or Replace Batteries

1. Remove the battery cover at the middle of the front panel. Move slide to left pull lid upward.

2. Two batteries are under front panel and must be installed prior to insertion of four in rear receptacle. Observe polarity as indicated on label.

3. Install the battery cover and slide the knob as indicated on battery cover.

Chassis Removal

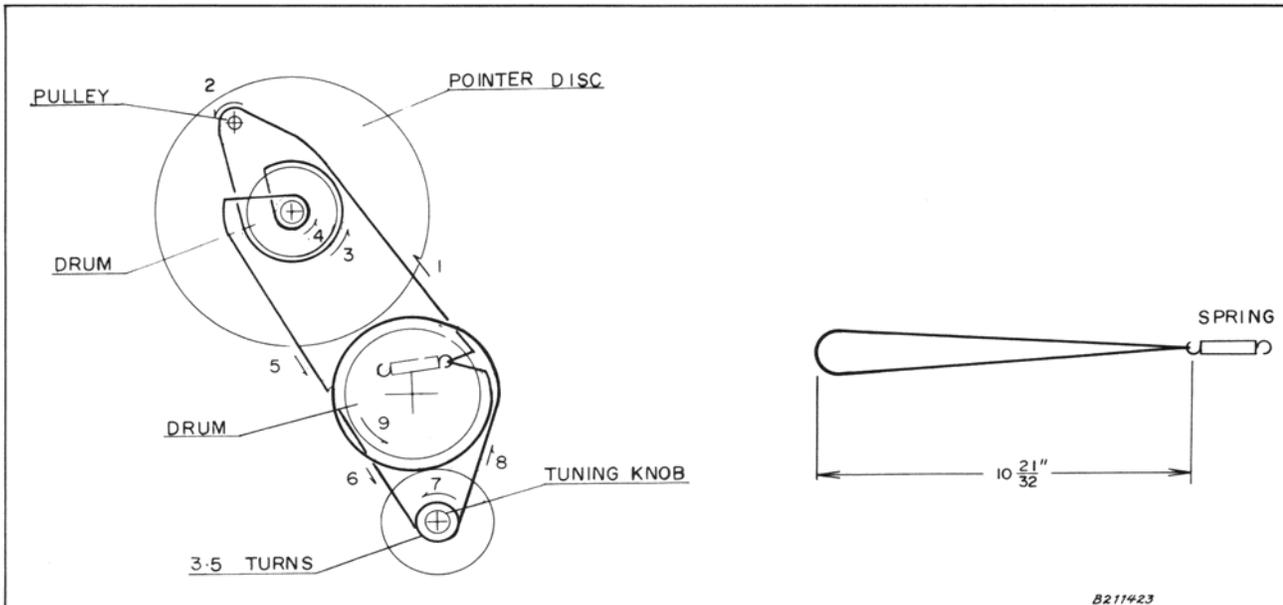
Before removing chassis, the unit should be switched off and batteries removed.

1. Pull out the tuning knob and volume knob.
2. Set the whip antenna in vertical position.
3. Loosen the screw under the tuning knob and two screws under the whip antenna groove.
4. Lift the panel and pull out the attached spring from the bottom of upper cabinet. Chassis assembly and front panel can be then separated from the cabinet.
5. To remove the printed board assembly, remove 7 screws on the printed board.

NOTE:

All transmitter adjustments or tests made while radiating energy or coincident with the servicing of this equipment for the purpose of restoring compliance with FCC regulation must be made by or under the immediate supervision and responsibility of a person holding a first

or second class commercial radio operator license who will be held responsible for the proper functioning of the equipment at the conclusion of such adjustments or tests.



Dial Cord Arrangement

ALIGNMENT PROCEDURES

INSTRUMENT REQUIRED

1. RF Signal Generator (RCA WR-50B or equivalent)
2. Vacuum-Tube Voltmeter (RCA WR-69A or equivalent)
3. Thin non-metallic shaft screwdriver alignment tool

GENERAL CONDITIONS

1. Signal input must be kept as low as possible to avoid AVC action. (Set output indicator to highest sensitivity.)
2. Standard modulation is 400 cycle at 30% amplitude.

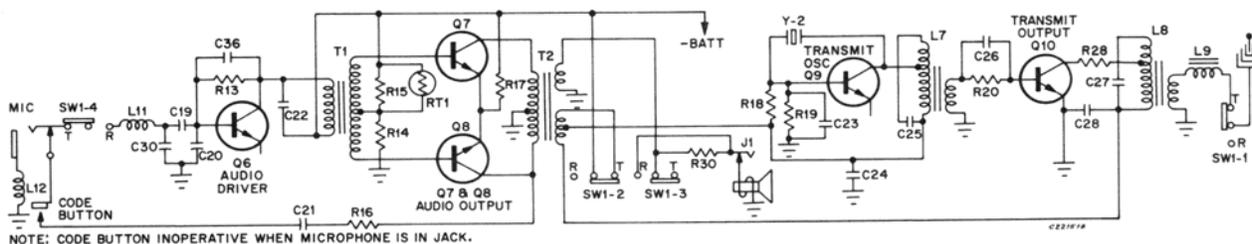
Step	Signal Source Connected to—	Output Indicator Connected to—	Set Signal to—	Set Radio Dial to—	Adjust—	Adjust for—	Step
1	Set function switch to BC						1
2	RF Signal Generator— A standard radiating loop or loop of wire placed near BC antenna	V.T.V.M.— across voice coil	455kHz	Gang closed	T1 (1st IF)	Max.	2
3					T2 (2nd IF)	Max.	3
4					T3 (3rd IF)	Max.	4
5	Repeat steps 2 thru 4 as necessary to obtain maximum sensitivity						5
6	RF Signal Generator— A standard radiating loop or loop of wire placed near BC antenna	V.T.V.M.— across voice coil	525kHz	Gang closed	L5 (Osc. coil)	Max.	6
7			1620kHz	Gang open	C11 (Osc. trim)	Max.	7
8			1400kHz	1400kHz (rock gang)	C15 (Ant. trim)	Max.	8
9			600kHz	600kHz (rock gang)	L6 (Ant. coil)	Max.	9
10	Repeat steps 6 thru 8 as necessary to obtain best tracking						10
11	Set function switch to CB						11
12	RF Signal Generator— whip antenna through 10pF dummy antenna	V.T.V.M.— across voice coil	26.965MHz	Channel 1 (rock gang)	L4 (Osc. coil)	Max.	12
13			27.255MHz	Channel 23 (rock gang)	C10 (Osc. coil)	Max.	13
14	Repeat steps 11 thru 13 as necessary to obtain best tracking						14

TRANSMITTER

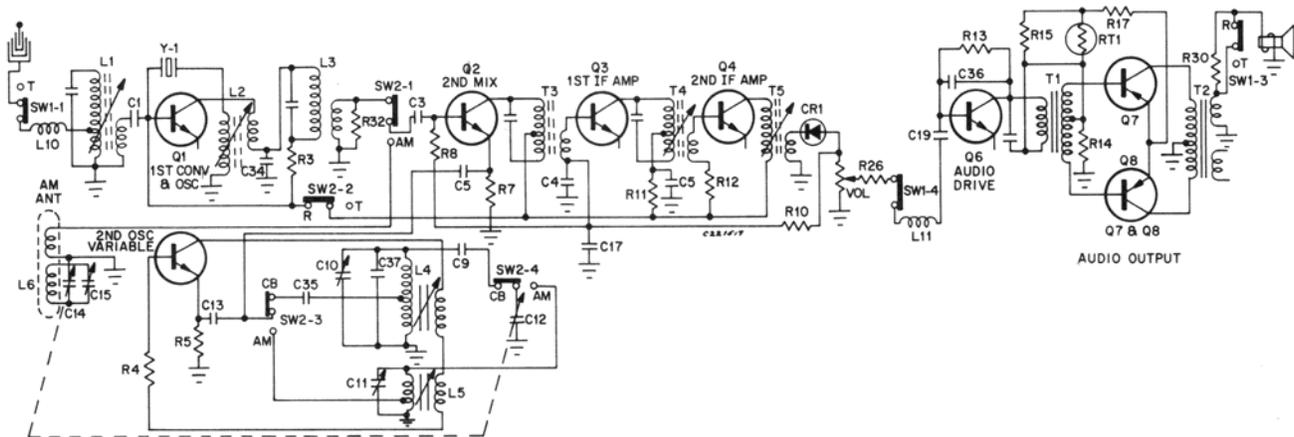
Alignment Conditions

1. CB/BC switch to be switched CB position.
2. TRANSMIT/RECEIVE switch to be switched TRANSMIT position.
3. Fully extend the whip antenna.
4. Remove the leadwire out of the TP4 and connect the DC ammeter between TP4 and the leadwire (+ for leadwire).
5. Field strength meter placed in position near extended antenna. Set up a field strength meter at the exact transmitting frequency.
6. Insert the plug of Microphone into Mic. jack J2 and hold the microphone in hand.
7. Turn the core of oscillator coil L7 for max. field intensity. (Core to be inside 1 turn from max.)
8. Turn the core of tank coil from min. reading of DC ammeter.
9. Turn the core of loading coil L9 for max. field intensity. (Core to be inside 1½ turn from max.)
10. Turn the core of L8 for 9.5mA to 11.5mA of DC ammeter reading.

SIMPLIFIED CIRCUIT—TRANSMIT MODE



SIMPLIFIED CIRCUIT—RECEIVE MODE



REPLACEMENT PARTS

NOTE: See Schematic for Values, Wattage and Tolerance of Standard Electrical Components not listed.

SYMBOL NO.	STOCK NO.	DESCRIPTION	SYMBOL NO.	STOCK NO.	DESCRIPTION
Radio Chassis RZF395A					
C1	165187	Capacitor—0.002 μ f 50v., GMV, cer.	O2	165190	Transistor—CB/BC mixer, 2SC838N
C2	117706	Capacitor—0.02 μ f +80—20%, 50 v., cer.	O3	129512	Transistor—I.F. amp.
C3	117604	Capacitor—0.01 μ f 50v., GMV, cer.	O4	129512	Transistor—I.F. amp.
C4	117779	Capacitor—0.02 μ f 50 v., GMV, cer.	O5	165190	Transistor—CB/BC osc., 2SC838N
C5	117706	Capacitor—0.02 μ f +80—20%, 50v., cer.	O6	129513	Transistor—A.F. amp.
C6	117799	Capacitor—0.04 μ f +80—20%, 50v., cer.	O7	165191	Transistor—output, 2SB329K
C7	117799	Capacitor—0.04 μ f +80—20%, 50v., cer.	O8	165191	Transistor—output, 2SB329K
C8	165188	Capacitor—0.0047 μ f 20%, 50v., cer.	O9	165190	Transistor—Transmitter osc., 2SC838N
C9	116220	Capacitor—60 μ f 5%, 50v., cer.	O10	165192	Transistor—Transmitter output
C10	165186	Capacitor—40 μ f, variable	R1	165193	Resistor—control, On/off, vol.
C11	165185	Capacitor—8 μ f, variable	RT1	129501	Thermistor
C12	165184	Capacitor—tuning	SW1	165194	Switch—CB/BC transmit
C13	117604	Capacitor—0.01 μ f 50v., GMV, cer.	SW2	165194	Switch—receiver
C14	165184	Capacitor—tuning	T1	129134	Transformer—input
C15	165184	Capacitor—variable	T2	165159	Transformer—output
C16	117706	Capacitor—0.02 μ f +80—20%, 50v., cer.	T3	129502	Transformer—I.F.
C17	126920	Capacitor—33 μ f 6.3v., elec.	T4	129379	Transformer—I.F.
C18	117799	Capacitor—0.04 μ f +80—20%, 50v., cer.	T5	165160	Transformer—I.F.
C19	127478	Capacitor—4.7 μ f 10v., elec.	Y1	165195	Crystal—receiver, 22.590MH
C20	165188	Capacitor—0.0047 μ f 20%, 50v., cer.	Y2	165196	Crystal—transmitter, 27.035MH
C21	117773	Capacitor—0.005 μ f 20%, 50v., mylar	MISCELLANEOUS		
C22	165188	Capacitor—0.0047 μ f 20%, 50v., cer.	165158	Antenna—Telescoping	
C23	116218	Capacitor—40 μ f 5%, 50v., cer.	165161	Belt—MIC./earphone holder	
C24	117604	Capacitor—0.01 μ f 50v., GMV, cer.	165156	Cabinet—top, blue	
C25	116218	Capacitor—40 μ f 5%, 50v., cer.	165157	Cabinet—bottom, blue	
C26	165183	Capacitor—0.001 μ f 50v., GMV, cer.	165162	Cover—battery	
C27	116221	Capacitor—30 μ f 5%, 50v., cer.	165163	Dial—Crystal	
C28	117604	Capacitor—0.01 μ f 50v., GMV, cer.	165164	Dial—channel indicator	
C29	117706	Capacitor—0.02 μ f +80—20%, 50v., cer.	165165	Drum—tuning capacitor	
C30	117706	Capacitor—0.02 μ f +80—20%, 50v., cer.	165166	Drum—dial indicator	
C31	129357	Capacitor—100 μ f 10v., elec.	165167	Emblem—RCA	
C32	129357	Capacitor—100 μ f 10v., elec.	165168	Headphone	
C33	165188	Capacitor—0.0047 μ f 20%, 50v., cer.	165169	Holder—crystal	
C34	117706	Capacitor—0.02 μ f +80—20%, 50v., cer.	165170	Knob—tuning, on/vol.	
C35	165188	Capacitor—0.0047 μ f 20%, 50v., cer.	165171	Knob—code key	
C37	118449	Capacitor—100 μ f 5%, 50v., cer.	165172	Label—morse code	
C38	165189	Capacitor—150 μ f 5%, 50v., cer.	165173	Microphone	
C39	117706	Capacitor—0.02 μ f +80—20%, 50v., cer.	127400	Nut—3 mm, pulley	
CR1	129474	Diode—detector	127622	Nut—2.6 mm, for L6	
CR2	129474	Diode—AGC	165174	Overlay—controls	
J1	129116	Jack—microphone	165175	Panel—around dial	
L1	165144	Coil—CB antenna	120287	Screw—3 × 8 mm, rod antenna & dial panel	
L2	165145	Coil—CB OSC.	123611	Screw—2.6 × 6 mm, tuning drum	
L3	165146	Coil—CB I.F.	123641	Screw—3 × 4 mm, rod antenna washer	
L4	165147	Coil—CB osc.	129274	Screw—2.6 × 8 mm, speaker, printed circuit board & L6	
L5	165148	Coil—BC osc.	165176	Shaft—code key	
L6	165149	Antenna—Ferrite Rod	165177	Speaker—10 ohm 0.5w.	
L7	165150	Coil—CB Transmitter osc.	165178	Spring—code key shaft	
L8	165151	Coil—tank	165179	Spring—code key	
L9	165153	Coil—transmitter loading	165180	Spring—battery cover	
L10	165152	Coil—receiver loading	165181	Terminal—battery, neg.	
L11	165154	Coil—choke	165182	Terminal—battery, pos.	
PC1	165155	Circuit—printed	123600	Washer—3 mm, rod antenna	
PC2	165156	Circuit—printed	— order from RCA Sales Corporation —		
PC3	165157	Circuit—printed	1407486-2	Book—customer instruction	
PC5	165157	Circuit—printed			
Q1	129512	Transistor—conv./osc.			

Specifications Subject to Change Without Notice

CONSULT YOUR RCA DISTRIBUTOR FOR REPLACEMENT PARTS AND ACCESSORIES