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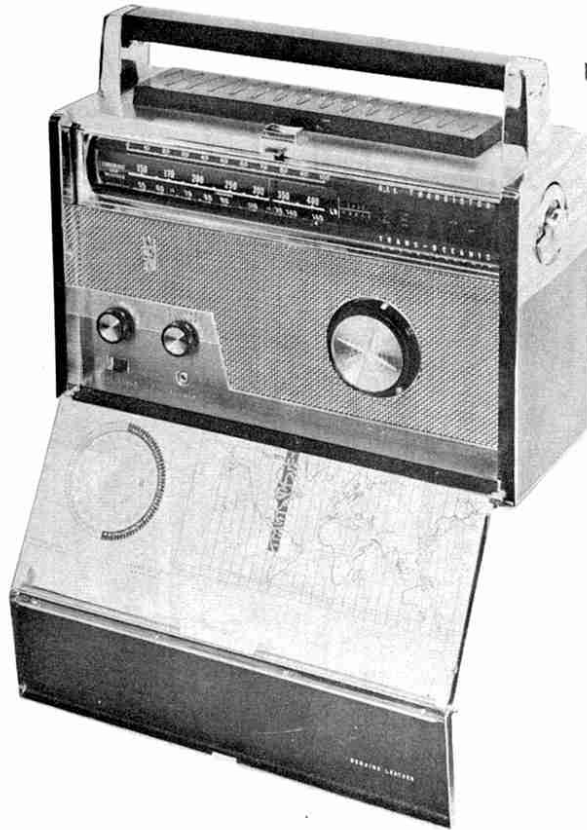
TH MODEL
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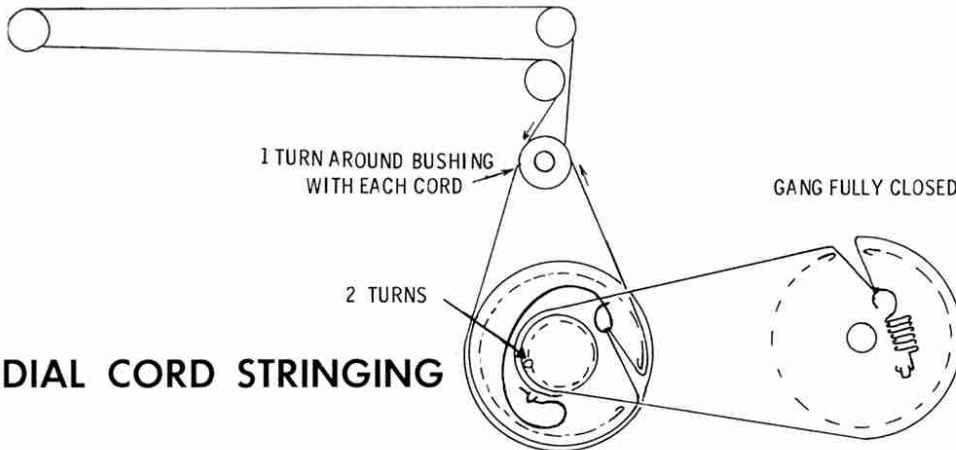
REFERENCE OFFICE

ZENITH MODEL
Royal 1000D



ZENITH MODEL
Royal 1000D

TRADE NAME	Zenith Model Royal 1000D		
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago 39, Illinois		
TYPE SET	Battery Operated 9 Band Transistorized Portable Receiver		
POWER SUPPLY	12 Volts DC (Receiver) 1.5 Volts DC (Dial Lamp)	RATING	17MA @ 12 Volts DC (No Signal, Min. Volume) 20MA @ 12 Volts DC (Signal Normal Volume)
TUNING RANGES	150-400KC 540-1600KC 2-4MC	4-9MC 9.4-10.1MC 11.4-12.3MC	14.6-15.8MC 17.1-18.5MC 20.7-22.5MC

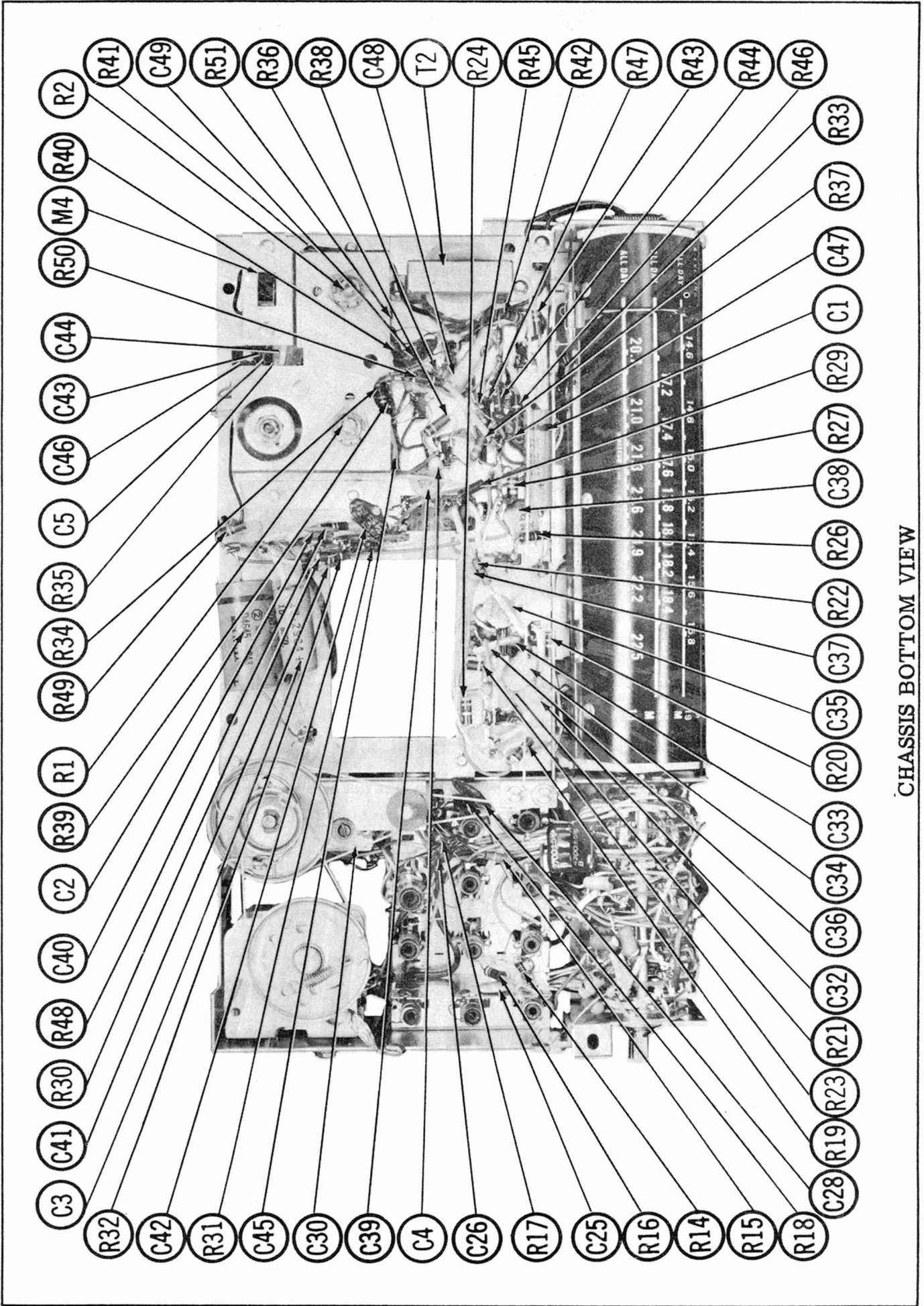


DIAL CORD STRINGING

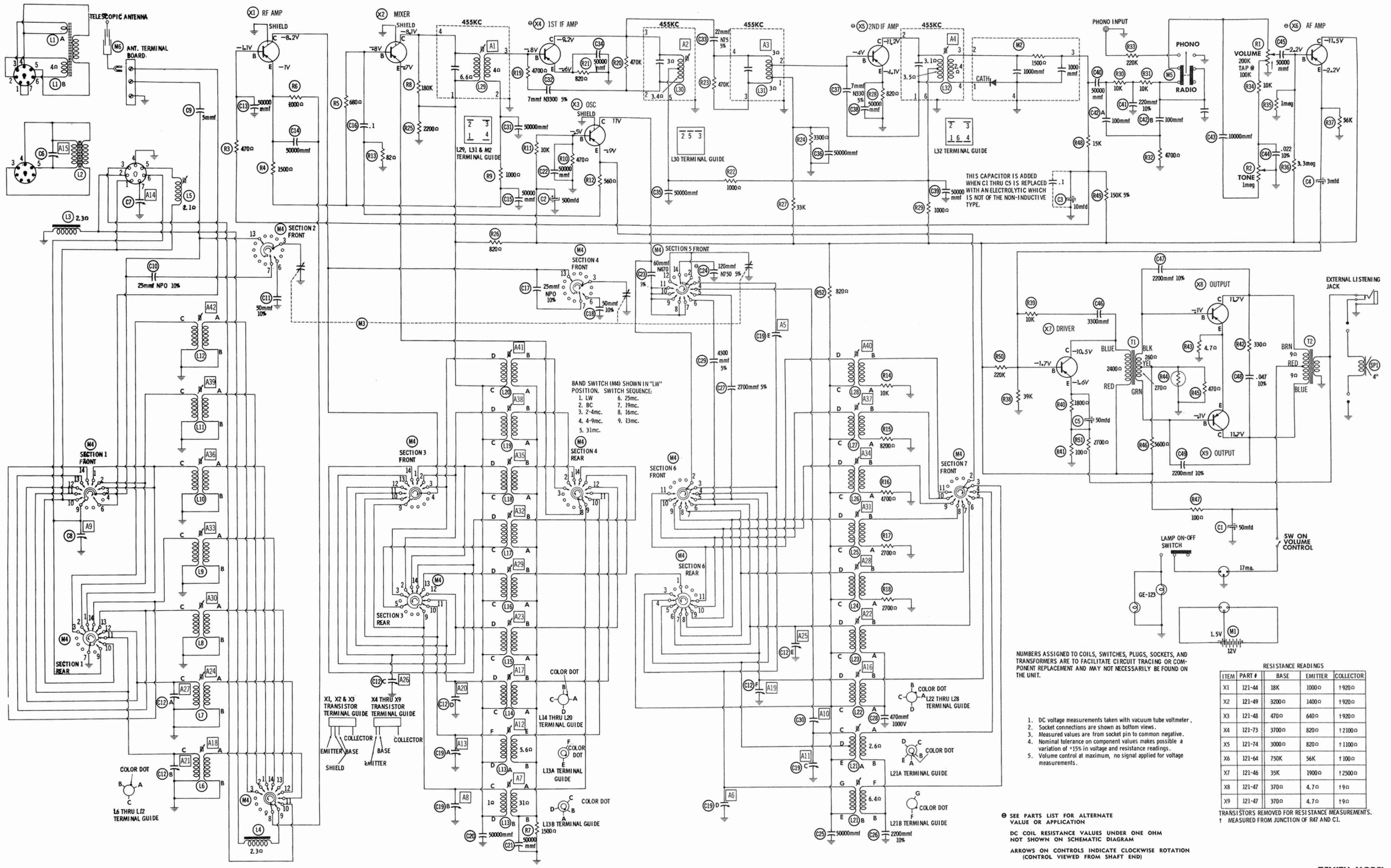
HOWARD W. SAMs & CO., INC. Indianapolis 6, Indiana

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CHASSIS BOTTOM VIEW



BAND SWITCH (MM) SHOWN IN "LW" POSITION. SWITCH SEQUENCE:
 1. LW 6.25mc.
 2. BC 7.19mc.
 3. 2-4mc.
 4. 4-9mc.
 5. 31mc.
 6. 29mc.
 7. 19mc.
 8. 16mc.
 9. 13mc.

THIS CAPACITOR IS ADDED WHEN C1 THRU C5 IS REPLACED WITH AN ELECTROLYTIC WHICH IS NOT OF THE NON-INDUCTIVE TYPE.

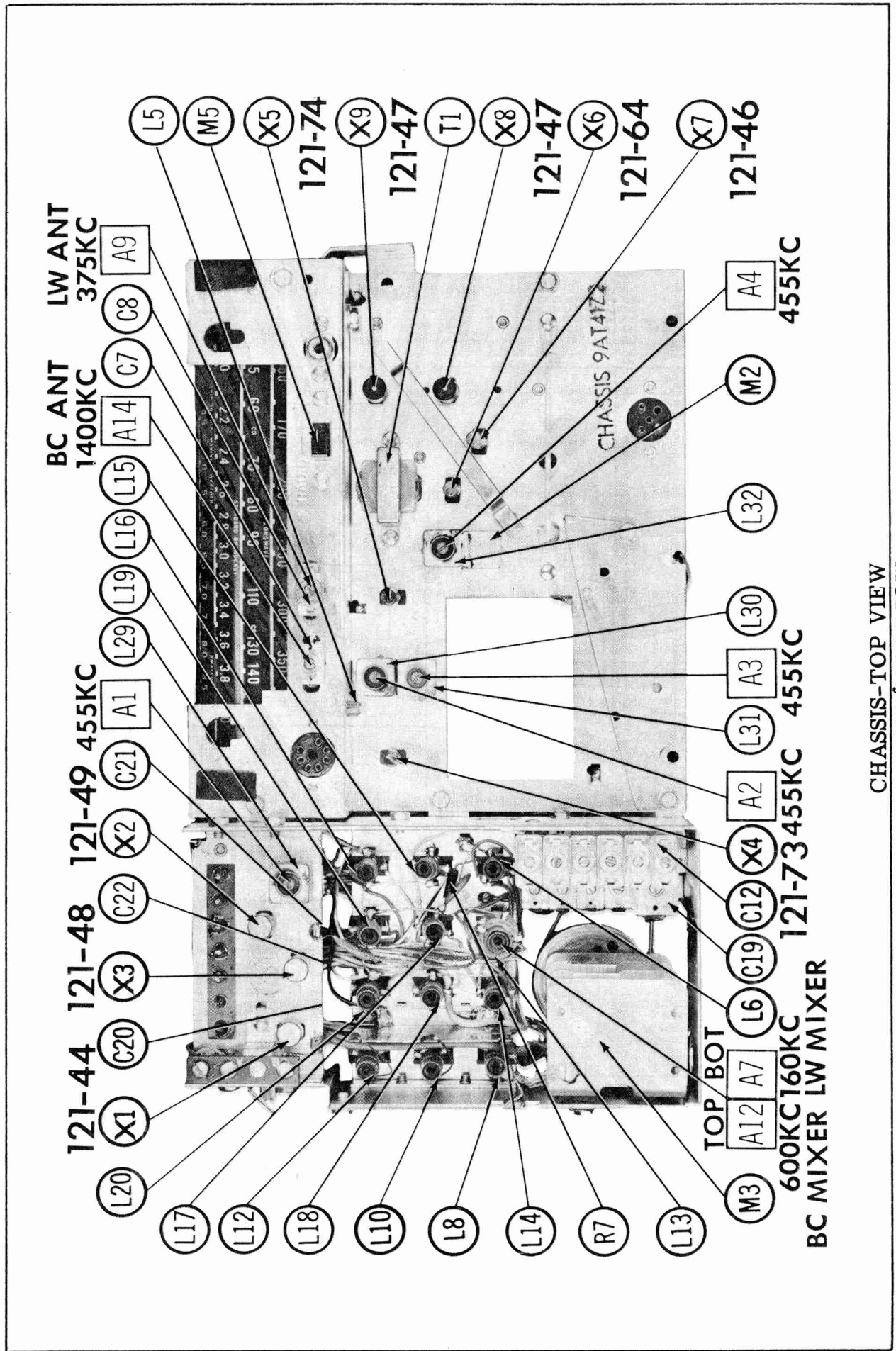
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

- DC voltage measurements taken with vacuum tube voltmeter.
- Socket connections are shown as bottom views.
- Measured values are from socket pin to common negative.
- Nominal tolerance on component values makes possible a variation of ±1% in voltage and resistance readings.
- Volume control at maximum, no signal applied for voltage measurements.

SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
 DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM
 ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

RESISTANCE READINGS			
ITEM	PART #	BASE	EMITTER COLLECTOR
X1	121-44	18K	1000Ω 1920Ω
X2	121-49	3200Ω	1400Ω 1920Ω
X3	121-48	470Ω	640Ω 1920Ω
X4	121-73	3700Ω	820Ω 12100Ω
X5	121-74	3000Ω	820Ω 11100Ω
X6	121-64	750K	56K 1100Ω
X7	121-46	35K	1900Ω 12500Ω
X8	121-47	370Ω	4.7Ω 19Ω
X9	121-47	370Ω	4.7Ω 19Ω

TRANSISTORS REMOVED FOR RESISTANCE MEASUREMENTS.
 † MEASURED FROM JUNCTION OF R47 AND C1.



LW ANT
375KC

BC ANT
1400KC

121-49 455KC

121-48

121-44

121-74

121-47

121-47

121-64

121-46

455KC

455KC

121-73

455KC

600KC

160KC

BC MIXER
LW MIXER

TOP BOT

CHASSIS 9AT41Z

ZENITH
MODEL Royal 1000D
CHASSIS 9AT41Z

FOLDER 20

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

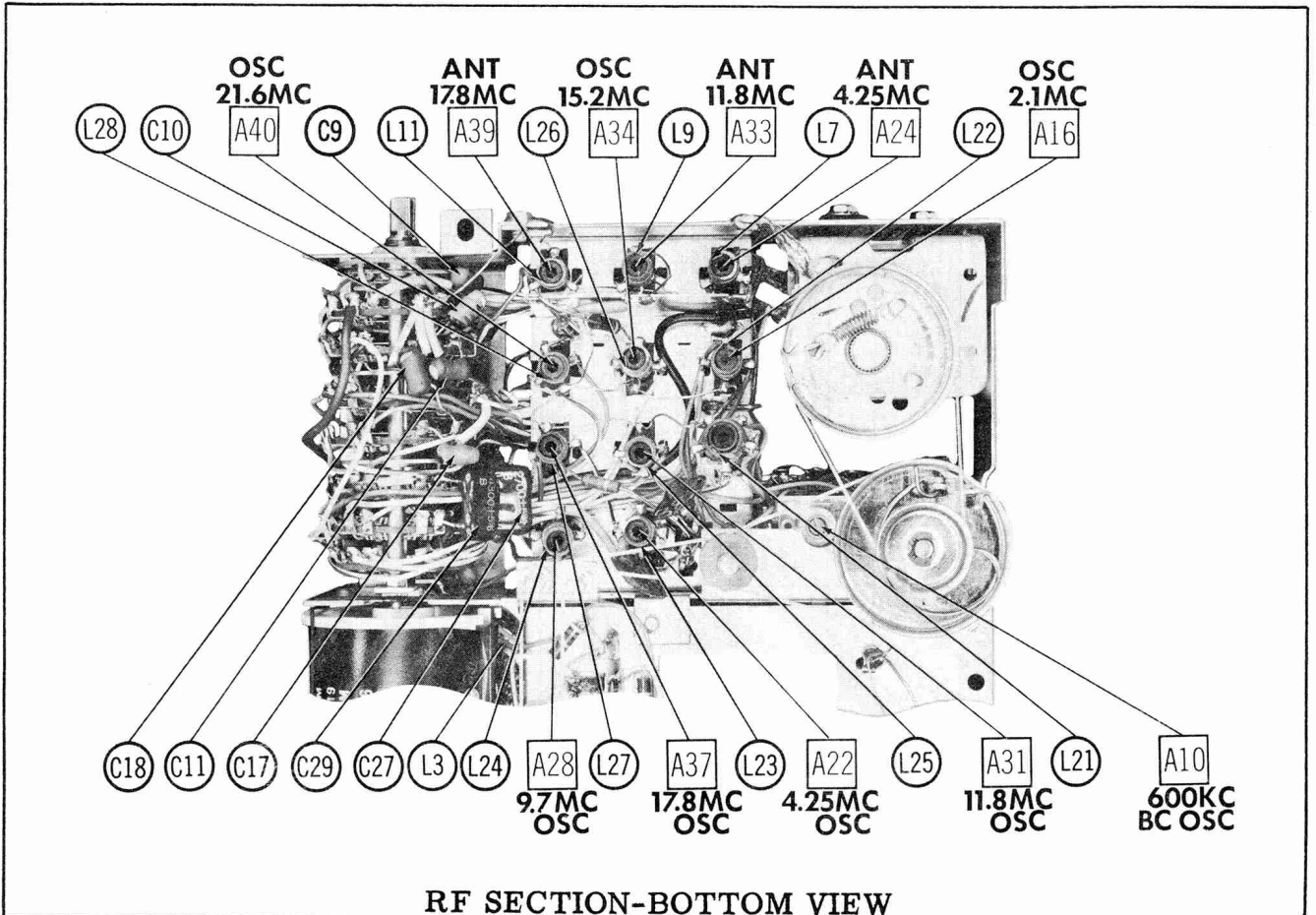
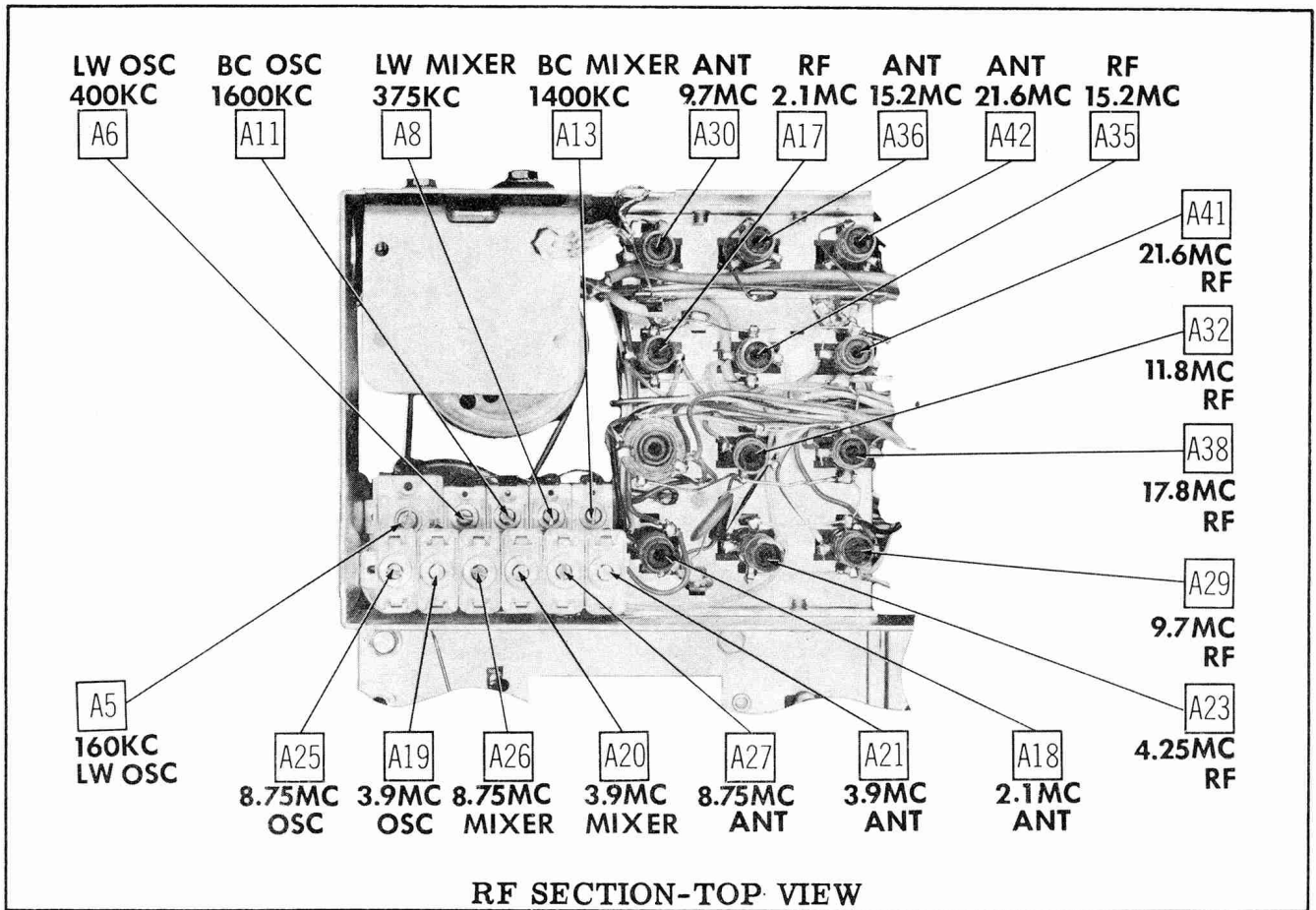
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1, A2, A3, A4 GENERAL CEMENT #8607, 9291
 WALSCO #2520, 2522, 2523, 2524, 2537

A5, A6, A8, A9, A10, A11, A13, A14, A15,
 A19, A20, A21, A25, A26, A27 GENERAL CEMENT #5000, 5003, 8276, 8290
 WALSCO #2512, 2525

A7, A12, A16, A17, A18, A22, A23, A24,
 A28 thru A42 GENERAL CEMENT #8606, 8606L, 8282, 9295
 WALSCO #2526, 2543, 2544, 2545

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Loop	455KC (400v Mod.)	BC	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.	Loop coupled loosely to long wave antenna.	160KC	LW	160KC	"	A5	Adjust for maximum output.
3.	"	400KC	"	400KC	"	A6	Adjust for maximum output. Repeat steps 2 and 3.
4.	"	160KC	"	160KC	"	A7	Adjust for maximum output.
5.	"	375KC	"	375KC	"	A8	Adjust for maximum output. Repeat steps 4 and 5.
6.	"	"	"	"	"	A9	Adjust for maximum output.
7.	Loop coupled loosely to BC antenna.	600KC	BC	600KC	"	A10	Adjust for maximum output.
8.	"	1600KC	"	1600KC	"	A11	Adjust for maximum output. Repeat steps 7 and 8.
9.	"	600KC	"	600KC	"	A12	Adjust for maximum output.
10.	"	1400KC	"	1400KC	"	A13	Adjust for maximum output. Repeat steps 9 and 10.
11.	"	"	"	"	"	A14	Adjust for maximum output.
12.	"	"	"	"	"	A15	Place detachable antenna in center of metal frame window. Adjust for maximum output.
13.	3' of wire approximately 1' from and parallel with extended whip antenna.	2.1MC	2-4MC	2.1MC	"	A16, A17, A18	Adjust for maximum output.
14.	"	3.9MC	"	3.9MC	"	A19, A20, A21	Adjust for maximum output. Repeat steps 13 and 14.
15.	"	4.25MC	4-9MC	4.25MC	"	A22, A23, A24	Adjust for maximum output.
16.	"	8.75MC	"	8.75MC	"	A25, A26, A27	Adjust for maximum output. Repeat steps 15 and 16.
17.	"	9.7MC	31M	9.7MC	"	A28, A29, A30	Adjust for maximum output.
18.	"	11.8MC	25M	11.8MC	"	A31, A32, A33	"
19.	"	15.2MC	19M	15.2MC	"	A34, A35, A36	"
20.	"	17.8MC	16M	17.8MC	"	A37, A38, A39	"
21.	"	21.6MC	13M	21.6MC	"	A40, A41, A42	"



PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	MFR PART No.	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	121-44	RF Amplifier		2N370		2N370	PNP
X2	121-49	Mixer		2N372		2N372	PNP
X3	121-48	Oscillator		2N371		2N371	PNP
X4	121-73	1st IF Amplifier		2N409	2N483	2N409	PNP (Alt. #121-75)
X5	121-74	2nd IF Amplifier		2N407	2N482	2N407	PNP (Alt. #121-76)
X6	121-64	1st AF Amplifier		2N109	2N362	2N109	PNP
X7	121-46	Driver		2N270	2N360	2N270	PNP Matched
X8	121-47	Output		2N270	2N360	2N270	PNP
X9	121-47	Output		2N270	2N360	2N270	PNP

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	VOLT.	REPLACEMENT DATA				NOTES	
			ZENITH PART No.	AEROVOX PART No.	CORNELL DUBILIER PART No.	MALLORY PART No.		SPRAGUE PART No.
C1	50	12	22-2883	SRE12V50	BBR50-25	TT15X50	ML50-15	TE-1132
C2	500	12	22-2985	PRES12V500	BR5001	TC1505	TD-500-15	TVA-1132
C3	10	12	22-2884	SRE25V10	BBR10-25	TT12X10	ML10-15	TE-1128
C4	3	12	22-2884	XP1-2003	EC5-15	TT12X3	ML4-15	TE-1122
C5	50	12	22-2883	SRE12V50	BBR50-25	TC29	ML50-15	TE-1133

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	VOLT.	TOL.	REPLACEMENT DATA				NOTES
				ZENITH PART No.	AEROVOX PART No.	CORNELL DUBILIER PART No.	MALLORY PART No.	
C6				22-2983				
C7				22-2989				
C8				22-2989				
C9	5			22-1865	SI 5	C10V5C	D6-050	5GA-V5
C10	25		NPO 10%	22-1392	NPO-SI 25	C10Q25C	TCZ-25	5TCC-Q25S 10%*
C11	50		10%	22-1761	NPO-SI 50	C10Q5C	TCZ-50	5GA-Q5S 10%*
C12A								
C				22-2969				
C								
C								
C								
C								
C								
C13	50000	25		22-2728	C-80V-503AM	DA-503	DA-503	TG-850
C14	50000	25		22-2728	C-80V-503AM	DA-503	DA-503	TG-850
C15	50000	25		22-2728	C-80V-503AM	DA-503	DA-503	TG-850
C16	.1	50		22-2998	P285N-1	DDA-104	GTM-101	2WF-P10
C17	25		NPO 10%	22-1392	NPO-SI 25	TCZ-25	TCZ-25	5TCC-Q25S 10%*
C18	50		10%	22-1761	NPO-SI 50	TCZ-50	TCZ-50	5GA-Q5S 10%*

CAPACITORS (cont)

ITEM No.	RATING CAP.	VOLT.	TOL.	REPLACEMENT DATA				NOTES
				ZENITH PART No.	AEROVOX PART No.	CORNELL DUBILIER PART No.	MALLORY PART No.	
C19A				22-3048				
C								
C								
C								
C								
C20	50000	25		22-2728	C-80V-503AM	DA-503	H-05S5	TG-850
C21	50000	25		22-2728	C-80V-503AM	DA-503	H-05S5	TG-850
C22	50000	25		22-2728	C-80V-503AM	DA-503	H-05S5	TG-850
C23	60		N470 5%	22-2979				
C24	120		N750 2%					
C25	50000	25		22-2728	C-80V-503AM	DA-503	H-05S5	5TCU-T12S 2%*
C26	2200		10%	22-18	DI 2200		JL-222	5GA-D22S 10%*
C27	2700		5%	22-2981	ADM-19-272		IR5D27	MS-227
C28	470	1000		22-6	HVD-15-470	DD-471	BYA10T47	5GA-T47
C29	4300		5%	22-2982	ADM-20-432		IR5D43	MS-243
C30				22-3049				
C31	50000	25		22-2728	C-80V-503AM	DA-503	H-05S5	TG-850
C32	7		N330 5%	22-2978				
C33	22		N75 5%	22-2372				
C34	50000	25		22-2728	C-80V-503AM	DA-503	H-05S5	TG-850
C35	50000	25		22-2728	C-80V-503AM	DA-503	H-05S5	TG-850
C36	50000	25		22-2728	C-80V-503AM	DA-503	H-05S5	TG-850
C37	7		N330 5%	22-2978				
C38	50000	25		22-2728	C-80V-503AM	DA-503	H-05S5	TG-850
C39	50000	25		22-2728	C-80V-503AM	DA-503	H-05S5	TG-850
C40	50000	25		22-2728	C-80V-503AM	DA-503	H-05S5	TG-850
C41	220		10%	22-2703	DI 220		L10T22	5GA-T22S 10%*
C42A	100			22-22	BPD-0001	DD-101	UC-531	5GA-T1
B								
C43	100000			22-3	BPD-0001	DD-101	UC-531	5GA-T1
C44	.022	50	10%	22-2986	BPD-01	DD-103	BYA10S1	5HK-S1
C45	50000	50		22-2728	C-80V-503AM	DA-503	STM-IS22	2WF-S22
C46	3300			22-11	BPD-0033	DD-332	GTM-U122	TG-850
C47	2200		10%	22-18	DI 2200		B-233	5HK-D33
C48	.047	50	10%	22-3045			JL-222	5GA-D22S 10%*
C49	2200		10%	22-18	DI 2200		JL-222	5GA-D22S 10%*

① Some versions may use 135mmf N750 2% in this application (Part #22-3067).
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No.	RATING RESIST. ANCE	WATTS	REPLACEMENT DATA				INSTALLATION NOTES
			ZENITH PART No.	CAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
RIA	200K	Switch	63-4006				Volume, Tap @ 100K Power Off-On Tone
R2	1meg	1/2	63-4018				

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		ZENITH PART No.	NOTES
	OHMS	WATT		
R3	470Ω		63-1771	
R4	1500Ω		63-1783	
R5	680Ω		63-1779	
R6	1000Ω		63-1786	
R7	1500Ω		63-1783	
R8	180K		63-1880	
R9	1000Ω		63-1786	
R10	470Ω		63-1771	
R11	10K		63-1827	
R12	560Ω		63-1775	
R13	82Ω		63-1740	
R14	10K		63-1827	
R15	8200Ω		63-1824	
R16	4700Ω		63-1813	
R17	2700Ω		63-1803	
R18	2700Ω		63-1803	
R19	4700Ω		63-1814	
R20	470K		63-1888	
R21	820Ω		63-1782	
R22	1000Ω		63-1786	
R23	470K		63-1898	
R24	3300Ω		63-1806	
R25	2200Ω		63-1800	
R26	820Ω		63-1782	
R27	33K		63-1848	
R28	820Ω		63-1782	
R29	1000Ω		63-1786	
R30	10K		63-1827	
R31	10K		63-1827	
R32	4700Ω		63-1813	
R33	220K		63-1883	
R34	10K		63-1827	
R35	1meg		63-1912	
R36	3.3meg		63-1923	
R37	56K		63-1859	
R38	39K		63-1852	
R39	10K		63-1828	
R40	1800Ω		63-1796	
R41	100Ω		63-1743	
R42	330Ω		63-1764	
R43	4.7Ω		63-4530	
R44	470Ω		63-3663	
R45	63-1772		63-1772	
R46	5600Ω		63-1817	
R47	100Ω		63-1744	
R48	15K		63-1834	
R49	150K 5%		63-1875	
R50	220K		63-1884	
R51	2700Ω		63-1803	
R52	820Ω		63-1782	

Temp. Compensating

COILS (cont)

ITEM No.	USE	ZENITH PART No.	REPLACEMENT DATA				NOTES
			Gramer PART No.	Meissner PART No.	Meritt PART No.	Miller PART No.	
L13A	BC RF Coil	S-43364					
B	LW RF Coil						
L14	2-4MC RF Coil	S-42097					
L15	4-9MC RF Coil	S-42098					
L16	9.4-10MC RF Coil	S-42099					
L17	11.4-12.2MC RF Coil	S-42100					
L18	14.7-15.7MC RF Coil	S-42101					
L19	17.1-18.5MC RF Coil	S-42102					
L20	20.7-22.4MC RF Coil	S-42103					
L21A	BC Osc. Coil	S-43363					
B	LW Osc. Coil						
L22	2-4MC Osc. Coil	S-42082					
L23	4-9MC Osc. Coil	S-42083					
L24	9.4-10MC Osc. Coil	S-42084					
L25	11.4-12.2MC Osc. Coil	S-42085					
L26	14.7-15.7MC Osc. Coil	S-42086					
L27	17.1-18.5MC Osc. Coil	S-42087					
L28	20.7-22.4MC Osc. Coil	S-42088					
L29	1st IF Trans.	95-1563					
L30	2nd IF Prl.	95-1564					
L31	2nd IF Sec.	95-1565					
L32	3rd IF Trans.	95-1590					

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO	REPLACEMENT DATA				NOTES
		ZENITH PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	PRI. 2 SEC. 1	95-1567				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE	REPLACEMENT DATA				NOTES
		ZENITH PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	PRI. 600Ω SEC. 3-4Ω C.T	95-1551				

COILS (RF-IF)

ITEM No.	USE	ZENITH PART No.	REPLACEMENT DATA				NOTES
			Gramer PART No.	Meissner PART No.	Meritt PART No.	Miller PART No.	
L1A	BC Loopstick	S-43594					
B	LW Loopstick						
L2	Portable Loopstick	S-42212					
L3	455KC Trap Coil	95-1599	19-1015		4631	VP-2	
L4	455KC Trap Coil	95-1599	19-1015		4631	VP-2	
L5	Ant. Loading Coil	S-42089					
L6	2-4MC Ant. Coil	S-42089					
L7	4-9MC Ant. Coil	S-42090					
L8	9.4-10MC Ant. Coil	S-42091					
L9	11.4-12.2MC Ant. Coil	S-42092					
L10	14.7-15.7MC Ant. Coil	S-42093					
L11	17.1-18.5MC Ant. Coil	S-42094					
L12	20.7-22.4MC Ant. Coil	S-42095					

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	TYPE		REPLACEMENT DATA		NOTES
	SIZE	FIELD	ZENITH PART No.	QUAM PART No.	
SP1	4"	PM	3-410	4A1	

BATTERIES

ITEM No.	VOLTAGE	ZENITH PART No.	REPLACEMENT DATA			NOTES
			BURGESS	EVEREADY	MALLOYRY	
MI	12V 1.5V	Z2NL ① Z2NL	"A" 2R ① 2R	"B" 950 ① 950	"A" M-13R ① "B" M-13R	9 used, Receiver Power Dial Light Power

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M2	Diode Det. Assem.		
M3	Tuning Cap.	22-3050	Includes Diode (part #103-22), 1500Ω Resistor, 2 (1000mmf) capacitors
M4	Switch	85-602	3 Gang (Ant.13-504mmf, RF 13-504mmf, Osc.13-504mmf) Band
B	Switch Ass'y	S-43367	Includes Bandswitch and Colls
M5	Switch	85-495	Radio-Phone (DP/DT)
M6	Antennae	S-42207	Telescopic

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	46-1809	Tuning
Knob	46-2005	Volume-On-Off
Knob	46-2006	Tone
Knob	46-1825	Band Selector
Knob	46-1812	Antenna Release
Knob	46-1810	Release
Cabinet Top Plate	57-2371	Left
Cabinet End Plate	57-2372	Right
Cabinet End Plate	57-2373	Band Selector
Trim Plate	57-2379	Tuning
Indicator Plate	57-2416	Band Selector
Top Door	S-44161	Includes Bushing Assembly
Leather Material	S-44815	Includes Trim Strip and Leather Cover Assembly
Leather Material	110-303	2 used on end plate
Leather Material	110-304	Cabinet Support Bracket
Leather Material	110-305	Lower Front Door
Leather Material	110-307	Inside Top Door
Leather Material	110-319	Rear Door
Handle	S-42289	Includes Pin Assembly
Handle	38-205	Bottom Section
Dial Pointer	39-330	
Dial Drum	S-45369	
Dial Crystal	182-236	
Chart Book	202-1357	Shortwave

WIRING DATA

General-use Unshielded Hook-up Wire Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

