

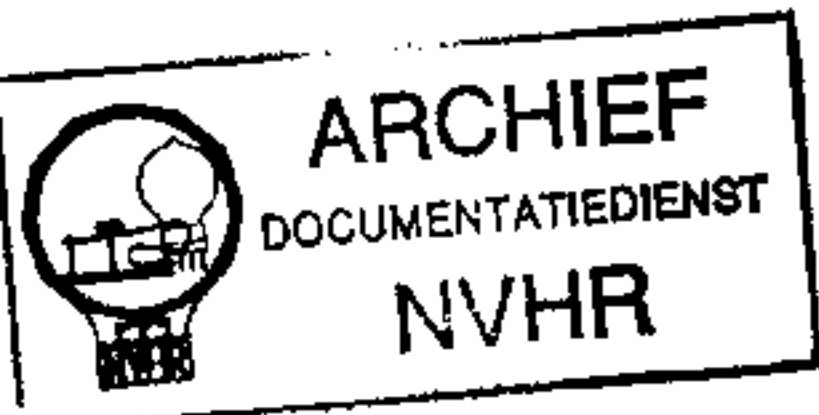
PHOTOFACT® Folder

with CIRCUITRACE®

COLUMBIA
MODELS 400B, G, R

Met dank aan Jef Bos

led. Ver. v. Historie v/d Radio



TRADE NAME	Columbia Models 400B, 400G, 400R		
MANUFACTURER	CBS Electronics, 100 Endicott Street, Danvers, Mass.		
TYPE SET	Battery Operated Transistorized Portable AM Receiver		
POWER SUPPLY	9 Volts DC		
TUNING RANGE—BROADCAST	535 — 1605KC	RATING	13MA @ 9 Volts DC

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.

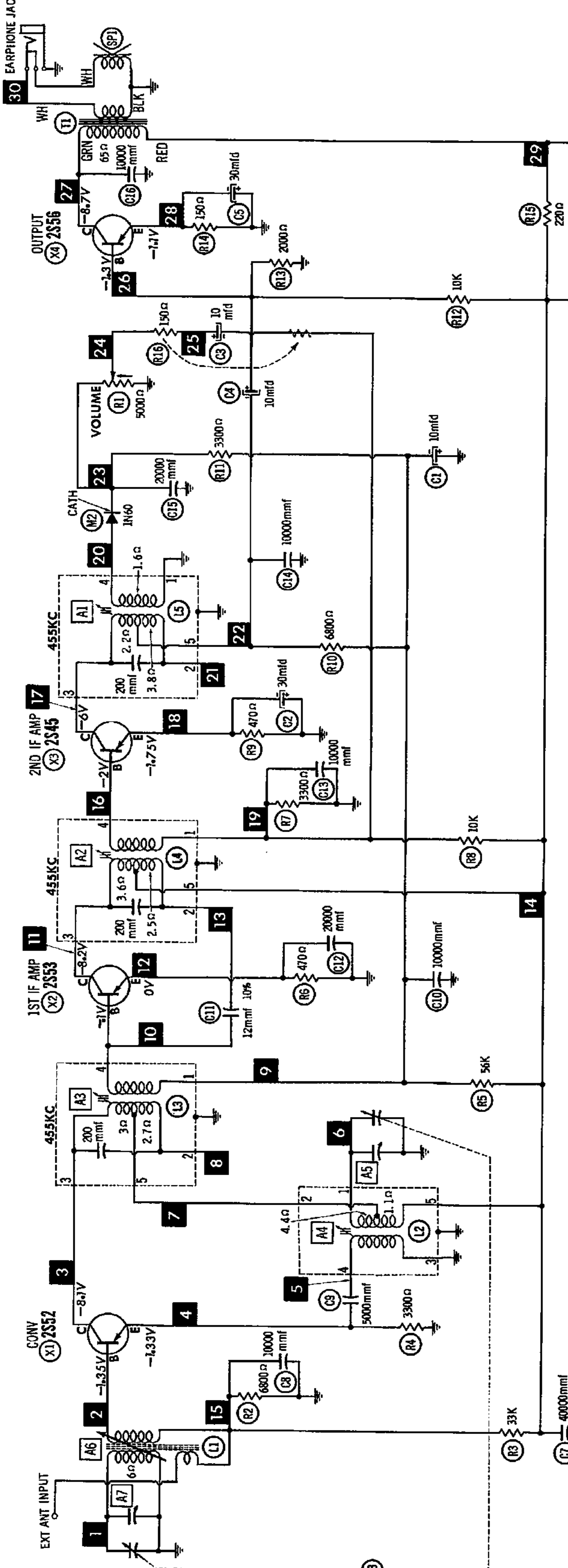
Suggested Alignment Tools: A1, A2, A3, A4... GENERAL CEMENT #5004, 5009, 8195, 8274, 8275, 8607, 8728, 8987, 8988, 8989, 9291
 WALSCO #2515, 2520, 2522, 2523, 2531, 2532, 2534, 2537, 2538
 A5, A7..... GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089
 WALSCO #2512, 2525, 2528

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side to antenna jack. Low side to chassis.	455KC (400% Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2 A3	Adjust for maximum output.
2.	Loop	640KC	640KC	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.	"	1240KC	1240KC	"	A5	Adjust for maximum output. Repeat Steps 2 and 3.
4.	"	640KC	640KC	"	A6	Adjust for maximum output.
5.	"	1240KC	1240KC	"	A7	Adjust for maximum output. Repeat Steps 4 and 5.

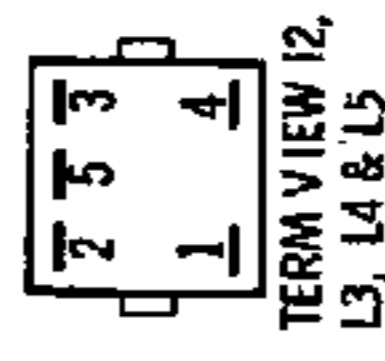
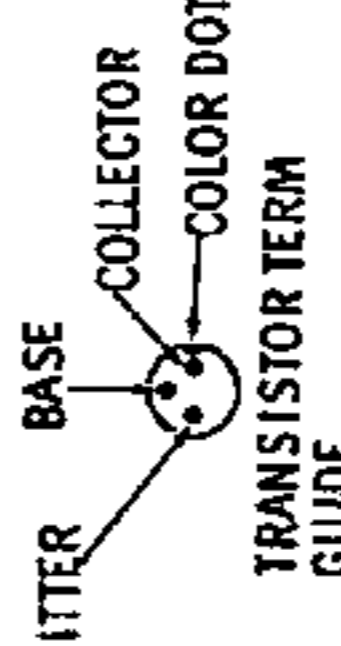
HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of KF068

the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1960 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America



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.



1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of $\pm 15\%$ in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

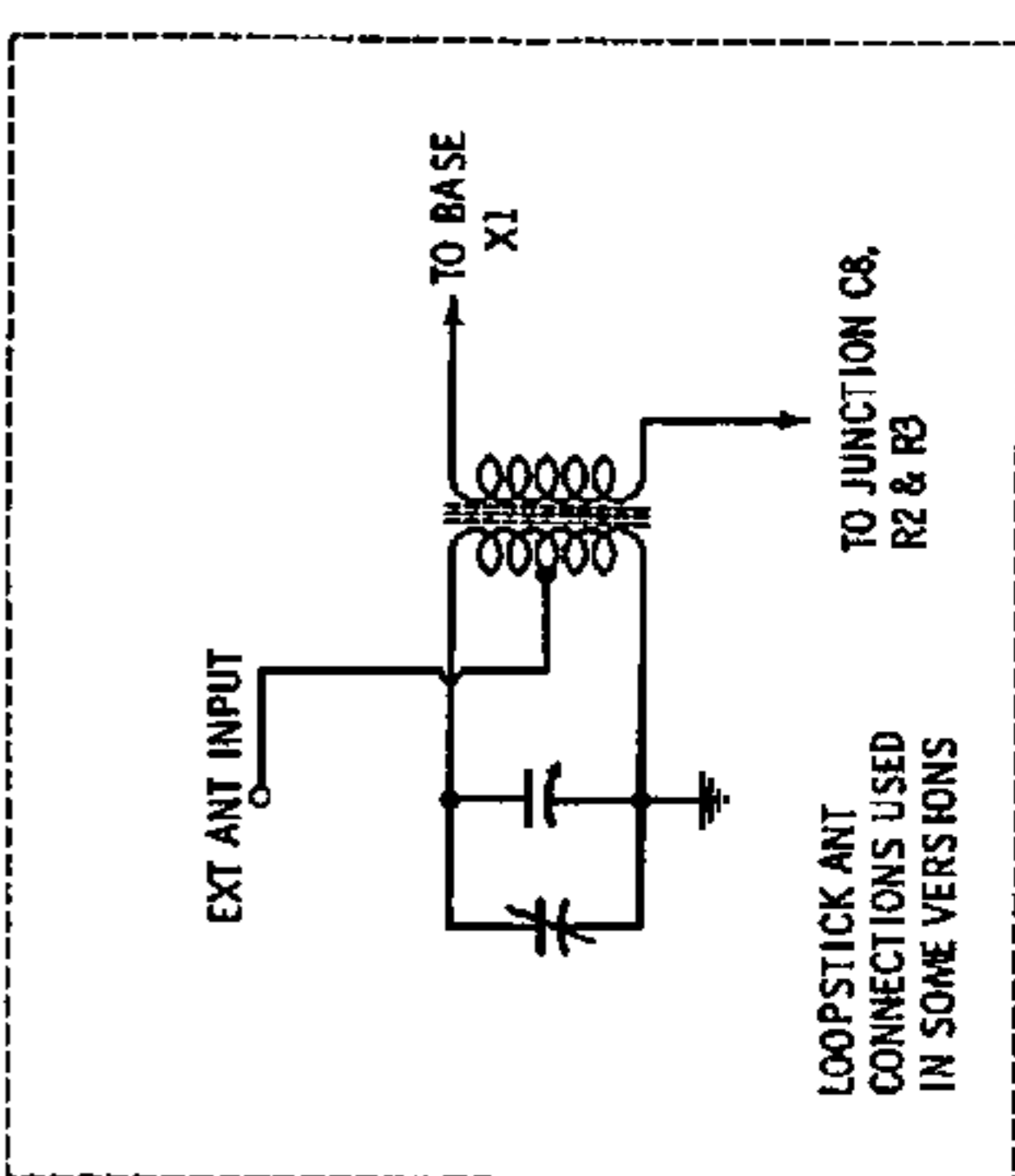
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

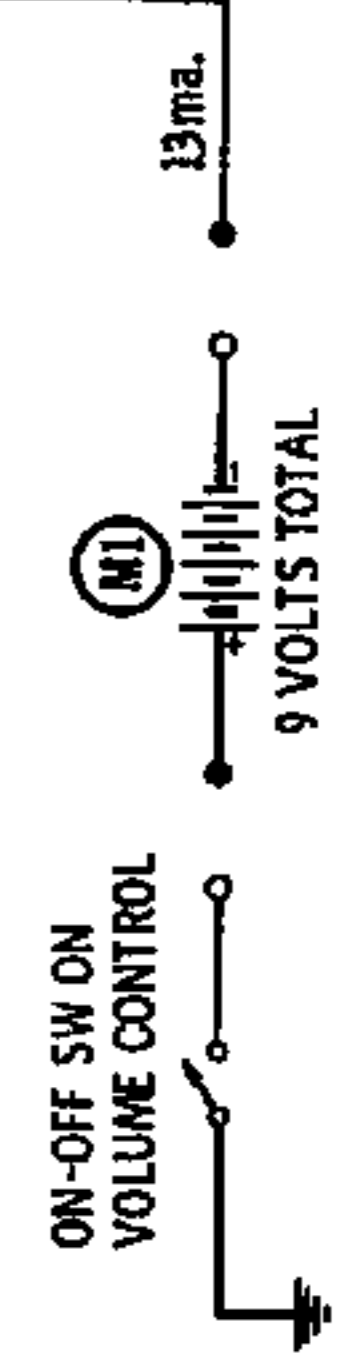
A PHOTOFACIT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

© Howard W. Sams & Co., Inc. 1960



LOOPSTICK ANT CONNECTIONS USED IN SOME VERSIONS

TO JUNCTION C8, R2 & R9



RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

COLUMBIA
MODELS 400B, G, R

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2S52	Converter 1st IF Amplifier 2nd IF Amp. -AF Amp. Output	2N412	2N486	2N412	PNP
X2	2S53		2N410	2N483	2N410	PNP
X3	2S45		2N410	2N483	2N410	PNP
X4	2S56		2N408	2N632	2N408	PNP

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		COLUMBIA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
	CAP.	VOLT.							
C1	10	3		PTT3030	NLW10-3	TT3X10	ML10-6	TE-1053	
C2	30	3			NLW30-8	TT6X30	ML30-3	TE-1092	
C3	10	3			NLW10-3	TT3X10	ML10-6	TE-1053	
C4	10	10			NLW10-10	TT12X10	ML10-12	TE-1114	
C5	30	3			NLW30-8	TT6X30	ML30-3	TE-1092	
C6	10	10			NLW10-10	TT12X10	ML10-12	TE-1114	

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	REMARKS	REPLACEMENT DATA					SPRAGUE PART No.					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.						
C7	40000		C80V103AM	DDM-103	H-05S1	CCD-502	TA-110	TG-S10					
C8	10000							C80V502AM	DDM-502	H-05D5		TA-250	TG-D50
C9	5000							C80V103AM	DDM-103	H-05S1	CCTO-120	TA-110	TG-S10
C10	10000								TCZ-12	C10Q12C		CNO-412	10TCC-Q12
C11	12 10%											TA-120	TG-S20
C12	20000							C80V203AM	DDM-203	H-05S2		TA-110	TG-S10
C13	10000							C80V103AM	DDM-103	H-05S1		TA-110	TG-S10
C14	10000							C80V103AM	DDM-103	H-05S1		TA-110	TG-S10
C15	20000							C80V203AM	DDM-203	H-05S2		TA-120	TG-S20
C16	10000							C80V103AM	DDM-103	H-05S1		TA-110	TG-S10

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES	
	RESISTANCE	WATTS	COLUMBIA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.		MALLORY PART No.
R1	5000Ω	1/4	9H645	B16-214				Volume & Switch

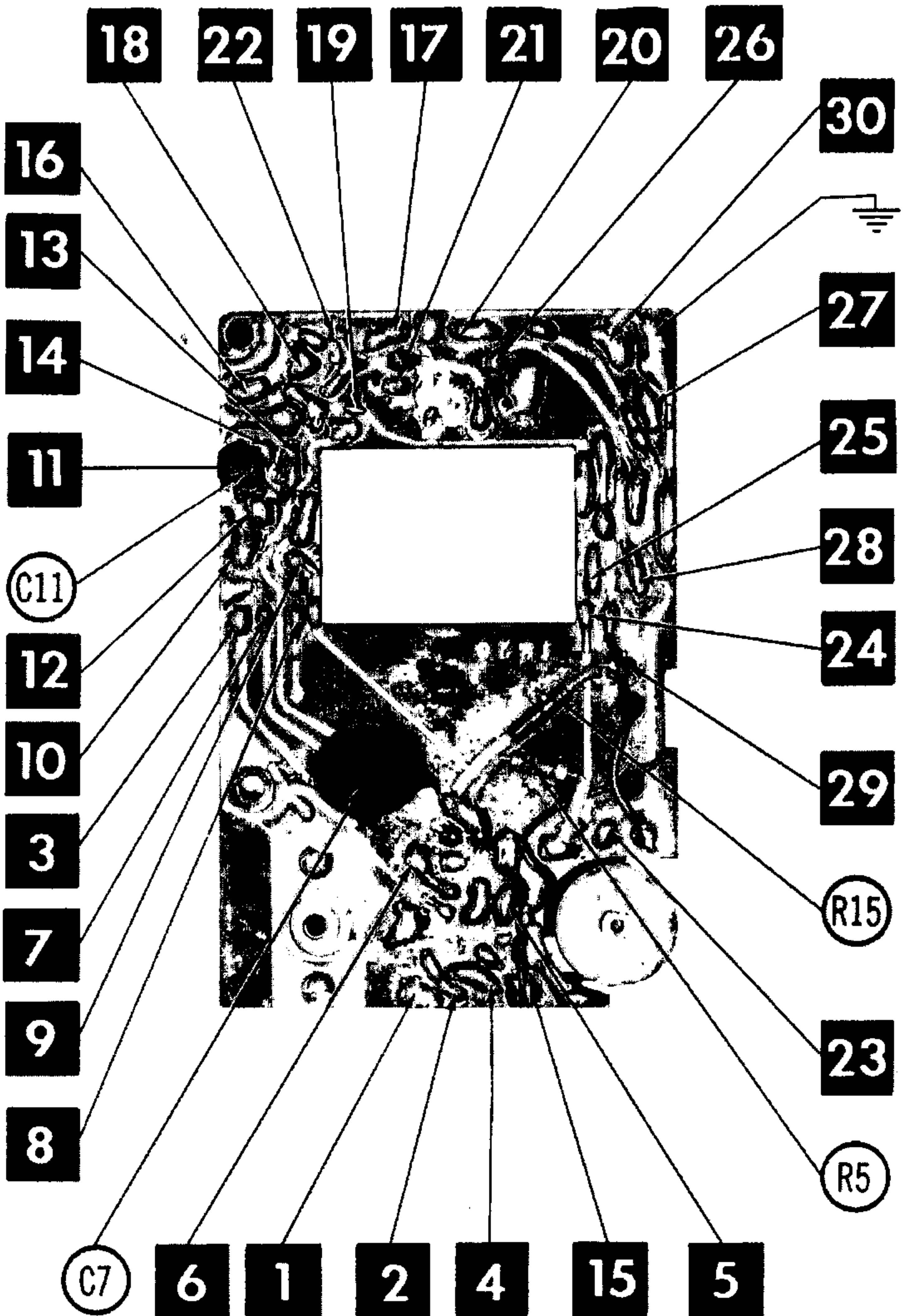
RESISTORS (IRC or EQUIVALENT)

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

ITEM No.	RATING	REMARKS	ITEM No.	RATING	REMARKS	ITEM No.	RATING	REMARKS
R2	6800Ω		R7	3300Ω		R12	10K	
R3	33K		R8	10K		R13	2000Ω	
R4	3300Ω		R9	470Ω		R14	150Ω	
R5	56K		R10	6800Ω		R15	220Ω	
R6	470Ω		R11	3300Ω		R16	150Ω	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		COLUMBIA PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Loopstick	20H365				
L2	Osc. Coil	20H363				
L3	1st IF Trans.	20H371				
L4	2nd IF Trans.	20H372				
L5	3rd IF Trans.	20H373				



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	COLUMBIA PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	
T1	3200Ω	8-10Ω	3H255					

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	COLUMBIA PART No.	QUAM PART No.	
SP1	2 1/4"	PM	8-10Ω	1H162	22A06Z10	

BATTERIES

ITEM No.	VOLTAGE	COLUMBIA PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	9V	BL-006P		2U6		216		M-1604	

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		COLUMBIA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	1N60	SD-46	1N60	1N60	Detector (Pigtall)

MISCELLANEOUS

ITEM No.	PART NAME	COLUMBIA PART No.	NOTES
M3	Tuning Cap. Earphone	14H113 19H710	2 Gang

CABINETS & CABINET PARTS

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

NAME	PART NO.	DESCRIPTION
Knob	8H524	Tuning
Knob	8H525	Volume
Cabinet	17H887	Black
Cabinet	17H888	Red
Cabinet	17H889	Gray

WIRING DATA

General-use Unshielded Hook-up Wire Use BELDEN No. 8690 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

CHASSIS—TOP VIEW

