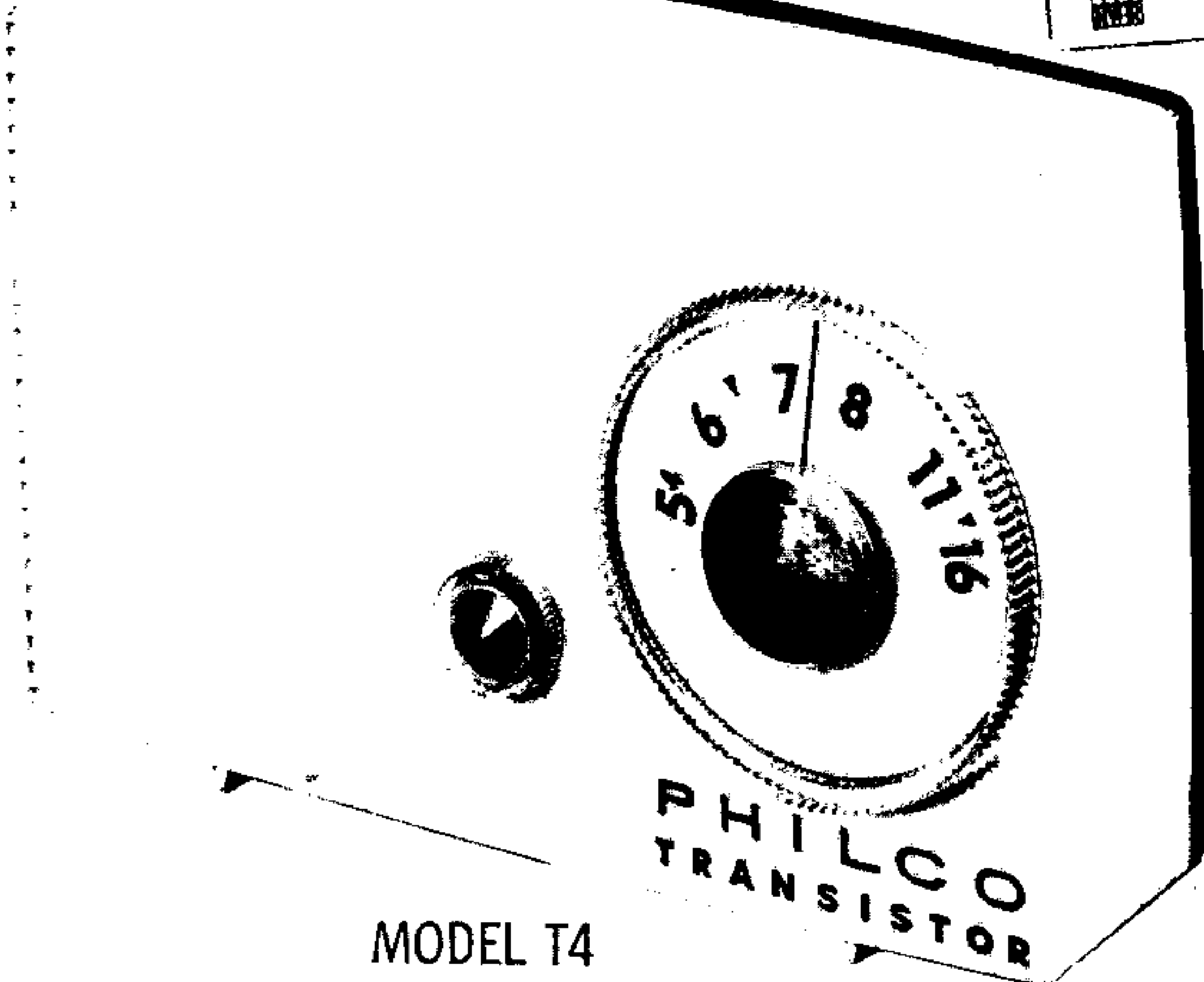
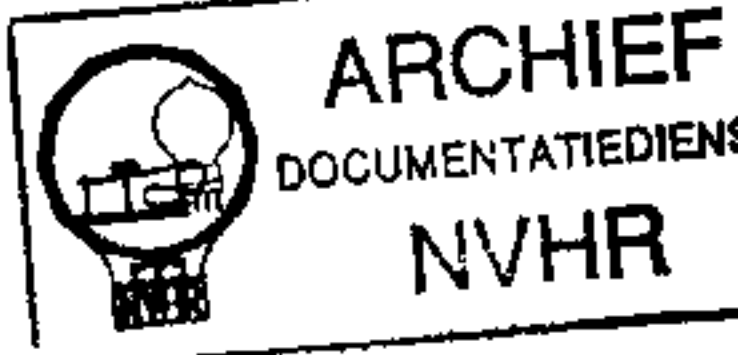




with **CIRCUITRACE***

Met dank aan Jef Bos



MODEL T4

TRADE NAME	Philco Models T-4, T-4J (Code 124)		
MANUFACTURER	Philco Corp., Tioga & "C" Streets, Philadelphia, Pa.		
TYPE SET	Battery Operated Portable Transistorized AM Receiver		
POWER SUPPLY	6 Volts DC	RATING	19MA@6 Volts DC (No Signal, Min. Volume)
TUNING RANGE—BROADCAST	535 - 1620KC		21MA@6 Volts DC (Signal, Normal Volume)

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.

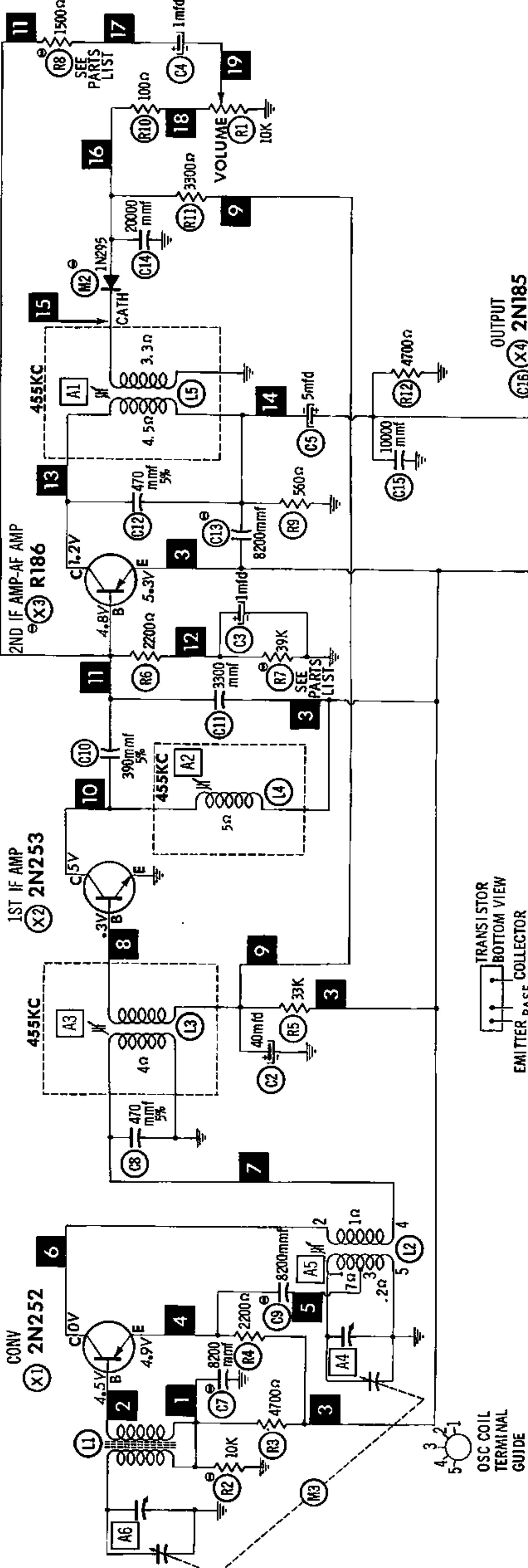
- Suggested alignment tools:
- A1, A2, A3..... General Cement #5008, 8195, 8274, 8987, 2728
Walsco #2520
 - A5..... General Cement #8606, 8606L, 9295
Walsco #2543, 2544, 2545
 - A4, A6..... General Cement #8607, 5008, 5004
Walsco #2520, 2537

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1. .1mfd	High side to antenna stator lug of tuning gang. Low side to B:	455KC (400% Mod.)	Tuning gang fully open	Across voice coil	A1, A2 A3	Adjust for maximum output.
2.	Loop	1620KC	"	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.	"	600KC	600KC	"	A5	Adjust for maximum output while rocking tuning gang. Repeat Steps 2 & 3.
4.	"	1400KC	Tune for 1400KC signal	"	A6	"

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 H826

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. © 1959 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America



**PHILCO MODELS T4,
T4J (Code 124)**

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

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
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

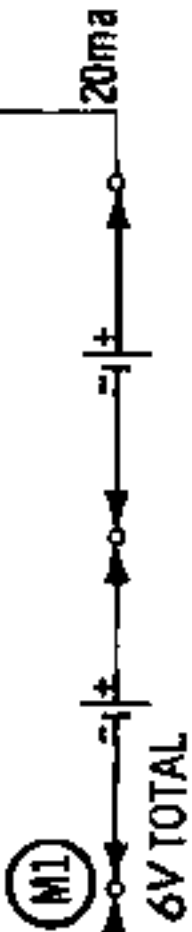
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

A PHOTOFACIT STANDARD NOTATION SCHEMATIC

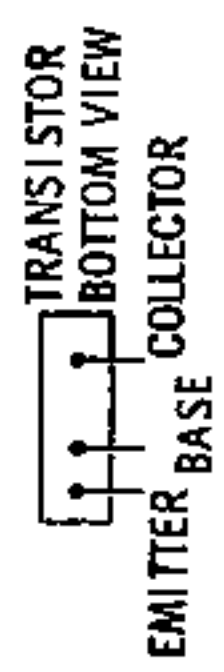
with **CIRCUITRACE**

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SW ON VOLUME CONTROL



EARPHONE JACK & SPEAKER CIRCUIT USED IN MODEL #T-4J



PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2N252	Converter	CBS-2N438		2N486	2N140	PNP NPN PNP PNP
X2	2N253	1st IF Amplifier				2N94A	
X3	R186 *	2nd IF Amp. -AF Amp.			2N483	2N139	
X4	2N185	Output			2N631	2N109	

* When replacing X3, R7 and R8 must be replaced. Kit Part #324-8003 may be used.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	PHILCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	100	6	30-2588-4	PWE6100	NL100-6	TT6X100	ML100-6	MQ-680	TE-1102
C2	40	3	30-2588	PWE3040	NL40-3	TT3X40	ML40-6		TE-1057
C3	1	6	30-2591-8	XPP-6001	NL1-6	TT12X1	ML1-6		TE-1080
C4	1	6	30-2591-8	XPP-6001	NL1-6	TT12X1	ML1-6		TE-1080
C5	5	6	30-2591-7	XPP-6005	NL5-6	TT6X5	ML5-6		TE-1084
C6	40	6	30-2588-3	PWE6640	NL40-6	TT6X40	ML40-6		TE-1095

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		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C7	8200						B-282		5% $\text{\textcircled{1}}$
C8	470		30-1264-18	1469-00047	MD-471	5R5T47		MS-347	
C9	8200						B-282		5% $\text{\textcircled{1}}$
C10	390		30-1264-19	1469-00039	MD-391	5R5T39		MS-338	
C11	3300		30-1262-42	BPD-0033	DD-332	BYA10D33	B-233	5HK-D33	5% $\text{\textcircled{1}}$
C12	470		30-1262-18	1469-00047	MD-471	5R5T47		MS-347	
C13	8200						B-282		5% $\text{\textcircled{1}}$
C14	20000		30-1272-3	BPD-02	DD-203	BYB6S2	B-120	5HK-S2	
C15	10000		30-1238-2	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C16	1500		30-1262-8	BPD-0015	DD-152	BYA10D15	B-215	5HK-D15	

$\text{\textcircled{1}}$ Some versions may use 8000mmf in this application (Part #30-1262-1).

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	PHILCO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1	10K	1	33-5583-5					Volume & Switch

RESISTORS

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

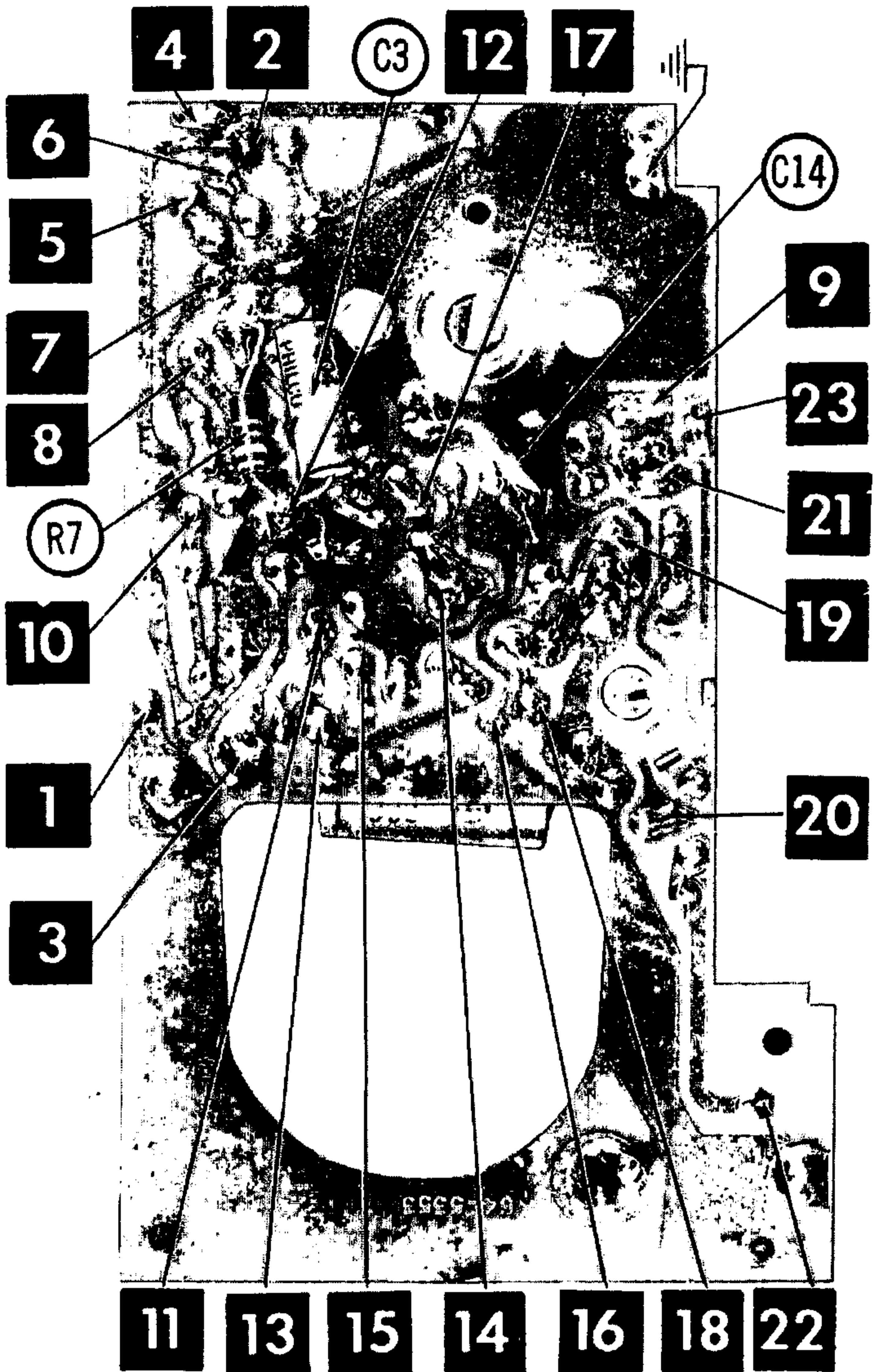
ITEM No.	RATING		PHILCO PART No.	NOTES	ITEM No.	RATING		PHILCO PART No.	NOTES
	OHMS	WATT				OHMS	WATT		
R2	10K		66-3108340	Note 1	R9	560 Ω		66-1588340	
R3	4700 Ω		66-2478340		R10	100 Ω		66-1108340	
R4	2200 Ω		66-2228340	R11	3300 Ω		66-2338340		
R5	33K		66-3338340	R12	4700 Ω		66-2478340		
R6	2200 Ω		66-2228340	R13	1000 Ω		66-2108340		
R7	39K		66-3388340	R14	47 Ω		66-0478340		
R8	1500 Ω		66-2158340	R15	220 Ω		66-1228340		

Note 1. Run #51 & later use 15K in this application (Part #66-3158340).

Note 2. Value of R7 varies between 27K & 390K; R8 from 1000 Ω to 5600 Ω . Replace with original value. (R7 must be of a value to obtain 1.12 volts (+.12V) across R9.)

PRINTED BOARD

A Howard W. Sams **CIRCUITRACE⁺** Photo



PARTS LIST & DESCRIPTION (continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		PHILCO PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Loopstick	92-4781-1					
L2	Osc. Coil	32-4669-5					
L3	1st IF	32-4760-1					
L4	2nd IF	32-4760-2					
L5	3rd IF	32-4760-3					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES	
			PHILCO PART No.	HoHderson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.		Triad PART No.
	PRI.	SEC.								
T1	285Ω	15Ω	32-8819-1						TY-57X ①	① Use original channel frame

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
				PHILCO PART No.	QUAM PART No.	
	SIZE	FIELD	V. C. IMP.			
SP1	2 3/4"	PM	15Ω	36-1664-5		

BATTERIES

ITEM No.	VOLTAGE	PHILCO PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	6V			Z ①		915 ① E9 ②		M-15R ① ZM9 ②	① 4 used ② Mercury Type, use 4

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		PHILCO PART No.	CBS PART No.	SYLVANIA PART No.	
M2	1N295 *		1N60	1N295	Detector (Pigtail)

* Some versions may use 1N60 in this application (Part #34-8022-3).

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
M3	Tuning cap. Printed Board	31-2788-1 54-5353	2 Gang, Ant. 4-126mmf

CABINETS & CABINET PARTS

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

NAME	PART NO.	DESCRIPTION
Knob	54-6659-1	Tuning
Knob	54-6660-1	Off-On-Volume
Cabinet	51-0002	Ivory And Black, Model T-4
Cabinet	51-0002-1	Aqua, Model T-4
Cabinet	51-0002-4	Ebony, Model T4J

WIRING DATA

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

CHASSIS—TOP VIEW

