

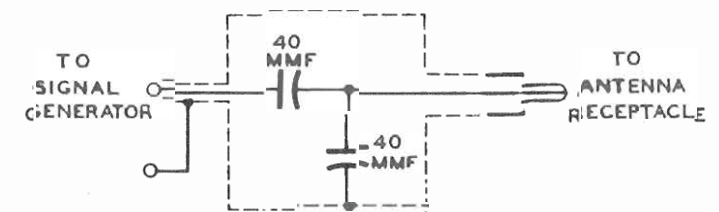
213-8

- 1-DC Voltage measurements are at 20,000 ohms per volt-AC. Voltages measured at 1000 ohms per volt.
- 2-Socket connections are shown in the diagram.
- 3-Measured values are from socket pin to common negative.
- 4-Battery voltage maintained at 6.3V for voltage readings.
- 5-Nominal tolerance on component values makes possible a variation of $\pm 15\%$ in voltage and resistance readings.
- 6-Volume control at maximum, no signal applied for voltage measurements.

STUDEBAKER
MODEL AC-2301 (S-5323)



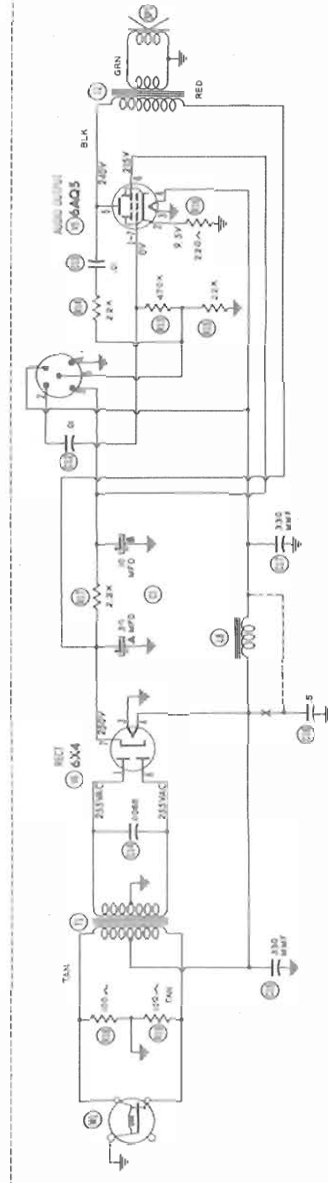
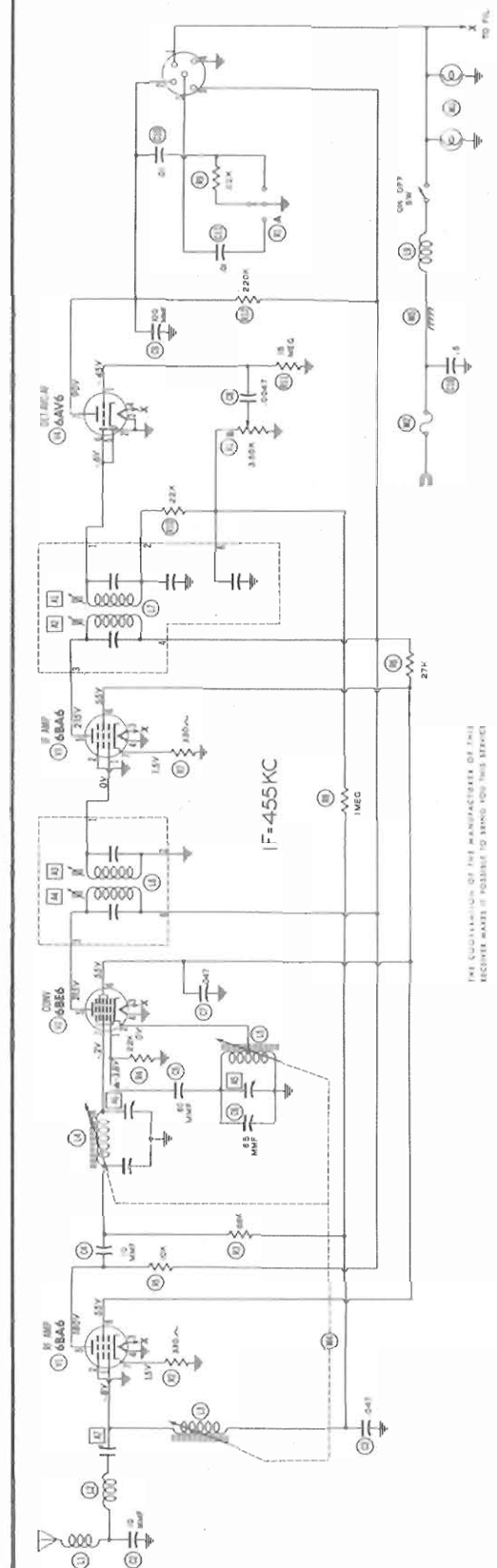
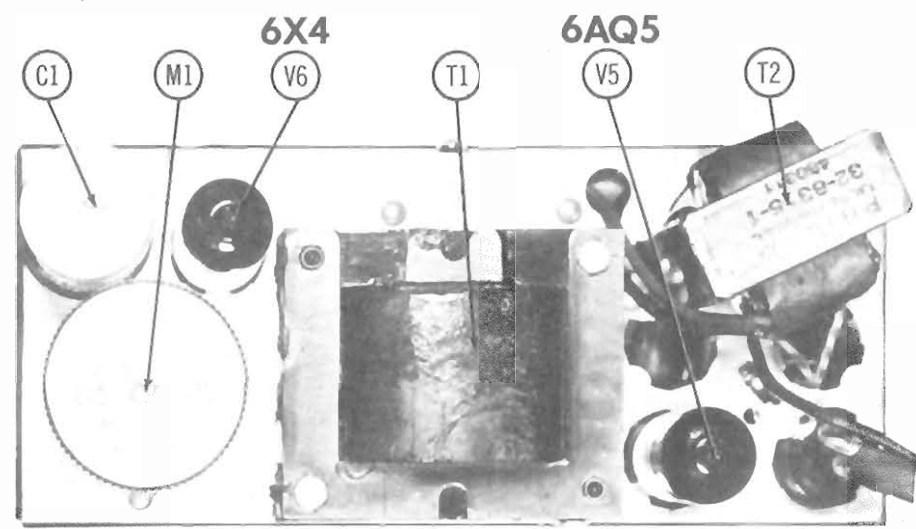
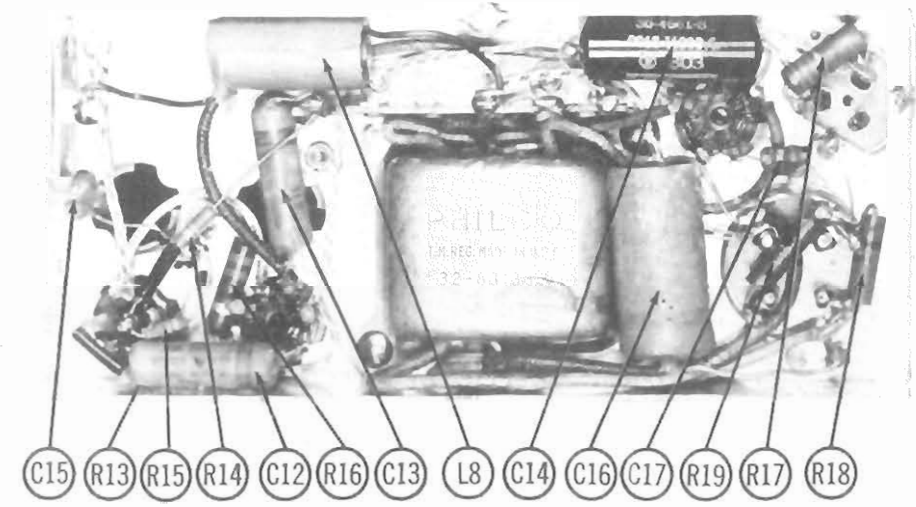
TRADE NAME	Studebaker Model AC-2301 (Philco Model S-5323) (For 1953 Studebaker Automobiles)					
MANUFACTURER	Philco Corp., Tioga & "C" Sts., Philadelphia, Pa.					
TYPE SET	Battery Operated Custom Built AM Automobile Superheterodyne Receiver					
TUBES (Six)	Types 6BA6 RF Amp., 6BE6 Conv., 6BA6 IF Amp., 6AV6 Det.-AVC-AF Amp., 6AQ5 Audio Output, 6X4 Rectifier					
POWER SUPPLY	6 Volt Storage Battery			RATING 6.4 Amp. @ 6.3 Volts DC		
TUNING RANGE	BROADCAST 535-1605 KC					
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. Use an insulated alignment screwdriver for adjusting. Set tone control to "HI" position.						
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1. .05MFD	High side to pin 7 (grid) of 6BE6 (V2). Low side to chassis.	455KC (400% Mod)	High frequency end stop	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2. Fig. 1	Thru dummy to antenna receptacle.	1605 KC	"	"	A5	"
3. "	"	1400KC	Tune to 1400KC signal	"	A6, A7	"



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RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BA6	1.3Meg	0Ω	.1Ω	0Ω	†29KΩ	†29KΩ	330Ω
V 2	6BE6	22KΩ	.8Ω	.1Ω	0Ω	†2.2KΩ	†29KΩ	1.4Meg
V 3	6BA6	11.5Ω	0Ω	.1Ω	0Ω	†2.2KΩ	†29KΩ	330Ω
V 4	6AV6	15Meg	0Ω	0Ω	.1Ω	370KΩ	370KΩ	†220KΩ
V 5	6AQ5	490KΩ	220Ω	0Ω	.1Ω	†334Ω	†2.2KΩ	490KΩ
V 6	6X4	436Ω	INF	0Ω	.1Ω	INF	394Ω	1 Meg

† TAKEN WITH VACUUM TUBE VOLTMETER.
* MEASURED FROM PIN 7 OF V6.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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213-8

1-DC Voltage measurements are at 20,000 ohms per volt-AC
Voltages measured at 1000 ohms per volt.
2-Socket connections are shown as bottom views.
3-Measured values are from socket pin to common negative.
4-Battery voltage maintained at 6.3Volts for voltage readings.
5-Nominal tolerance on component values makes possible a
variation of ±15% in voltage and resistance readings.
6-Volume control at maximum, no signal applied for voltage
measurements.

STUDEBAKER
MODEL AC-2301 (S-5323)

VOLUME
CONTROL
ON-OFF SW

Ⓜ2
TONE
CONTROL

TRADE NAME Studebaker	
MANUFACTURER Philco	
TYPE SET Battery	
TUBES (Six) Types 6AQ5 /	
POWER SUPPLY 6 Volt	
TUNING RANGE—BROAD	
Volume control should output reading. Use a Set tone control to "HI"	
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING
1. .05MFD	High side to pin (grid) of 6BE6
2. Fig. 1	Thru dummy antenna receptacle
3. "	"

HC
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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		PHILCO PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6BA6	6BA6	7BK	
V2	IF Amplifier	6BE6	6BE6	7CH	
V3	IF Amplifier	6BA6	6BA6	6BK	
V4	Det.-AFC-AF Amp.	6AV6	6AV6	7BT	
V5	Audio Output	6AQ5	6AQ5	7BZ	
V6	Rectifier	6X4	6X4	5BS	

CAPACITORS

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

ITEM No.	RATING CAP. VOLT	REPLACEMENT DATA				NOTES
		PHILCO PART No.	AEROVOX PART No.	CORNEILL DUBIER PART No.	CENTRALAB PART No.	
C1A	.30	61-0086-7	AFH2-12	BO41		
C2	.350	60-00105417	1469-00001	5R5Q1	DF-503	
C3	.047	30-1650-45	P288-047	PJ285		
C4	.010	60-00105417	1469-00001	5R5Q1		
C5	.010	30-1224-110				
C6	.010	30-1224-87				
C7	.047	30-1650-45	P288-047	PJ285	NT50K-650	
C8	.0047	30-1650-56	P088-0047	PT6247	GP2-333-472	2TM-S47
C9	.010	62-10000021	SI00	TM5T1	UC-531	5GA-T1
C10	.010	30-1650-41	P488-01	D8-103	GP2-333-103	4TM-S1
C11	.010	30-1650-41	P488-01	D8-103	GP2-333-103	4TM-S1
C12	.010	30-1650-41	P488-01	D8-103	GP2-333-103	4TM-S1
C13	.010	30-1650-41	P488-01	D8-103	GP2-333-103	4TM-S1
C14	.0068	30-1661-8	YBC-23	PT6247	UC-5333	5GA-T33
C15	.330	62-133001001	SI330	PJ2P5	GP2K-331	5GA-T33
C16	.5	61-0183	VHC36		UC-5333	5GA-T33
C17	.330	62-133001001	SI330	PJ2P5	GP2K-331	5GA-T33
C18	.5	61-0183	VHC36		VO480	68P20

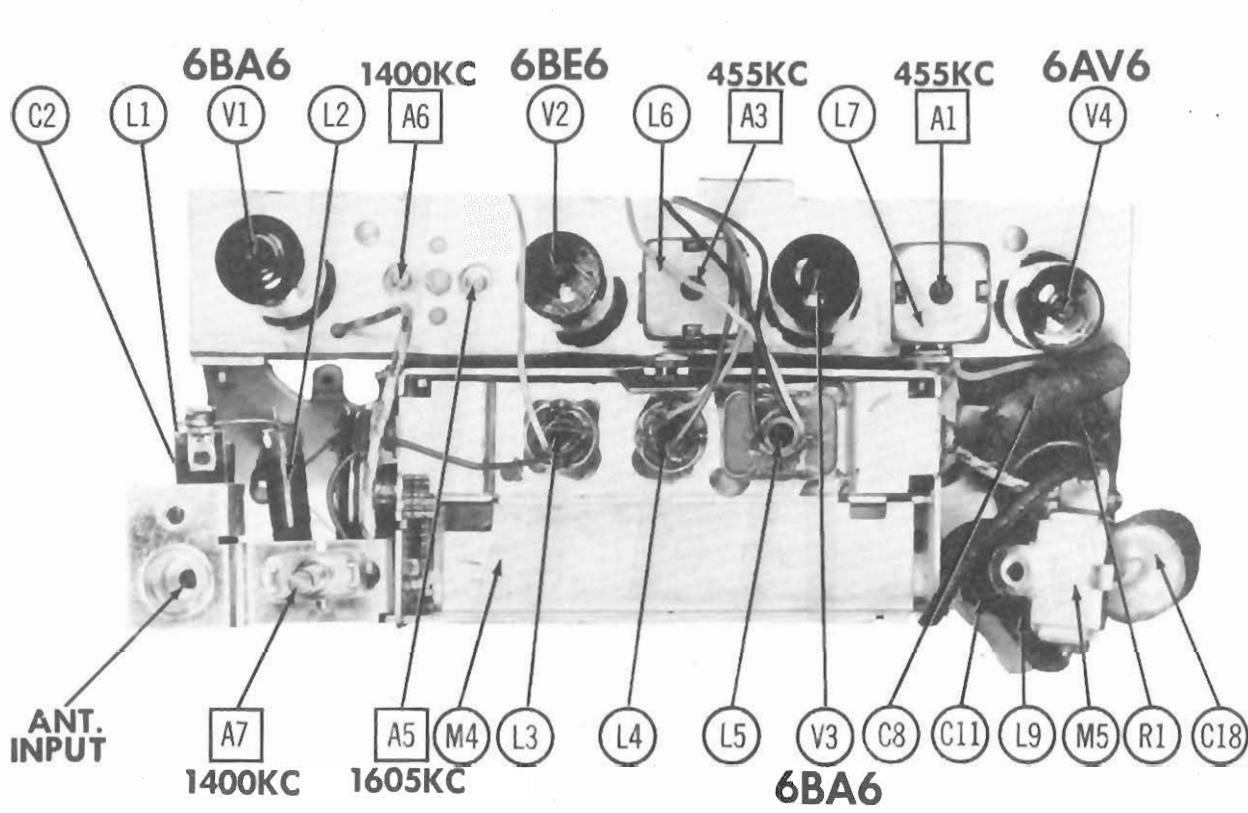
CONTROLS

ITEM No.	RATING RESIST. ANCE	REPLACEMENT DATA			INSTALLATION NOTES
		PHILCO PART No.	IRC PART No.	CLEAROSTAT PART No.	
R1A	Switch				Tone Switch
R1B	350KΩ	33-5570			Volume & Switch

RESISTORS

ITEM No.	RATING OHMS	REPLACEMENT DATA		NOTES
		PHILCO PART No.	IRC PART No.	
R2	330Ω	66-1328340	BTS-330	
R3	68KΩ	66-3028340	BTS-68K	
R4	22KΩ	66-3228340	BTS-22K	
R5	10KΩ	66-3108340	BTS-10K	
R6	27KΩ	66-3274340	BTA-27K	
R7	330Ω	66-1328340	BTS-330	
R8	1 Meg	66-5108340	BTS-1 Meg	
R9	22KΩ	66-3228340	BTS-22K	
R10	22KΩ	66-3228340	BTS-22K	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (VIBRATOR)

ITEM No.	RATING			REPLACEMENT DATA			
	IMPEDANCE	DC RES.	SEC. 1	PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO TRIAD PART No.
T1	6.3VCT	510VCT	SEC. 2	32-8313-3			
	3.8A	.052ADC		32-8313-1 ①		P-3068 ②	

① Alternate power trans.

② Drill new mag. holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING			REPLACEMENT DATA			
	IMPEDANCE	DC RES.	SEC. 1	PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO TRIAD PART No.
T2	5.1KΩ	3.4Ω	334Ω	32-8313-1	A-2030	A-3877	RO-8 S-3X

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA		NOTES
	SIZE	FREQ. V. C. IMP.	PHILCO PART No.	JENSEN PART No.	
SP1	6 1/2"	PM 3.4Ω	36-1638-10	ST-806 Mod. PT-U	

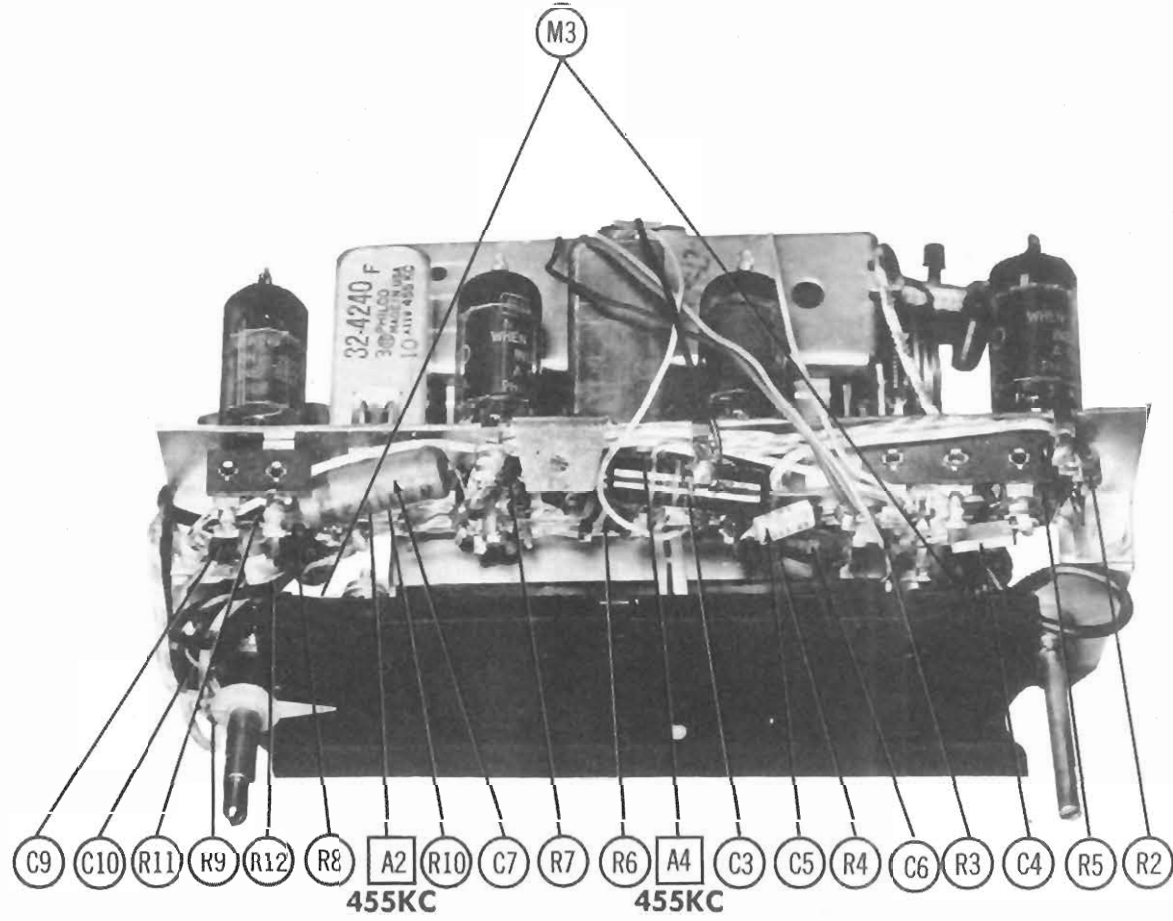
COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	PHILCO PART No.	MEISSNER PART No.	MILLER PART No.	
L1	Ant. Loading Coil	4Ω		32-4422-24		4610	
L2	RF Coupling Ant. Coil	.7Ω		65-0378		4612	5.6 Microhenries, (IRC part #CL-1)
L3	Ant. Coil	13Ω		32-4586			11 Microhenries
L4	RF Coil	13Ω		32-4585			Less tuning core, core part #28-9336
L5	Osc. Coil	3Ω(tap .8Ω)		32-4587			Less tuning core, core part #28-9336
L6	Input IF	11.5Ω		32-4160A	BC-352	12-C1	Less tuning core, core part #28-9336
L7	Output IF	14Ω		32-4240A	BC-355	12-C6	Less tuning core, core part #28-9336
L8	Vibrator	14Ω		16-6770			
L9	Hash Choke; Fil. Choke	.1Ω		32-4170-4			.2 Microhenry

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			NOTES
				PHILCO PART No.	CORNEILL DUBIER PART No.	MALLORY PART No.	
M1	Int.	6.3V	115%	83-0035	5326	5326	

CHASSIS—BOTTOM VIEW



ITEM No.	RATING		PHILCO PART No.	IRC PART No.	NOTES
	OHMS	WATT			
R2	330Ω		66-1338340	BTS-330	
R3	68KΩ		66-3698340	BTS-68K	
R4	22KΩ		66-3228340	BTS-22K	
R5	10KΩ		66-3108340	BTS-10K	
R6	27KΩ		66-3274340	BTA-27K	
R7	330Ω		66-1338340	BTS-330	
R8	1 MΩ		66-5108340	BTS-1 MΩ	
R9	22KΩ		66-3228340	BTS-22K	
R10	22KΩ		66-3228340	BTS-22K	

ITEM No.	RATING		PHILCO PART No.	IRC PART No.	NOTES
	OHMS	WATT			
R11	15 MΩ		66-6158340	BTS-15 MΩ	
R12	220KΩ		66-4228340	BTS-220K	
R13	470KΩ		66-4478340	BTS-470K	
R14	22KΩ		66-3228340	BTS-22K	
R15	22KΩ		66-3228340	BTS-22K	
R16	220Ω		66-1224340	BTA-220	
R17	2200Ω		66-2224340	BTA-2200	
R18	100Ω		66-1104340	BTA-100	
R19	100Ω		66-1104340	BTA-100	

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (VIBRATOR)

ITEM No.	RATING			REPLACEMENT DATA			
	PRL SEC.	SEC. 1	SEC. 2	PHILCO PART No.	STANCOR PART No.	MERIT PART No.	TRIAD PART No.
T1	6.3VCT ② 3.6A	510VCT ② 3.6A		32-8313-3		P-3068 ②	

- ① Alternate power trans.
② Drill new mfg. holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING			REPLACEMENT DATA			
	IMPEDANCE	DC RES.	PRL SEC.	PHILCO PART No.	STANCOR PART No.	CHICAGO PART No.	NOTES
T2	5.1KΩ	3.4Ω	334Ω	32-8313-1	A-4980	RO-8	S-3X

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	PHILCO PART No.	JENSEN PART No.	QUAM PART No.	
SPI	6 1/2"	PM	3.4Ω	36-1838-10	ST-806 Mod. DT-U	7A21	

COILS (RF-IF)

ITEM No.	USE	DC RES.		PHILCO PART No.	REPLACEMENT DATA			NOTES
		PRL	SEC.		MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Loading Coil	4Ω		32-4422-24			4610	5.6 Microhenries, (IRC part #CL-1)
L2	RF Coupling	.7Ω		65-0378			4612	11 Microhenries
L3	Ant. Coil	13Ω		32-4586				Less tuning core, core part #28-9336
L4	RF Coil	13Ω		32-4585				Less tuning core, core part #28-9336
L5	Osc. Coil	30(μap ② .6Ω)		32-4587				Less tuning core, core part #28-9336
L6	Input IF	11.5Ω	11.5Ω	32-4100A	BC-432		12-C1	.2 Microhenry
L7	Output IF	14Ω	14Ω	32-4240A	BC-355		12-C6	
L8	Vibrator				16-6758			
L9	Hash Choke			32-4170-4	16-6770			
	Flt. Choke	1Ω	0Ω	32-1641				

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	PHILCO PART No.	REPLACEMENT DATA			NOTES
					CORNER-DUBILIER PART No.	MALLORY PART No.	RADIART PART No.	
M1	Int.	6.3V	115%	83-0035	5326	859	5326	

PARTS LIST AND DESCRIPTIONS (Continued)

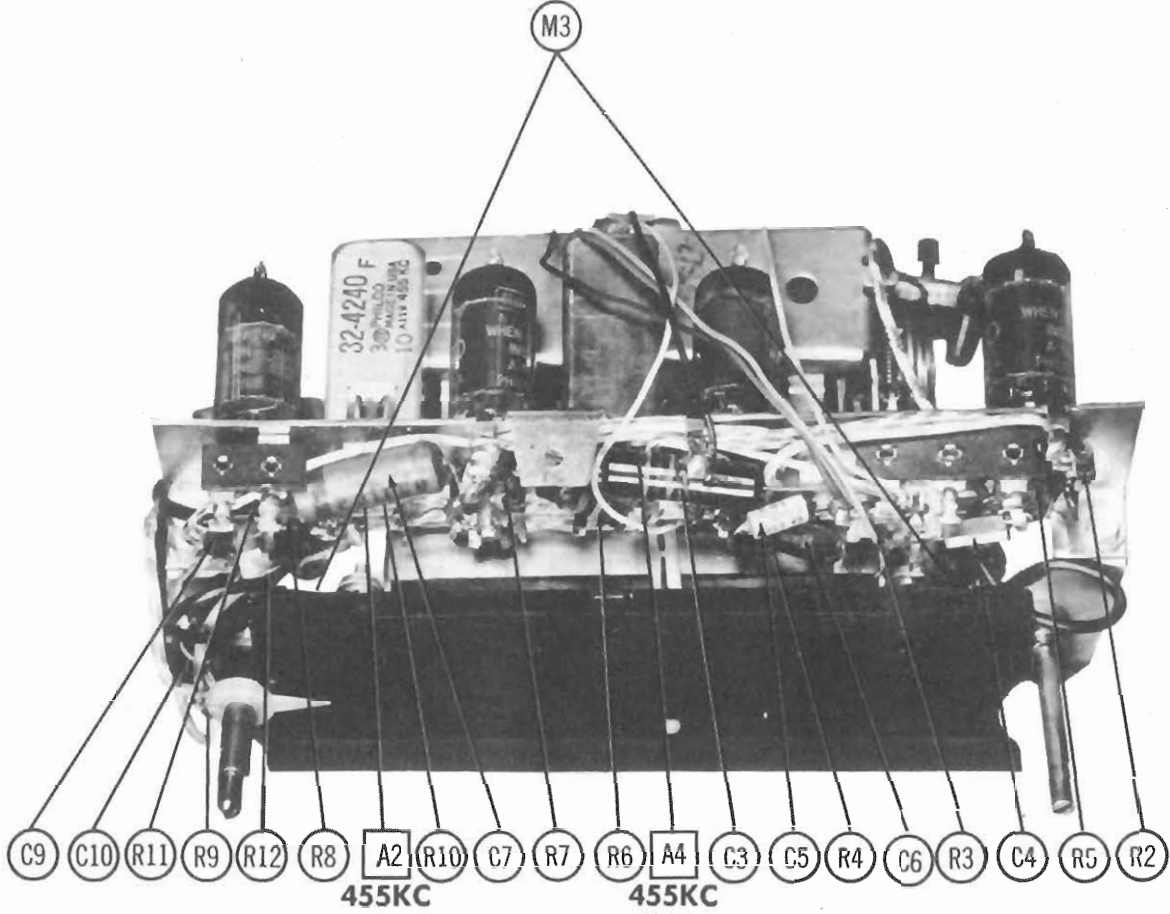
FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			PHILCO PART No.		LITELUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	SFE	1/4 Amp.	45-2559	56-3807-4	307014 (SFE-14A)	155014	SFE-14	HDI

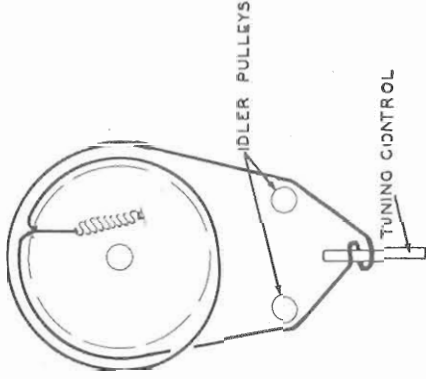
MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
M3	Dial Light	34-6024	Type #44 (3 Used)
M4	Tuning Unit	76-7920	
M5	Spark Filter	30-1235-1	500MMF Feed through type
A5	Trimmer Strip	31-6522-2	500MMF Feed through type
			Exc. & RF Adjustments (includes Fixed 500MMF Trimmer)
	Back Cover	56-9920	Background plate assembly
	Dial	76-7972	
	Dial Glass	54-5153	
	Pointer	56-9898	
	Knob	27-4687-20	
	Knob	56-9960	

CHASSIS—BOTTOM VIEW



TUNING MECHANISM FULLY OPEN



DIAL CORD DRIVE