

SET 610 FOLDER 3

PHOTOFACT® Folder

SETCHELL-CARLSON CHASSIS 159  
(Late Production)

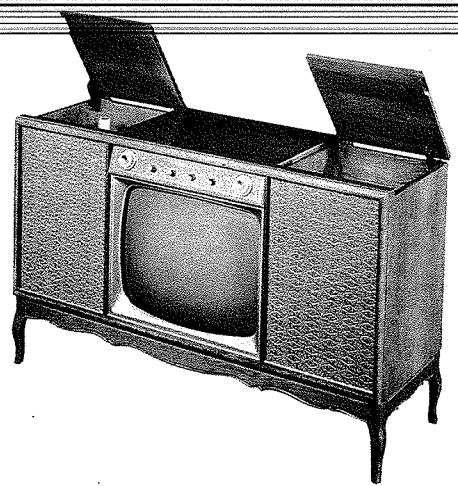
IMPORTANT FILING NOTICE

Some models covered by this PHOTOFACT Folder employ chassis in addition to the TV chassis. PHOTOFACT Folders covering these additional chassis are packaged immediately behind this Folder and should be filed with this Folder in the yellow filing jacket provided. For specific coverage see index below.

INDEX

AM Chassis H62 . . . . . SET 610, FOLDER 3-A  
FM Chassis J62 > . . . . . SET 610, FOLDER 3-B  
Amp Chassis K62

SETCHELL-CARLSON CHASSIS 159  
(Late Production)



MODEL 23 C602

TRADE NAME	Setchell-Carlson
MANUFACTURER	Setchell-Carlson Inc., New Brighton, St. Paul 12, Minnesota
TYPE SET	Television Receiver (Models 23L602, U, P, PU with AM Radio H62, FM Radio J62, Audio Amp. K62)
TUBES	TV: VHF Twenty-Three, UHF Twenty-Four
POWER SUPPLY	110-120 Volts AC, 60 Cycle
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Inter-carrier)
RATING 175 Watts, 1.7 Amp. @ 117 Volts AC	
Models	
23C62, U; 23L62, U, P, PU; 27C62, U; 27L62, U; CB62, U . . . . .	159 (Late Production)
23L602, U, P, PU . . . . .	159 (Late Production)
TV Chassis	
AM Chassis H62 . . . . .	
FM Chassis J62 . . . . .	
Audio Amp. K62 . . . . .	
VHF and UHF TUNER Assembly #57-B-49	
VHF TUNER A62, -1, -2	

SETCHELL-CARLSON CHASSIS 159  
(Late Production)

FOR SERVICE INFORMATION ON RECORD CHANGER MODEL RC-302 - SEE SIMILAR UNIT - PHOTOFACT SET 527  
FOLDER 14

SERVICING IN THE FIELD

SAFETY GLASS

23" Models use Bonded-Type picture tubes (23YP4, 23CP4).  
27" Models use 27VP4 picture tube (not bonded).

FUSE OR FUSE DEVICE

LOCATION

3 Amp. Line Fuse . . . . . See photo: Cabinet - Rear View  
20 5W Fusible Resistor (Line) . . See R105 in photo: Power Supply (Subchassis "G")  
Fuse Wire (Filament) . . . . . See M1 in photo: Power Supply (Subchassis "G")

TUNER OSCILLATOR ADJUSTMENT

Models using VHF/UHF Assembly #57-B-49:  
It is necessary to remove tuner assembly for Channel 13 and 6 Oscillator Adjustments.

AGC

No provision is made to vary the AGC on this receiver.

FOCUS

The focus may be varied by means of a Focus control. (See "Tube Placement Chart" for location.)

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Coarse adjustment of the Horizontal Hold is accomplished by the proper setting of the Horizontal Frequency Slug. (For location, see Chassis-Top View photo".)

BUZZ ADJUSTMENT

To eliminate intercarrier buzz, adjust the Ratio Detector secondary (A14) located at top of chassis.

CENTERING

Centering is accomplished by 2 magnetic rings, located behind the yoke, on the neck of the picture tube.

PICTURE TUBE SAVER

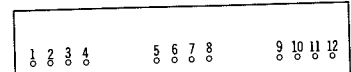
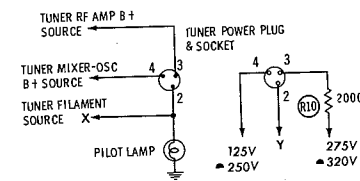
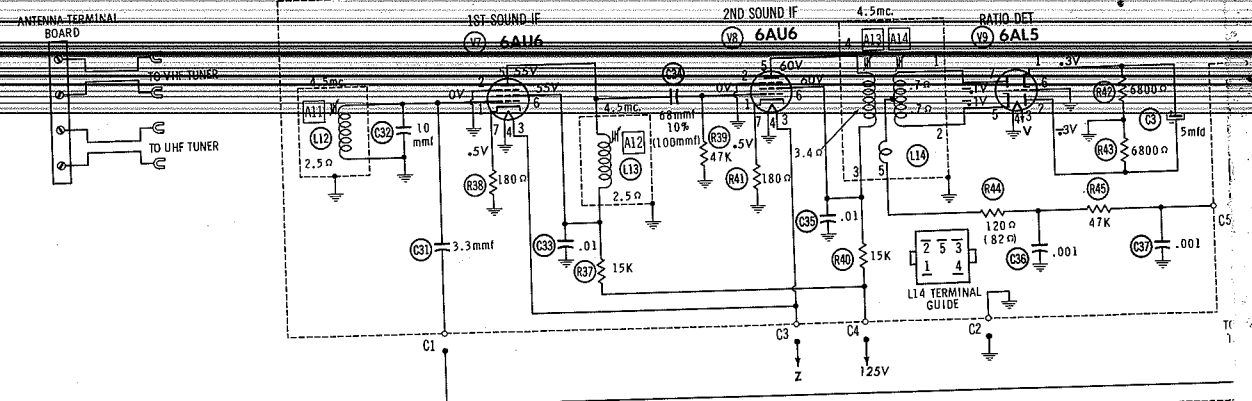
Insert shorting plug to supply 8 volts to picture tube filaments. (Use only to extend life of weak tube.)

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

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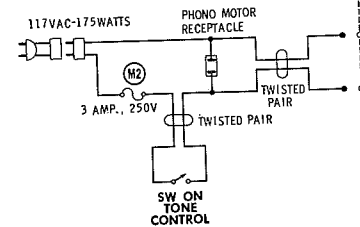
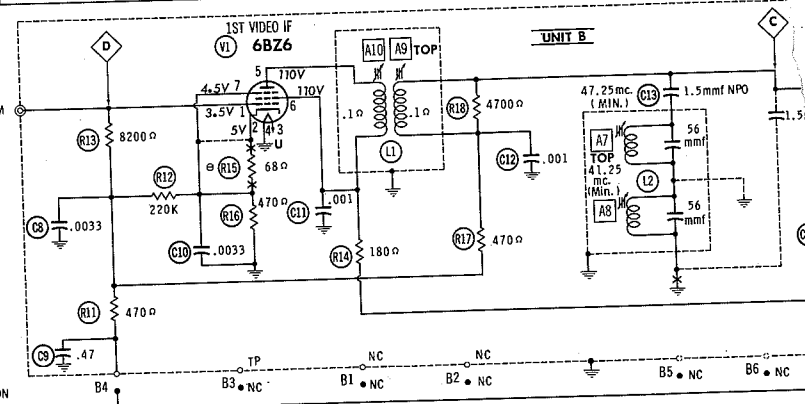
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SET 610 FOLDER 3



ALL UNITS HAVE 12 CONNECTORS EXCEPT UNIT B ON WHICH 5 THRU 8 ARE OMITTED.

—○— DENOTES SUB-CHASSIS INTERCONNECTION



TUNER SCHEMATICS - PAGES 11 THRU 18

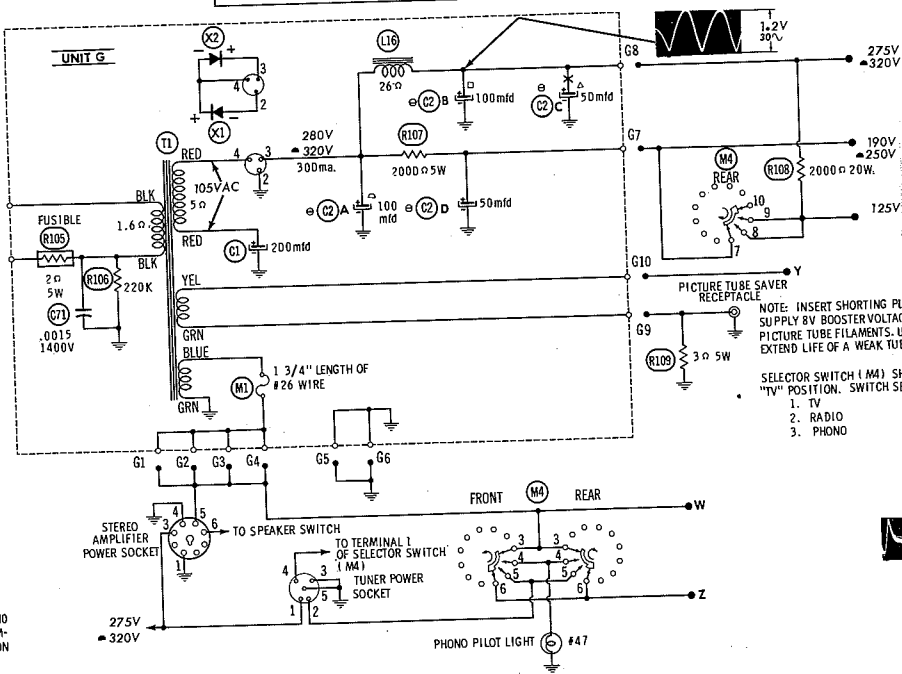
— TAKEN IN "RADIO" OR "PHONO" POSITION.  
— DENOTES CHASSIS GROUND

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.

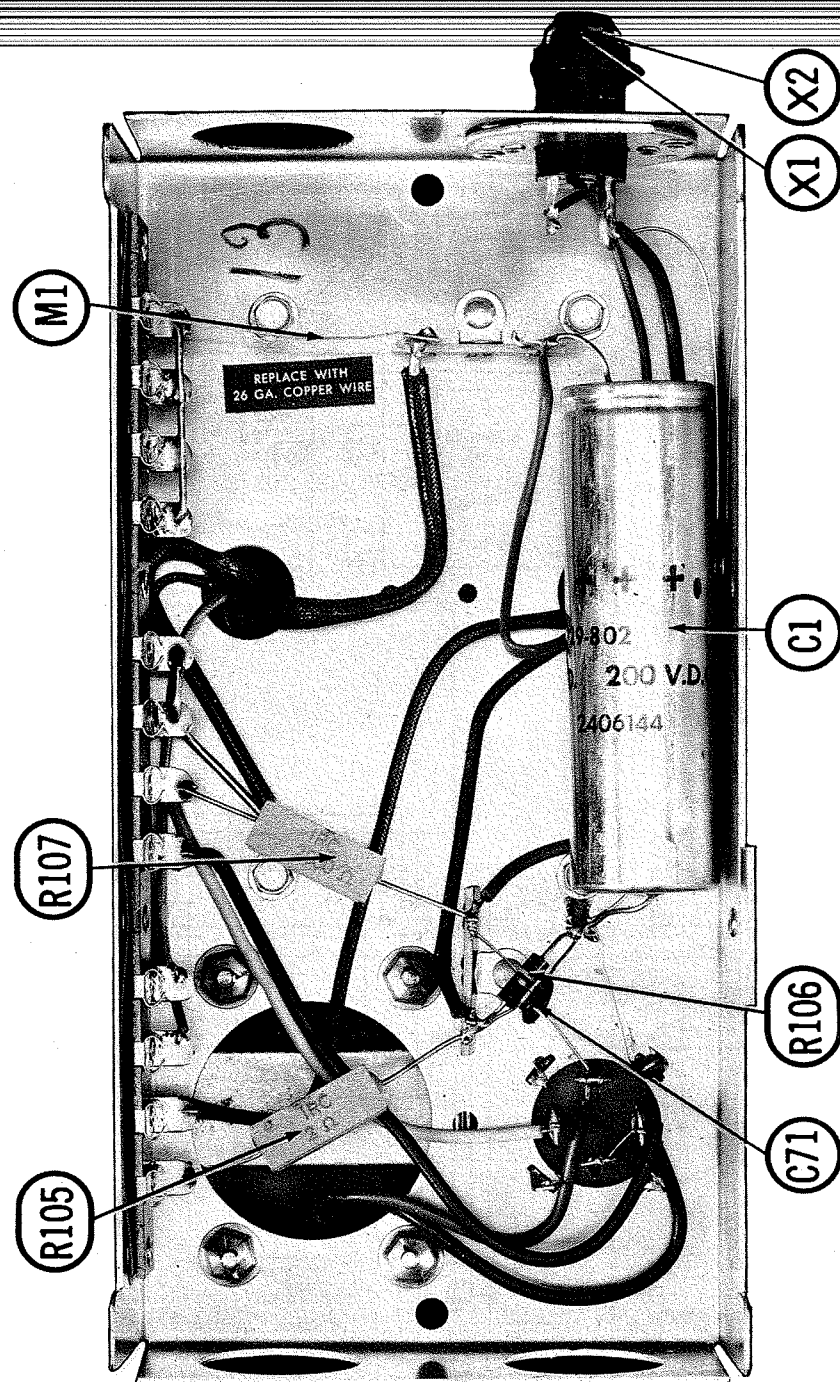
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltage measured at 1000 ohms per volt.
2. Pin numbers are counted in clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line Voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation; no signal applied.



A PHOTOFAC STANDARD NOTATION SCHEMATIC  
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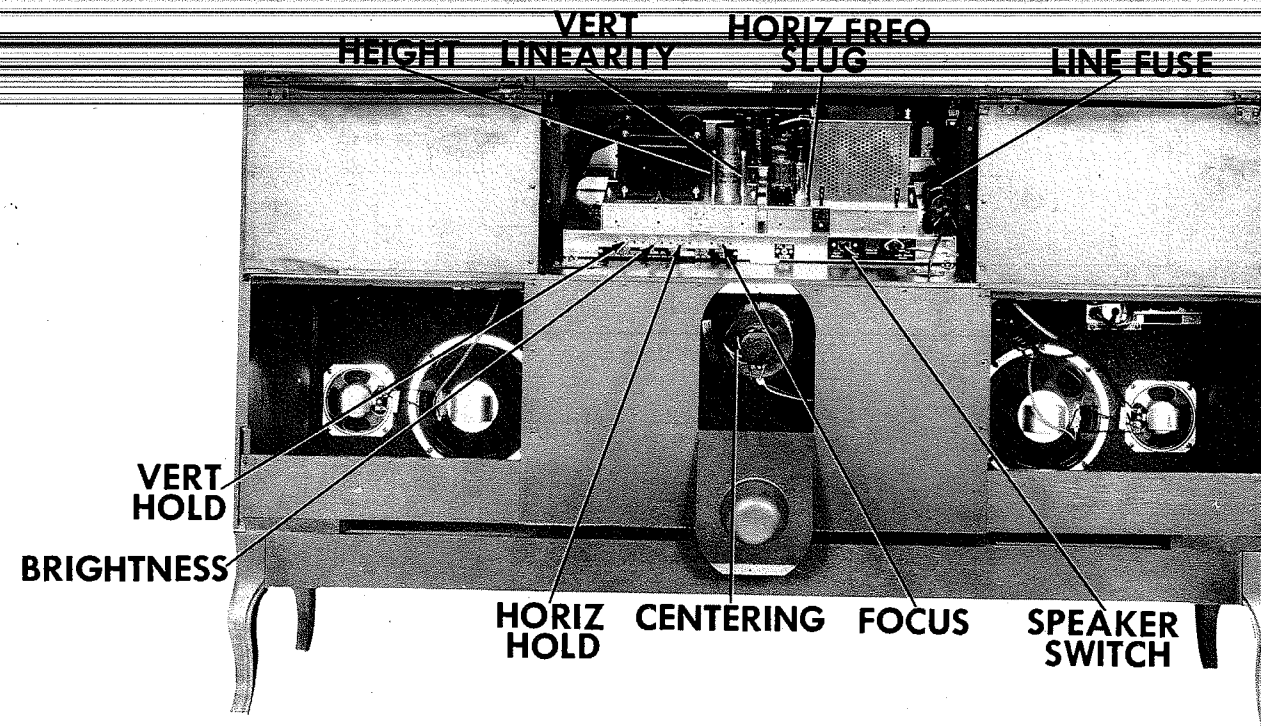


LV POWER SUPPLY ( SUBCHASSIS "G")

(Late Production)

SETCHELL-CARLSON CHASSIS 159

FOLDER 3



CABINET-REAR VIEW

## HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Suggested Alignment Tools: B1..... GENERAL CEMENT #5003, 8271, 8275, 8276, 8809, 8721, 8722, 9150, 9296 WALSCO #2516, 2518, 2519

Turn set on and tune in a TV signal, preferably with a test pattern. Set Horizontal Hold Control to center of its range and adjust Horizontal Frequency Slug (B1) until picture synchronizes horizontally.

## DISASSEMBLY INSTRUCTIONS

### TV CHASSIS REMOVAL

**SERVICE NOTE:** For access to receiving tubes, remove rear cover and cabinet top. (Follow Step 1.)

1. Remove rear cover (4 screws). Remove 2 screws (1 at each side) holding center of cabinet top, and lift up.
2. Remove knobs from front, and disconnect antenna terminal at rear. Disconnect picture tube socket, yoke, and high voltage lead.

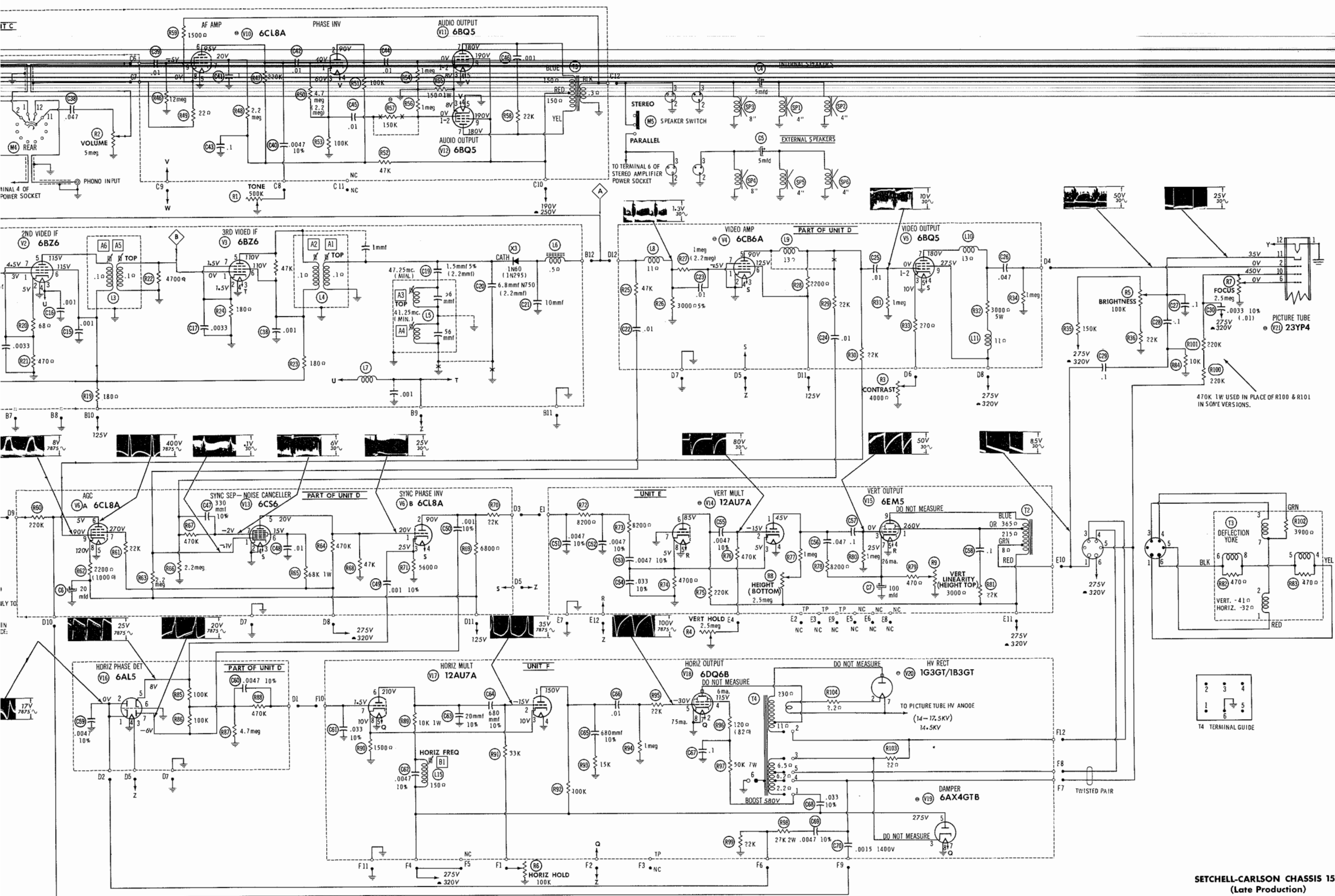
3. Remove speaker plugs and plugs to FM Radio. Remove 2 screws holding interlock.

4. Remove antenna leads to AM Radio.

5. Remove TV chassis out rear.

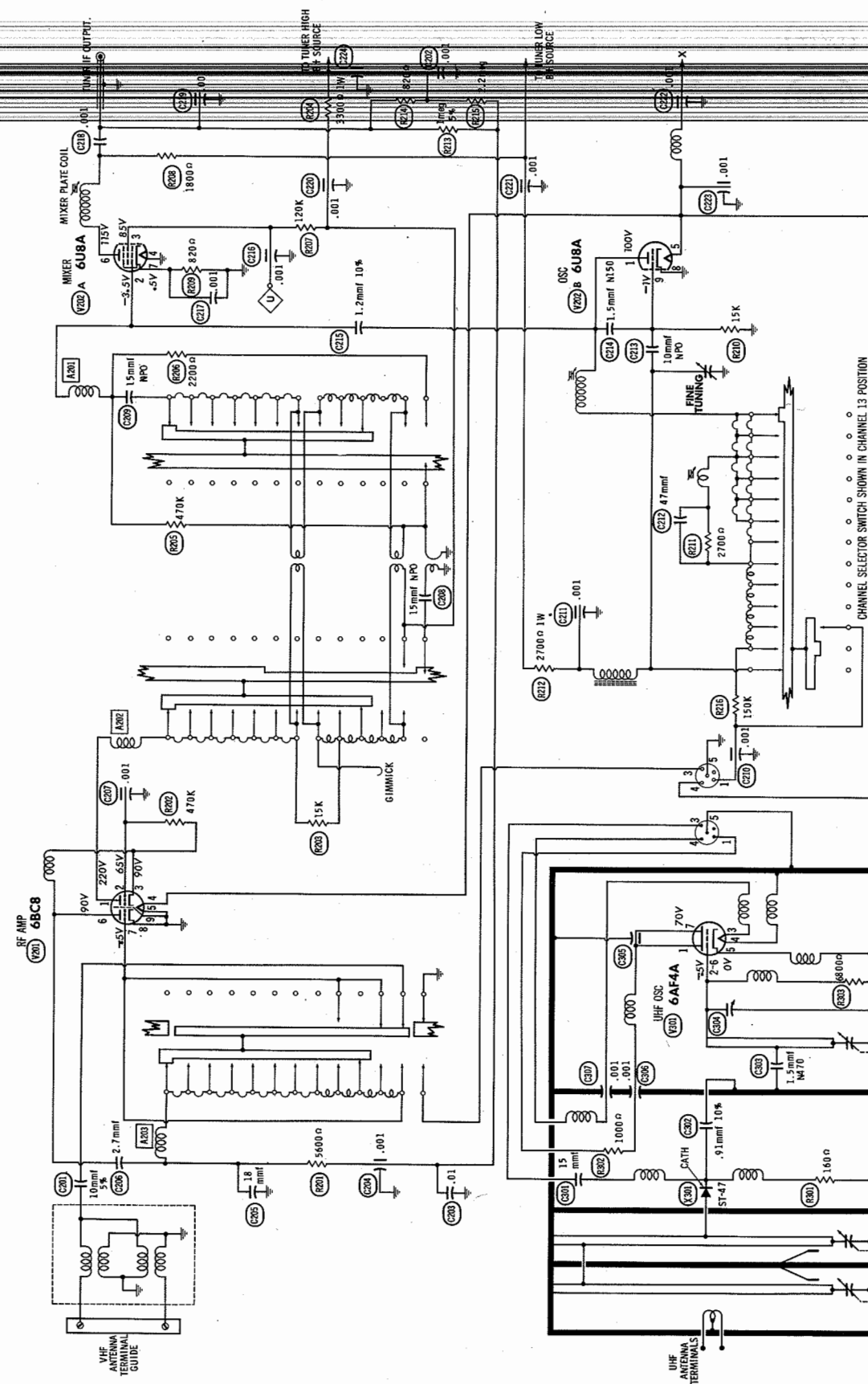
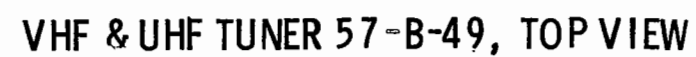
### PICTURE TUBE REMOVAL

It is necessary to remove the TV chassis for picture tube removal.



SETCHELL-CARLSON CHASSIS 159  
(Late Production)

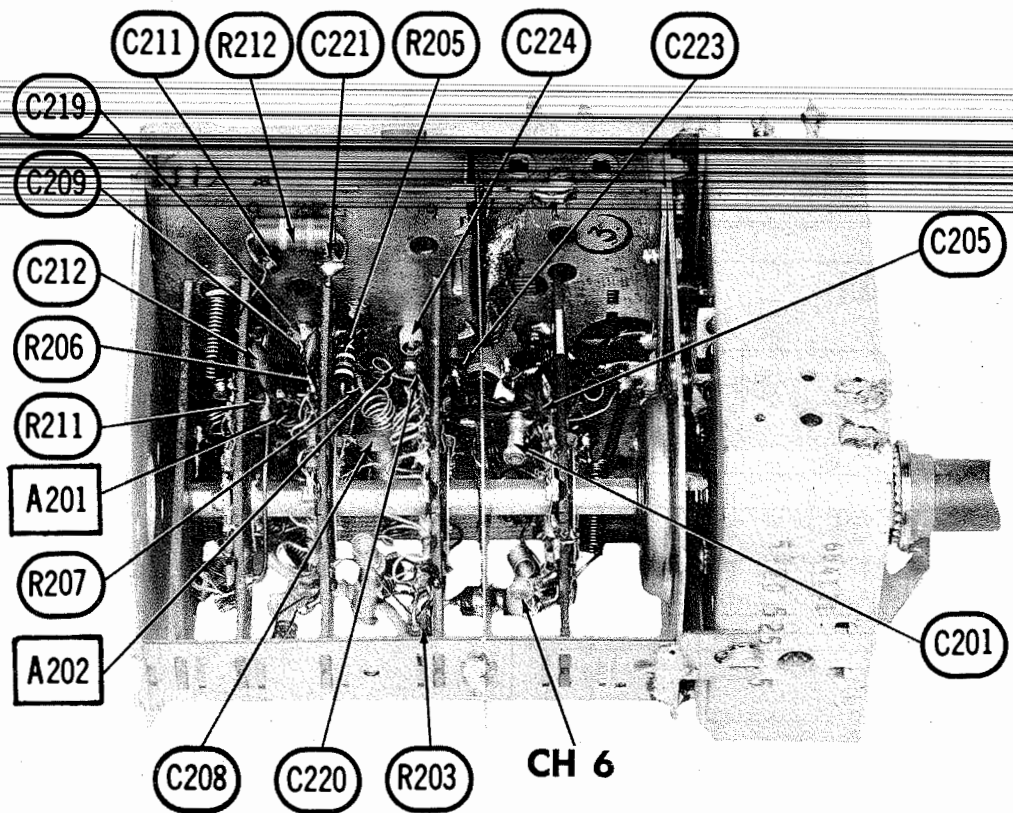




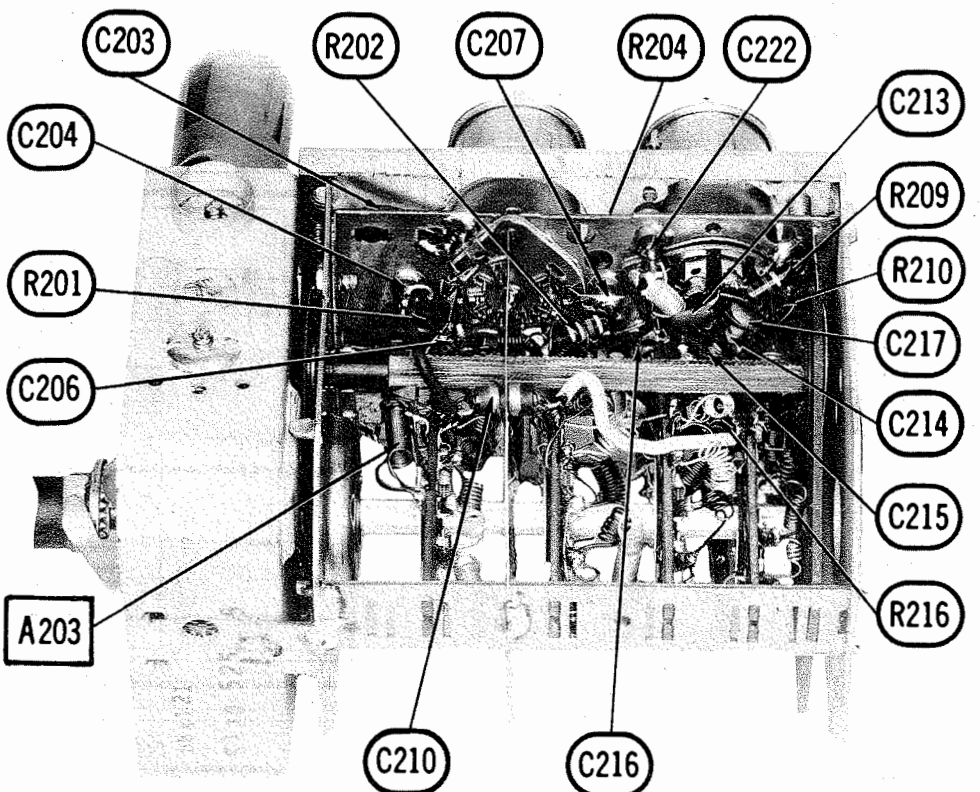
113 POSITION WAFER-TYPE VHF TUNER, UHF TUNER (ASSEMBLY #57-B-49)

**SETCHELL-CARLSON CHASSIS 159**  
(Late Production)

**FOLDER 3**



VHF & UHF TUNER 57-B-49, LEFT SIDE



VHF & UHF TUNER 57-B-49, RIGHT SIDE

ASSEMBLY 57-B-49  
VHF TUNER PARTS LIST AND DESCRIPTIONS  
TUBES

* AMPEREX *		* GENERAL ELECTRIC *		* RCA *		* RAYTHEON *		* SYLVANIA *	
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE		TYPE	
V201	RF Amplifier	6BC8		V202	Mixer - Osc.	6U8A			

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	10 5%		SI-10	TCZ-10	L10Q1	CCD-100	GP410	10TS-Q10
C202	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C203	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C204	.001		EF-6-1000	MFT-1000		CCF-102	CT280A	BH-340
C205	18		DI-18	DD-180	L10Q18	CCD-180	GP418	10TS-Q18
C206	2.7							10TCC-V27
C207	.001		EF-6-1000	MFT-1000		CCF-102	CT280A	BH-340
C208	15 NPO		NPO-DI-15	DTZ-15	C10Q15C	CCTO-150	CNO-415	10TCC-Q15
C209	15 NPO		NPO-DI-15	DTZ-15	C10Q15C	CCTO-150	CNO-415	10TCC-Q15
C210	.001		EF-6-1000	MFT-1000		CCF-102	CT280A	BH-340
C211	.001		EF-6-1000	MFT-1000		CCF-102	CT280A	BH-340
C212	47		DI-47	DD-470	L10Q47	CCD-470	GP447	10TS-Q47
C213	10 NPO		NPO-DI-10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C214	1.5 N150							
C215	1.2 10%							
C216	.001		EF-6-1000	MFT-1000		CCF-102	CT280A	BH-340
C217								
C218	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C219	.001		EF-6-100	MFT-1000		CCF-102	CT280A	BH-340
C220	.001		EF-6-1000	MFT-1000		CCF-102	CT280A	BH-340
C221	.001		EF-6-1000	MFT-1000		CCF-102	CT280A	BH-340
C222	.001		EF-6-1000	MFT-1000		CCF-102	CT280A	BH-340
C223	.001		EF-6-1000	MFT-1000		CCF-102	CT280A	BH-340
C224	.001		EF-6-1000	MFT-1000		CCF-102	CT280A	BH-340

\* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

RESISTORS

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

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R201	5600Ω				R209	820Ω			
R202	470K				R210	15K			
R203	15K				R211	2700Ω			
R204	3300Ω 1W				R212	2700Ω 1W			
R205	470K				R213	1meg 5%			
R206	2200Ω				R214	820Ω			
R207	120K				R215	2.2meg			
R208	1800Ω				R216	150K			

UHF TUNER PARTS LIST AND DESCRIPTIONS

TUBES

* AMPEREX *		* GENERAL ELECTRIC *		* RCA *		* RAYTHEON *		* SYLVANIA *	
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE		TYPE	
V301	UHF Osc.	6AF4A							

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	CURRENT RATING (Measured)	ORIGINAL Part or Type No.	RECTIFIERS		DIODES	NOTES
			RCA PART No.	SARKES TARZIAN PART No.		
X301		ST47				Germanium, UHF Mixer Diode

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C301	15		DI-15	DD-150	L10Q15	CCD-150	GP415	10TS-Q15
C302	.01 10%							
C303	1.5 N470							
C304								
C305	.001		EF-6-1000	MFT-1000		CCF-102	CT280A	BH-340
C306	.001		EF-6-1000	MFT-1000		CCF-102	CT280A	BH-340
C307								

\* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

RESISTORS

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

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R301	180Ω				R303	6800Ω			
R302	1000Ω								

SETCHELL-CARLSON CHASSIS 159  
(Late Production)

FOLDER 3

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS VHF TUNER (PART OF ASSEMBLY #57-B-49)

The High Voltage lead should be securely taped and kept away from the chassis.  
Allow a 20 minute warm-up period for the receiver and test equipment.

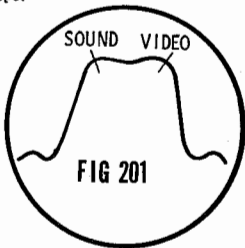
VHF OSCILLATOR ADJUSTMENT

Set Fine Tuning to center of its range. Adjust the overall oscillator screw for best picture and sound. If the Fine Tuning control will not bring desired results, compress or expand coils or bend tabs to compensate.

VHF RF MIXER ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. Use only enough sweep generator output to provide a usable pattern on scope. Use 10MC sweep unless otherwise noted. Connect variable bias to IF AGC line. Adjust bias to obtain response curve which shows no indication of overloading.

SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1. Across antenna terminal with 120Ω Resistor in each lead.	213MC	211. 25MC 215. 75MC	13	Vert. Amp. thru demodulator probe to point ①. Low side to chassis.	A201, A202, A203	Adjust for maximum gain and symmetry of response similar to Fig. 201 with markers as shown. Spread or compress coils for maximum gain and symmetry of response similar to Fig. 201 with markers as shown. Adjust A203 for MINIMUM response on scope.
	207MC	205. 25MC 209. 75	12			
	201MC	199. 25MC 203. 75MC	11			
	195MC	193. 25MC 197. 75MC	10			
	189MC	187. 25MC 191. 75MC	9			
	183MC	181. 25MC 185. 75MC	8			
	177MC	175. 25MC 179. 75MC	7			
	85MC	83. 25MC 87. 25MC	6			
	79MC	77. 25MC 81. 25MC	5			
	69MC	67. 25MC 71. 75MC	4			
	63MC	61. 25MC 65. 75MC	3			
	57MC	55. 25MC 59. 75MC	2			



PRE-ALIGNMENT INSTRUCTIONS - VHF TUNER A62

The High Voltage lead should be securely taped and kept away from the chassis.  
Allow a 20 minute warm-up period for the receiver and test equipment.

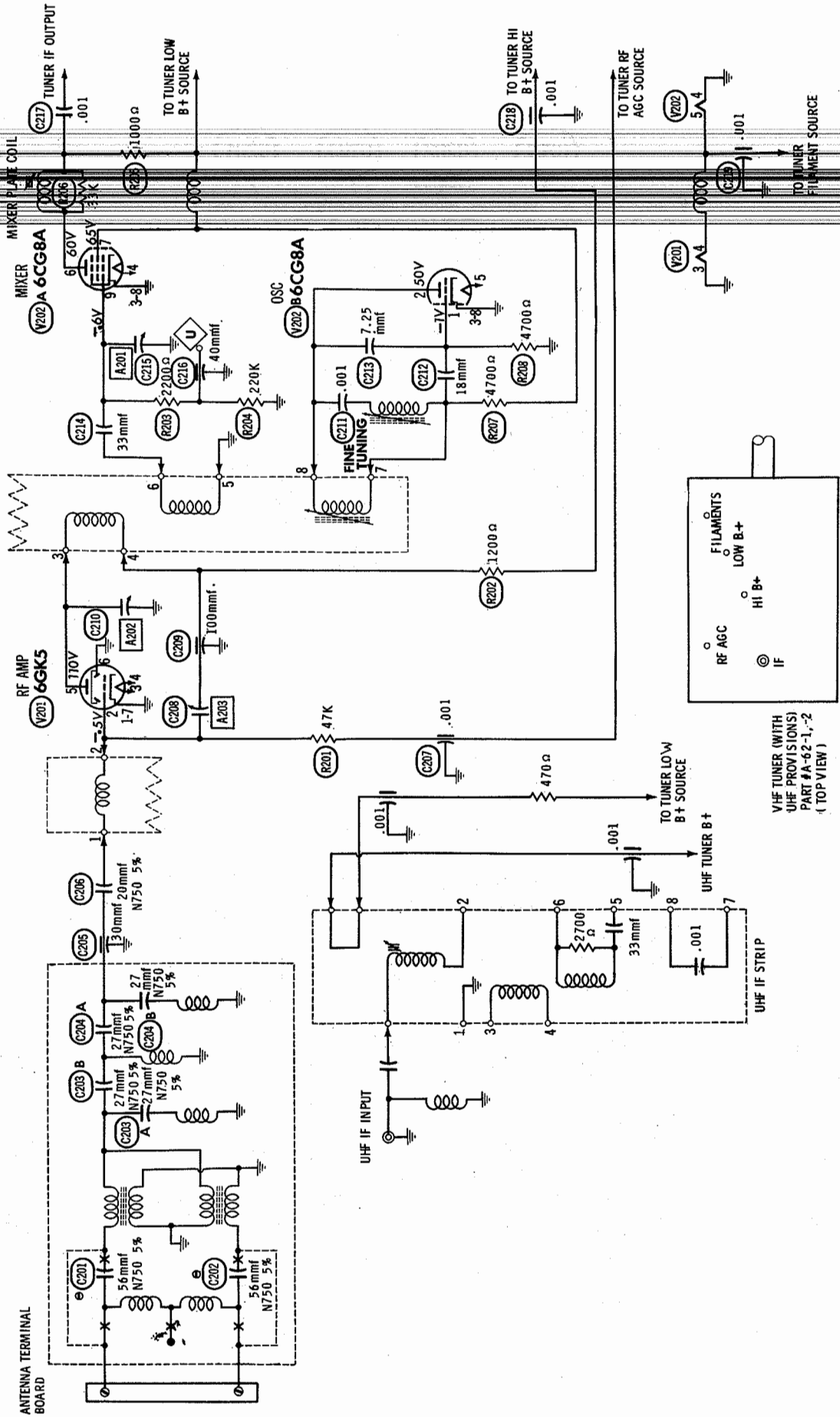
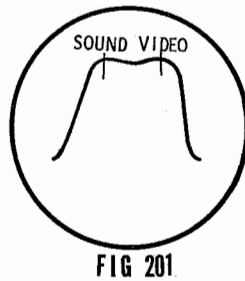
VHF OSCILLATOR ADJUSTMENT

Set Fine Tuning to center of its range. Starting with the highest channel in area, adjust the appropriate oscillator screw for best picture and sound.

VHF RF MIXER ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. Use only enough sweep generator output to provide a usable pattern on scope. Use 10MC sweep unless otherwise noted. Connect variable bias to IF AGC line. Adjust bias to obtain response curve which shows no indication of overloading.

SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1. Across antenna terminals with 120Ω in each lead.	195MC (10MC Sweep)	193. 25MC 197. 75MC	10	Vert. Amp. thru demodulator probe to point ①. Low side to chassis.	A201, A202	Adjust for maximum amplitude of response similar to Fig. 201. Adjust by compressing or expanding coils.
	85MC	83. 25MC 87. 75MC	6			
	213MC	211. 25MC 215. 75MC	13			
	207MC	205. 25MC 209. 75MC	12			
	201MC	199. 25MC 203. 75MC	11			
	189MC	187. 25MC 191. 75MC	9			
	183MC	181. 25MC 185. 75MC	8			
	177MC	175. 25MC 179. 75MC	7			
	79MC	77. 25MC 81. 75MC	5			
	69MC	67. 25MC 71. 75MC	4			
	63MC	61. 25MC 65. 75MC	3			
	57MC	55. 25MC 59. 75MC	2			



VHF TUNER (WITH UHF PROVISIONS) PART #A-62-1,-2 (TOP VIEW)

VHF TUNER A-62, -1, -2  
(Late Production)  
SETCHELL-CARLSON CHASSIS 159

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PARTS LIST AND DESCRIPTIONS

VHF TUNER A62,A62-1

TUBES

* AMPEREX *		* GENERAL ELECTRIC *		* RCA *		* RAYTHEON *		* SYLVANIA *	
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE		TYPE	
V201	RF Amplifier	6GK5		V202	Mixer - Osc.	6CG8A			

FIXED CAPACITORS

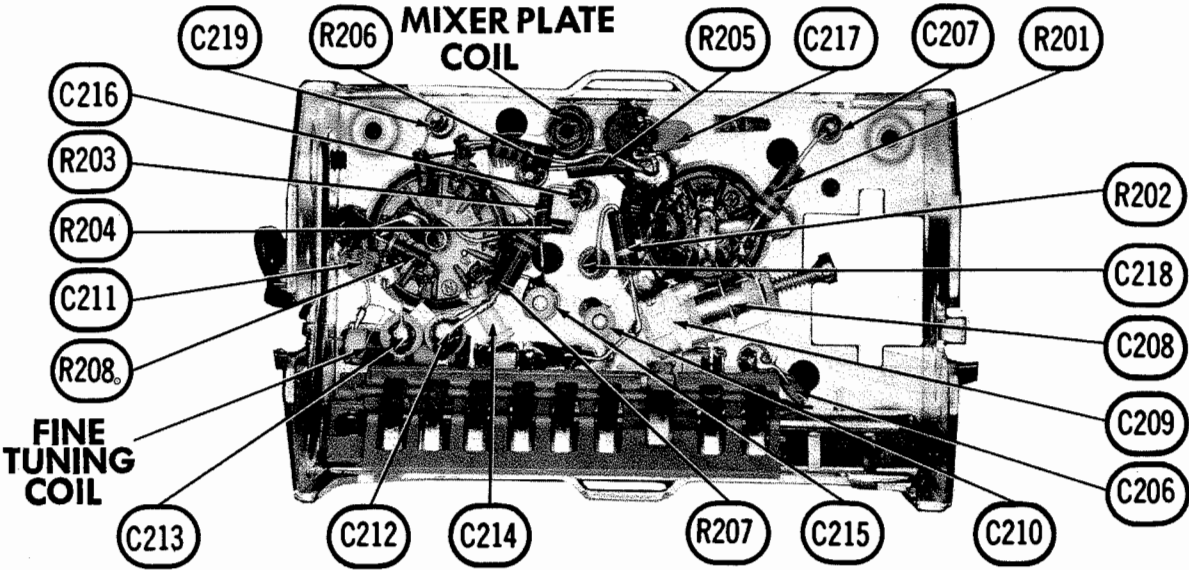
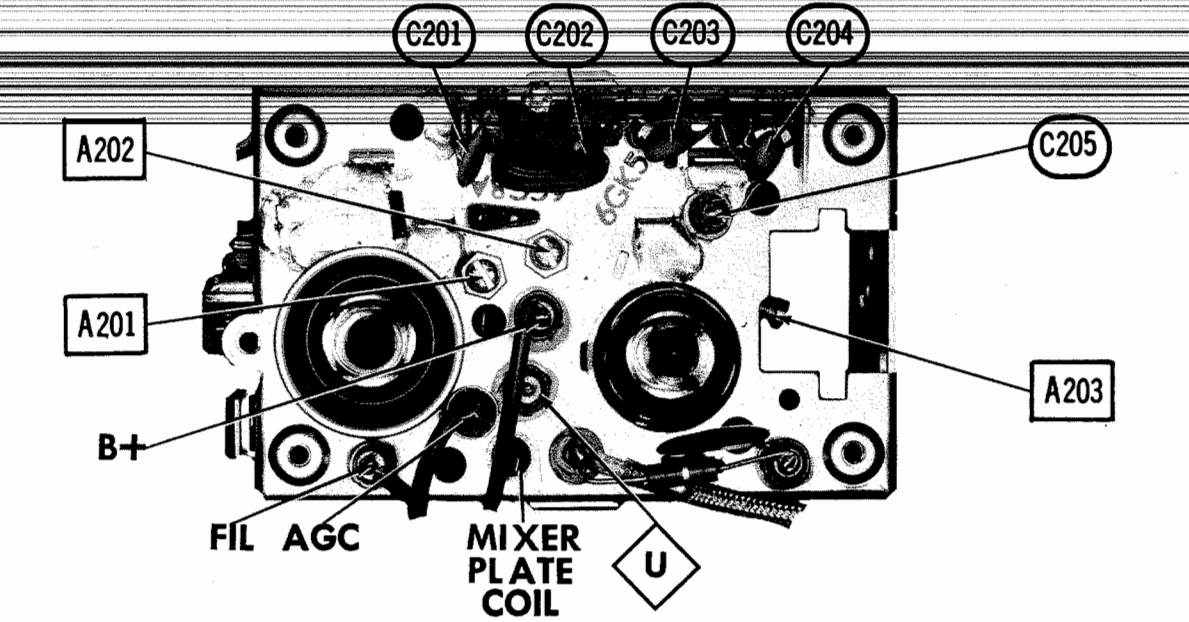
ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	56 N750 5%	①	N750-DI-20 EF-6-1000	DTN-20 MFT-1000	C10Q56U	CCTN-560	CN7-456	10TCU-Q56
C202	56 N750 5%				C10Q56U	CCTN-560	CN7-456	10TCU-Q56
C203A	27 N750 5%				C10Q27U	CCTN-270	CN7-427	10TCU-Q27
C204B	27 N750 5%				C10Q27U	CCTN-270	CN7-427	10TCU-Q27
C204A	27 N750 5%				C10Q27U	CCTN-270	CN7-427	10TCU-Q27
C204B	27 N750 5%				C10Q27U	CCTN-270	CN7-427	10TCU-Q27
C205	30				C10Q2U		CN7-420	10TCU-Q20
C206	20 N750 5%					CCF-102	CT280A	BH-340
C207	.001							
C208								BH-310
C209	100		EF-6-100	MFT-100				
C210								
C211	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C212	18							
C213	7.25							
C214	33		SI-1-33	TCZ-33	L10Q33	CCD-330	GP433	10TS-Q33
C215								
C216	40							
C217	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C218	.001		EF-6-1000	MFT-1000		CCF-102	CT280A	BH-340
C219	.001		EF-6-1000	MFT-1000		CCF-102	CT280A	BH-340
C219	.001							

① Not used in some versions.

RESISTORS

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

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R201	47K				R205	1000Ω			
R202	1200Ω				R206	33K			
R203	2200Ω				R207	4700Ω			
R204	220K				R208	4700Ω			



VHF TUNER A-62

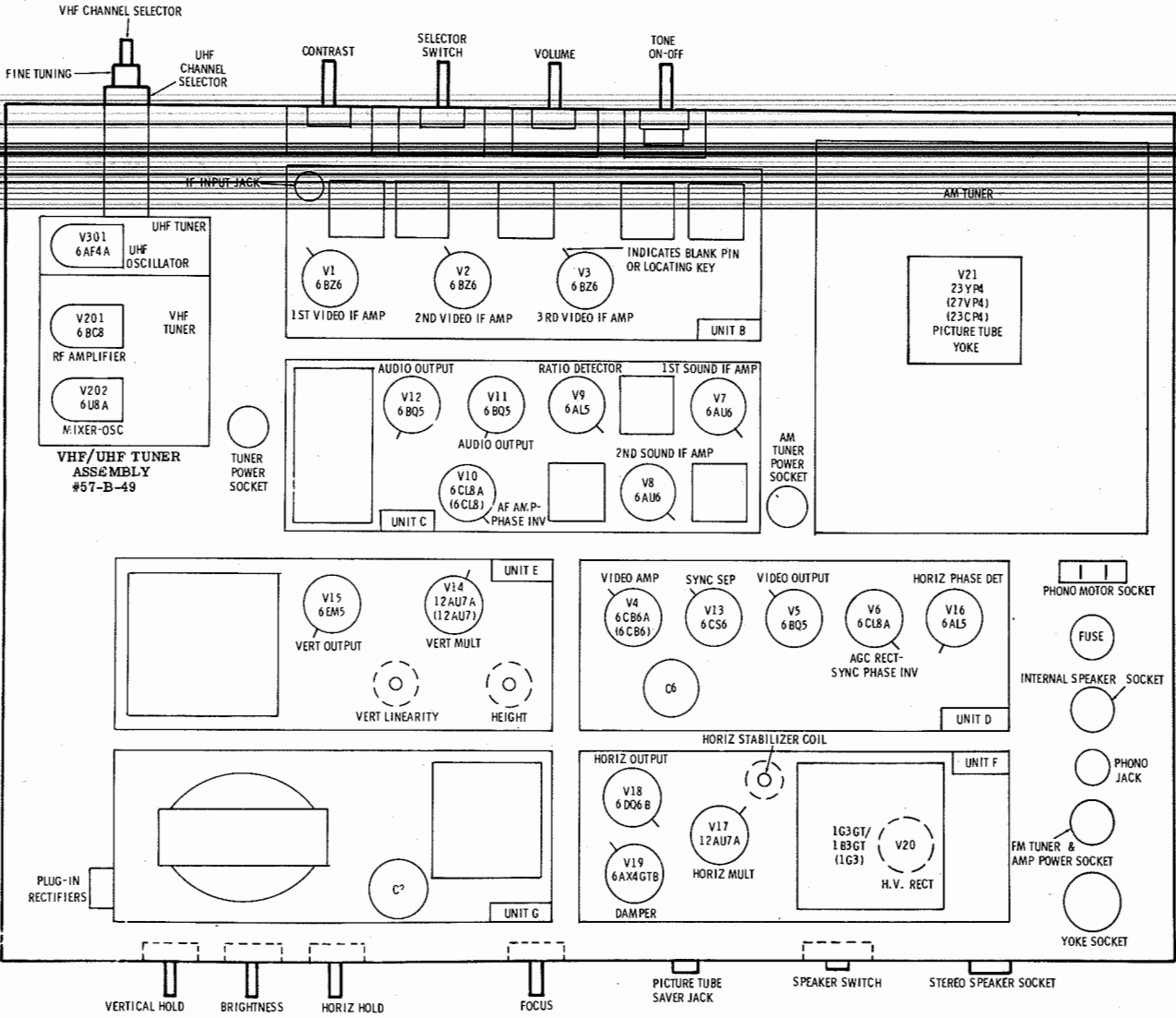


RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BZ6	228K	540Ω	FIL	FIL	†2400Ω	†2400Ω	470Ω		
V2	6BZ6	220K	540Ω	FIL	FIL	†2200Ω	†2200Ω	470Ω		
V3	6BZ6	.1Ω	180Ω	FIL	FIL	†2400Ω	†2400Ω	180Ω		
V4	6CB6A	1meg	0Ω	FIL	FIL	†4200Ω	†2000Ω	0Ω		
V5	6BQ5	NC	1meg	550Ω	FIL	FIL	NC	†3000Ω	NC	†26Ω
V6	6CL8A	47K	†8800Ω	5600Ω	FIL	FIL	440K	†22K	†4200Ω	†26K
V7	6AU6	2.5Ω	0Ω	FIL	FIL	†17K	†17K	180Ω		
V8	6AU6	47K	0Ω	FIL	FIL	†17K	†17K	180Ω		
V9	6AL5	6800Ω	6800Ω	FIL	FIL	INF	0Ω	INF		
V10	6CL8A	4.8meg	†150K	100K	FIL	FIL	†270K	†2.2meg	22Ω	12meg
V11	6BQ6	NC	1meg	150Ω	FIL	FIL	NC	†2150Ω	NC	†2000Ω
V12	6BQ5	NC	1meg	150Ω	FIL	FIL	NC	†2150Ω	NC	†2000Ω
V13	6CS6	†2.2meg	0Ω	FIL	FIL	47K	†68K	2.7meg		
V14	12AU7A	†2.2meg	850K	4700Ω	FIL	FIL	†220K	0Ω	4700Ω	FIL
V15	6EM5	†250Ω	NC	1meg	FIL	FIL	NC	1100Ω	NC	†615Ω
V16	6AL5	22K	22K	FIL	FIL	4.8meg	0Ω	4.8meg		
V17	12AU7A	†100K	65K	1500Ω	FIL	FIL	†10K	5.2meg	1500Ω	FIL
V18	6DQ6B	TP	FIL	TP	†50K	1meg	NC	FIL	0Ω	TOP CAP †30Ω
V19	6AX4GTB	TP	NC	3meg	NC	†26Ω	NC	FIL	FIL	
V20	1G3GT 1B3GT	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP †260Ω
V21	23YP4	FIL	1meg	Pin 6 100Ω	Pin 10 †440K	Pin 11 30K	Pin 12 FIL			
V201	6BC8	†5000Ω	†470K	INF	FIL	FIL	†0Ω	1meg	0Ω	0Ω
V202	6U8A	†5000Ω	470K	†125K	FIL	FIL	†3800Ω	1000Ω	0Ω	15K
V301	6AF4A	†15800Ω	7500Ω	FIL	FIL	0Ω	7500Ω	†15800Ω		
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

ALL MEASUREMENTS MADE IN VHF TV POSITION UNLESS OTHERWISE DESIGNATED.  
† MEASURED FROM OUTPUT OF X2.  
‡ MEASURED FROM PIN 3 OF V19.  
NC NO CONNECTION  
• MEASURED IN UHF POSITION.  
MEASURED FROM PIN 3 OF V201.  
TP TIE POINT

TUBE PLACEMENT CHART



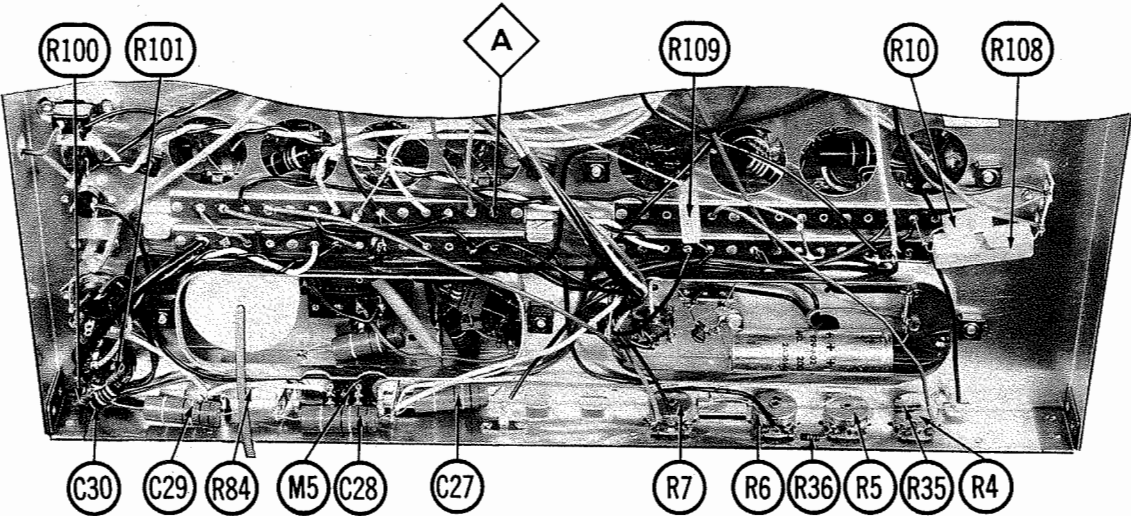
SETCHELL-CARLSON CHASSIS 159  
(Late Production)

TUBE FAILURE CHECK CHART

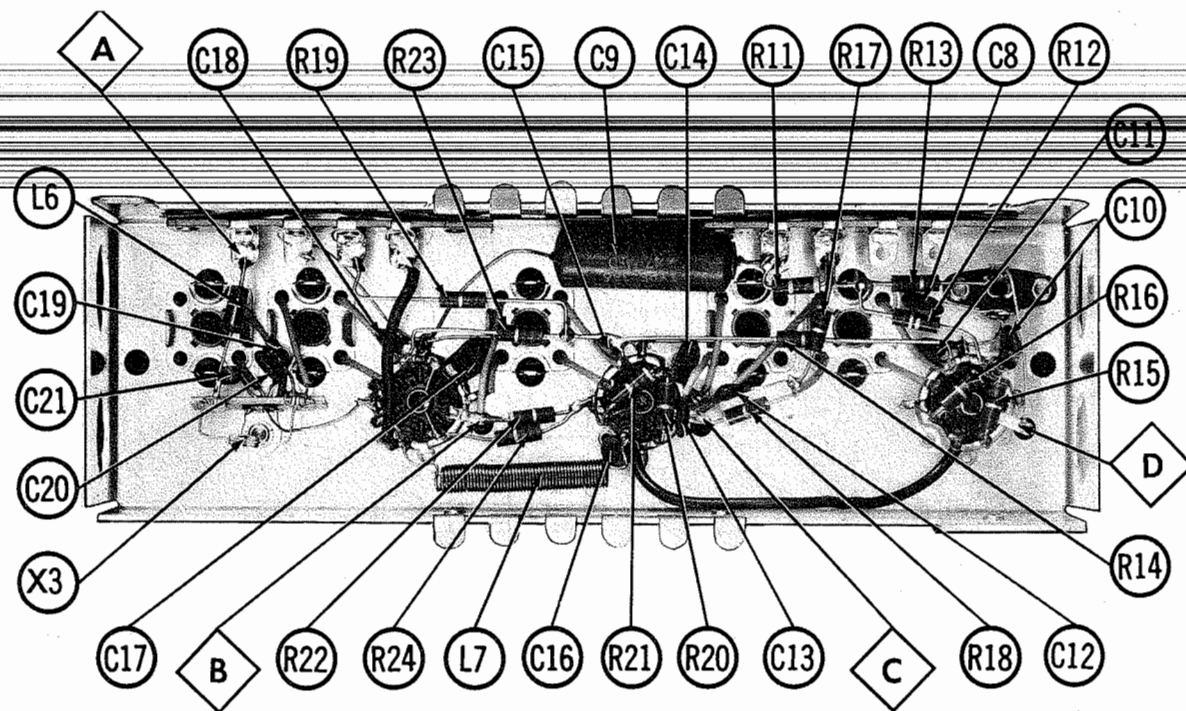
The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

<b>POWER SUPPLY FAILURE</b> No raster, no sound Power Rectifiers X1, X2, Filament Fuse M1, Fusible Resistor R105, Line Fuse M2.	<b>LOSS OF PICTURE OR SOUND</b> No pic, no sound, has raster V1, V2, V3, V6, V21 No pic, no sound, has snow V201, V202, V1 No pic, has sound, has raster V4, V5, V21 Has pic, no sound V7, V8, V9, V10, V11, V12 Overloaded picture V6
<b>SWEEP FAILURE</b> No raster, has sound V17, V18, V19, V20, V21 No vertical deflection V14, V15 Poor vert. linearity or foldover V14, V15 Poor horiz. linearity or foldover V17, V18, V19 Narrow picture V17, V18, V19, X1, X2 Vert. off freq. V14, V15 Horiz. off freq. V16, V17, V18	<b>SYNC FAILURE</b> No vert. sync V6, V13 No horiz. sync V6, V13, V16 No vert. or horiz. sync V6, V13, V16

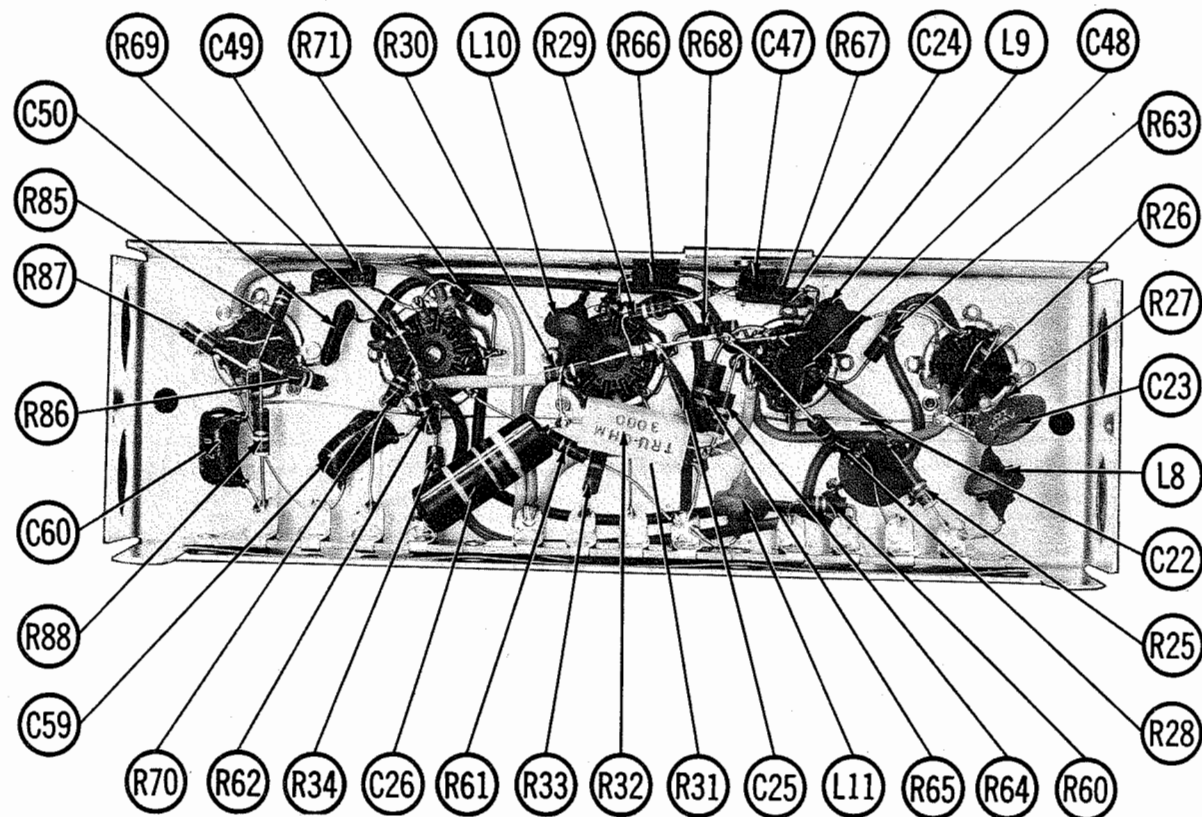
FOLDER 3



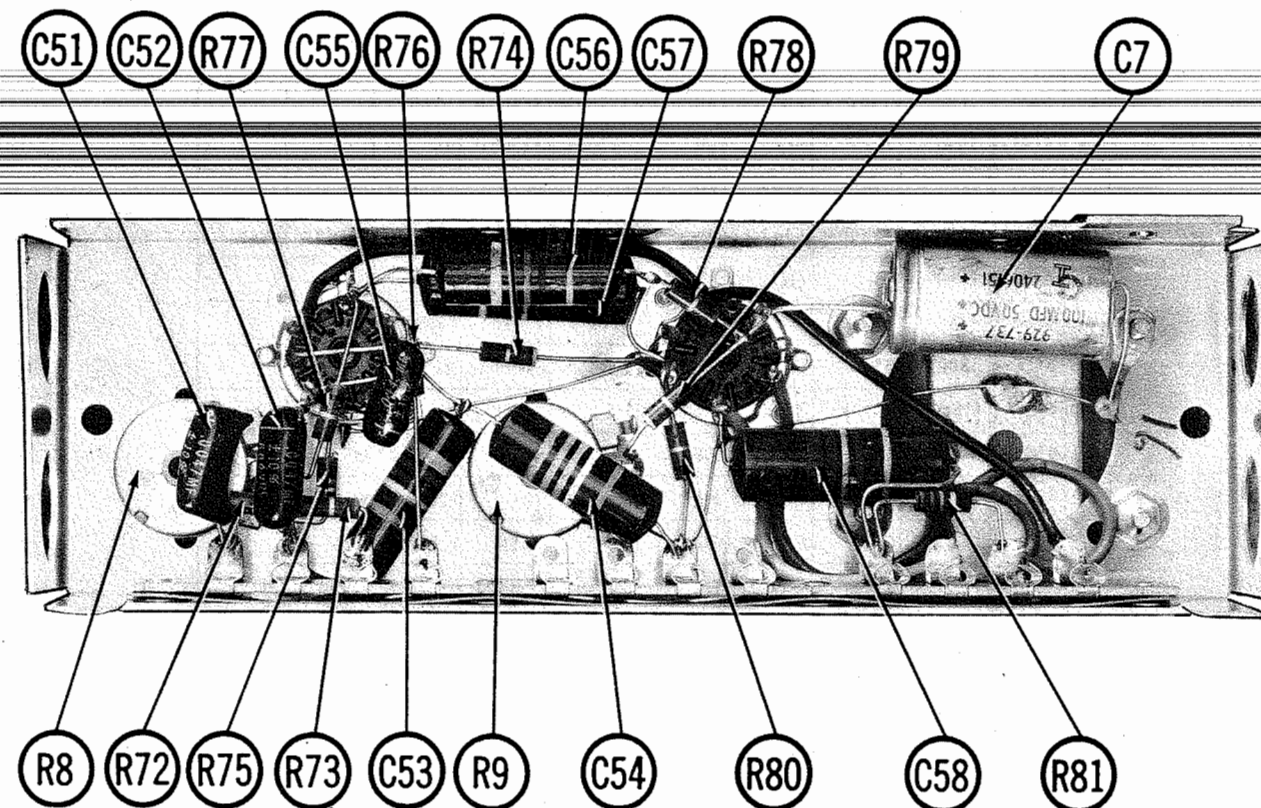
CHASSIS BOTTOM VIEW-(REAR SECTION)



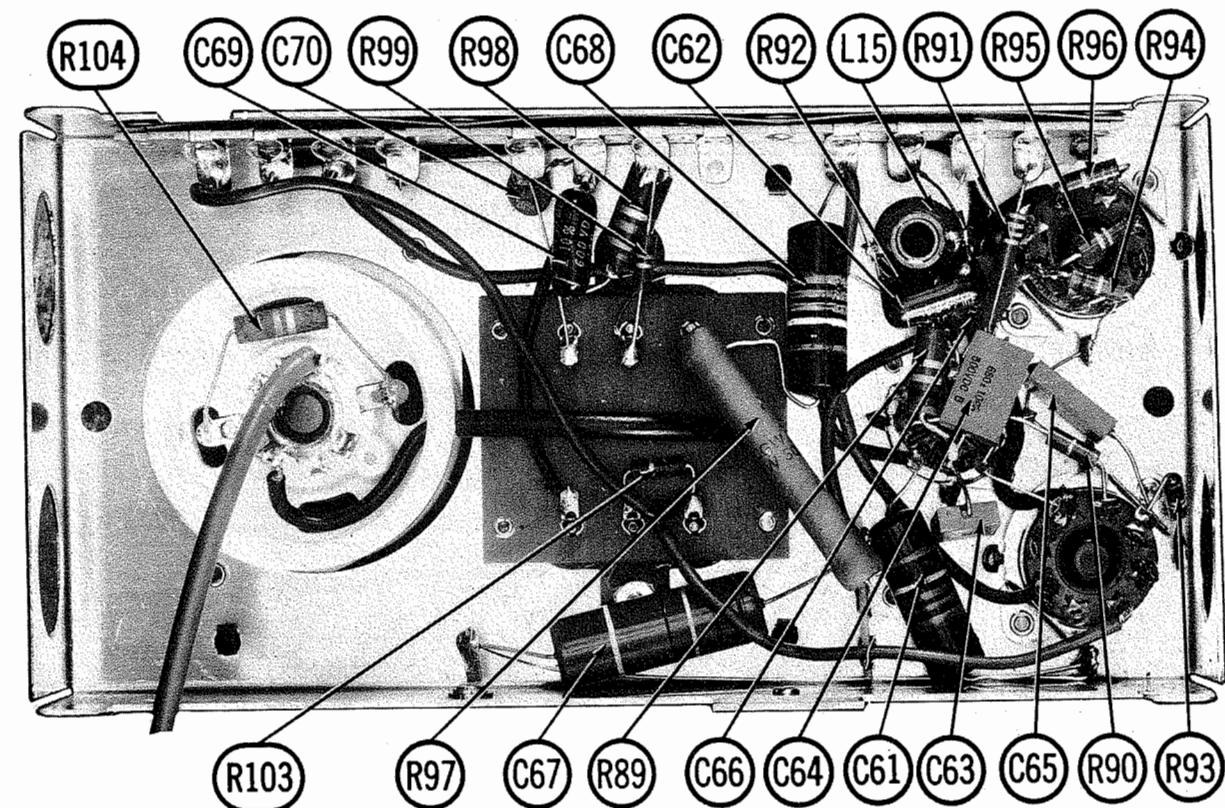
VIDEO IF (SUBCHASSIS "B")



VIDEO AMP - OUTPUT, SYNC, AGC,  
HORIZ. PHASE DET. (SUBCHASSIS "D")



VERT. OSC. - OUTPUT (SUBCHASSIS "E")



HORIZ. MULT. - OUTPUT (SUBCHASSIS "F")



PARTS LIST AND DESCRIPTIONS (Continued)

MISCELLANEOUS

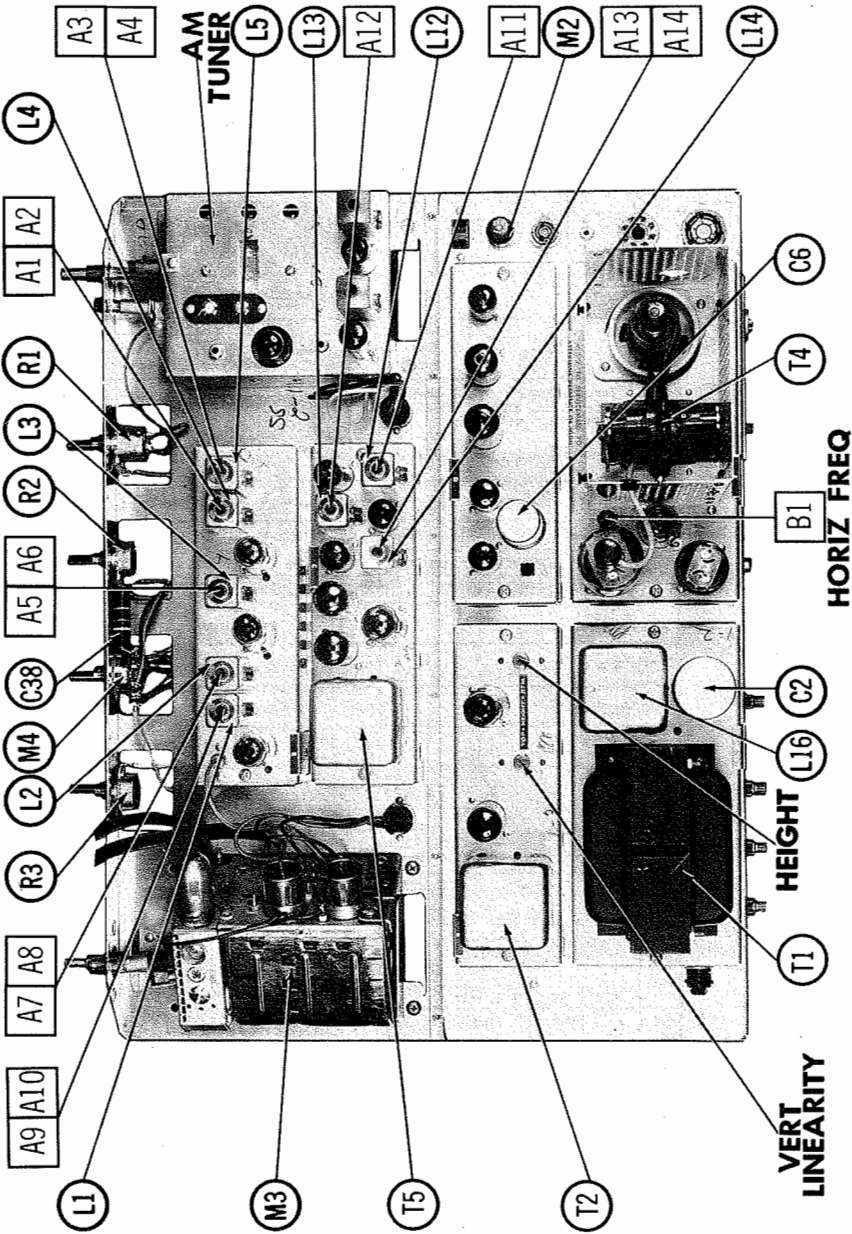
ITEM No.	PART NAME	Setchell-Carlson PART No.	NOTES
M3	VHF/UHF Tuner	57-B-49	VHF and UHF Tuner Assembly
M4	Switch	A62, -1, -2	
M5	Switch		Selector (TV-Radio-Phono) Speaker (Stereo-Parallel)

CABINETS & CABINET PARTS

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

WIRING DATA

High Voltage Lead ..... Use BELDEN No. 8869 (17KV) or 8868 (25KV)  
Shielded Hook-up Wire ..... Use BELDEN No. 8885 (Single Conductor)  
8738 (Two Conductor)  
General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in 12 Colors  
8524 (Stranded) Available in 12 Colors  
Power Cord (Interlock Type) ..... Use BELDEN No. 8874 (Rubber) or 8895 (Plastic)  
300Ω Tuner Input Lead ..... Use BELDEN No. 8225  
300Ω Antenna Lead-in ..... Use BELDEN No. 8230 or 8275  
Antenna Rotor Cable ..... Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor  
8485 (Round) - 5 Conductor  
8488 (Round) - 8 Conductor



CHASSIS—TOP VIEW

PRE-ALIGNMENT INSTRUCTIONS ALIGNMENT INSTRUCTIONS

The High Voltage Lead should be securely taped and kept away from the chassis.  
Allow a 20 minute warm-up period for the receiver and test equipment.  
Suggested Alignment Tools: A1 thru A14, Mixer Plate Coil ..... GENERAL CEMENT #8282, 8806, 8806L, 9295, 9440  
WALSCO #2526, 2543, 2544, 2545

VIDEO IF ALIGNMENT

Disable oscillator grid by removing a pin of a test tube.  
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.  
Use only enough generator output to provide a usable indication.  
Connect variable bias to IF AGC line. Adjust bias to obtain response curve which shows no indication of overloading.

	SWEET GENERATOR COUPLING	SWEET GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	High side to Point (B). Low side to chassis.	44MC (10MC Sweep)	41.25MC 42.25MC 45.75MC 47.25MC	Any non-interfering channel	Vert. Amp. to Point (A). Low side to chassis.	A1, A2, A3, A4	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Adjust A3 to place 47.25MC marker in trap notch and A4 to place 41.25MC marker in trap notch as shown in Fig. 2.
2.	High side to Point (C). Low side to chassis.	"	42.25MC 45.75MC	"	"	A5, A6	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown.
3.	High side to Point (D). Low side to chassis.	"	41.25MC 42.25MC 45.75MC 47.25MC	"	"	A7, A8, A9, A10	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Adjust A7 to place 47.25MC marker in trap notch and A8 to place 41.25MC marker in trap notch as shown in Fig. 2.
4.	High side to ungrounded tube shield over Mixer-Osc. Low side to chassis	"	"	"	"	Mixer Plate Coil	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. If necessary, retouch A1, A2, A5, A8, A9 and A10.

SOUND IF ALIGNMENT

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5.	High side to Point (A). Low side to chassis.	4.5MC (Unmod.)	Any non-interfering channel	DC Probe to Point (B). Common to chassis.	A11, A12, A13	Adjust for maximum deflection.
6.	"	"	"	DC Probe to Point (D). Common to chassis.	A14	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

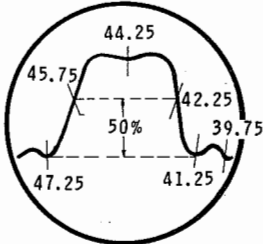


FIG. 1

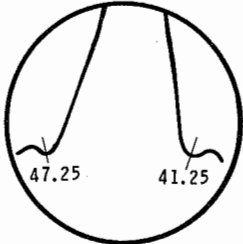
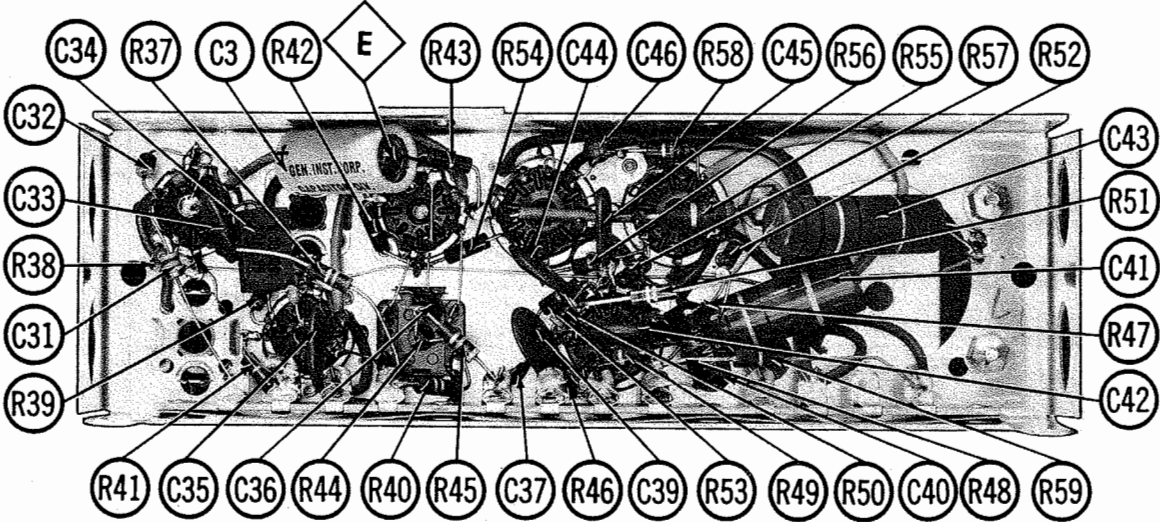


FIG. 2



SOUND IF/OUTPUT ( SUBCHASSIS "C")

SET 610 FOLDER 3

SETCHELL-CARLSON CHASSIS 159  
(Late Production)

FOLDER 3

## PARTS LIST AND DESCRIPTIONS

## TUBES

* AMPEREX			* GENERAL ELECTRIC			* RCA			* RAYTHEON			* SYLVANIA		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	1st Video IF Amp.	6BZ6	V11	Audio Output	6BQ5	V1	1st Video IF Amp.	6BZ6	V12	Audio Output	6BQ5	V2	2nd Video IF Amp.	6BZ6
V2	2nd Video IF Amp.	6BZ6	V13	Audio Output	6BQ5	V3	3rd Video IF Amp.	6BZ6	V14	Vert. Mult.	12AU6 (12AU7)*	V4	Video Amp.	6CB6A (6CB6)*
V3	3rd Video IF Amp.	6BZ6	V15	Horiz. Phase Det.	6AL5	V5	Video Output	6CB6A (6CB6)*	V16	Horiz. Mult.	12AU6	V6	Video Output	6CB6A (6CB6)*
V4	Video Amp.	6CB6A (6CB6)*	V17	Horiz. Mult.	12AU6	V6	Video Output	6CB6A (6CB6)*	V18	Horiz. Output	6AL5	V7	1st Phase Inv.	6CL8A
V5	Video Output	6CB6A (6CB6)*	V19	Damper	6AX4GTB (6AX4)*	V7	1st Phase Inv.	6CL8A	V20	HV Rectifier	1G3GT/1B3GT (1G3)*	V8	2nd Phase Inv.	6CL8A
V6	Video Output	6CB6A (6CB6)*				V8	2nd Phase Inv.	6CL8A				V9	Ratio Detector	6AL5
V7	1st Phase Inv.	6CL8A				V9	Ratio Detector	6AL5				V10	AF Amp. - Phase Inv.	6CL8A (6CL8)*
V8	2nd Phase Inv.	6CL8A				V10	AF Amp. - Phase Inv.	6CL8A (6CL8)*						

\* Alternate

## PICTURE TUBE

REPLACEMENT DATA						NOTES
ITEM No.	Setchell-Carlson PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
V21	23YP4 23CP4 23VP4	23YP4 ① 23CP4 ①	23YP4 ① 23CP4 ①	23YP4 ② 23CP4 ②	23YP4 ② 23CP4 ②	① Aluminized ② Silver Screen "85"

## POWER RECTIFIERS &amp; SIGNAL DIODES

ITEM No.	CURRENT RATING (Measured)	ORIGINAL Part or Type No.	RECTIFIERS		DIODES	NOTES
			RCA PART No.	SARKES TARZIAN PART No.		
X1	.300A	*	1N3194	F4		* Silicon, Complete Plug-in Assembly, X1, X2 Part #ZSR500, Video Detector
X2	.300A	*	1N3194	F4		
X3	.300A	*			1N60 (1N295)	

## ELECTROLYTIC CAPACITORS

ITEM No.	RATING		Setchell-Carlson PART No.	REPLACEMENT DATA					
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.
C1	200	200	①	PR1-075	BR200-250	QTI-27	WS342	TD-200-200	TVA-1480
C2A	100	350		AFH4-05-85	BR100-450	XCS-41	FP333, 86	TMT-3441	TVL8-4635, 15*
B	100	350				QTI-16	TC79	TD-100-450	
C	50	350							
D	50	350							
C3	5	50		PRSL310	BR5-50	QTI-3	TC30	TD-5-50	TVA-1303
C4	50	25		PTT85	NLW50-25	MTI-17	TC29	MLV50-25	TE-1209
C5	50	25		PTT85	NLW50-25	MTI-17	TC29	MLV50-25	TE-1209
C6	20	350		AFH1-50	A0480	XCI-2	FPI44	TMS-1690	TVL-1714
C7	100	50		PRSL370	BR100-50	QTI-23	TC3501	TD-100-50	TVA-1310

① Some versions may use 3 section (140mfd-140mfd-20mfd) in this application.  
 \* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

## FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CORNELL-DUBILIER PART No.	ELMENCOR PART No.	MALLORY PART No.	SPRAGUE PART No.	
C8	.0033	100V	BPD-0033	DD-332	BYA10D33	CCD-332	B-233	10TS-D33
C9	.47		P268N-47		CUB2P47	2DP-6-474	GEM-2047	2PS-P47
C10	.0033		BPD-0033	DD-332	BYA10D33	CCD-332	B-233	10TS-D33
C11	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	10TS-D10
C12	.001	NPO	BPD-001	DD-102	BYA10D1	CCD-102	B-210	10TS-D10
C13	1.5		NPO-DI 1.5	TCZ-1R5	C10V15C	10TCC-V15		
C14	.0033		BPD-0033	DD-332	BYA10D33	CCD-332	B-233	10TS-D33
C15	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	10TS-D10
C16	.001	5%	BPD-001	DD-102	BYA10D1	CCD-102	B-210	10TS-D10
C17	.0033		BPD-0033	DD-332	BYA10D33	CCD-332	B-233	10TS-D33
C18	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	10TS-D10
C19	1.5		NPO-SI 1.5	TCZ-1R5	C10V15C	10TCC-V15		
C20	6.8	N750	N750-SI 6.8	DTZ-6R8	C10V68U	CNT-568		
C21	10	(2.2) †	BPD-01	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C22	.01		BPD-01	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C23	.01		BPD-01	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C24	.01		BPD-01	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C25	.01	400V	BPD-01	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C26	.047		P488N-047	DD-503	CUB4S47	4DP-4-473	GEM-4147	4PS-S47
C27	.1		P488N-1	DF-104	CUB4P1	4DP-4-104	GEM-401	4PS-P10
C28	.1		P488N-1	DF-104	CUB4P1	4DP-4-104	GEM-401	4PS-P10
C29	.1	400V	P488N-1	DF-104	CUB4P1	4DP-4-104	GEM-401	4PS-P10
C30	.0033		BE6-0033	DD-332	PM6D33	8DP-1-332	GEM-16233	6PS-D33
C31	3.3		NPO-SI 3.3	TCZ-3R3	L10V33	CCTO-2R2	GP533	10TS-V33
C32	10		NPO-SI 10	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C33	.01	10%	BPD-01	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C34	.01		BPD-01	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C35	.01		BPD-01	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C36	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	10TS-D10
C37	.001	400V	BPD-001	DD-102	BYA10D1	CCD-102	B-210	10TS-D10
C38	.047		P488N-047	DD-503	CUB4S47	4DP-4-473	GEM-4147	4PS-S47
C39	.01		BPD-01	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C40	.0047		BE6-0047	DD-332	PM6D47	8DP-1-472	GEM-16247	6PS-D47
C41	.1	400V	P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4PS-P10
C42	.01		BPD-01	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C43	.1		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4PS-P10
C44	.01		BPD-01	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C45	.01	10%	BPD-01	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C46	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	10TS-D10
C47	330		1489-00033	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C48	.01		BPD-01	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C49	.001	10%	1489-001	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C50	.001		1489-001	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C51	.0047		BE6-0047	DD-332	PM6D47	8DP-1-472	GEM-16247	6PS-D47
C52	.0047		BE6-0047	DD-332	PM6D47	8DP-1-472	GEM-16247	6PS-D47
C53	.0047	10%	BE6-0047	DD-332	PM6D47	8DP-1-472	GEM-16247	6PS-D47
C54	.033		BE6-033	DD-332	PM6D33	8DP-1-332	GEM-16233	6PS-D33
C55	.0047		BE6-0047	DD-332	PM6D47	8DP-1-472	GEM-16247	6PS-D47
C56	.047		P488N-047	DD-503	CUB4S47	4DP-4-473	GEM-4147	4PS-S47
C57	.1	400V	P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4PS-P10

## FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CORNELL-DUBILIER PART No.	ELMENCOR PART No.	MALLORY PART No.	SPRAGUE PART No.	
C58	.1	400V	P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4PS-P10
C59	.0047	600V 10%	BE6-0047	DD-332	PM6D47	8DP-1-472	GEM-16247	6PS-D47
C60	.0047	600V 10%	BE6-0047	DD-332	PM6D47	8DP-1-472	GEM-16247	6PS-D47
C61	.033	600V 10%	BE6-033	DD-332	PM6D33	8DP-1-332	GEM-16233	6PS-D33
C62	.0047	600V 10%	BE6-0047	DD-332	PM6D47	8DP-1-472	GEM-16247	6PS-D47
C63	.20	10%	1489-0002	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C64	.880	10%	1489-00068	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C65	.880	10%	1489-00068	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C66	.01	10%	BPD-01	DD-103	BYA10D1	CCD-103	B-210	10TS-D10
C67	.1	400V	P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4PS-P10
C68	.033	600V 10%	BE6-033	DD-332	PM6D33	8DP-1-332	GEM-16233	6PS-D33
C69	.0047	600V 10%	BE6-0047	DD-332	PM6D47	8DP-1-472	GEM-16247	6PS-D47
C70	.0015	1400V	HVD-15-1500	DD30-152	HVC15D15	2HV-215	30GA-D15	
C71	.0015	1400V	HVD-15-1500	DD30-152	HVC15D15	2HV-215	30GA-D15	

† Alternate Value

## CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA					
			Setchell-Carlson PART No.	CORNELL-DUBILIER PART No.	ELMENCOR PART No.	MALLORY PART No.	SPRAGUE PART No.	
R1	Tone, Power On-Off Switch	500K	VR-816-R	B-80-S, or (F2-500K, SU204, KR-1)	A47-500K-Z, F8-3, SWR12	Q13-133, 78-1, or (BU2, CF25, SSI, DC1) *	U48, US-28, or (UA55A, SL3500, US-41) *	
R2	Volume	5meg	VR-817-R	B-88, or (F2-5meg, SU204)	A47-5meg-Z, F8-3	Q13-141, or (BU2, CF29, SSI, DC1) *	U85, or (UA56A, SL3500)	
R3	Contrast	4000Ω	VR-805A	B-12, or (F5-5000, SU204)	A47-4000-S, F8-3	Q17-114, or (BU2, CF34, SSI, DC1) *	RU452R, SL-38, SL3500)	
R4	Vertical Hold	2.5meg	VR-803	BX-83, or (F1-2.5meg, SNI010)	A47-2.5meg-S, FKS-1/4	BU1-239, SK8, or (BU2, CF20, S86) *	SU565, or (UA255L, SNI000)	
R5	Brightness	100K	VR-802	BX-40, or (F1-100K, SNI010)	A47-100K-S, FKS-1/4	BU1-128, SK8, or (BU2, CF13, S86) *	SU41, or (UA15L, SNI000)	
R6	Horizontal Hold	100K	VR-802	BX-40, or (F1-100K, SNI010)	A47-100K-S, FKS-1/4	BU1-128, SK8, or (BU2, CF13, S86) *	SU41, or (UA15L, SNI000)	
R7	Focus	2.5meg	VR-803	BX-83, or (F1-2.5meg, SNI010)	A47-2.5meg-S, FKS-1/4	BU1-239, SK8, or (BU2, CF20, S86) *	SU565, or (UA255L, SNI000)	
R8	Height (Bottom)	2.5meg	VR-803	BX-83, or (F1-2.5meg, SNI010)	A47-2.5meg-S, FKS-1/4	BU1-239, SK8, or (BU2, CF20, S86) *	SU565, or (UA255L, SNI000)	
R9	Vertical Linearity (Height Top)	3000Ω	VR-801-B	TT-8, or (F1-2500, SNI010)	A47-3000-S, FKS-1/4	BU1-112, SK6	SU8, or (UA33L, SNI000)	

\* "SNAPTROL"

## RESISTORS

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

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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