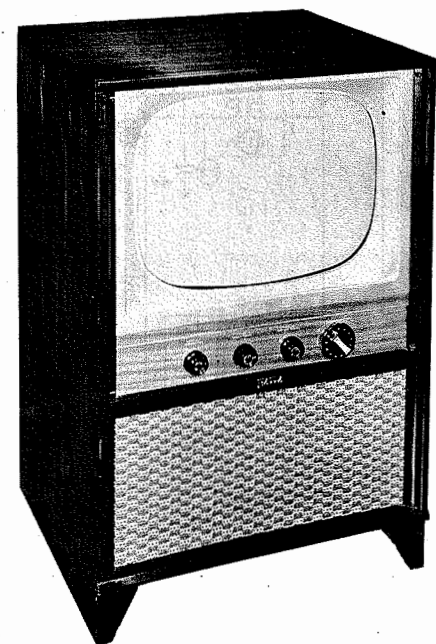




FADA MODELS UH17KD, UH17LI, UH17L2, UH17L2EB, UH17LO, UH21KA, UH21KI, UH21KILO, UH21LI, UH21L2, UH21L2EB, UH21L2LO



MODELS

UH17KD, UH17LI, UH17L2, UH17L2EB, UH17L2LO, UH21KA, UH21KI, UH21KILO, UH21LI, UH21L2, UH21L2EB, UH21L2LO

## DISASSEMBLY INSTRUCTIONS

### CHASSIS REMOVAL

1. Remove 7 push-on type control knobs from front panel of cabinet.
2. Remove 9 wood screws. Remove rear cover.
3. Remove 4 wood screws. Remove antenna terminal bracket.
4. Disconnect speaker leads, picture tube socket, ion trap, centering magnet and HV lead.
5. Remove wing screw holding yoke. Remove yoke.
6. Remove 4 chassis bolts. Remove chassis.
7. Remove 2 speaker nuts. Remove speaker.

## SERVICING IN THE FIELD

### TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the VHF tuner oscillator circuit may be accomplished by removal of the channel selector and fine tuning knobs. The adjustments are accessible, one at a time, thru the small hole in the cabinet to the right of the channel selector shaft.

### PICTURE TUBE SAFETY GLASS CLEANING

To clean safety glass remove 4 phillips head wood screws holding the 2 wood molding strips to each side of the safety glass. Hold glass in place and remove the molding strips and safety glass. Use extreme caution when removing safety glass.

### PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions).

### SERVICE ADJUSTMENT LOCATION

See tube placement chart on page 5.

### HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal oscillator circuit can be made from the rear panel of the chassis. Set the horizontal hold control at its mid-range position and adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

### SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (A10) located on top of chassis.

### FUSES

One fuse is used for horizontal and vertical sweep circuit protection. (For location see tube placement chart).

### CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube, located flush against the deflection yoke. Rotate the two rings around the neck of the tube until the picture is properly centered.

FADA MODELS UH17KD, UH17LI, UH17L2, UH17L2EB, UH17LO, UH21KA, UH21KI, UH21KILO, UH21LI, UH21L2, UH21L2EB, UH21L2LO

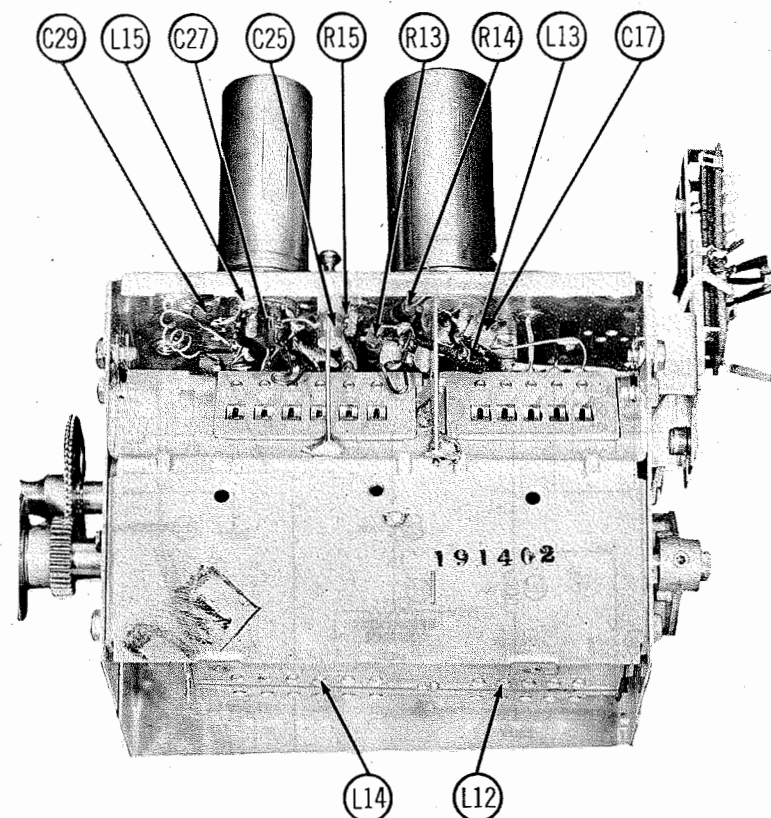
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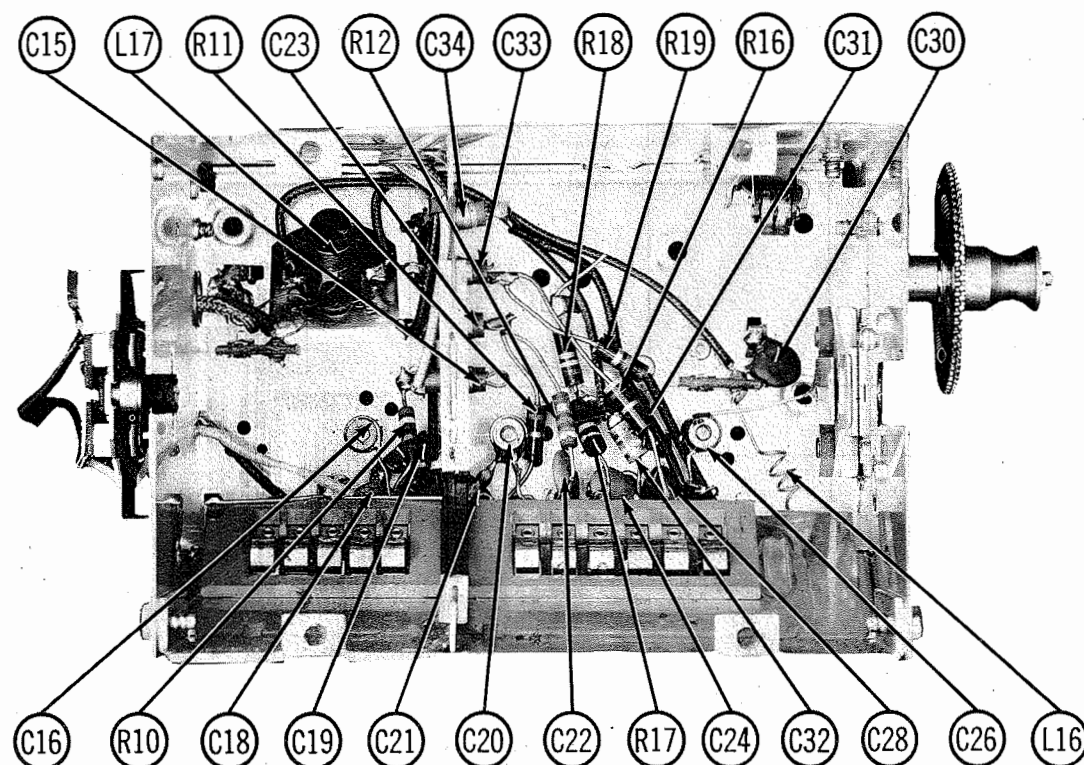
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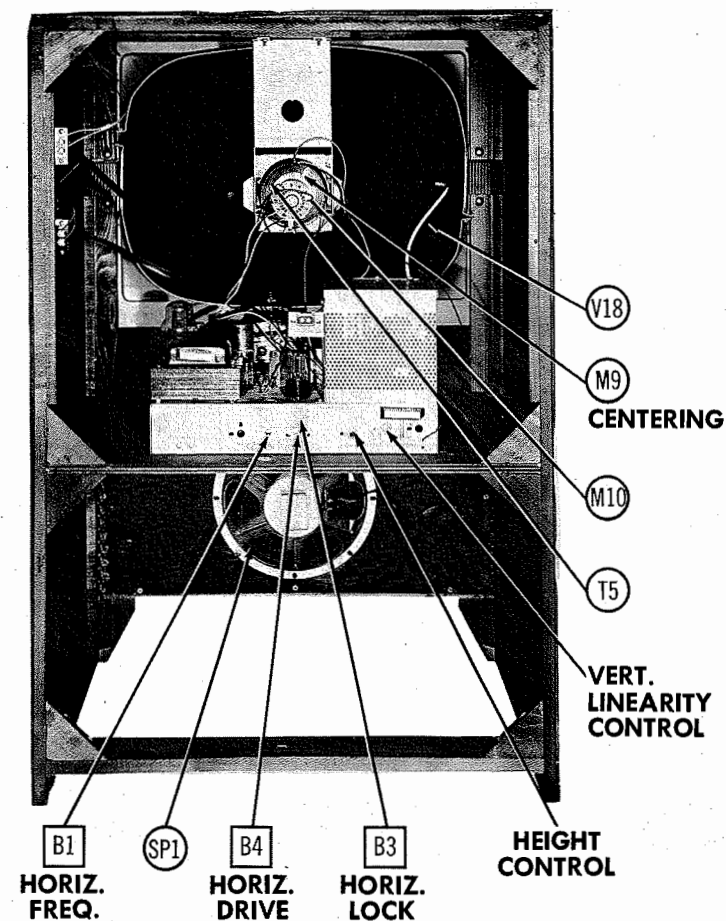




VHF TUNER-RIGHT SIDE



VHF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

## HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Preset horizontal lock trimmer (B3) one turn counter clockwise from tight and the horizontal drive trimmer (B4) two turns counter clockwise from tight.

Turn the set on and tune in a TV station, preferably a test pattern.

### A. HORIZONTAL FREQUENCY ADJUSTMENT

1. Rotate the horizontal hold control over its entire range. If picture does not remain in sync over most of its range, adjust the horizontal frequency slug (B1) for best sync.

2. If unable to adjust B1 for proper horizontal hold range, adjust the horizontal phase slug (B2) counter clockwise a few turns and repeat step 1. Picture should remain in horizontal sync, if not, continue with "Horizontal Phase Adjustment".

### B. HORIZONTAL PHASE ADJUSTMENT

1. Short together terminals "C" and "D" of the horizontal oscillator coil (L31).

2. Set the horizontal hold to its maximum counter clockwise position.

3. Adjust B1 until picture just locks in horizontally.

4. Remove short from terminals "C" and "D" of L31. If picture loses sync with short removed, adjust B2 clockwise until picture falls into sync.

5. Connect the vertical input lead of an oscilloscope to terminal "C" of L31. Adjust the phase slug (B2) until broad and narrow peaks are of equal amplitude as shown in Fig. 8. While adjusting B2 keep the picture in sync by turning the horizontal hold control clockwise. Disconnect scope from receiver.

6. Set the horizontal hold control fully clockwise and adjust B1 until picture remains in sync while switching off channel and back. With the horizontal hold control at mid-position the picture should fall in sync when switching off channel and back again.

### C. HORIZONTAL LOCK ADJUSTMENT

1. Set the horizontal hold control fully clockwise, switch off channel and back again. Picture should remain in sync.

2. If not slightly, adjust B1 clockwise until picture falls out of sync with diagonal lines sloping to the left.

3. Turn the horizontal hold control counter clockwise, if more than three bars are present just before picture falls in sync, adjust the horizontal lock trimmer (B3) clockwise. If less than two bars are present, adjust B3 counter clockwise. Picture should now remain in sync while rotating the horizontal hold control over its full range and switching off channel and back again.

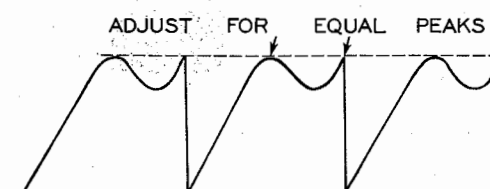
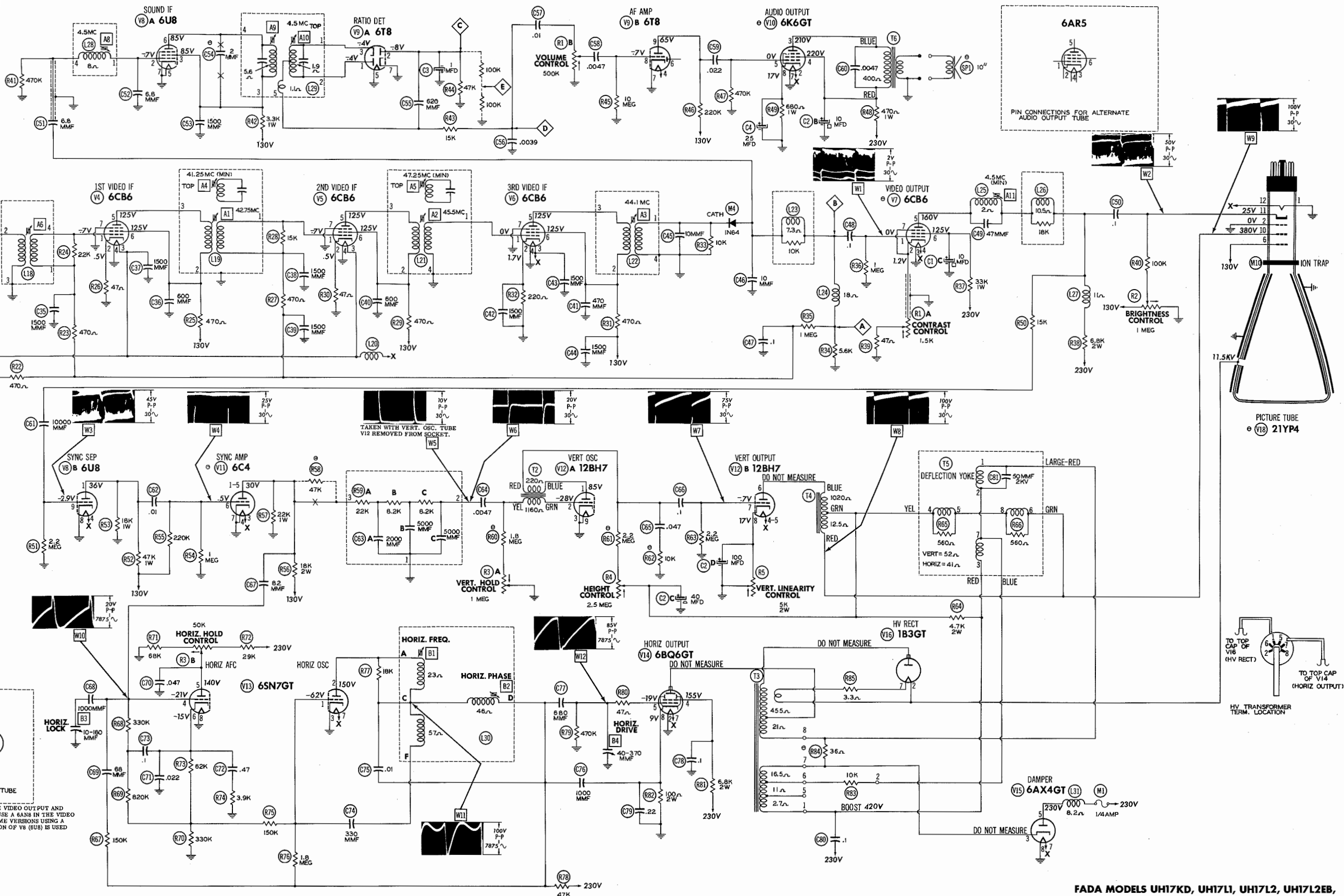


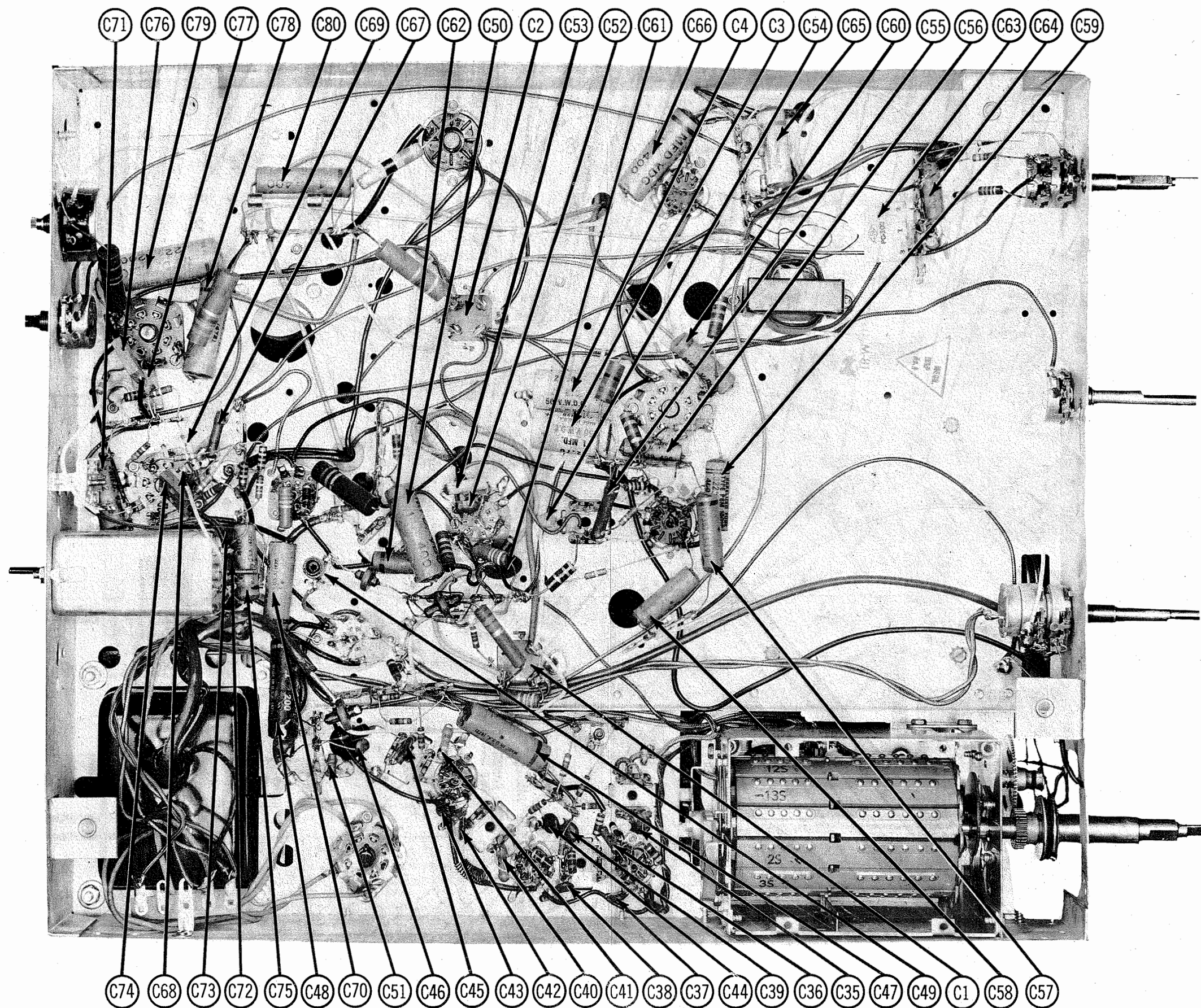
FIG. 8



FADA MODELS UH17KD, UH17L1, UH17L2, UH17L2EB,  
UH17LO, UH21KA, UH21K1, UH21K1LO, UH21L1,  
UH21L2, UH21L2EB, UH21L2LO

FADA MODELS UH17KD, UH17L1, UH17L2, UH17L2EB,  
UH17LO, UH21KA, UH21K1, UH21K1LO, UH21L1,  
UH21L2, UH21L2EB, UH21L2LO

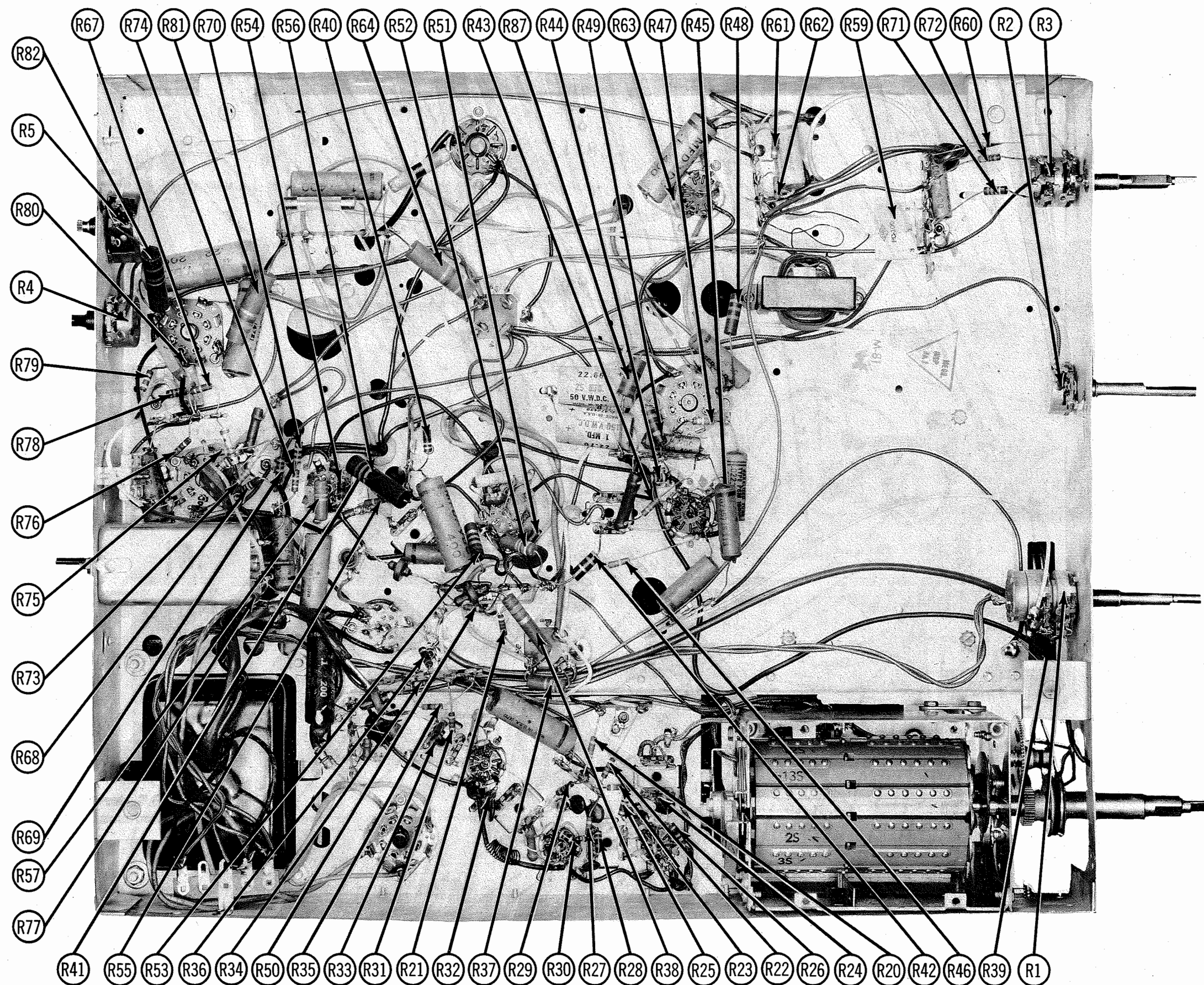




CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

FADA MODELS UH17KD, UH17L1, UH17L2, UH17L2EB,  
UH17LO, UH21KA, UH21K1, UH21K1LO, UH21L1,  
UH21L2, UH21L2EB, UH21L2LO





CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

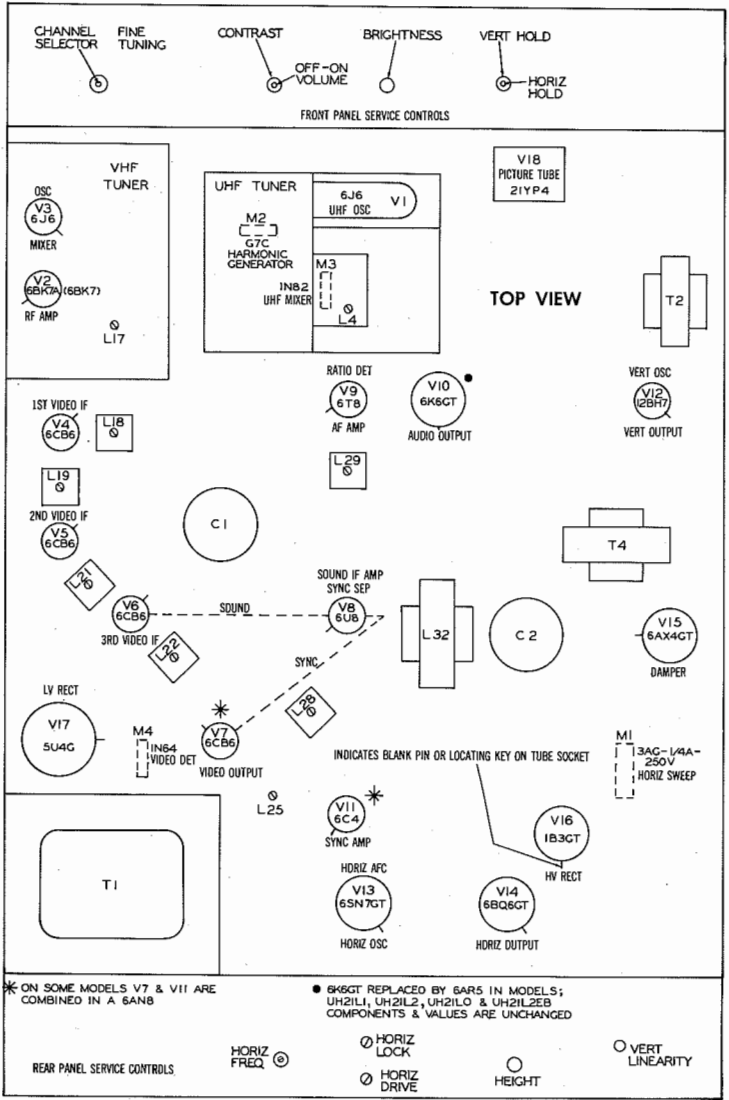
FADA MODELS UH17KD, UH17L1, UH17L2, UH17L2EB,  
UH17LO, UH21KA, UH21K1, UH21K1LO, UH21L1,  
UH21L2, UH21L2EB, UH21L2LO

RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	*†2.7KΩ	*†2.7KΩ	0Ω	.1Ω	5.6KΩ	5.6KΩ	0Ω		
V 2	6BK7A	1Meg	1Meg	0Ω	.1Ω	0Ω	†1KΩ	1Meg	1Meg	0Ω
V 3	6J6	†6.5KΩ	†12KΩ	.1Ω	0Ω	190KΩ	10KΩ	0Ω		
V 4	6CB6	1Meg	47Ω	.1Ω	0Ω	†2.2KΩ	†2.2KΩ	0Ω		
V 5	6CB6	1Meg	47Ω	.1Ω	0Ω	†2.2KΩ	†2.2KΩ	0Ω		
V 6	6CB6	.2Ω	220Ω	.1Ω	0Ω	†2.2KΩ	†2.2KΩ	0Ω		
V 7	6CB6	1Meg	100Ω	0Ω	.1Ω	†6.8KΩ	†33KΩ	100Ω		
V 8	6U8	†25KΩ	470KΩ	†5KΩ	.1Ω	0Ω	†5KΩ	0Ω	0Ω	2.2Meg
V 9	6T8	INF	47KΩ	INF	.1Ω	0Ω	NC	0Ω	10Meg	†220KΩ
V 10	6K6GT	NC	.1Ω	†250Ω	†500Ω	470KΩ	NC	0Ω	680Ω	
V 11	6C4	†15KΩ	NC	.1Ω	0Ω	†15KΩ	220KΩ	0Ω		
V 12	12BH7	▲3.5Meg	2.5Meg	0Ω	.1Ω	.1Ω	▲5.7KΩ	2.2Meg	1.1KΩ	0Ω
V 13	6SN7GT	400KΩ	†47KΩ	0Ω	1.5Meg	†40KΩ	400KΩ	.1Ω	0Ω	
V 14	6BQ6GT	NC	0Ω	NC	†6.8KΩ	470KΩ	TP	.1Ω	100Ω	TOP CAP ▲44Ω
V 15	6AX4GT	NC	NC	400KΩ	NC	†70Ω	NC	.1Ω	0Ω	
V 16	1B3GT		PINS 1-8	HAVE	INF	RESISTANCE				TOP CAP ▲500Ω
V 17	5U4G	NC	20KΩ	NC	22Ω	NC	24Ω	NC	20KΩ	
V 18	21YP4	0Ω	0Ω	PIN 5 †1.7KΩ	PIN 10 ▲4.7KΩ	PIN 11 †200KΩ	PIN 12 .1Ω			

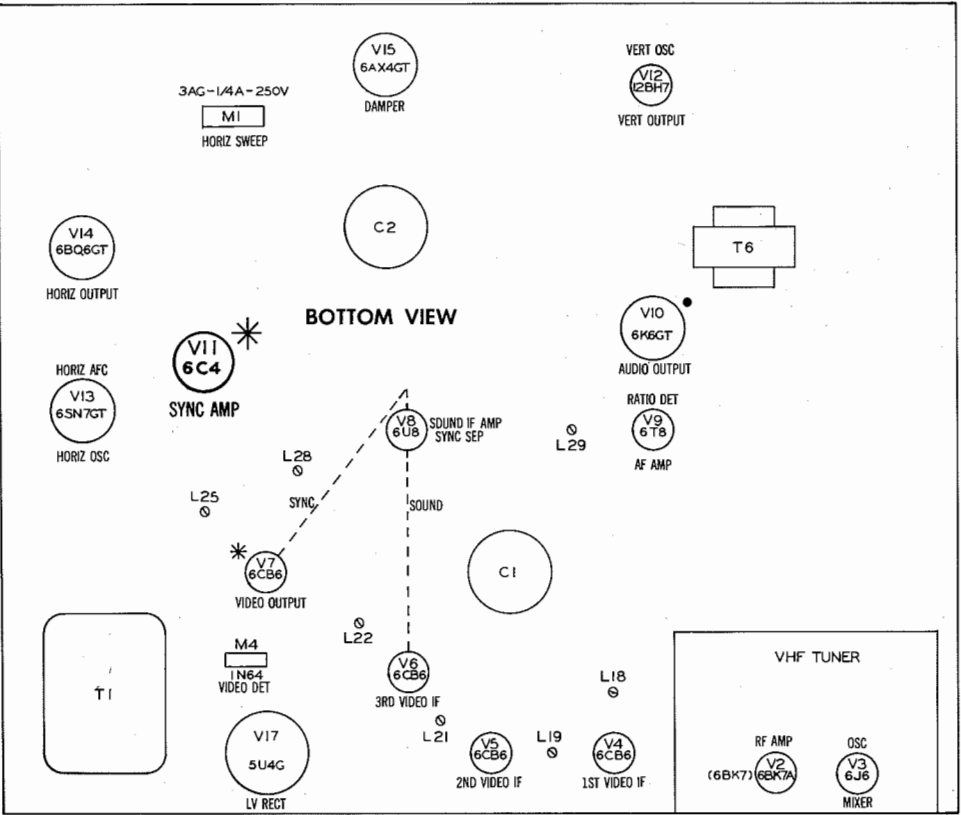
\*MEASURED IN "UHF" POSITION.  
†MEASURED FROM PIN 8 OF V17.  
▲MEASURED FROM PIN 3 OF V15.  
NC-NO CONNECTION.  
TP-TIE POINT.

TUBE PLACEMENT CHART



FADA MODELS UH17KD, UH17L1, UH17L2, UH17L2B, UH17LO, UH21KA, UH21K1, UH21K1LO, UH21L1, UH21L2, UH21L2B, UH21L2LO

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

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

POWER SUPPLY FAILURE

No raster, no sound - V17

LOSS OF PICTURE OR SOUND

No pic, no sound, has raster - V3, V4, V5, V6, (V1 UHF only)

No pic, no sound, has snow - V2, V3, V4

No pic, has sound, has raster - V7, V18

Has pic, no sound - V8, V9, V10

SYNC FAILURE

No vert. sync - V11, V12

No horiz. sync - V11, V13

No vert. or horiz. sync - V8, V11

SWEEP FAILURE

No raster, has sound - V13, V14, V15, V16, V18 Fuse (M1)

No vertical deflection - V12

Poor vert. linearity or foldover - V12

Poor horiz. linearity or foldover - V13, V14, V15

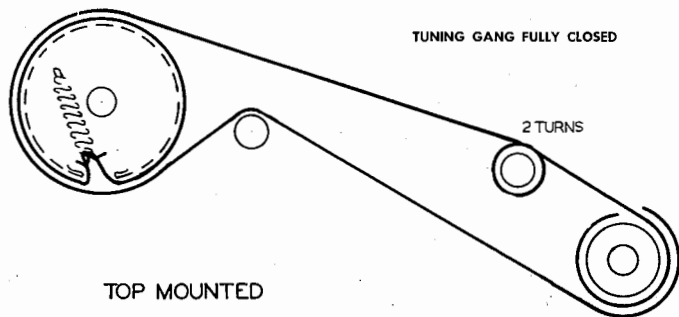
Narrow picture - V13, V14, V15, V16, V17

Vert. off freq. - V11, V12

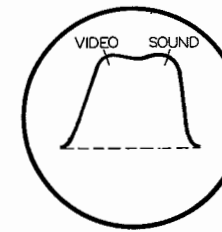
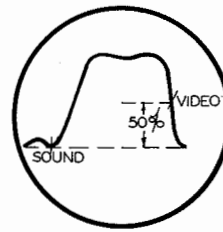
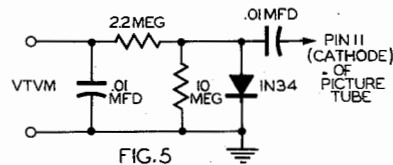
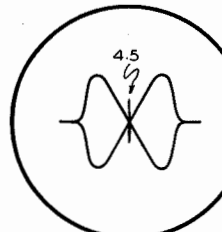
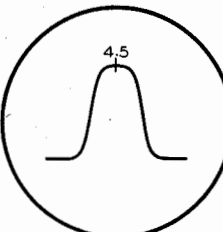
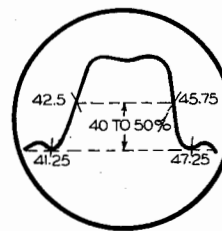
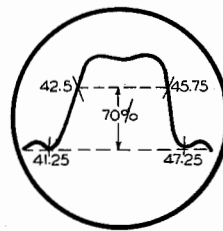
Horiz. off freq. - V11, V13



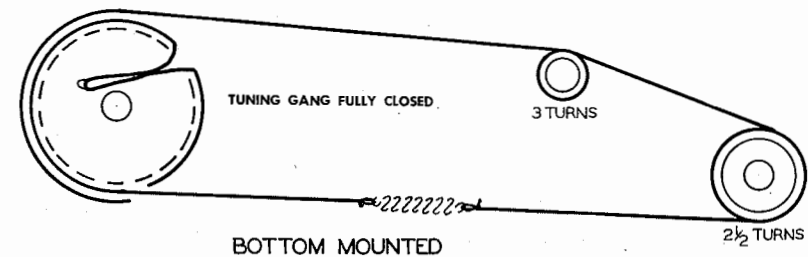
ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT						
The high voltage lead should be securely taped and kept away from chassis. Do not remove the horizontal oscillator tube (V12) to disable the high voltage.						
VIDEO IF ALIGNMENT						
Remove the converter tube (V3) from its socket and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications. Set the contrast control for minimum contrast. Connect the negative lead of a 4.5 volt bias supply to the ungrounded side of C47. Connect the positive lead to chassis. Connect a .001MFD capacitor across the vertical input lead of the oscilloscope. If a separate marker generator is used, connect its high side to the chassis apron near the first video IF stage. Leave the low side disconnected. In steps 6 and 7, if necessary, reduce bias from 4.5 volts to 3 volts. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.						
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	REMARKS
1. .001MFD	High side to pin 1 (grid) of 6CB6 (V4). Low side to chassis.	Not used	42.75MC (Unmod)	Any	Use VTVM. DC probe thru 47KΩ to point Ⓢ. Common to chassis.	A1 Attenuate generator output to maintain approximately 2.5 volts on VTVM. Adjust for maximum deflection.
2. "	"	"	45.5MC	"	"	A2
3. "	"	"	44.1MC	"	"	A3
4. "	"	"	41.25MC	"	"	A4 Increase generator output for usable reading on VTVM. Adjust for MINIMUM deflection.
5. "	"	"	47.25MC	"	"	A5 Adjust for MINIMUM deflection. Repeat steps 1 thru 5 until readings do not change.
6. "	"	44MC (10MC Swp)	42.5MC 45.75MC	"	Vert. Amp. thru 15KΩ to point Ⓢ. Low side to chassis.	A1, A2 Use only enough sweep generator output to produce usable pattern on scope. Retouch A2 to place 45.75MC at 75% on response curve as in Fig. 1. Check position of 42.5MC marker. If necessary, slightly retouch A1 to place 42.5MC marker. Retouch A3 to correct tilt. (Fig. 1).
7. Direct	High side to ungrounded tube shield floating over converter tube. Low side to chassis.	"	41.25MC 42.5MC 45.75MC 47.25MC	"	"	A6, A7 Adjust A6 and A7 for maximum response similar to Fig. 2, with correct 42.5MC and 45.75MC marker positions. Increase sweep and marker output to observe trap markers. If necessary, retouch A4 (41.25MC) and A5 (47.25MC) for correct trap marker positions.
SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM						
Connect two matched 100KΩ (±1%) resistors in series from point Ⓢ to chassis. The junction of these two resistors is alignment point Ⓢ as shown on the schematic.						
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8. .01MFD	High side to point Ⓢ. Low side to chassis.	4.5MC (Unmod)	Any	DC probe thru 47KΩ to point Ⓢ. Common to chassis.	A8, A9	Adjust for maximum deflection.
9. "	"	"	"	DC probe thru 47KΩ to point Ⓢ. Common to point Ⓢ.	A10	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE						
Use frequency modulated signal with 80% modulation and 450KC sweep. Use 120V sawtooth voltage in scope for horizontal deflection.						
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	REMARKS
8. .01MFD	High side to point Ⓢ. Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. thru 47KΩ to point Ⓢ. Low side to chassis.	A8, A9 Disconnect stabilizing capacitor (C3). Adjust for curve of maximum amplitude and symmetry similar to Fig. 3.
9. "	"	"	"	"	Vert. Amp. thru 47KΩ to point Ⓢ. Low side to chassis.	A10 Reconnect stabilizing capacitor (C3). Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 4. SLIGHTLY retouch A9 for maximum amplitude and straightness of crossover lines.
4.5MC TRAP ALIGNMENT						
Set contrast control fully clockwise.						
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10. .01MFD	High side to point Ⓢ. Low side to chassis.	4.5MC (Unmod)	Any	DC probe thru detector (Fig. 5) to pin 11 (cathode) of picture tube. Common to chassis.	All	Adjust for MINIMUM deflection.



## ALIGNMENT INSTRUCTIONS



VHF OSCILLATOR ALIGNMENT						
Remove the dummy converter tube and replace the original 6J6 in its socket. Leave bias connected as under "Video IF Alignment". Reduce bias to -3 volts. Complete oscillator alignment may not be necessary. If the oscillator seems to be off frequency approximately the same amount for a majority of the channels it may be possible to correct them in one step using A12. It should be noted that this is an all channel oscillator circuit adjustment and should not be used to correct any individual channel. If adjustment A12 will not bring all channels well within the range of the fine tuning control it will be necessary to adjust the channel strip adjustment screw for each channel that is off frequency. The channel oscillator adjustment screws are reached thru a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch shaft is turned to each channel. Use only enough sweep generator output to provide useable pattern on scope. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50Ω. Set the fine tuning control to the mid-position of its range.						
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	REMARKS
11. Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. Amp. thru 47KΩ to point Ⓢ. Low side to chassis.	A13 Adjust to place sound marker as shown in Fig. 6. Video marker should be at 50%.
		213MC (10MC Swp)	211.25MC 215.75MC	13		A14
		201MC (10MC Swp)	199.25MC 203.75MC	11		A15
		195MC (10MC Swp)	193.25MC 197.75MC	10		A16
		189MC (10MC Swp)	187.25MC 191.75MC	9		A17
		183MC (10MC Swp)	181.25MC 185.75MC	8		A18
		177MC (10MC Swp)	175.25MC 179.75MC	7		A19
		85MC (10MC Swp)	83.25MC 87.75MC	6		A20
		79MC (10MC Swp)	77.25MC 81.75MC	5		A21
		69MC (10MC Swp)	67.25MC 71.75MC	4		A22
		63MC (10MC Swp)	61.25MC 65.75MC	3		A23
		57MC (10MC Swp)	55.25MC 59.75MC	2		A24
VHF RF AND MIXER ALIGNMENT						
Leave bias connected as under Video IF Alignment. Reduce bias to -3 volts. Use only enough sweep generator output to provide useable pattern on scope. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50Ω.						
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	REMARKS
12. Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp.)	205.25MC 209.75MC	12	Vert. Amp. thru 10KΩ to point Ⓢ. Low side to chassis.	A25, A26, A27 Adjust for response similar to Fig. 7.
13. "	"	213MC (10MC Swp)	211.25MC 215.75MC	13		
		201MC (10MC Swp)	199.25MC 203.75MC	11		
		195MC (10MC Swp)	193.25MC 197.75MC	10		
		189MC (10MC Swp)	187.25MC 191.75MC	9		
		183MC (10MC Swp)	181.25MC 185.75MC	8		
		177MC (10MC Swp)	175.25MC 179.75MC	7		
		85MC (10MC Swp)	83.25MC 87.75MC	6		
		79MC (10MC Swp)	77.25MC 81.75MC	5		
		69MC (10MC Swp)	67.25MC 71.75MC	4		
		63MC (10MC Swp)	61.25MC 65.75MC	3		
		57MC (10MC Swp)	55.25MC 59.75MC	2		
UHF 44MC IF COIL ALIGNMENT						
Connect bias as under "Video IF Alignment". Reduce bias to -3 volts if necessary. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50Ω.						
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	REMARKS
14. Two 130Ω Carbon Resistors	Across UHF antenna terminals with 130Ω in each lead.	677MC (10MC Swp)	675.25MC (Video) 679.75MC (Sound)	48	Vert. Amp. thru 15KΩ to point Ⓢ. Low side to chassis.	A28 Adjust for response curve similar to Fig. 6. Check all other UHF channels for response curve similar to Fig. 6. If necessary, make compromise adjustment of A28.
UHF OSCILLATOR AND RF ALIGNMENT						
These portions of this receiver have been properly aligned at the factory and are very stable. Alignment of these portions should not be required in the field.						



## UHF DRIVE CORD STRINGING



**PARTS LIST AND DESCRIPTIONS (Continued)**  
**COILS (cont)**

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	FADA PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L25	4.5MC Trap	2Ω		37.226	20-1004	TV-151	1469	
L26	Series Peak- ing Coil	10.5Ω		37.290	19-3250*	TV-185*	6181*	245 Microhenries, wound on 18KΩ resistor
L27	Shunt Peak- ing Coil	11Ω		37.237	19-3250	TV-185	6181	245 Microhenries
L28	Sound IF	8Ω		37.285	17-3495*	TV-113*	6203*	
L29	Ratio Det.	5.8Ω	1.9ΩCT	37.253	17-3497	TV-115	6205	Tertiary Winding=1.1Ω
L30	Horiz. Osc.	23Ω	57Ω	37.219	20-1402 #	TV-162#	6183#	Waveform Winding= 4.6Ω
L31	RF Choke	8.2Ω		37.288	19-1005		4612	10 Microhenries, IRC Part #CL-1

\* Detune trap & drill mounting holes.  
■ Drill mounting holes.  
▲ Parallel with 10KΩ resistor.  
◆ Parallel with 18KΩ resistor.  
▲ Use one winding only.  
# Reverse coil mounting in can.

**FILTER CHOKE**

ITEM No.	RATINGS			REPLACEMENT DATA				
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	FADA PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordorson PART No.
L32	.160ADC	57Ω	1.92HY	42.91	C5030	C-2974	C-2325	26C43 ①

① Drill one new mounting hole.

**FUSES**

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			FADA PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG P/T	1/4A 250V	122.32		318.250 (3AG P/T-1/4A)		GJV-1/4	

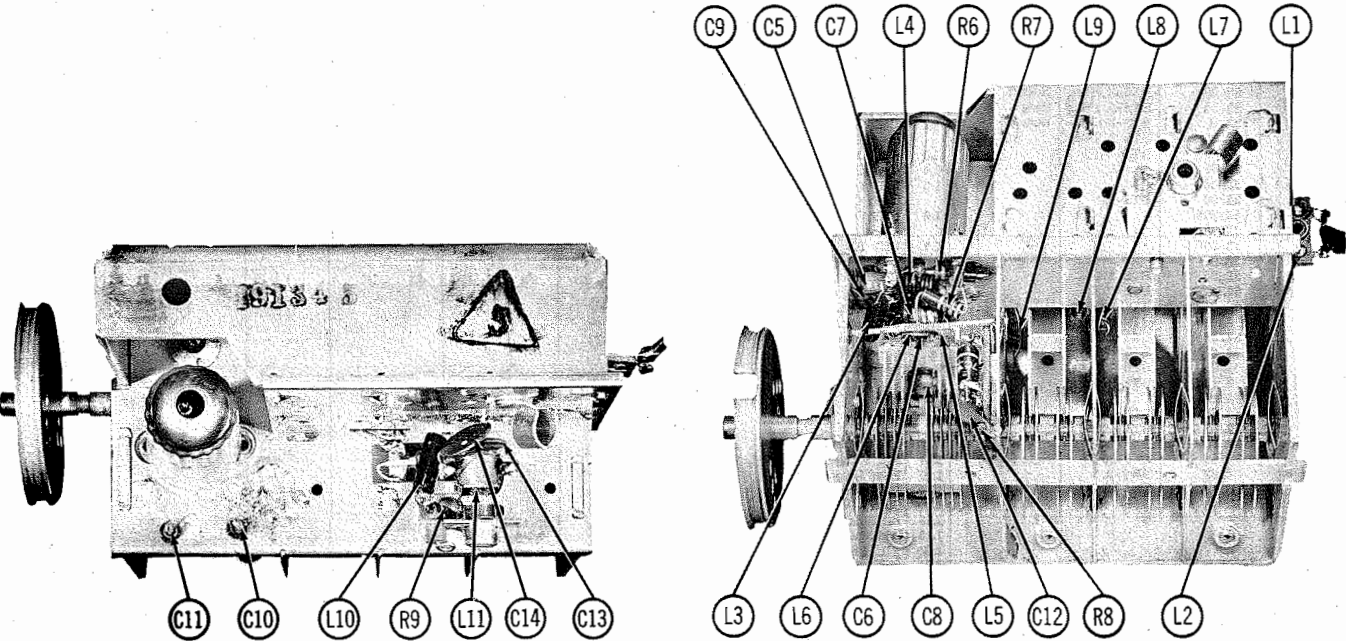
**CRYSTAL DIODES**

ITEM No.	ORIG. TYPE	REPLACEMENT DATA		NOTES
		FADA PART No.	SYLVANIA PART No.	
M2	G7C *		1N109	Harmonic generator
M3	1N82		1N82	UHF Mixer
M4	1N64		1N60	Video Detector

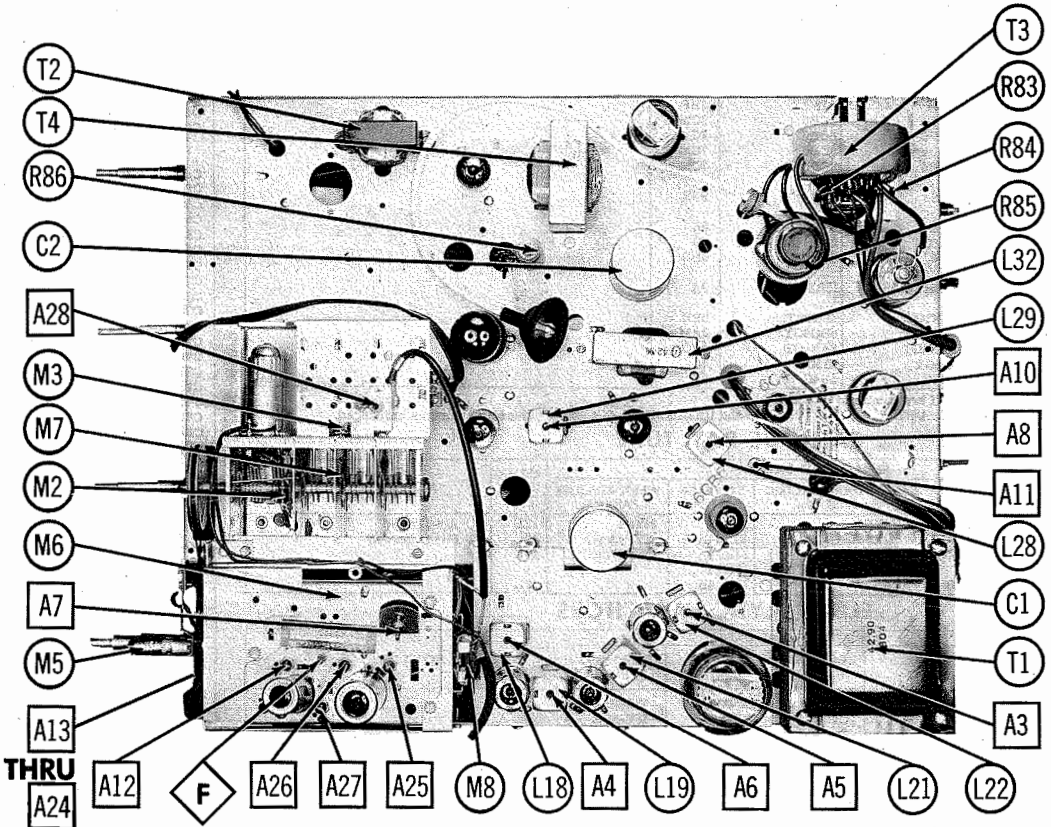
\* Some versions may use type G7B crystal diode in this application.

**MISCELLANEOUS**

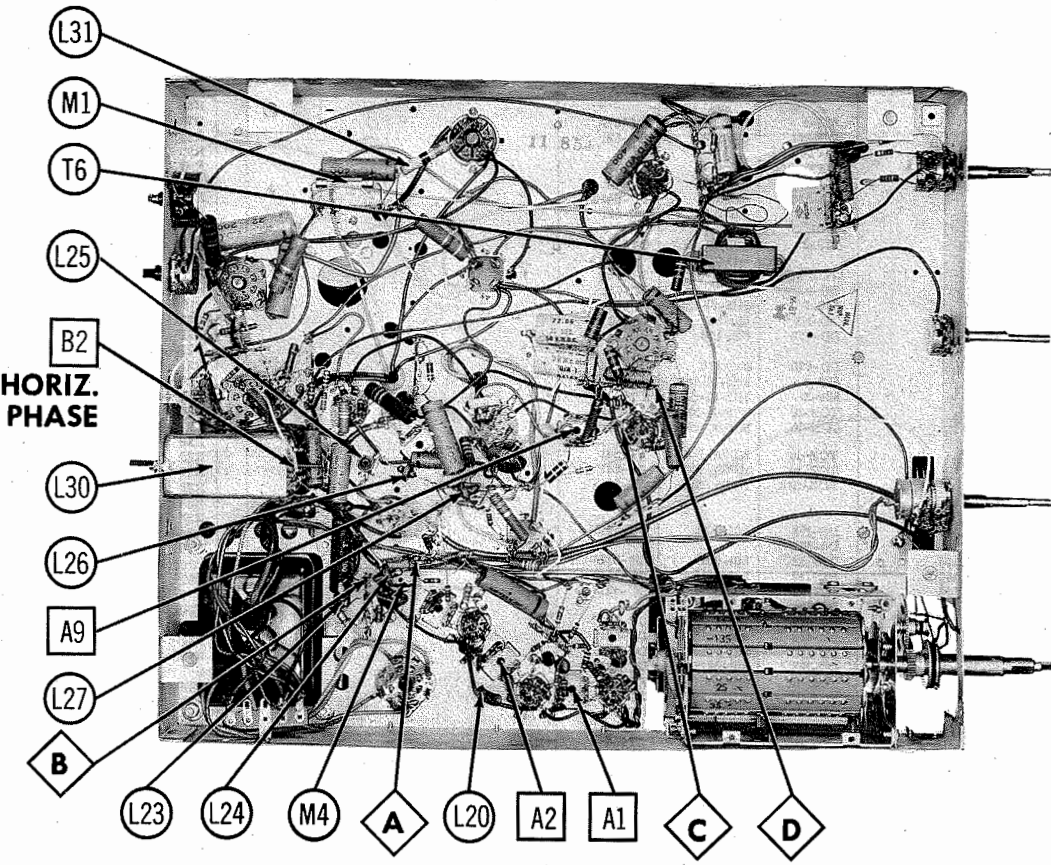
ITEM No.	PART NAME	FADA PART No.	NOTES
M5	Dial Light		
M6	Tuner	42.78A	#47 VHF
M7	Tuner	42.79	UHF
M8	Switch		VHF-UHF (Slide Type)
M9	Centering Device	112.37	
M10	Ion Trap	112.39	
B3	Trimmer Cap.	132.14	
B4			Dual Trimmer, horizontal lock (10-160MMF) and horizontal drive (40-370MMF)



**UHF TUNER**



**CHASSIS TOP VIEW**



**CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION**  
**SET 303 FOLDER 3**

FADA MODELS UH17KD, UH17L1, UH17L2, UH17L2EB, UH17L0, UH21KA, UH21K1, UH21K1L0, UH21L1, UH21L2, UH21L2EB, UH21L2L0

## TUBES (SYLVANIA, GENERAL ELECTRIC, WESTINGHOUSE)

ITEM No.	USE	REPLACEMENT DATA		RETM A BASE TYPE	NOTES
		FADA PART No.	STANDARD REPLACEMENT		
V1	UHF Osc.	6J6	6J6	7BF	6BK7 used as an alternate.
V2	RF Amp.	6BK7A	6BK7A	9AJ	
V3	Mixer-Osc.	6J6	6J6	7BF	
V4	1st Video IF Amp.	6CB6	6CB6	7CM	
V5	2nd Video IF Amp.	6CB6	6CB6	7CM	
V6	3rd Video IF Amp.	6CB6	6CB6	7CM	
V7	Video Output	6CB6 *	6CB6	7CM	
V8	Sound IF Amp. - Sync Sep.	6U8	6U8	9AE	
V9	AF Amp.	8T8	8T8	9E	†
V10	Audio Output	8K6GT	8K6GT	7S	
V11	Sync Amp.	6C4 *	6C4	6BG	†
V12	Vert. Osc. - Vert. Output	12BH7	12BH7	9A	
V13	Horiz. AFC - Horiz. Osc.	6SN7GT	6SN7GT	8BD	†
V14	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V15	Damper	6AX4GT	6AX4GT	4CG	†
V16	HV Rect.	1B3GT	1B3GT	3C	
V17	LV Rect.	5U4G	5U4G	5T	

\* On some models V7 and V11 are combined in a 6AN8.

† 6AR5 substituted on models UH21L1, UH21L2, UH21L0, and UH21L2EB all component values and voltages unchanged.

## CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA				RETM A BASE TYPE	NOTES
	FADA PART No.	CBS PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	WESTINGHOUSE PART No.	
V18	21YP4	21YP4	21YP4	21YP4	21YP4	① Aluminized ② Silver Screen
	17HP4/17RP4	17HP4/17RP4	17HP4/17RP4	17HP4/17RP4	17HP4/17RP4	

## ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	CAP.	VOLT.	FADA PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	
C1A	50	450	22.101	FP385.5	TM-3127	T-180	
C1B	50	350		TC72		MT-3512	
C2A	10	350	22.102	FP431.7	TM-4025	Q-415	
C2B	10	350					
C3	1	150	22.70	TC40	TD-4-150	FM-1504	
C4	25	50	22.66	TC38	TD-25-50	FM-0525	

## FIXED CAPACITORS

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

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	CAP.	VOLT.	FADA PART No.	CENTRALAB PART No.	ERIE PART No.	MALLORY PART No.	
C5	4.7				N330A-4R7		
C6	4.7				N330A-4R7		
C7	4.7				N330A-4R7		
C8	7-2				3115-01-OR5	CT565A	
C9	800				831-801	DC-521	
C10	800				DD-801		
C11	800				MFT-1000		
C12	10				DD-100	UC-541	
C13	33				DD-330	UC-5433	
C14	100				DD-101	UC-531	
C15	800				829-3	CT565A	
C16	1-3				3115-01-OR5	CT565A	
C17	1.8				829-3	CT565A	
C18	5				TCZ-4R7	NP0A-050	ZT-555
C19	800				DD-801	DC-521	
C20	7-2				829-3	CT565A	
C21	800				DD-801	DC-521	
C22	47				DD-470	UC-5447	
C23	800				DD-470	UC-5447	
C24	47				829-3	CT565A	
C25	1-3				829-3	CT565A	
C26	1-3				TCN-10	NT-541	
C27	10				TCN-10	NT-541	
C28	10				TCN-10	NT-541	
C29	800				TCZ-10	NP0A-100	ZT-541
C30	10				TCZ-10	NP0A-100	ZT-541
C31	10				TCZ-1R5	NP0A-1R5	ZT-5515
C32	1.5				DD-152	801-0015	DC-5215
C33	800				DD-152	801-0015	DC-5215
C34	800				DD-152	801-0015	DC-5215
C35	1500				DD-152	801-0015	DC-5215
C36	600				DD-152	801-0015	DC-5215
C37	1500				DD-152	801-0015	DC-5215
C38	1500				DD-152	801-0015	DC-5215
C39	1500				DD-152	801-0015	DC-5215
C40	600				DD-152	801-0015	DC-5215
C41	470				DD-152	801-0015	DC-5215
C42	1500				DD-152	801-0015	DC-5215
C43	1500				DD-152	801-0015	DC-5215
C44	1500				DD-152	801-0015	DC-5215
C45	10				TCZ-10	NP0A-100	ZT-541
C46	10				TCZ-10	NP0A-100	ZT-541
C47	.1	200			DF-104	PT401	
C48	.1	200			DF-104	PT401	
C49	47				TCZ-47	NP0-338-470	ZT-5447
C50	.1	400			DF-104	PT401	
C51	6.8				TCZ-6R8	NP0A-6R8	ZT-5568
C52	6.8				TCZ-6R8	NP0A-6R8	ZT-5568
C53	1500				DD-152	801-0015	DC-5215
C54	2				TCZ-2R2	NP0A-2R2	ZT-5522
C55	620				TCN-620	N750-335-621	PT624
C56	.0039	400			D6-402	GP2-333-402	PT624
C57	.01	400			D6-103	GP3-333-103	PT411
C58	.0047	400			D6-472	GP2-333-472	PT6247
C59	.022	400			DF-203	817-02	PT4122

Note 1

## PARTS LIST AND DESCRIPTIONS CAPACITORS (cont)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	CAP.	VOLT.	FADA PART No.	CENTRALAB PART No.	ERIE PART No.	MALLORY PART No.	
C60	.0047	400	12.68	D6-472	GP2-333-472	PT6247	
C61	10000		17.60	DD-103	811-01	DC-511	
C62	.01	400	12.72	D6-103	GP3-333-103	PT411	
C63A	2000					DC-522	
B	5000		4187.1	•PC-100	•1405-01	DC-525	
C	5000					DC-525	
C64	.0047	400	12.68	D6-472	GP2-333-472	PT6247	
C65	.047	400	12.67	DF-503		PT4147	
C66	.1	400	12.75	DF-104		PT4147	
C67	82		17.149	TCZ-82	NP0-337-820	UC-521	
C68	1000		17.153	D6-102	GP21-102		
C69	88		17.152	TCN-88	N750L-880		
C70	.047	400	12.67	DF-503		PT4147	
C71	.022	400	12.82	DF-203	817-02	PT4122	
C72	.47	200	12.92	DF-104		PT4047	
C73	.1	400	12.49	D6-103	GP3-333-103	PT411	
C74	330	500	17.69			MCB255	
C75	.01	400	12.72	D6-681	GP2K-681	UC-5368	
C76	1000	500	17.11	DF-104		PT401	
C77	680	500	17.39			PT4022	
C78	.1	400	12.75			PT401	
C79	.22	200	12.91			PT401	
C80	.1	400	12.75	DF-104		PT401	
C81	50	2000	17.151	DD30-500			

Note 1. Not used in some versions.

• Items C83A, C83B, C83C, R59A, R59B and R59C are combined in one unit.

## CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESIST- ANCE	WATTS	FADA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	
R1A	1500Ω		52.79	F1-7		QJ-735*	Contrast (Panel)
B	500KΩ			R2-41		UR55A	Volume (Rear)
C	Switch			KB-1		US-26	Attach to R1B.
R2A	1MΩ		52.78	B-69	A47-1Meg-S	Q11-137	Brightness
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R2A.
R3A	1MΩ		52.66	SBB-510	RTV-110	QJ-168	Vertical Hold (Panel)
B	50KΩ					UR54L	Horizontal Hold (Rear)
R4A	2.5Meg		52.24	AB-83	A47-2.5Meg-S	Q11-239	Height
B	Shaft		Not Req.	AK-1	FKS-1/4	Not Req.	Attach to R4A.
R5A	5000Ω	2	52.68	VK-135	A43-5000	R5000L	Vertical Linearity (Wire Wound)
B	Shaft		Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R5A.

•CONCENTRIKIT EQUIVALENT; K-4 KIT, BASE ELEMENTS AND SHAFTS; B17-109, P6-125 (Panel)

B13-133, R1-209 (Rear)

T6-1 (Switch)

†CONCENTRIKIT EQUIVALENT; K-2 KIT, BASE ELEMENTS AND SHAFTS; B11-137, P1-126 (Panel)

B11-123, R1-212 (Rear)

\*Universal Replacement (Mallory Exact Duplicate Part No. UE-1601)

## RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	FADA PART No.	IRC PART No.	
R6	5000Ω			BTS-470	
R7	470Ω			BTS-270	
R8	270Ω			BTS-47	
R9	47Ω			BTS-3900	
R10	3900Ω			BTS-10K	
R11	1.8Meg			BTS-470	
R12	470Ω			BTS-33K	
R13	33KΩ			BTS-10K	
R14	2.2Meg				
R15	10KΩ				
R16	4700Ω				
R17	10KΩ				
R18	180KΩ				
R19	10KΩ				
R20	470Ω		32.30	BTS-470	
R21	470Ω		32.30	BTS-470	
R22	470Ω		32.30	BTS-470	
R23	470Ω		32.30	BTS-470	
R24	22KΩ		32.13	BTS-22K	
R25	470Ω		32.30	BTS-470	
R26	47Ω		32.197	BTS-47	
R27	470Ω		32.30	BTS-470	
R28	15KΩ		32.12	BTS-470	
R29	470Ω		32.30	BTS-47	
R30	47Ω		32.197	BTS-470	
R31	470Ω		32.30	BTS-470	
R32	220Ω		32.5	BTS-220	
R33	10KΩ		32.11	BTS-10K	
R34	5600Ω 5%		32.126	BTS-5600 5%	
R35	1MΩ		32.33	BTS-1MΩ	
R36	1MΩ		32.33	BTS-1MΩ	
R37	33KΩ		32.409	BTA-33K	
R38	6800Ω		32.651	BTB-6800	
R39	470		32.197	BTS-47	
R40	100KΩ		32.89	BTS-100K	
R41	470KΩ		32.92	BTS-470K	
R42	3300Ω		32.178	BTA-3300	
R43	15KΩ		32.12	BTS-15K	
R44	47KΩ		32.15	BTS-47K	
R45	10Meg		32.99	BTS-10Meg	
R46	220KΩ		32.18	BTS-220K	
R47	470KΩ		32.92	BTS-470K	

Note 1. Not used in