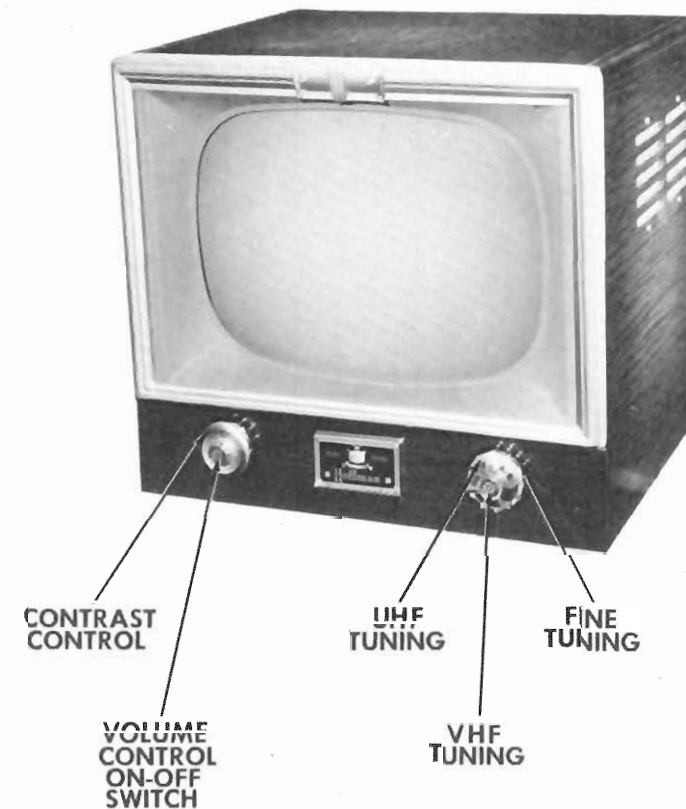


CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

PHOTOFACT* Folder



HOFFMAN MODELS 7B141, U, 7M140, U, 21B144, U, 21B318, U, 21B719, U, 21M143, U, 21M317, U, 21M718, U, 21P145, U, 21P720, U (Ch. 300-17, 300-21)



HOFFMAN MODEL 21M143 U			
TRADE NAME	Hoffman	MODELS	CHASSIS
		7B141, 7M140	300-17
		7B141U, 7M140U	300-17
		21B144, 21B318,	
		21B719, 21M143,	
		21M317, 21M718,	
		21P145, 21P720	300-21
		21B144U, 21B318U,	
		21B719U, 21M143U,	
		21M317U, 21M718U,	
		21P145U, 21P720U	300-21
MANUFACTURER	Hoffman Radio Corp., 6200 S. Avalon Blvd., Los Angeles 3, Calif.		
TYPE SET	Television Receiver		
TUBES	Twenty-one		
POWER SUPPLY	110-120 Volts AC-60 Cycle		RATING 1.42 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)		

INDEX	
Alignment Instructions	6, 7
Disassembly Instructions	18
Horizontal Sweep Circuit Adjustments	11
Parts List and Descriptions	14, 15, 16
Photographs	
Cabinet-Rear View	11
Capacitor Identification	4, 9
Chassis-Top View	3
RF Tuner	10
Resistor Identification	19, 20
Photographs (Cont)	
Trans., Inductor & Alignment Identification	13
Resistance Measurements	8
Servicing in the Field	18
Schematic	2
Trouble Shooting Aids	12, 17
Tube Failure Check Chart	5
Tube Placement Chart (Bottom View)	8
Tube Placement Chart (Top View)	5

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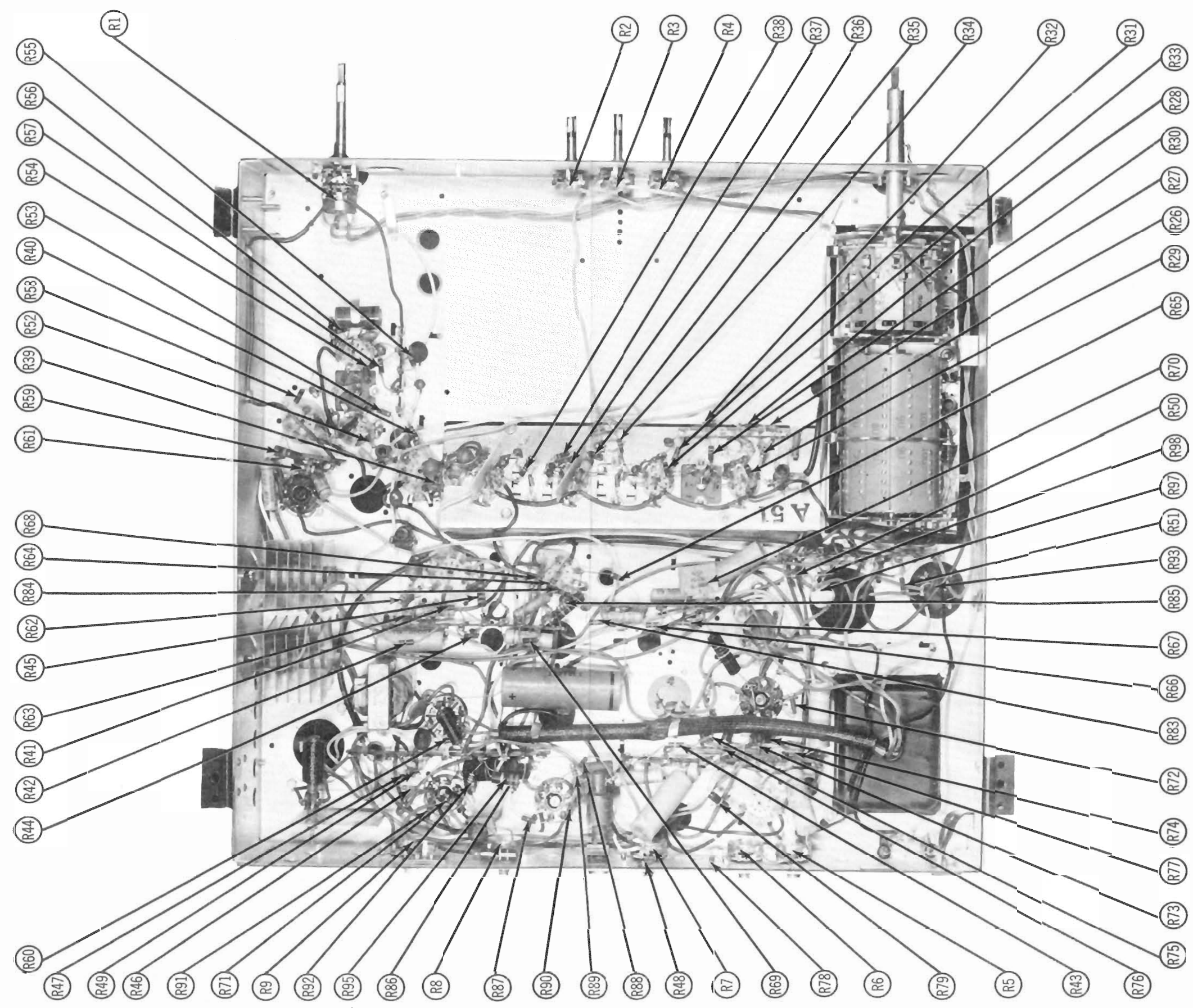
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of 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. Copyright 1954 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 4-54

SET 236

FOLDER 6

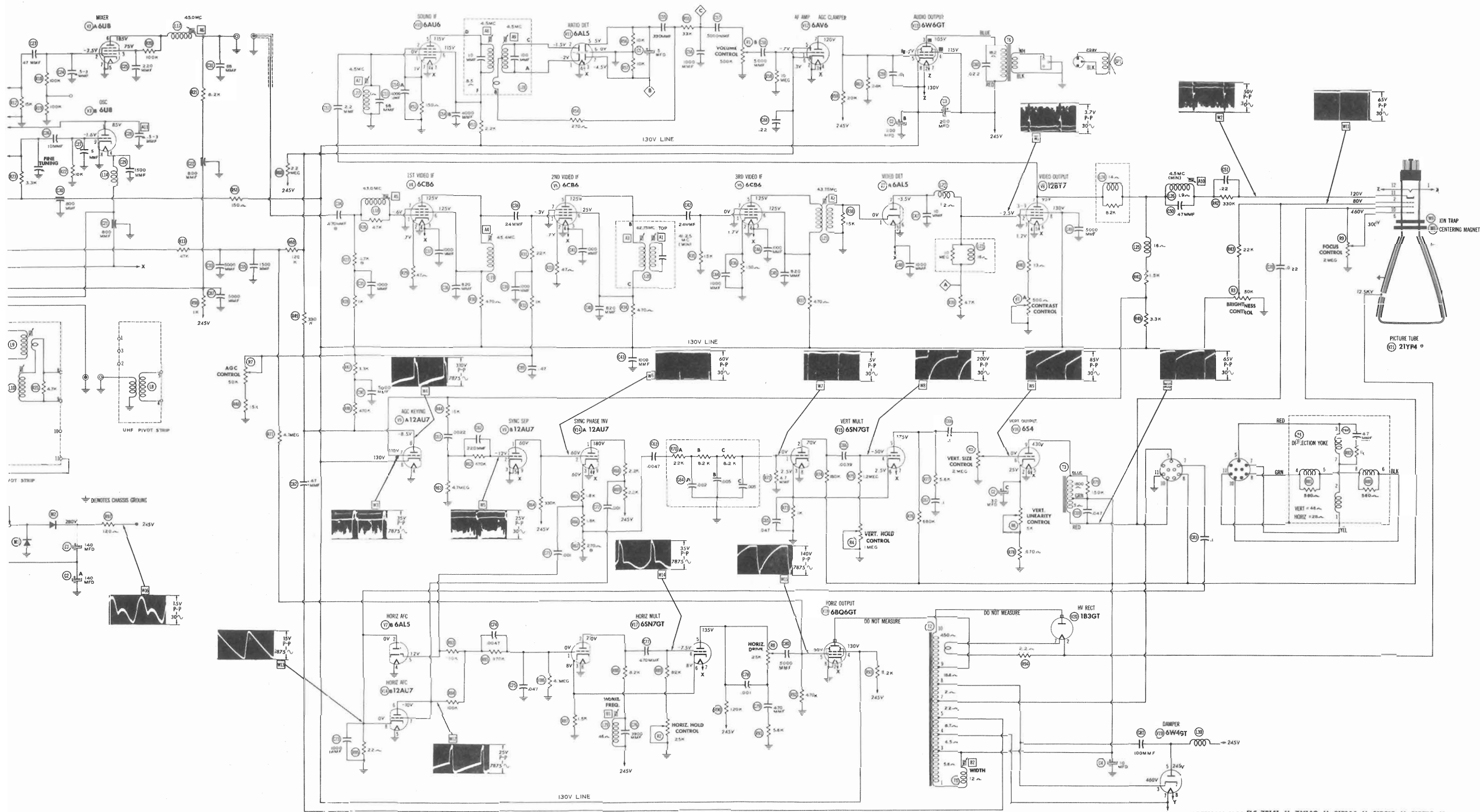
HOFFMAN MODELS 7B141, U, 7M140, U, 21B144, U, 21B318, U, 21B719, U, 21M143, U, 21M317, U, 21M718, U, 21P145, U, 21P720, U (Ch. 300-17, 300-21)



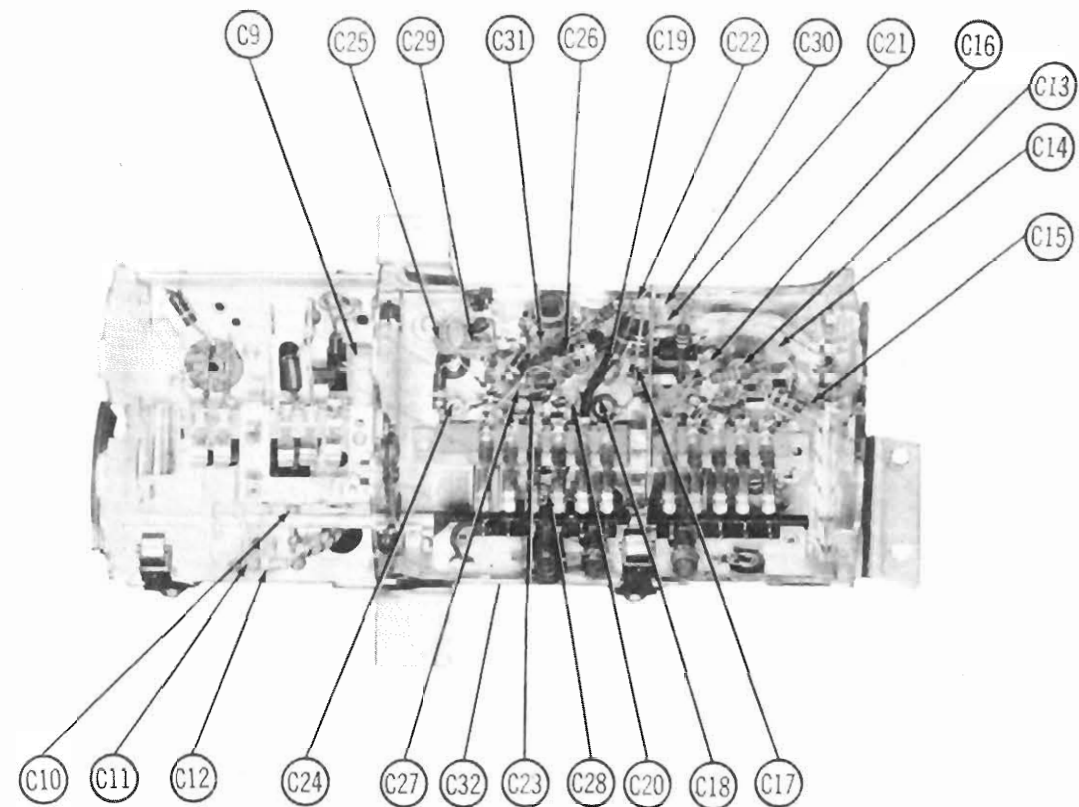
CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

TRADE NAME
MANUFACTURER
TYPE SET
TUBES
POWER SUPPLY
TUNING RANGE
Alignment Instruct
Disassembly Instr
Horizontal Sweep C
Parts List and Des
Photographs
Cabinet-Rear
Capacitor Ide
Chassis-Top
RF Tuner...
Resistor Ide

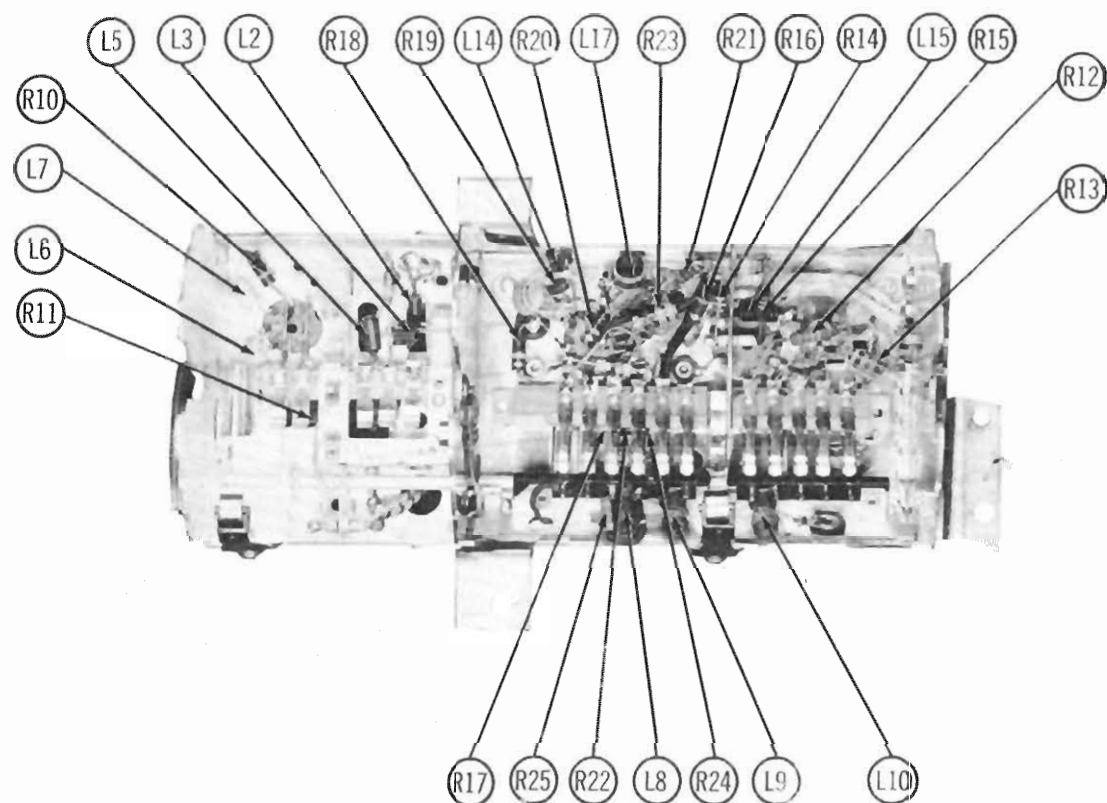
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parts have been compiled
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"Reproduction or use, wit



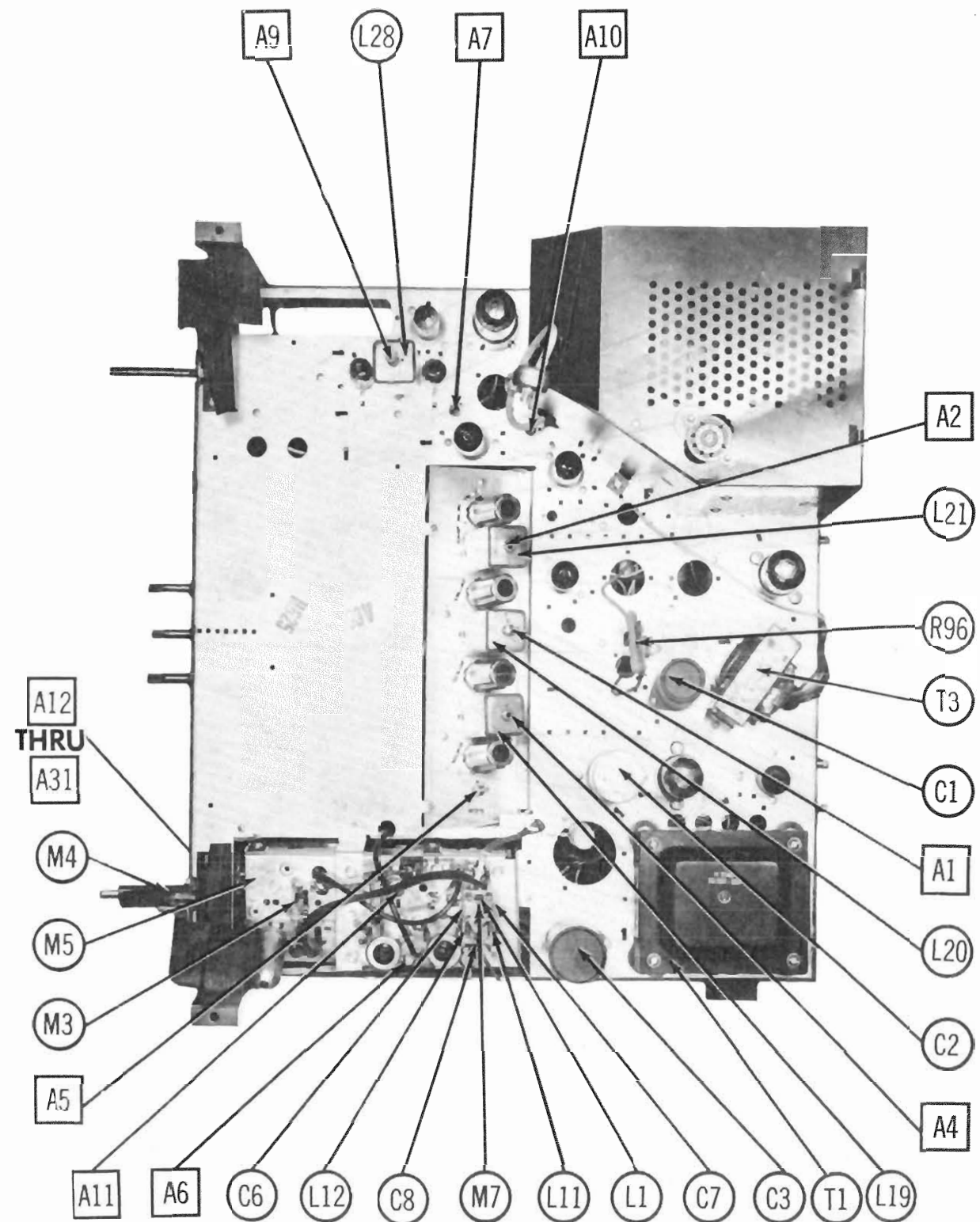
HOFFMAN MODELS 7B141, U, 7M140, U, 21B144, U, 21B318, U, 21B719, U,
21M143, U, 21M317, U, 21M718, U, 21P145, U, 21P720, U (Ch. 300-17, 300-21)



RF TUNER-BOTTOM VIEW CAPACITOR IDENTIFICATION



RF TUNER-BOTTOM VIEW -RESISTOR AND INDUCTOR IDENTIFICATION

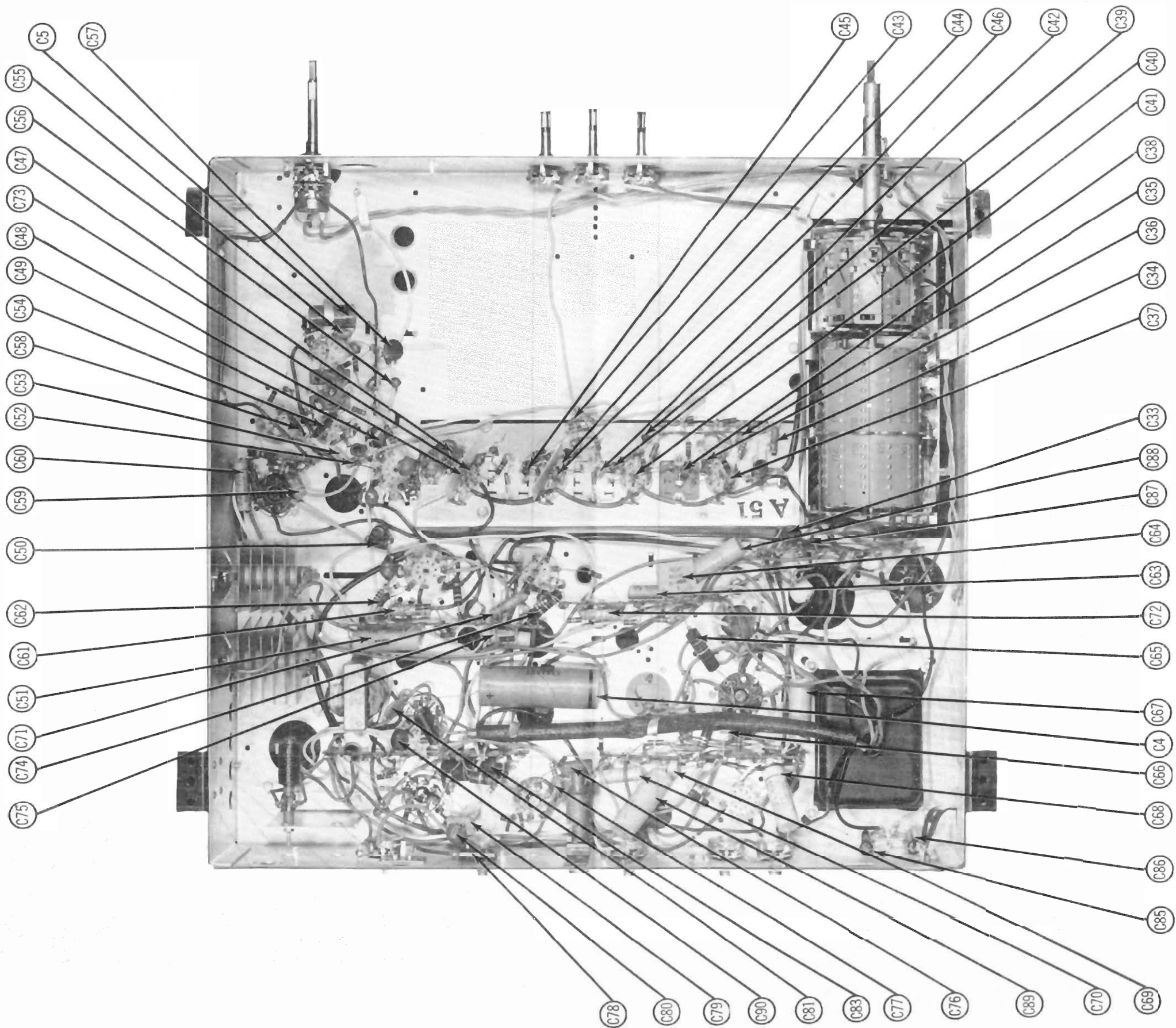


CHASSIS TOP VIEW

HOFFMAN MODELS 7B141, U, 7M140, U, 21B144, U, 21B318, U, 21B719, U, 21M143, U, 21M317, U, 21M718, U, 21P145, U, 21P720, U (Ch. 300-17, 300-21)

HOFFMAN MODELS 7B141, U, 7M140, U, 21B144, U, 21B318, U, 21B719, U,
21M143, U, 21M317, U, 21M718, U, 21P145, U, 21P720, U (Ch. 300-17, 300-21)

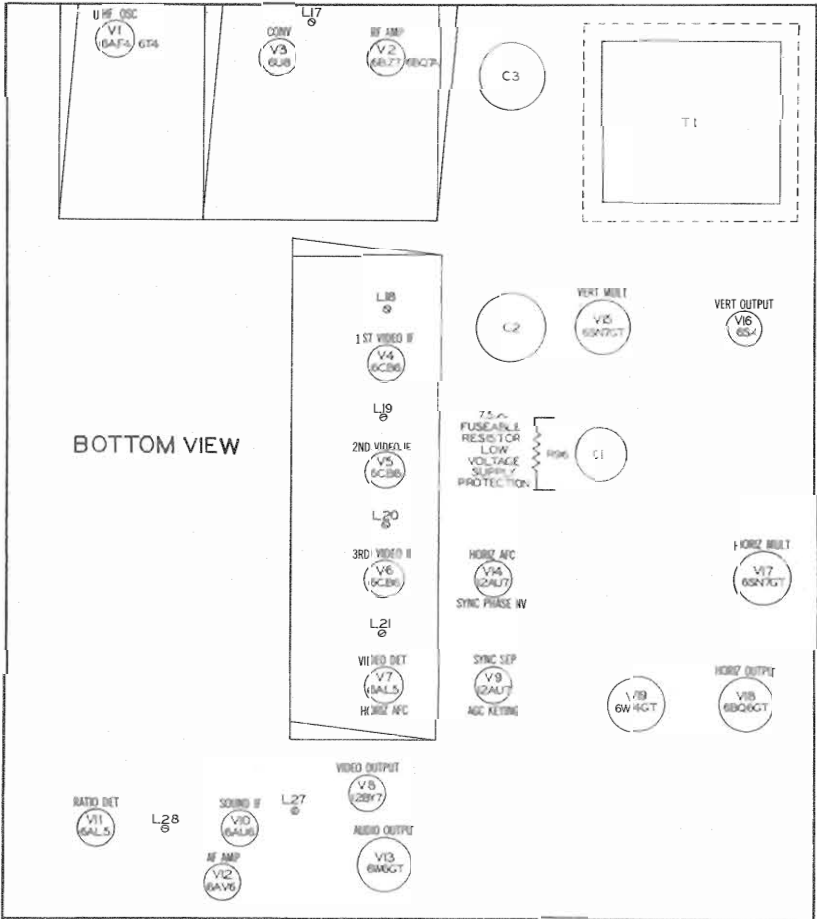
NOTIFICATION IDENTIFICATION



RESISTANCE MEASUREMENTS

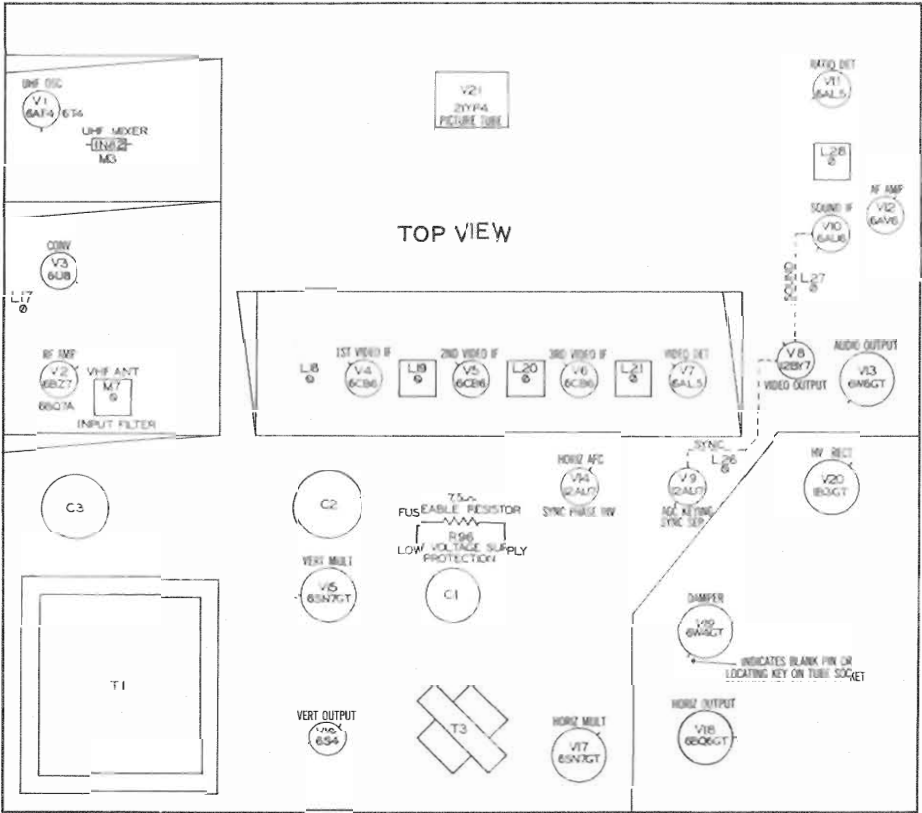
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AF4	■ 4.5KΩ	10KΩ	.1Ω	0Ω	0Ω	10KΩ	■ 4.5KΩ		
V 2	6BZ7	† 1.7KΩ	† 140KΩ	INF	0Ω	.1Ω	INF	800KΩ	0Ω	0Ω
V 3	6U8	▲ 3.5KΩ	200KΩ	† 100KΩ	.1Ω	0Ω	† 9.2KΩ	0Ω	0Ω	10KΩ
V 4	6CB6	50KΩ	47Ω	.1Ω	0Ω	▲ 470Ω	▲ 470Ω	0Ω		
V 5	6CB6	50KΩ	47Ω	.1Ω	0Ω	▲ 470Ω	▲ 470Ω	0Ω		
V 6	6CB6	15KΩ	150Ω	.1Ω	0Ω	▲ 470Ω	▲ 470Ω	0Ω		
V 7	6AL5	.1Ω	22Ω	.1Ω	0Ω	5.3Meg	0Ω	4.7KΩ		
V 8	12BY7	150Ω	4.7KΩ	0Ω	0Ω	0Ω	.1Ω	▲ 4.8KΩ	▲ 0Ω	0Ω
V 9	12AU7	† 330KΩ	5.2Meg	0Ω	0Ω	0Ω	500KΩ	▲ 3.3KΩ	▲ 0Ω	.1Ω
V 10	6AU6	1Ω	150Ω	.1Ω	0Ω	▲ 2.2KΩ	▲ 2.2KΩ	150Ω		
V 11	6AL5	INF	INF	.1Ω	0Ω	10KΩ	0Ω	10KΩ		
V 12	6AV6	10Meg	0Ω	0Ω	.1Ω	550KΩ	550KΩ	† 16KΩ		
V 13	6W6GT	INF	▲ 0Ω	† 300Ω	† 120Ω	18KΩ	INF	▲ .1Ω	22KΩ	
V 14	12AU7	† 4.5KΩ	† 330KΩ	4KΩ	0Ω	0Ω	5.3Meg	5.3Meg	22Ω	.1Ω
V 15	6SN7GT	4.7Meg	▲ 180KΩ	1KΩ	1.7Meg	▲ 680KΩ	1KΩ	.1Ω	0Ω	
V 16	6S4	INF	2.6KΩ	1.2Meg	0Ω	.1Ω	1.2Meg	INF	INF	▲ 1.9KΩ
V 17	6SN7GT	4.7Meg	18.4KΩ	1.5KΩ	100KΩ	† 120KΩ	1.5KΩ	.1Ω	0Ω	
V 18	6BQ6GT	750KΩ	0Ω	▲ 32Ω	▲ 0Ω	450KΩ	5.6KΩ	.1Ω	0Ω	TOP CAP ▲ 18Ω
V 19	6W1GT	INF	INF	1.7Meg	INF	† 120Ω	▲ 38Ω	▲ 33Ω	▲ 33Ω	TOP CAP ▲ 470Ω
V 20	1B3GT		PINS	1-8 PIN 6 ▲ 600KΩ	HAVE PIN 10 ▲ 38Ω	INF PIN 11 ▲ 330KΩ	RESISTANCE PIN 12 ▲ 0Ω			
V 21	21Y24A	▲ .1Ω	▲ 40KΩ							

■ MEASURED IN UHF POSITION
▲ MEASURED FROM 130V LINE
† MEASURED FROM OUTPUT OF M2
▲ MEASURED FROM PIN 3 OF V19



TUBE PLACEMENT CHART

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 - Selenium Rectifiers (M1 & M2)
LOSS OF PICTURE OR SOUND No pic, no sound, has raster - V3, V4, V5, V6, V7, V8, V13 (V1 UHF only) No pic, no sound, has snow - V2, V3, V4 No pic, has sound, has raster - V8, V21 Has pic, no sound - V0, V11, V12, V13 Overloaded picture - V5, V12
SYNC FAILURE No vert. sync - V4, V15 No horiz. sync - V7, V14, V17 No vert. or horiz. sync - V9, V14
SWEEP FAILURE No raster, has snow - V17, V18, V19, V20, V21 No vertical deflection - V15, V16 Poor vert. linearity or foldover - V15, V16 Poor horiz. linearity or foldover - V1, V18, V19 Narrow picture - V17, V18, V19, V20, M1, M2 Vert. off freq. - V14, V15 Horiz. off freq. - V7, V14, V17

HOFFMAN MODELS 7B141, U, 7M140, U, 21B144, U, 21B318, U, 21B719, U, 21M143, U, 21M317, U, 21M718, U, 21P145, U, 21P720, U (Ch. 300-17, 300-21)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS (cont)

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT							
Use an isolation transformer to protect the test equipment. The high voltage shock hazard may be eliminated by removing the horizontal output tube (V18) or by biasing V18 with a -60 volts.							
VIDEO IF ALIGNMENT							
Connect the negative lead of a 3 volt battery to the ungrounded side of C89. Connect the positive lead to chassis. Set contrast control to maximum contrast position. Attenuate signal generator to maintain one volt at VTVM.							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS	
Direct	High side to an un-grounded tube shield floating over converter tube (V3). Low side to chassis.	41.25MC (Unmod.)	Between any two VHF channels	DC probe thru 10KΩ to point A . Common to chassis.	A1	Adjust for MINIMUM deflection.	
"	"	43.75MC	"	"	A2	Adjust for maximum deflection.	
"	"	42.75MC	"	"	A3	"	
"	"	45.4MC	"	"	A4	"	
"	"	43.0MC	"	"	A6	Temporarily adjust for MINIMUM deflection.	
"	"	"	"	"	A5	Adjust for maximum deflection.	
"	"	45.0MC	"	"	A6	Adjust for maximum deflection. Repeat steps 1 thru 7 until no further change is noted.	
OVERALL VIDEO IF RESPONSE CHECK							
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	ADJUST	REMARKS
Direct	High side to an un-grounded tube shield floating over converter tube (V3). Low side to chassis.	43.5MC (10MC Swp)	41.25MC 42.0MC 45.75MC	Between any two VHF channels	Vert. Amp. thru 10KΩ to point A . Low side to chassis.		Check for response curve similar to Fig. 1. If necessary retouch A2, A3 and A4. Do not adjust A5 and A6 unless absolutely necessary. A4 positions 45.75MC marker, A3 positions 42.0MC marker, A2 affects tilt. Use only enough generator output to produce usable pattern on scope.
SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS	
.005MFD	High side to point A . Low side to chassis.	4.5MC (Unmod)	Between any two VHF channels	DC probe thru 10KΩ to point B . Common to chassis.	A7, A8	Attenuate generator to maintain from 4 to 7 volts at VTVM. Adjust for maximum deflection.	
"	"	"	"	DC probe thru 10KΩ to point C . Common to chassis.	A9	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 60% 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	ADJUST	REMARKS
.005MFD	High side to point A . Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Between any two VHF channels	Vert. Amp. thru 10KΩ to point B . Low side to chassis.	A7, A8	Disconnect stabilizing capacitor C5. Adjust for curve of maximum amplitude and symmetry similar to Fig. 2.
"	"	"	"	"	Vert. Amp. thru 10KΩ to point C . Low side to chassis.	A9	Reconnect stabilizing capacitor C5. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 3. SLIGHTLY retouch A8 for maximum amplitude and straightness of crossover lines.

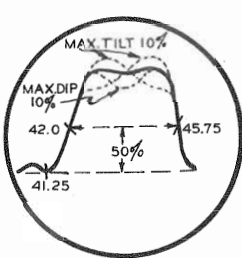


FIG.1

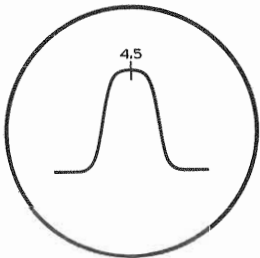


FIG.2

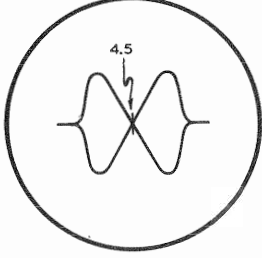


FIG.3

4.5MC TRAP ALIGNMENT						
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
11. .005MFD	High side to point A. Low side to chassis.	4.5MC (Unmod)	Between any two VHF channels	DC probe thru detector (Fig. 4) to pin 11 (cathode) of picture tube. Common to chassis.	A10	Adjust for MINIMUM deflection.

Replace V3 tube shield to normal position.
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 A11. It should be noted that this is an all channel oscillator circuit adjustment and should not be adjusted for any individual channel.
Switch tuner to VHF position and remove tuner knobs. With the fine tuning control near the center of its range the VHF channel oscillator adjustment screws are accessible thru a hole just above and slightly to the left of the channel switch shaft. This hole extends thru the UHF tuner only when the channel switch is set to VHF position. The correct VHF channel adjustment screw is accessible thru this hole as the channel switch is turned to each channel. Leave bias connected as under video IF alignment and connect a jumper from the ungrounded side of C89 to the tuner AGC terminal.
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 50 ohms.
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	ADJUST	REMARKS
12. Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC	211.25MC	13	Vert. Amp. thru 10KΩ to point A. Low side to chassis.	A12	Adjust to place sound marker in trap notch as in Fig. 5. Video marker should be at 50%.
		207MC	205.25MC	12		A13	
		201MC	199.25MC	11		A14	
		195MC	193.25MC	10		A15	
		189MC	187.25MC	9		A16	
		183MC	181.25MC	8		A17	
		177MC	175.25MC	7		A18	
		171MC	169.25MC	6		A19	
		165MC	163.25MC	5		A20	
		159MC	157.25MC	4		A21	
		153MC	151.25MC	3		A22	
		147MC	145.25MC	2		A23	
		141MC	139.25MC				
		135MC	133.25MC				
		129MC	127.25MC				
		123MC	121.25MC				
		117MC	115.25MC				
		111MC	109.25MC				
		105MC	103.25MC				
		99MC	97.25MC				
		93MC	91.25MC				
		87MC	85.25MC				
		81MC	79.25MC				

The VHF RF and Mixer portion of this receiver has been properly aligned at the factory and is very stable. Alignment of this portion of the receiver should not be required in the field.

Switch tuner to UHF and remove tuner knobs the UHF channel oscillator adjustment screws are reached thru a hole just above and slightly to the left of the channel switch shaft. The correct adjustment screw is accessible thru this hole as the channel switch is turned to each channel.
Leave the bias connected as under VHF oscillator alignment.
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 50 ohms.
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	ADJUST	REMARKS
13. Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	475MC	471.25MC	14	Vert. Amp. thru 10KΩ to point A. Low side to chassis.	A24	Adjust to place sound marker in trap notch as in Fig. 5. Video marker should be at 50%.
		515MC	513.25MC	21		A25	
		555MC	553.25MC	31		A26	
		595MC	593.25MC	41		A27	
		635MC	633.25MC	51		A28	
		675MC	673.25MC	61		A29	
		715MC	713.25MC	71		A30	
		755MC	753.25MC	81		A31	
		795MC	793.25MC				
		835MC	833.25MC				
		875MC	873.25MC				
		915MC	913.25MC				
		955MC	953.25MC				
		995MC	993.25MC				
		1035MC	1033.25MC				
		1075MC	1073.25MC				
		1115MC	1113.25MC				

The UHF RF and Mixer portion of this receiver has been properly aligned at the factory and is very stable. Alignment of this portion of the receiver should not be required in the field.

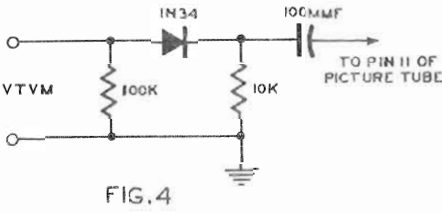


FIG.4

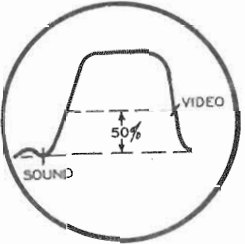


FIG.5

HOFFMAN MODELS 7B141, U, 7M140, U, 21B144, U, 21B318, U, 21B719, U, 21M143, U, 21M317, U, 21M718, U, 21P145, U, 21P720, U (Ch. 300-17, 300-21)

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the RF Tuner Oscillator Circuit may be accomplished by removal of the Channel Selector and Fine Tuning knobs. The adjustments are accessible, one at a time, through the small hole in the cabinet to the right of the Channel Selector shaft.

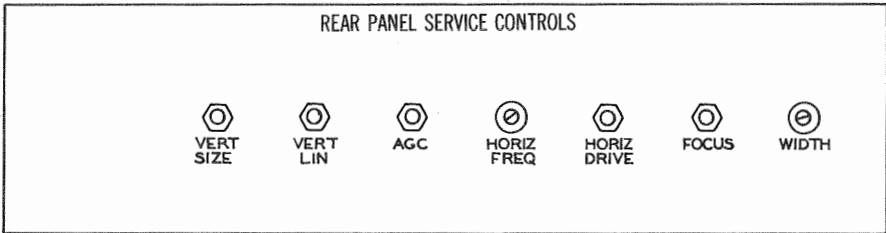
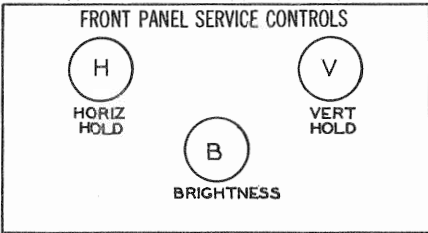
PICTURE TUBE SAFETY GLASS CLEANING

To clean safety glass remove two wood screws holding metal bracket at the front top of cabinet. Remove bracket, and metal strip. Remove safety glass by tilting forward up and out. 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



HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the Horiz. Oscillator Circuit can be made from the rear panel of the chassis. Set the Horiz. Hold Control at the Mid-position of its range and adjust the Horiz. Freq., slug (L29) until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate Sound IF Detector Buzz, adjust the Ratio Detector Secondary (L28) located on top of chassis. (See tube placement chart).

FUSES

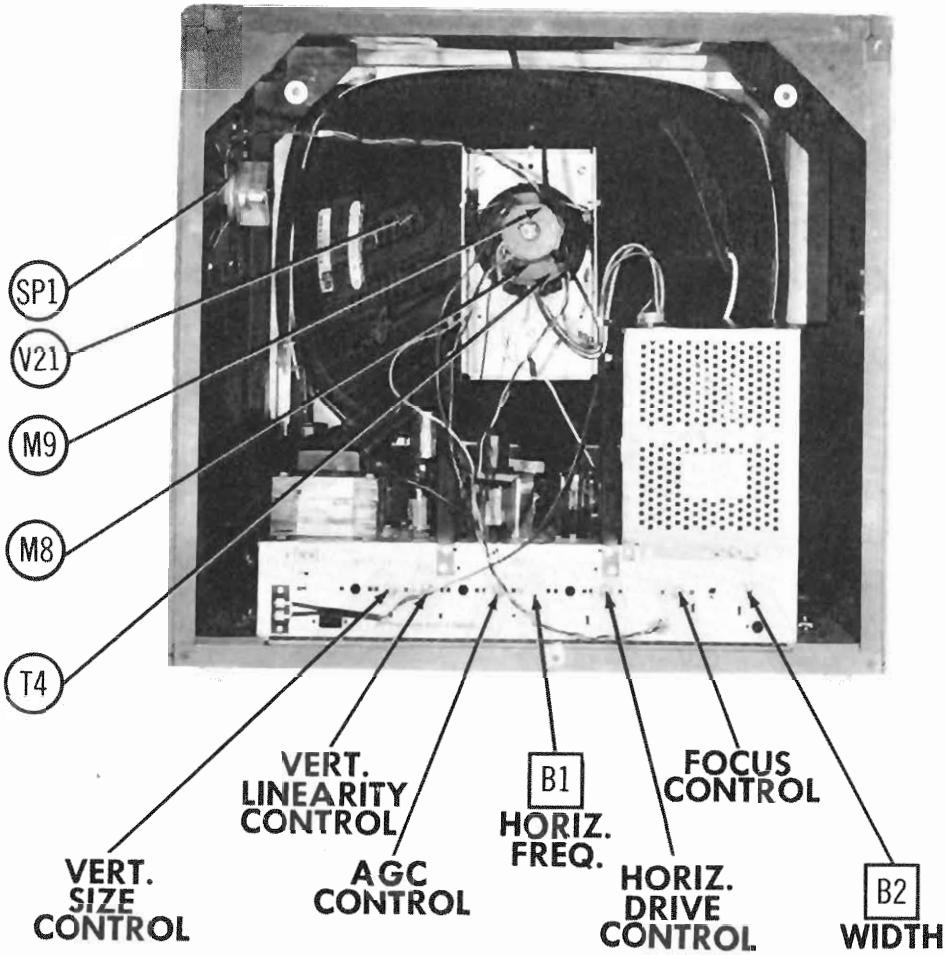
One fuseable resistor is used for L. V. Power Supply Protection.(For location, see tube placement chart).

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.

DISASSEMBLY INSTRUCTIONS

- Remove 8 push on type control knobs from front panel.
- Remove 7 wood and 1 metal screws. Remove rear cover.
- Disconnect speaker leads, and built-in antenna.
- Remove 4 chassis bolts and 2 wood screws. Remove chassis.
- Remove 2 speaker nuts. Remove speaker.



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

- Turn the set on and tune in a TV station, preferably a test pattern.
- Rotate the horizontal drive control counter clockwise as far as possible without the presence of vertical white lines or compression near the center of the picture.
- Set the horizontal hold control to its mid-range position.
- Adjust the horizontal frequency slug (B1) counter clockwise while switching on and off channel until picture loses sync. Tune B1 clockwise and note the number of diagonal bars just before sync pull-in. There should be not less than 2 bars if the horizontal section is operating normally. Continue turning B1 clockwise, while switching on and off channel, until sync is lost again, then turn B1 counter clockwise, and note the point where sync pull-in occurs. Turn B1 an additional half turn counter clockwise.
- Adjust the width slug (B2) for a picture slightly wider than necessary to fill the picture mask horizontally.

HOFFMAN MODELS 7B141, U, 7M140, U, 21B144, U, 21B318, U, 21B719, U, 21M143, U, 21M317, U, 21M718, U, 21P145, U, 21P720, U (Ch. 300-17, 300-21)

TROUBLE SHOOTING AIDS

SWEEP

HORIZONTAL	VERTICAL								
<p>LOSS OF SWEEP</p> <p>Follow procedure outlined under "Loss of High Voltage".</p> <p>INSUFFICIENT SWEEP</p> <p>Check by substitution V17, V18 and V19. Check adjustment of the horizontal drive control and B2. Check waveform W15.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check T2, T4A, C4 and other associated circuit components.</td><td>Check C77, C78, C80, R8, R92, R90 and other associated circuit components.</td></tr> </table> <p>DRIVE LINES</p> <p>Check adjustment of the horizontal drive control. Check by substitution V17, V18 and V19. Check T2, T4A, C77, C78, C80, and other associated circuit components.</p> <p>COMPRESSED LEFT SIDE</p> <p>Check by substitution V17, V18 and V19. Check components associated with the horizontal output and damper stages especially T2 and T4A.</p> <p>FOLDS</p> <p>Follow procedure outlined under "Drive Lines".</p> <p>PIE CRUST EFFECT</p> <p>Check by substitution V17, V18 and V19. Check T2 and T4A. Check C75 for open.</p> <p>XMAS TREE EFFECT</p> <p>Substitute V17. Check C77, C76, L29 and other associated circuit components for failure or change of value.</p>	If Satisfactory	If Unsatisfactory	Check T2, T4A, C4 and other associated circuit components.	Check C77, C78, C80, R8, R92, R90 and other associated circuit components.	<p>LOSS OF SWEEP</p> <p>Check by substitution V15 and V16. Check waveform W9.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check T3, T4B, R6, R78 and other associated circuit components.</td><td>Check R5, C68, R74, R76, C66 and other associated components.</td></tr> </table> <p>INSUFFICIENT SWEEP</p> <p>Check adjustment of vertical size and linearity controls. Proceed as outlined under "Loss of Sweep".</p> <p>COMPRESSED AT BOTTOM</p> <p>Check by substitution V15 and V16. Check T3, T4B, C2C and other associated circuit components.</p> <p>COMPRESSED AT TOP</p> <p>Check by substitution V15 and V16. Check C68, C66, C65, C67, R76, R5 and other associated circuit components for failure or change of value.</p> <p>FOLDS</p> <p>Check by substitution V15 and V16. Check associated circuit components for failure or change of value.</p>	If Satisfactory	If Unsatisfactory	Check T3, T4B, R6, R78 and other associated circuit components.	Check R5, C68, R74, R76, C66 and other associated components.
If Satisfactory	If Unsatisfactory								
Check T2, T4A, C4 and other associated circuit components.	Check C77, C78, C80, R8, R92, R90 and other associated circuit components.								
If Satisfactory	If Unsatisfactory								
Check T3, T4B, R6, R78 and other associated circuit components.	Check R5, C68, R74, R76, C66 and other associated components.								

SYNC

<p>LOSS OF VERTICAL AND HORIZONTAL SYNC</p> <p>Check by substitution V9 and V14. Check components associated with V9B and V14A for failure or change of value.</p> <p>LOSS OF VERTICAL SYNC-HORIZONTAL SYNC SATISFACTORY</p> <p>Check by substitution V9, V14 and V15. Check waveform W7.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check components associated with V15 especially C66, R74, and R7Z.</td><td>Check vertical integrator network and other associated components.</td></tr> </table>	If Satisfactory	If Unsatisfactory	Check components associated with V15 especially C66, R74, and R7Z.	Check vertical integrator network and other associated components.	<p>LOSS OF HORIZONTAL SYNC-VERTICAL SYNC SATISFACTORY</p> <p>Check by substitution V7, V14 and V17. Check waveform W12.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check components associated with V17 especially C76, C77, L29, R87, R88 and R90.</td><td>Check components associated with V7B and V14B especially C72 and C71.</td></tr> </table> <p>HORIZONTAL BENDING</p> <p>Check by substitution V7, V14, V17 and V18. Check horizontal AFC filter network for component failure or change of value.</p>	If Satisfactory	If Unsatisfactory	Check components associated with V17 especially C76, C77, L29, R87, R88 and R90.	Check components associated with V7B and V14B especially C72 and C71.
If Satisfactory	If Unsatisfactory								
Check components associated with V15 especially C66, R74, and R7Z.	Check vertical integrator network and other associated components.								
If Satisfactory	If Unsatisfactory								
Check components associated with V17 especially C76, C77, L29, R87, R88 and R90.	Check components associated with V7B and V14B especially C72 and C71.								

VIDEO

<p>LOSS OF VIDEO</p> <p>Check C51, picture tube and other associated circuit components for failure.</p> <p>SOUND BARS (4.5MC BEAT)</p> <p>Adjust tuner fine tuning for best picture and sound. Adjust A10 for minimum 4.5MC beat. Check video IF alignment.</p> <p>POOR CONTRAST</p> <p>Check by substitution V7 and V8. Check contrast control, picture tube and other associated circuit components.</p>	<p>NEGATIVE PIX</p> <p>Check by substitution V7, V8 and V9. Check AGC network. Check picture tube and other associated circuit components.</p> <p>SMEAR</p> <p>Check by substitution V7 and V8. Check L22, L23, L24, L25, R41, R42, C51, picture tube and other associated circuit components.</p> <p>WIDE BLACK BAR ACROSS PICTURE</p> <p>Check V2, V3, V4, V5, V6, V7 and V8 for heater to cathode leakage. In case of UHF check V1. Check B+ filter capacitors for open.</p>
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AUDIO

<p>WEAK OR NO SOUND</p> <p>Check by substitution V10, V11, V12 and V13. Check stages V12 and V13 using audio signal generator. Apply signal across R58.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check ratio detector and audio IF alignment and components.</td><td>Check components associated with V12 and V13 especially T6</td></tr> </table>	If Satisfactory	If Unsatisfactory	Check ratio detector and audio IF alignment and components.	Check components associated with V12 and V13 especially T6	<p>BUZZ</p> <p>Adjust tuner fine tuning for best picture with minimum buzz. Adjust A9 for minimum buzz. If still unsatisfactory, substitute V9 and realign ratio detector. Check C5.</p> <p>DISTORTED</p> <p>Follow procedure outlined under "Weak or No Sound".</p>
If Satisfactory	If Unsatisfactory				
Check ratio detector and audio IF alignment and components.	Check components associated with V12 and V13 especially T6				

TROUBLE SHOOTING AIDS (cont)

POWER

<p>DEAD SET</p> <p>If filaments fail to light, check AC interlock assembly switch on volume control and T1.</p> <p>If filaments light, check M1, M2, C1, C2A, C2B, C3 and other B+ filter and decoupling components.</p>	<p>SMALL AND/OR DIM PICTURE</p> <p>Substitute V13. Check M1, M2, C1, C2, C3 and other associated components.</p>
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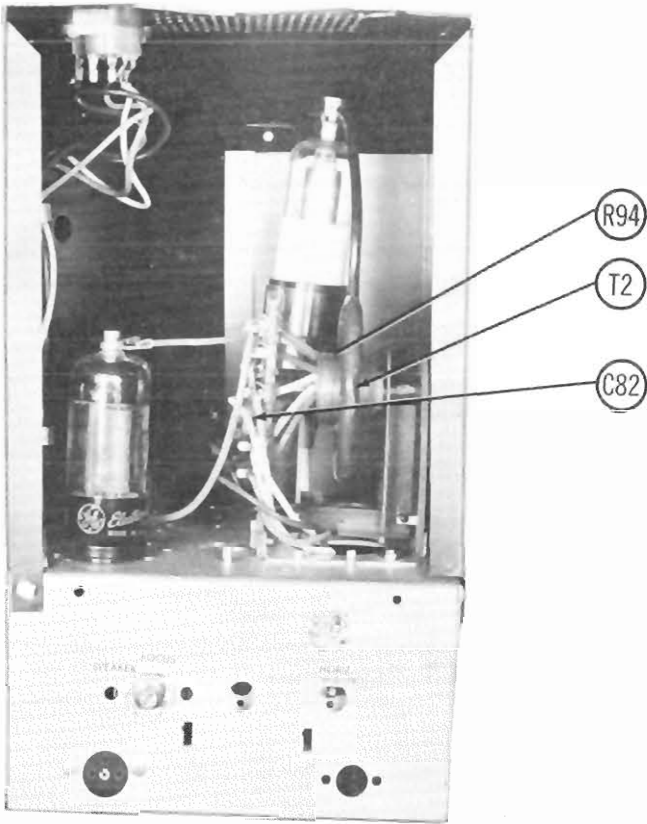
HIGH VOLTAGE

<p>LOSS OF HIGH VOLTAGE</p> <p>Check by substitution V17, V18, V19 and V20. Check waveform W15.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check R94, T2, T4A and other associated circuit components.</td><td>Check C69, C77, R88, R90, R92 and other associated components.</td></tr> </table>	If Satisfactory	If Unsatisfactory	Check R94, T2, T4A and other associated circuit components.	Check C69, C77, R88, R90, R92 and other associated components.	<p>INSUFFICIENT HIGH VOLTAGE</p> <p>Check by substitution V17, V18, V19 and V20. Measure B+.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Follow procedure outlined under "Loss of High Voltage".</td><td>Follow procedure outlined under "Small and/or Dim Picture".</td></tr> </table> <p>BLOOMING</p> <p>Check by substitution V17, V18, V19, V20 and V13. Check R94, T2, T4A and other associated circuit components.</p>	If Satisfactory	If Unsatisfactory	Follow procedure outlined under "Loss of High Voltage".	Follow procedure outlined under "Small and/or Dim Picture".
If Satisfactory	If Unsatisfactory								
Check R94, T2, T4A and other associated circuit components.	Check C69, C77, R88, R90, R92 and other associated components.								
If Satisfactory	If Unsatisfactory								
Follow procedure outlined under "Loss of High Voltage".	Follow procedure outlined under "Small and/or Dim Picture".								

GENERAL

<p>RASTER SOUND NO PICTURE</p> <p>Follow procedure outlined under "Loss of Video".</p> <p>RASTER PICTURE NO SOUND</p> <p>Follow procedure outlined under "Weak or No Sound".</p> <p>RASTER NO SOUND NO PICTURE</p> <p>Check by substitution V2, V3, V4, V5, V6, V7 and V8. Check associated circuit components. In case of UHF check V1.</p>	<p>NO RASTER NO SOUND</p> <p>Follow procedure outlined under "Dead Set".</p> <p>INTERMITTENT STREAKS</p> <p>Check video signal for interference pulses. Check high voltage section for corona discharge and arcing.</p>
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Symptoms shown are assumed and are not indicative of the quality and workmanship of this equipment.



HIGH VOLTAGE COMPARTMENT

HOFFMAN MODELS 7B141, U, 7M140, U, 21B144, U, 21B318, U, 21B719, U, 21M143, U, 21M317, U, 21M718, U, 21P145, U, 21P720, U (Ch. 300-17, 300-21)

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (cont)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	HOFFMAN PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L23	Shunt Peaking Coil	16Ω		5340	19-3300 †		4648 †	350 Microhenries; wound on 10 Meg resistor
L24	Series Peaking Coil	14Ω		5547	19-3100 ▲	TV-181 ▲	4642 ▲	105 Microhenries; wound on 8.2KΩ resistor
L25	Shunt Peaking Coil	16Ω		5548	19-3180	TV-184	6154	210 Microhenries
L26	4.5MC Trap	1.9Ω		5402	20-1004	TV-151	1470	
L27	Sound IF	.9Ω		5454	17-3400	TV-151	1470	
L28	Ratio Det.	8.5Ω	.5ΩCT	5443	17-1033	TV-110	1468	Tertiary winding= .25Ω
L29	Horiz. Osc.	46Ω		5447	19-1576	TV-163	6210	
L30	RF Choke	0Ω		5266	19-1003		4608	4 Microhenries

† Parallel with 10 Meg resistor.
▲ Parallel with 8.2KΩ resistor.
* Detune trap winding and disconnect R38.
■ Use adaptor plate.
♦ Use one winding only and use adaptor plate.
‡ Detune trap winding.
• Use one winding only; detune trap winding, and use adaptor plate.
§ Use winding with 56KΩ shunting resistor.
▲ Use one winding only.

SELENIUM RECTIFIER

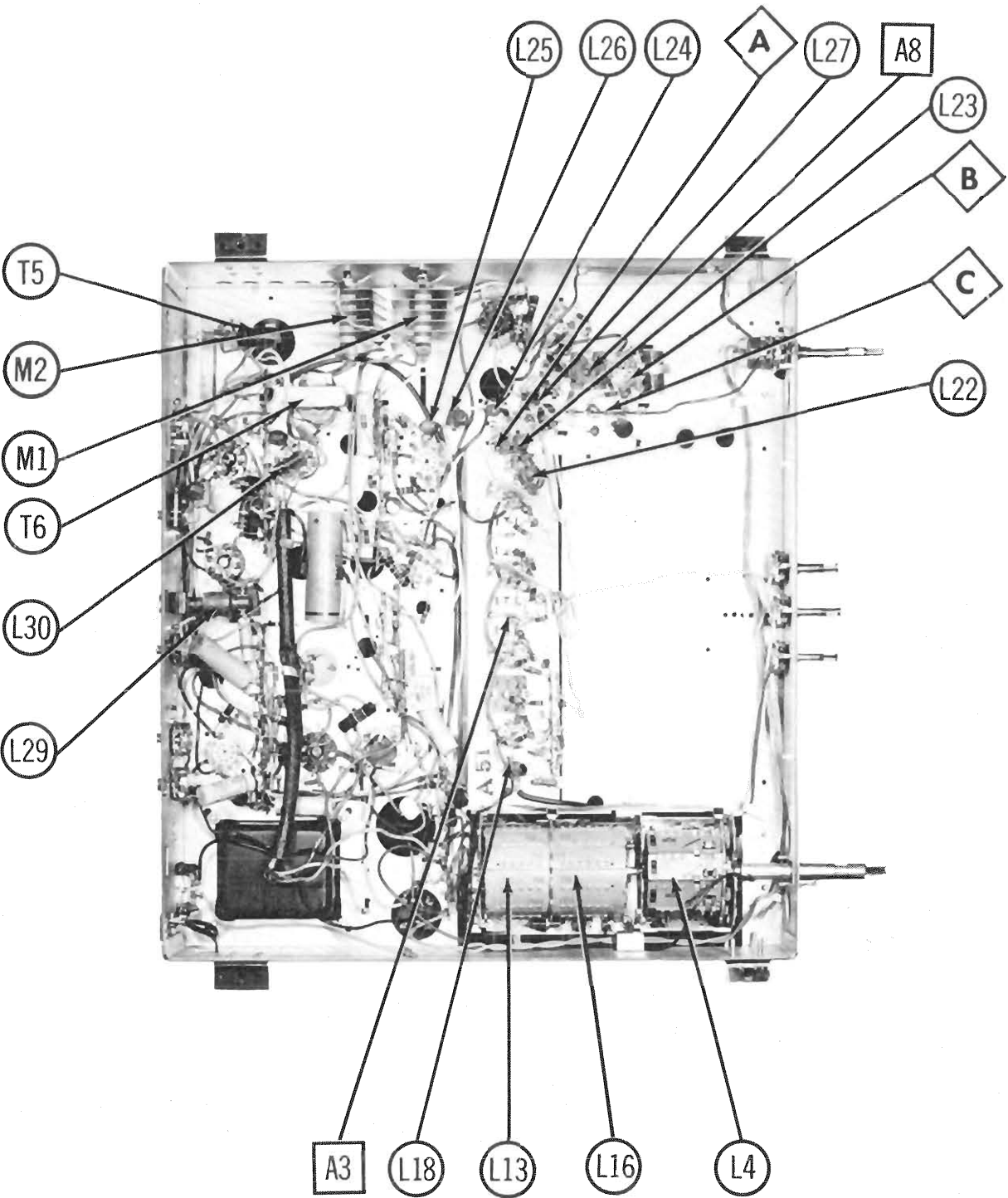
ITEM No.	RATING	REPLACEMENT DATA					NOTES
	CURRENT	HOFFMAN PART No.	SELETRON PART No.	FEDERAL PART No.	MAILORY PART No.	SARKES TARZIAN PART No.	
M1	.220A	9735	5QS1	1023A	6S350	350	
M2	.220A	9735	5QS1	1023A	6S350	350	

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		HOFFMAN PART No.	SYLVANIA PART No.		
M3	1N82		1N82 or A		UHF Mixer- (clip-in)

MISCELLANEOUS

ITEM No.	PART NAME	HOFFMAN PART No.	NOTES
M4	Dial Light	9505	# 44 bayonet
M5	Tuner	9795	UHF-VHF
M6	Tuner	9786	VHF only
M7	Trap		VHF antenna input filter
M8	Centering magnet	9722	
M9	I on trap	9702	



HOFFMAN MODELS 7B141, U, 7M140, U, 21B144, U, 21B318, U, 21B719, U, 21M143, U, 21M317, U, 21M718, U, 21P145, U, 21P720, U (Ch. 300-17, 300-21)

CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

SET 236 FOLDER 6

