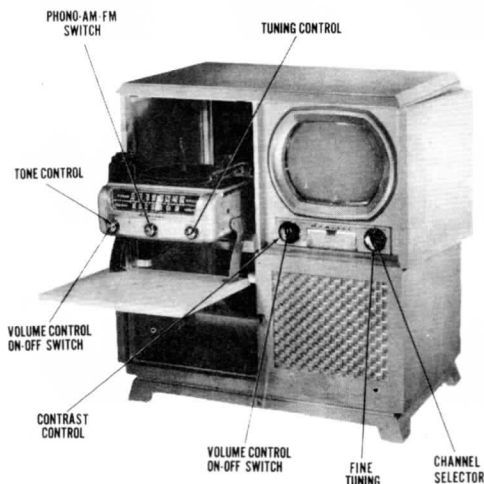




ADMIRAL MODEL 32X27

TRADE NAME	ADMIRAL MODELS	TV CHASSIS	RADIO CHASSIS	PWR. SUPPLY CHASSIS
	20X11, 20X12, 20X122, 24A125AN	20X1		
	20X136, 20X145, 20X146, 20X147	20Y1		
	24X15, 24X15S, 24X16, 24X16S, 24X17S	20X1	4L1	1PA1
	12X11, 12X12, 22X12, 22X25, 22X26, 22X27	20Z1		
	32X15, 32X16	20Z1	4S1	1PA2
	32X26, 32X27, 32X35, 32X36	20Z1	5B2	2PA1
MANUFACTURER	Admiral Corp., 3800 Cortland St., Chicago 47, Illinois			
TYPE SET	FM-AM-TV-Phono Combination Receiver (Some models "TV" only)			
TUBES	Nineteen ("TV" only models) Twenty Four (TV-AM-Phono models) Twenty Six (TV-AM-FM-Phono models)			
POWER SUPPLY	110-120 Volts AC-60 Cycle			
RATINGS	1.7 Amp. at 117 Volts AC (TV) .65 Amp. at 117 Volts AC (Radio Chassis 5B2) .5 Amp. at 117 Volts AC (Radio Chassis 4S1)		TUNING RANGES	TV Channels 2 thru 13 AM 540-1620KC FM 88-108MC

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Dial Cord Stringing	31	RF Tuner (TV)	11
Disassembly Instructions	31	Resistor Identification (TV)	22, 27
Horiz. Sweep Circuit Adjustment	12	Trans., Inductor and Alignment	
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Photographs		Schematic (Radio Chassis 4L1, 4S1)	20, 29
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Chassis-Top View (TV)	5, 26	Tube Placement Chart (TV)	3
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Power Supply (Chassis 1PA2)	26	Voltage and Resistance Measurements (TV)	10

THIS SERVICE INFORMATION SUPERCEDES PRELIMINARY SERVICE DATA PREVIOUSLY ISSUED ON THESE MODELS.

HOWARD W. SAMS & CO., INC. • Indianapolis 1, Indiana

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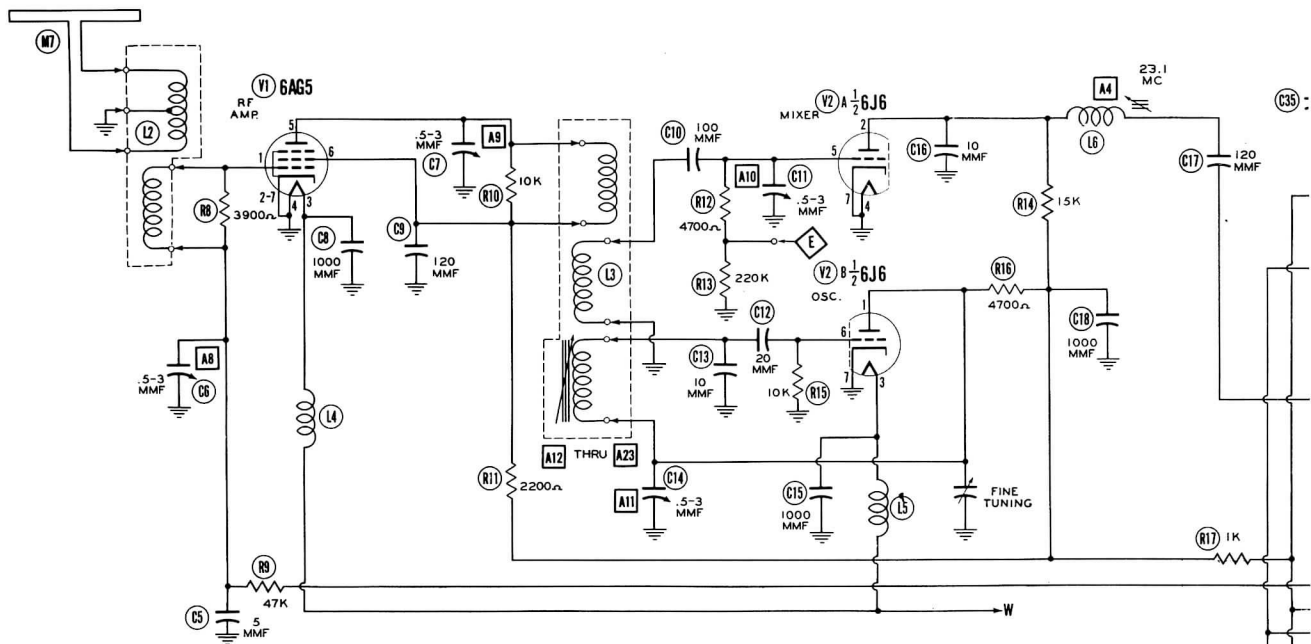
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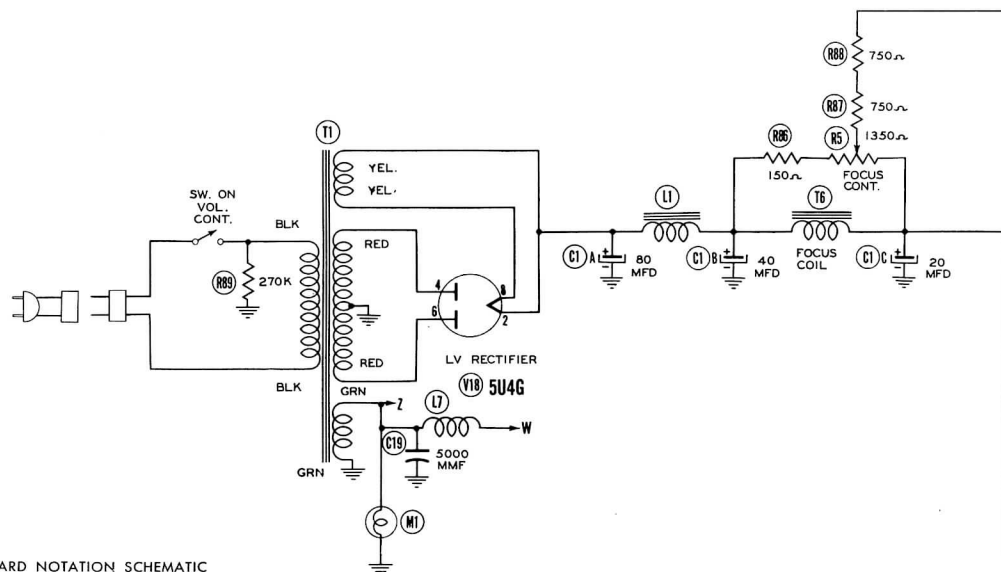
SET 100

FOLDER 1

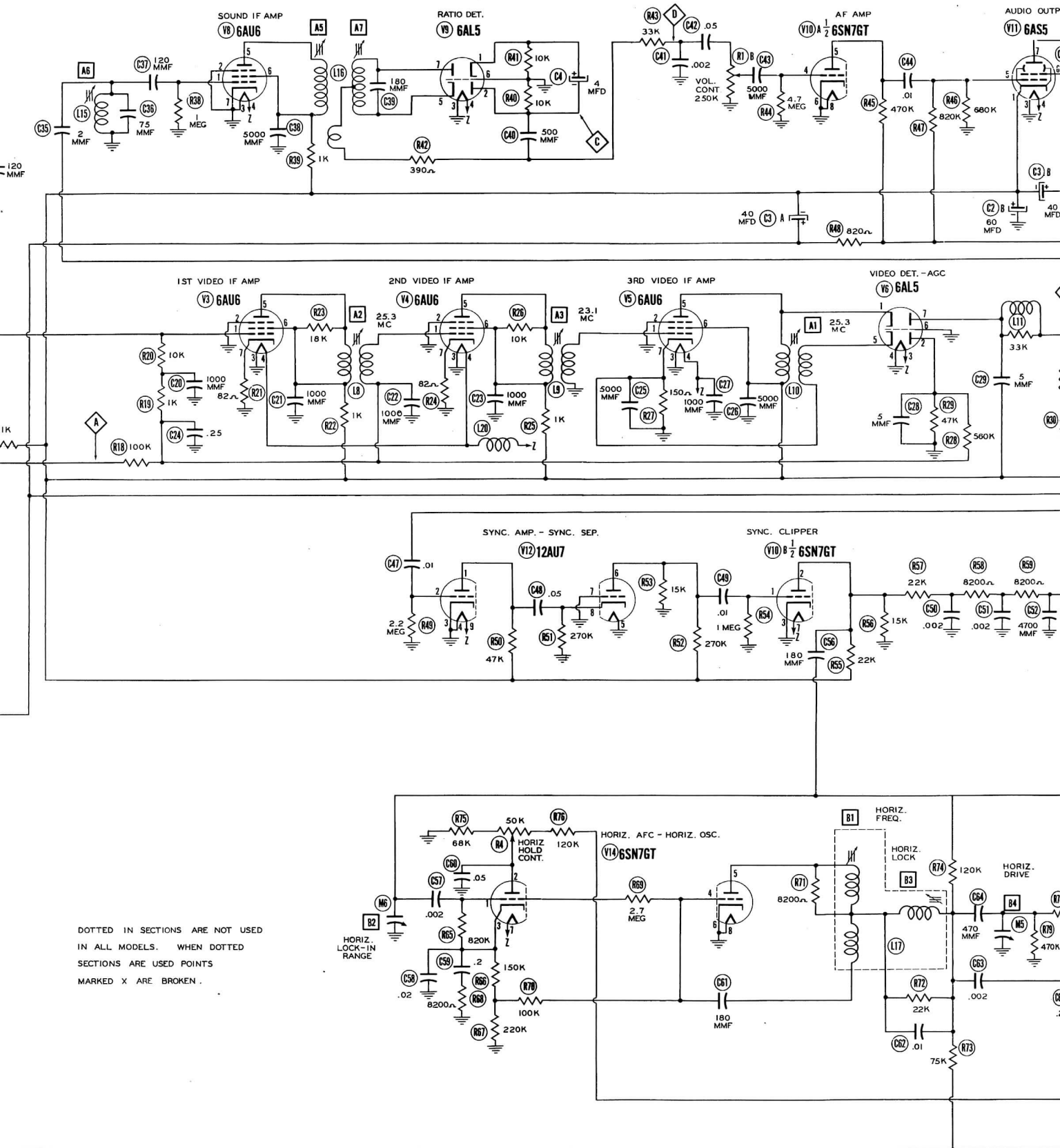
ADMIRAL CHASSIS 20X1, 20Y1, 20Z1,
RADIO CHASSIS 4L1, 4S1, 5B2



THE COOPERATION OF THE MANUFACTURER OF THIS
RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

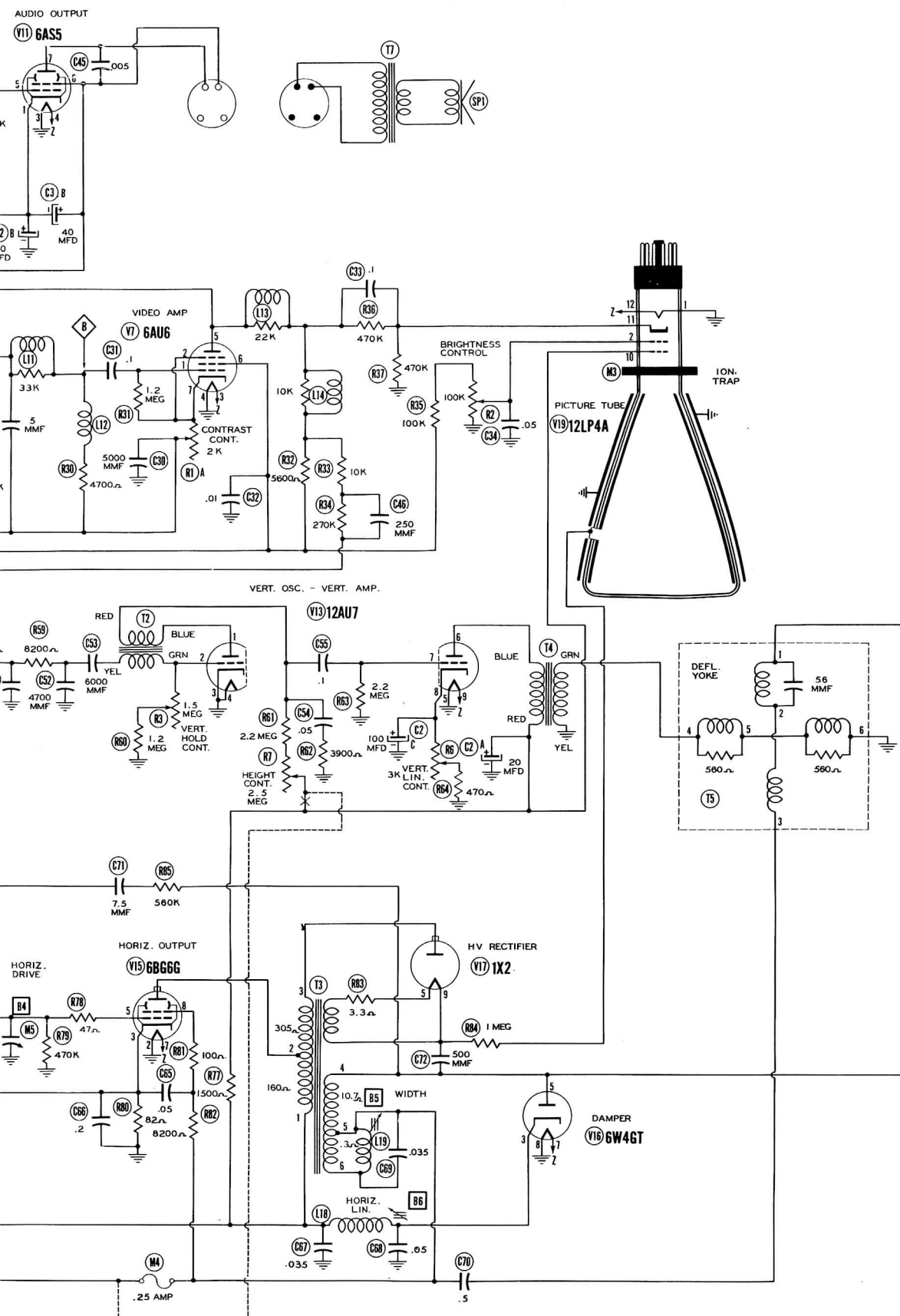


A PHOTOFAC STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1950



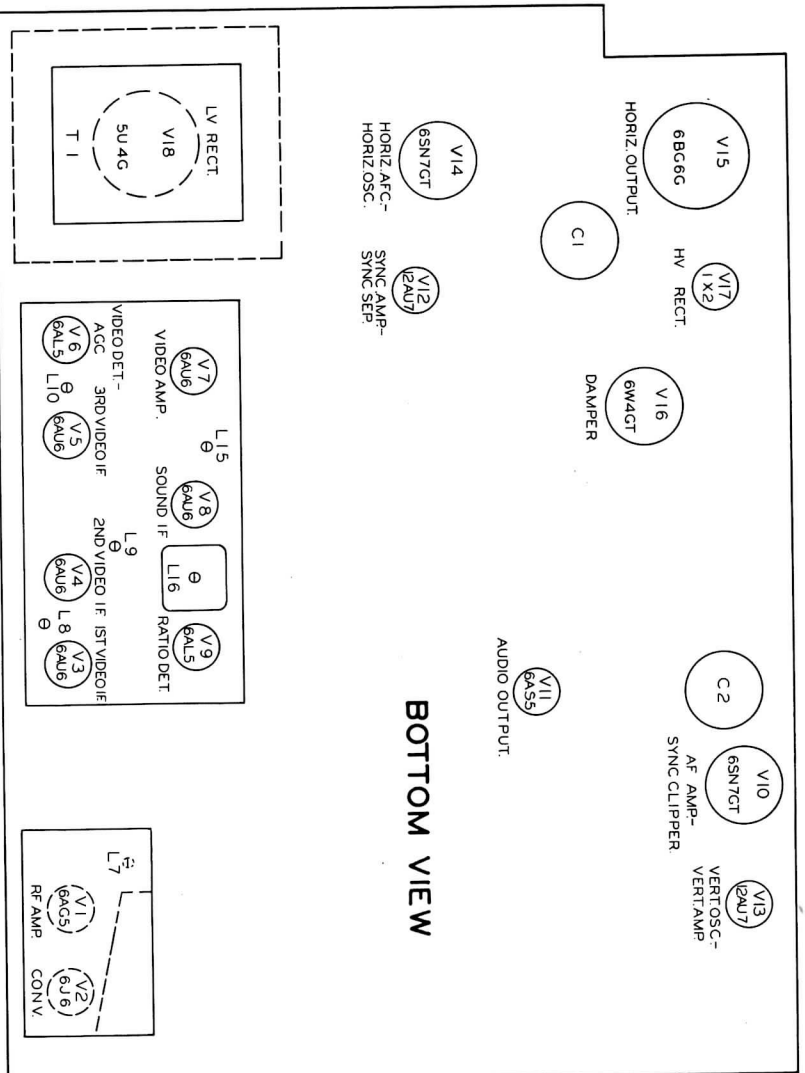
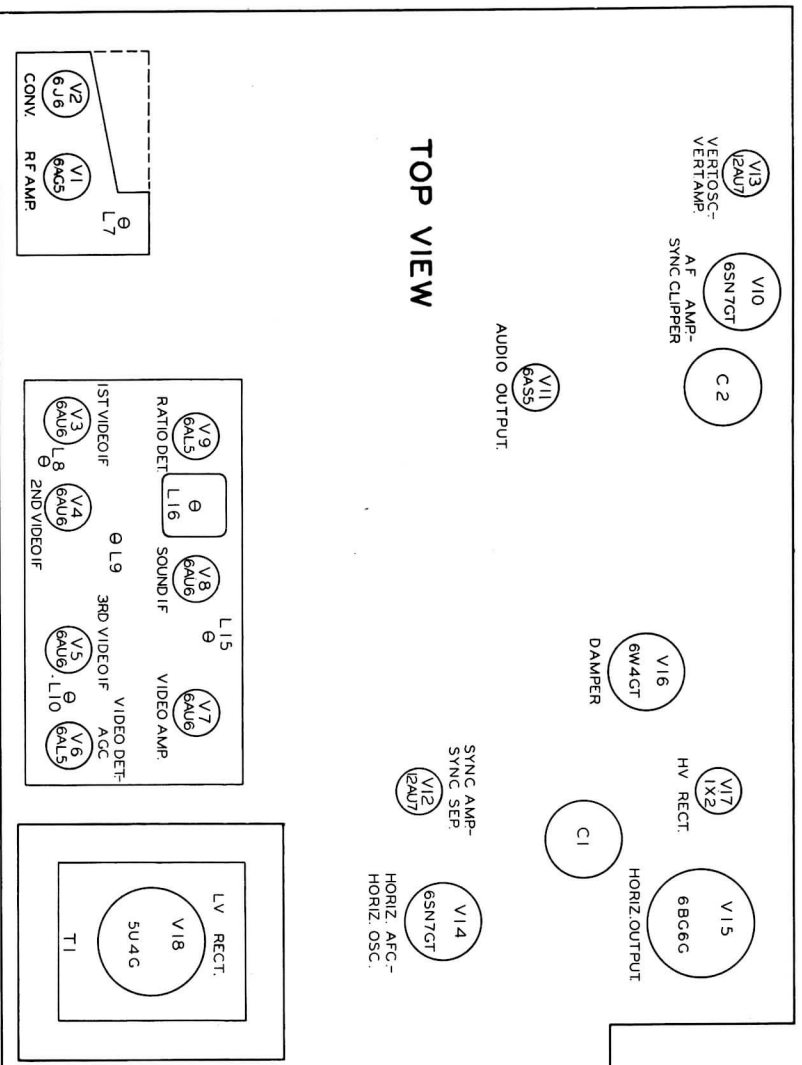
DOTTED IN SECTIONS ARE NOT USED
 IN ALL MODELS. WHEN DOTTED
 SECTIONS ARE USED POINTS
 MARKED X ARE BROKEN.

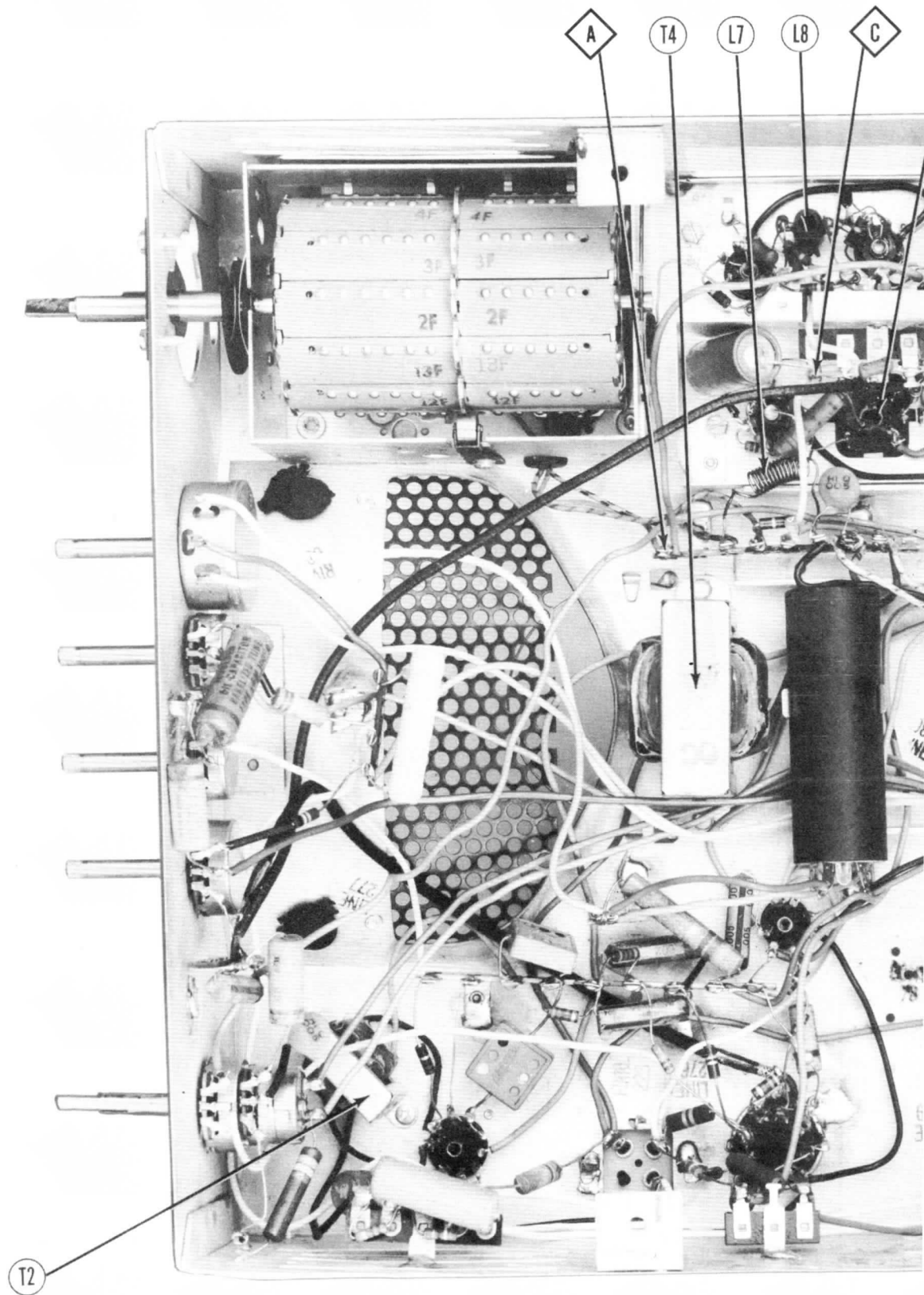
**ADMIRAL CHASSIS 20X1, 20Y1, 20Z1,
RADIO CHASSIS 4L1, 4S1, 5B2**



**ADMIRAL CHASSIS 20X1, 20Y1, 20Z1,
RADIO CHASSIS 4L1, 4S1, 5B2**

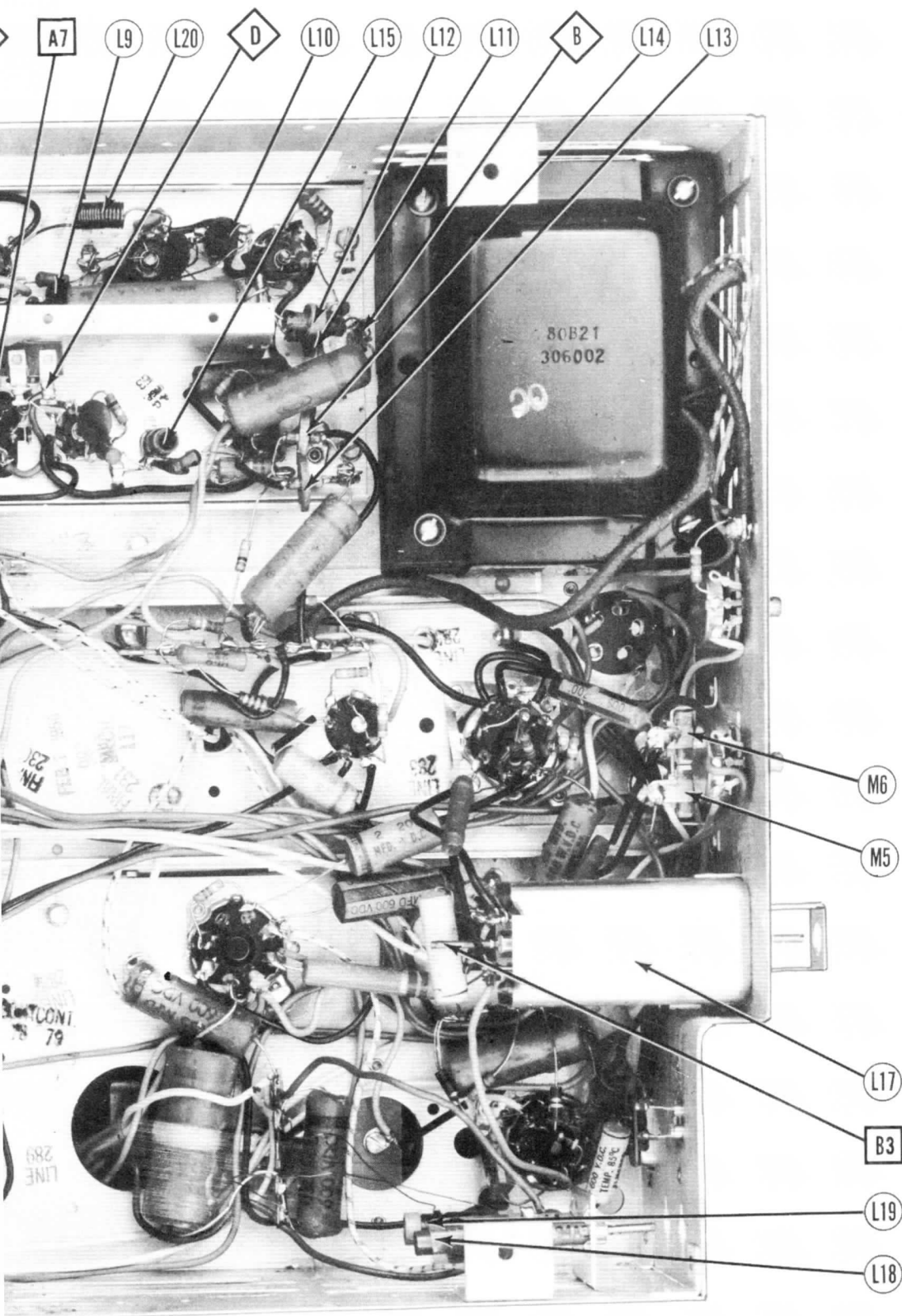
TUBE PLACEMENT CHART





TV CHASSIS BOTTOM VIEW-TRANS.,IND

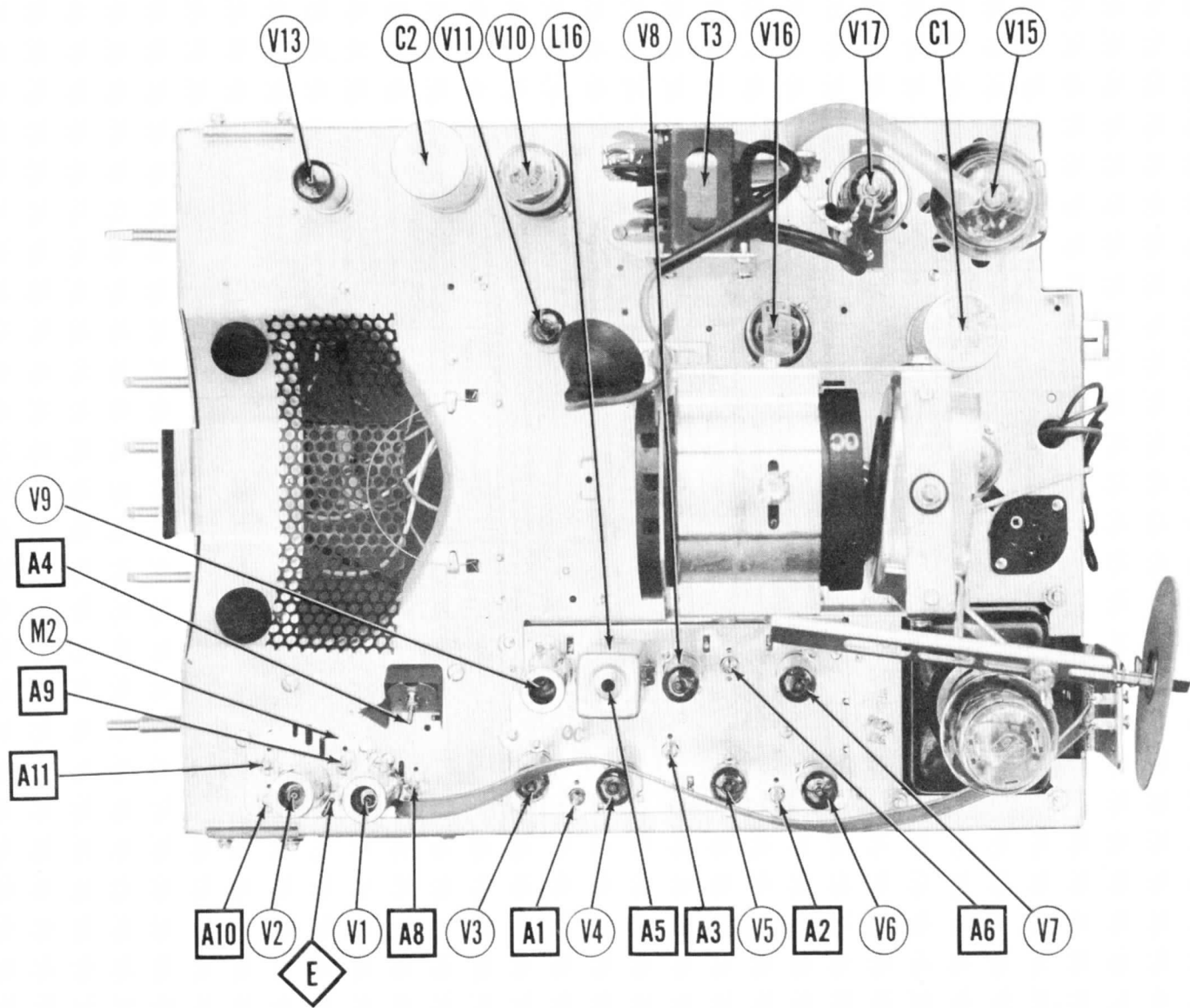
ADMIRAL CHASSIS 20X1, 20Y1, 20Z1,
RADIO CHASSIS 4L1, 4S1, 5B2



INDUCTOR AND ALIGNMENT IDENTIFICATION

ADMIRAL CHASSIS 20X1, 20Y1, 20Z1, RADIO CHASSIS 4L1, 4S1, 5B2

CHASSIS TOP VIEW



TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube (V14) from its socket.

VIDEO IF ALIGNMENT

Remove the converter tube (V2) and replace it with a 6J6 which has pin 1 removed. This will prevent erroneous indications caused by the local oscillator.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over converter tube (V2). Low side to chassis.	25.3MC (Unmod.)	Any	DC Probe to Point A. Low side to chassis.	A1, A2	Adjust for maximum deflection. Attenuate signal generator to maintain 1 volt reading.
2.	Direct	"	23.1MC	"	"	A3, A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. Connect a 10K Ω resistor in series with the oscilloscope vertical input lead, and a 330MMF capacitor across the end of the vertical input cable.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Direct	High side to ungrounded tube shield floating over converter tube (V2). Low side to chassis.	24MC (10MC SWP)	21.25MC 24.3MC 25.75MC	Any	Vert. Amp. to Point A. Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A1 thru A4 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Turn the contrast control to maximum clockwise.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	.01MFD	High side to pin 1 (Grid) of 6AU6 (V7). Low side to chassis.	4.5MC (Unmod.)	Any	DC Probe to Point A. Common to chassis.	A5, A6	Adjust for maximum deflection. Attenuate signal generator to maintain 1 volt reading.
5.	.01MFD	"	"	"	DC Probe to Point A. Common to chassis.	A7	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 120% sawtooth voltage in scope for horizontal deflection. Turn the contrast control to maximum clockwise.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	.01MFD	High side to pin 1 (Grid) of 6AU6 (V7). Low side to chassis.	4.5MC (450KC Sweep)	4.5MC	Any	Vert. Amp. to Point A. Low side to chassis.	A5, A6	Disconnect stabilizer capacitor C4. Adjust for maximum amplitude and symmetry as per figure 2.
5.	.01MFD	"	"	"	"	Vert. Amp. to Point A. Low side to chassis.	A7	Reconnect capacitor C4. Adjust A7 so 4.5MC occurs at center of crossover lines as per figure 3. Slightly retouch A6 for maximum amplitude and straightness of crossover lines.

RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. Connect the negative lead of a 1 1/2 volt battery to Point A, connect the positive lead to chassis. Keep the output of the sweep generator and marker generator as low as possible to prevent overloading the circuits.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Two 120 Ω carbon res.	Across antenna terminals with 120 Ω in each lead.	207MC (10MC SWP)	205.25MC 209.75MC	12	Vert. Amp. thru 10K Ω to Point A. Low side to chassis.	A8, A9, A10	Adjust for response curve similar to figure 4 with markers as shown.
7.	"	"	213MC (10MC SWP) 201MC (10MC SWP) 195MC (10MC SWP) 189MC (10MC SWP) 183MC (10MC SWP) 177MC (10MC SWP) 85MC (10MC SWP) 79MC (10MC SWP) 69MC (10MC SWP) 63MC (10MC SWP) 57MC (10MC SWP)	211.25MC 215.75MC 199.25MC 203.75MC 193.25MC 197.75MC 187.25MC 191.75MC 181.25MC 185.75MC 175.25MC 179.75MC 83.25MC 87.75MC 77.25MC 81.75MC 67.25MC 71.75MC 61.25MC 65.75MC 55.25MC 59.75MC	13 11 10 9 8 7 6 5 4 3 2	"		Check for response similar to figure 4. If markers fall below 80% on any channel, mark slight adjustment of A8, A9 and A10 with channel selector set for that channel. Recheck all channels to see that they have not been seriously effected.

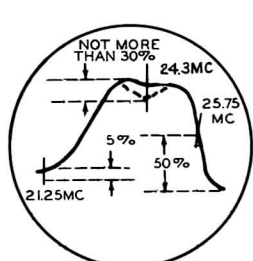


FIG. 1

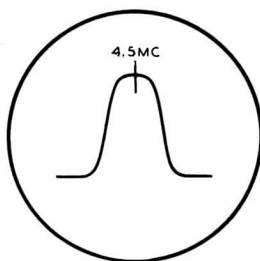


FIG. 2

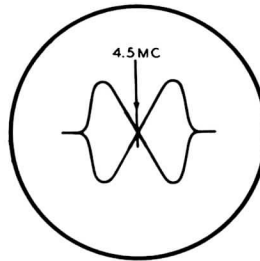


FIG. 3

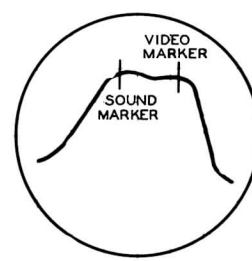


FIG. 4

TV ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

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. If adjust of A11 will not bring all channels within the range of the fine tuning control, it will be necessary to adjust the individual channel oscillator adjustment for each channel oscillator adjustment for each channel that is off frequency. The individual channel oscillator screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

Set the fine tuning control to the mid-position of its range.

Connect the negative lead of a 3 volt battery to Point A, connect the positive lead to chassis.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8. Two 120Ω carbon res.	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC	13	Vert. Amp. to Point B. Low side to chassis.	A12	Adjust to place sound marker as shown in figure 5. The video marker should be at 50%.
		207MC (10MC SWP)	205.25MC	12		A13	
		201MC (10MC SWP)	209.75MC	11		A14	
		195MC (10MC SWP)	199.25MC	10		A15	
		189MC (10MC SWP)	203.75MC	9		A16	
		183MC (10MC SWP)	193.25MC	8		A17	
		177MC (10MC SWP)	197.75MC	7		A18	
		171MC (10MC SWP)	187.25MC	6		A19	
		165MC (10MC SWP)	191.75MC	5		A20	
		159MC (10MC SWP)	181.25MC	4		A21	
		153MC (10MC SWP)	185.75MC	3		A22	
		147MC (10MC SWP)	175.25MC	2		A23	
		141MC (10MC SWP)	179.75MC				
		135MC (10MC SWP)	169.25MC				
		129MC (10MC SWP)	173.75MC				
		123MC (10MC SWP)	163.25MC				
		117MC (10MC SWP)	167.75MC				
		111MC (10MC SWP)	157.25MC				
		105MC (10MC SWP)	161.75MC				
		99MC (10MC SWP)	151.25MC				
		93MC (10MC SWP)	155.75MC				

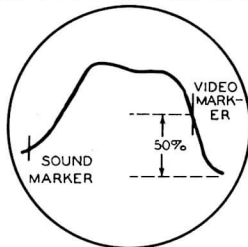


FIG.5

RADIO CHASSIS 4LI AND 4SI ALIGNMENT

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap fully closed and set pointer to last reference mark at low frequency end of dial. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
9. .1MFD	High side to stator on "AM" antenna section of tuning gang. Low side to chassis.	455KC (400 ~ Mod.)	Not used	Tuning gang fully open	Across voice coil	A24, A25, A26, A27	Adjust for maximum output.
10. REPLACE SET IN CABINET AND CONNECT THE LOOP ANTENNA.							
11.	Loop	1620KC	"	Tuning gang fully open	Across voice coil	A28	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
12.	Loop	1400KC	"	Tune for max. output	"	A29	"

ADMIRAL CHASSIS 20X1, 20Y1, 20Z1,
RADIO CHASSIS 4LI, 4SI, 5B2

RADIO CHASSIS 5B2 ALIGNMENT

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap fully closed and set pointer to last reference mark at low frequency end of dial.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
13. .1MFD	High side to stator on "AM" antenna section of tuning gang. Low side to chassis.	455KC (400 % Mod.)	AM (center)	Tuning gang fully open	Across voice coil	A30, A31, A32, A33	Adjust for maximum output.
14. .1MFD	"	1620KC	"	"	"	A34	"
15.	Loop	1400KC	"	Tune for max. output	"	A35	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. Retouch A35 after set is replaced in cabinet.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
16. .001MFD	High side to pin 1 (Grid) of 6BA6 (V22). Low side to chassis.	10.7MC (Unmod.)	FM (CW)	Tuning gang fully open	DC Probe to Point  . Common to chassis.	A36	Adjust for maximum deflection. Attenuate signal generator to maintain 1.5 volt reading.
17. .001MFD	High side to pin 1 (Grid) of 6BA6 (V21). Low side to chassis.	"	"	"	"	A37, A38	"
18. Direct	Across "FM" antenna terminals.	"	"	"	"	A39, A40	"

19. Adjust signal generator to output until VTVM reads EXACTLY 1.5 volt.

20. Tune signal generator above 10.7MC until VTVM reads EXACTLY 1 volt. Note exact frequency.

21. Tune signal generator below 10.7MC until VTVM reads EXACTLY 1 volt. Note exact frequency.

22. Add the frequencies obtained in steps 20 and 21 and divide their sum by 2. The result is the center frequency of the IF response curve.

23. Tune the signal generator above and below 10.7MC and note the VTVM reading at different frequency points until you have a good impression of the shape of the selectivity curve. If two peaks are obtained, note the difference of both peaks on the VTVM. If one peak exceeds 20% of the other, realignment of the IF's is necessary.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
24. Direct	Across "FM" antenna terminals.	Set to mid frequency obtained in step 22.	FM	Tuning gang fully open	DC Probe to Point  . Low side to chassis.	A41	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 % modulation, and 450KC sweep. Use 120 % sawtooth voltage in scope for horizontal deflection.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
16. Direct	Across "FM" antenna terminals.	10.7MC (450KC Sweep)	FM (CW)	Tuning gang fully open	Vert. Amp. to Point  . Low side to chassis.	A37, A38, A39, A40	Adjust for maximum amplitude and symmetry as per figure 6.
17. Direct	"	"	"	"	Vert. Amp. to Point  . Low side to chassis.	A36, A41	Adjust A41 so 10.7MC occurs at center of crossover lines as per figure 7. Adjust A36 for maximum amplitude and straightness of crossover lines. Continue with step 25.

FM RF ALIGNMENT

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
25. Two 120Ω carbon res.	Across FM Antenna terminals with 120Ω in each lead.	109MC (Unmod.)	FM	Tuning gang fully open	DC Probe to Point  . Common to chassis.	A42, A43	Adjust for maximum deflection.
26. "	"	87MC	"	Tune for max. signal	"		If the signals in steps 25 and 26 do not tune near the extremes of the tuning gang, expand or compress the oscillator coil turns and repeat steps 25 and 26.
27. "	"	106MC	"	"	"	A43	Readjustment for maximum deflection. Check calibration at 90MC. If necessary expand or compress antenna coil turns. Repeat steps 25, 26 and 27 if antenna coil is changed.

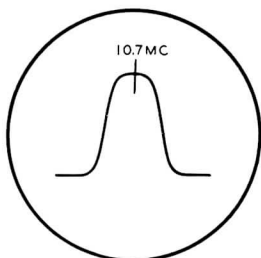


FIG. 6

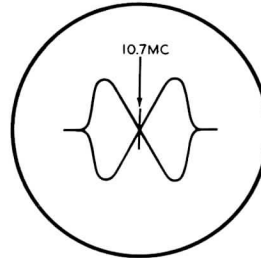


FIG. 7

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	-.1VDC	0V.	6.3VAC	0V.	115VDC	115VDC	0V.		
V 2	6J6	80VDC	90VDC	6.3VAC	0V.	-1.4VDC	§-1.7VDC	0V.		
V 3	6AU6	-2.8VDC	0V.	0V.	6.3VAC	130VDC	130VDC	.7VDC		
V 4	6AU6	-.6VDC	0V.	0V.	6.3VAC	130VDC	130VDC	.7VDC		
V 5	6AU6	0V.	0V.	0V.	6.3VAC	140VDC	140VDC	1.2VDC		
V 6	6AL5	140VDC	-.2VDC	6.3VAC	0V.	1.2VDC	0V.	135VDC		
V 7	6AU6	†.7VDC	†28VDC	6.3VAC	0V.	†120VDC	†180VDC	†28VDC		
V 8	6AU6	-2VDC	0V.	0V.	6.3VAC	125VDC	125VDC	0V.		
V 9	6AL5	.2VDC	-.2VDC	0V.	6.3VAC	-.1VDC	0V.	-.1VDC		
V 10	6SN7GT	-1VDC	38VDC	0V.	-.7VDC	20VDC	0V.	6.3VAC	0V.	
V 11	6AS5	†0V.	†-7.8VDC	0V.	6.3VAC	†-7.8VDC	†140VDC	†130VDC		
V 12	12AU7	37VDC	-1.6VDC	0V.	0V.	0V.	6.2VDC	0V.	2.2VDC	6.3VAC
V 13	12AU7	148VDC	-16VDC	0V.	0V.	0V.	380VDC	0V.	9.2VDC	6.3VAC
V 14	6SN7GT	-3.1VDC	100VDC	-18VDC	-55VDC	190VDC	0V.	6.3VAC	0V.	TOP CAP *
V 15	6BG6G	-.5VDC	0V.	9.6VDC	0V.	-.5VDC	190VDC	6.3VAC	280VDC	
V 16	6W4GT	0V.	0V.	410VDC	350VDC	350VDC	350VDC	6.3VAC	0V.	
V 17	1X2	* DO NOT MEASURE.								
V 18	5U4G	0V.	410VDC	0V.	365VAC	0V.	365VAC	0V.	410VDC	
V 19	12LP4A	0V.	0V.	PIN 10 400VDC	PIN 11 115VDC	PIN 12 6.3VAC				

§ TAKEN WITH VACUUM TUBE VOLTMETER.

* DO NOT MEASURE.

† MEASURED FROM PIN 1 OF V11.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	750KΩ	0Ω	.1Ω	0Ω	†3.2KΩ	†3.2KΩ	0Ω		
V 2	6J6	†5.7KΩ	†16KΩ	.1Ω	0Ω	225KΩ	10KΩ	0Ω		
V 3	6AU6	610KΩ	0Ω	0Ω	.1Ω	†1000Ω	†1000Ω	82Ω		
V 4	6AU6	600KΩ	0Ω	0Ω	.1Ω	†1000Ω	†1000Ω	82Ω		
V 5	6AU6	.3Ω	0Ω	0Ω	.1Ω	†.3Ω	†0Ω	150Ω		
V 6	6AL5	†.3Ω	47KΩ	.1Ω	0Ω	150Ω	0Ω	†4.7KΩ		
V 7	6AU6	†1.2 Meg.	†2000Ω	.1Ω	0Ω	▲7KΩ	▲1000Ω	†2000Ω		
V 8	6AU6	1 Meg.	0Ω	0Ω	.1Ω	†1000Ω	†1000Ω	0Ω		
V 9	6AL5	10KΩ	10KΩ	0Ω	.1Ω	Inf.	0Ω	Inf.		
V 10	6SN7GT	1 Meg.	15KΩ	0Ω	4.7 Meg.	▲470KΩ	0Ω	.1Ω	0Ω	
V 11	6AS5	†0Ω	400KΩ	0Ω	.1Ω	400KΩ	▲2000Ω	▲2.2KΩ		
V 12	12AU7	†47KΩ	2.2 Meg.	0Ω	0Ω	0Ω	15KΩ	0Ω	270KΩ	.1Ω
V 13	12AU7	#2 Meg.	9.2VDC	0Ω	0Ω	0Ω	#2000Ω	2.2 Meg.	3.4KΩ	.1Ω
V 14	6SN7GT	1 Meg.	#4.5 Meg.	2.7 Meg.	0Ω	0Ω	0Ω	0Ω	470Ω	
V 15	6BG6G	470KΩ	0Ω	82Ω	300KΩ	470KΩ	▲75KΩ	.1Ω	▲8.3KΩ	TOP CAP #200Ω
V 16	6W4GT	Inf.	8.2KΩ	#0Ω	▲300Ω	▲310Ω	▲300Ω	.1Ω	0Ω	
V 17	1X2	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP #450Ω
V 18	5U4G	Inf.	45KΩ	Inf.	38Ω	Inf.	38Ω	Inf.	45KΩ	
V 19	12LP4A	0Ω	13Ω	PIN 10 #1.5KΩ	PIN 11 250KΩ	PIN 12 .1Ω				

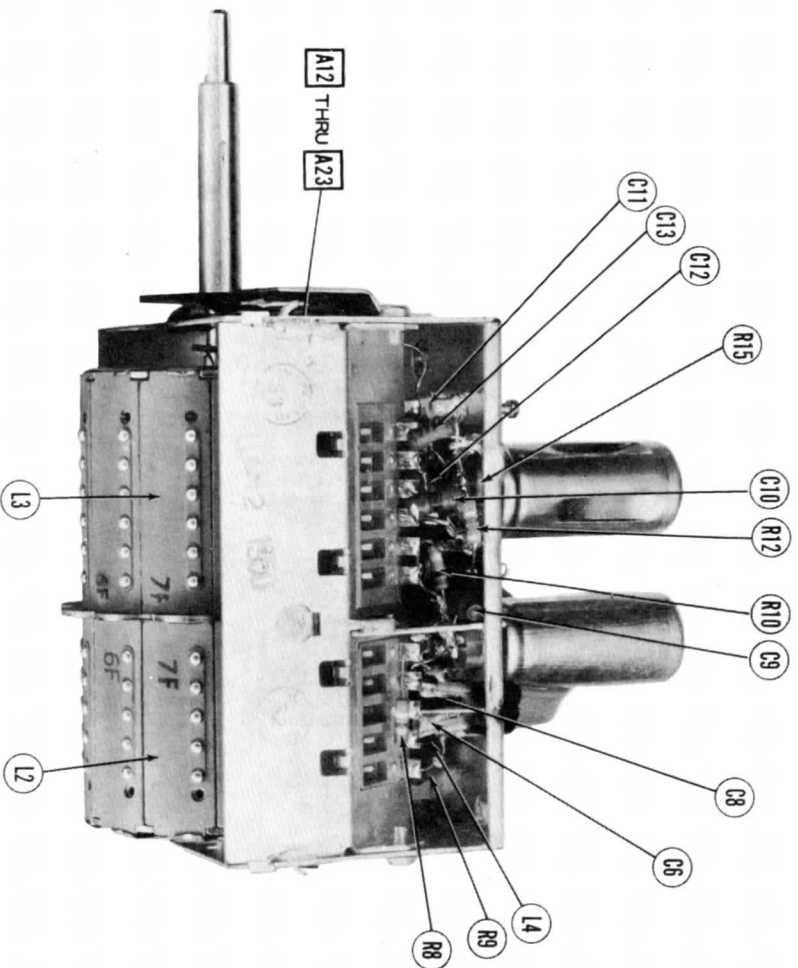
† MEASURED FROM PIN 1 OF V11.

▲ MEASURED FROM PIN 2 OF V18.

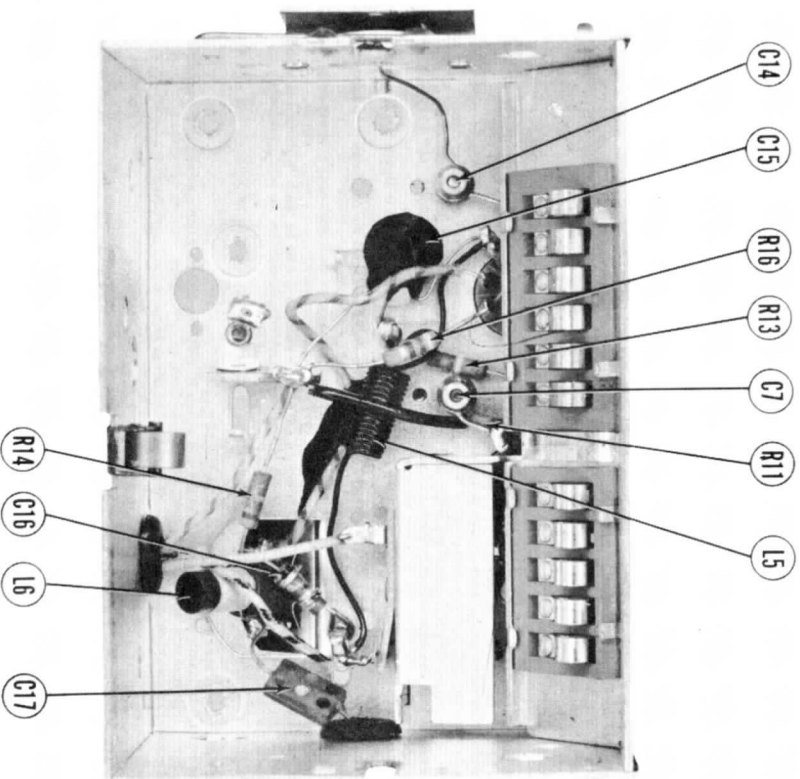
MEASURED FROM PIN 3 OF V16.

- DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
- Pin numbers are counted in a clockwise direction on bottom of socket.
- Measured values are from socket pin to common negative unless otherwise stated.

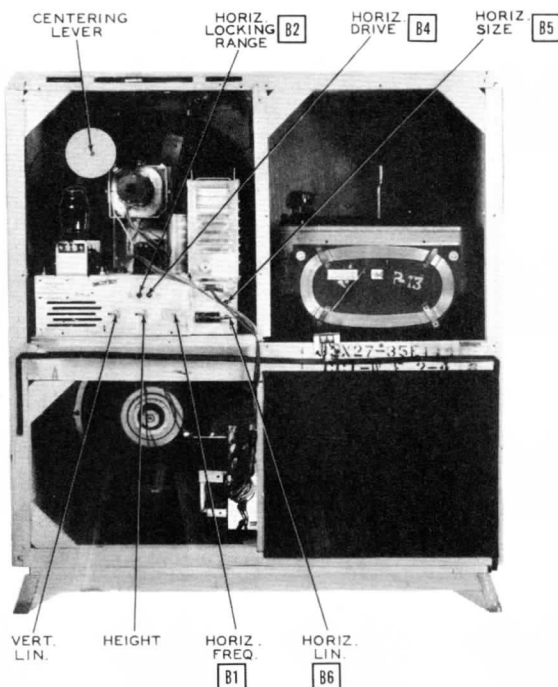
- Line voltage maintained at 117 volts for voltage readings.
- Front panels controls set at minimum.
- Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



TV RF TUNER-RIGHT SIDE



TV RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

HORIZONTAL OSCILLATOR CHECK

- Turn the set on and tune in a TV station, preferably a test pattern, and allow a few minutes warmup.
- Turn the horizontal hold control to fully counter-clockwise. The picture should remain in horizontal sync.
- Momentarily interrupt the signal by switching to another channel and back again. The picture will normally be out of sync.
- Slowly rotate the horizontal hold control clockwise and carefully note the number of bars just before the picture pulls into synchronization. There should be 3 to 4 bars just before pull in.
- The picture should pull into sync after approximately 90° of clockwise rotation and should remain in sync for approximately 90° additional clockwise rotation. At the extreme clockwise position the picture should be out of sync and show a single vertical or diagonal bar in the raster.

SLIGHT RETOUCH ADJUSTMENT

If the receiver failed the above check, proceed with slight retouch adjustment as follows:

- Turn the horizontal hold control fully clockwise.
- Adjust the horizontal frequency slug (B1) until a single vertical or diagonal bar appears in the picture.
- Turn the hold control to maximum counter-clockwise. The picture will normally fall out of horizontal sync. If it does not, momentarily interrupt the signal by switching to another channel and back again.
- Adjust the horizontal lock-in trimmer (B2) until 3 to 4 bars are present just before pull in, as the hold control is turned clockwise.
- Repeat the check of horizontal oscillator.

COMPLETE HORIZONTAL OSCILLATOR ALIGNMENT

If proper horizontal oscillator pull in range can not be obtained by the slight retouch alignment, the horizontal oscillator will require alignment using an oscilloscope as follows:

- Turn the horizontal lock slug (B3) fully out (counter-clockwise).
- Turn the horizontal lock in trimmer (B2) and horizontal drive trimmer (B4) $1/2$ turn counter-clockwise from tight.
- Turn the contrast control to approximately its normal position, and turn the hold control to fully counter-clockwise.
- Adjust B1 until the picture falls into synchronization. If sync cannot be obtained, turn B2 $1/4$ turn clockwise and repeat this step.
- Connect the low capacity probe of an oscilloscope between terminal "C" of L17 and chassis.
- Adjust B3 until the broad and sharp peaks of the waveform on the scope are of equal height as shown in figure 8. If necessary turn the hold control to keep the picture in sync while adjusting B3.
- Remove the oscilloscope and turn the horizontal hold control to fully clockwise. Adjust B1 until the entire picture appears to move slowly across the face of the tube. The horizontal blanking signal should appear as a single vertical or diagonal bar.
- Turn the hold control to fully counter clockwise, the picture will normally fall out of sync. If it does not, momentarily interrupt the signal by switching to another channel and back again.
- Carefully adjust B2 until 3 or 4 diagonal bars are present just before the picture pulls into sync as the hold control is rotated clockwise.
- Adjust the horizontal drive trimmer (B4) clockwise from fully out for the best compromise between horizontal linearity and line focus. (the trimmer screw will fall out if the screw is turned too far counter-clockwise).
- Adjust the horizontal linearity slug (B5) until the picture is symmetrical from left to right. It may be necessary to adjust B4 and B5 alternately for best results.
- Adjust the width slug (B6) until the picture just fills the mask horizontally.
- Turn the horizontal hold control to maximum counter-clockwise and adjust B1 until the blanking bar appears in the picture as a single vertical or diagonal bar.
- Turn the horizontal hold control to synchronize the picture and perform the check of horizontal oscillator.

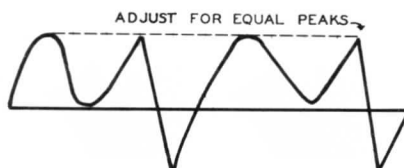


FIG. 8

TV PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		ADMIRAL PART No.	STANDARD REPLACEMENT		
V1	RF Amp.	6AG5	6AG5	7BD	
V2	Converter	6J6	6J6	7BF	
V3	1st Video IF	6AU6	6AU6	7BK	
V4	2nd Video IF	6AU6	6AU6	7BK	
V5	3rd Video IF	6AU6	6AU6	7BK	
V6	Video DET. -AGC	6AL5	6AL5	6BT	
V7	Video Amp.	6AU6	6AU6	7BK	
V8	Sound IF Amp.	6AU6	6AU6	7BK	
V9	Ratio Det.	6AL5	6AL5	6BT	
V10	AF Amp. -Sync. Clipper	6SN7GT	6SN7GT	8BD	
V11	Audio Output	6AS5	6AS5	7CV	
V12	Sync. Amp. -Sync. Sep.	12AU7	12AU7	9A	
V13	Vert. Osc. -Vert. Amp.	12AU7	12AU7	9A	
V14	Hor. AFC-Hor. Osc.	6SN7GT	6SN7GT	8BD	
V15	Hor. Output	6BG6G	6BG6G	5BT	
V16	Damper	6W4GT	6W4GT	4CG	
V17	HV Rectifier	1X2	1X2	7CB	
V18	LV Rectifier	5U4G	5U4G	5T	
V19A	Picture Tube	12LP4A	12LP4A	12D	Used in chassis 20Z1
B	Picture Tube	12LP4	12LP4	12D	Used in chassis 20Y1
C	Picture Tube	10BP4	10BP4	12D	Used in chassis 20X1

CAPACITORS

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

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	ADMIRAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	80	450	67C15-10	AFH1684J			TVL-310	▲ Filter
B	40	450						■ Filter
C	20	450						▲ Filter
C2A	20	450	67C15-11	AFH4J12F20A			TVL-309	■ Decoupling
B	60	250						■ Decoupling
C	100	25						▲ Vert. Output Cath. Bypass
C3A	40	250	67C15-52	AFH844F			TVL-205	■ Decoupling
B	40	250						▲ Decoupling
C4	4	50	67A4-4	PRS150/4			TVA-13	Stabilizing Cap.
C5	5		98A45-22	SI5DNPO	D2-4.7	NPOK-5		Fixed Trimmer *
C6	.5-3		98A45-87		829-3			Variable Trimmer
C7	.5-3		98A45-23		829-3			Variable Trimmer
C8	1000		98A45-24	GP1000M	D6-102	GP2L-001		RF Filament Bypass
C9	120		98A45-25	GP120K	D6-121	GP2K-120		RF Decoupling
C10	100		98A45-26	GP100K	D6-101	GP1K-100		RF Coupling
C11	.5-3		98A45-23		829-3			Variable Trimmer
C12	20		98A45-27	SI20KNPO	D2-20	NPOK-20		Osc. Grid Cap.
C13	10		98A45-79	SI10DN750	DN-10	N750K-10		Fixed Trimmer
C14	.5-3		98A45-23		829-3			Variable Trimmer
C15	1000		98A45-24	GP1000M	D6-102	GP2L-001	29C4	Mixer Filament Bypass
C16	10		98A45-64	CN10DNPO	D2-10	NPOK-10		Fixed Trimmer
C17	120	300	98A45-78	GP120K	D6-121	GP2K-120		IF Coupling
C18	1000		98A45-24	GP1000M	D6-102	GP2L-001		RF Bypass *
C19	5000		65A10-1	BPD-5	D6-502	811-005	29C1	Filament Bypass
C20	1000		65B6-41	GP1000M	D6-102	GP2L-001	1FM-21	AGC Filter
C21	1000		65B6-41	GP1000M	D6-102	GP2L-001	1FM-21	1st V. IF Decoupling
C22	1000		65B6-41	GP1000M	D6-102	GP2L-001	29C4	AGC Filter
C23	1000		65B6-41	GP1000M	D6-102	GP2L-001	1FM-21	2nd V. IF Decoupling
C24	.25	200	64B5-28	P488-25			TC-2	AGC Filter
C25	5000		64B6-12	BPD-5	D6-502	811-005	29C1	3rd V. IF Cathode Bypass
C26	5000		65A10-1	BPD-5	D6-502	811-005	29C1	RF Bypass
C27	1000		65B6-41	GP1000M	D6-102	GP2L-001	1FM-21	3rd V. IF Filament Bypass
C28	5		65B6-61	GP5K	D2-4.7	NPOK-5	MS-55	AGC Diode Filter
C29	5		65B6-61	GP5K	D2-4.7	NPOK-5	MS-55	V. Diode Filter
C30	5000		65A10-1	BPD-5	D6-502	811-005	29C1	RF Bypass *
C31	.1	200	64B5-30	P288-1			TM-1	Video Coupling †
C32	.01	600	64B5-10	P688-01	D6-103	821-01	TM-11	RF Bypass †
C33	.1	400	64B5-20	P488-1			TM-1	Video Coupling
C34	.05	400	64B5-22	P488-05			TM-15	Pic. Tube Grid Bypass
C35	2		65B6-58	SI2DNPO	D2-2.2			S. IF Coupling
C36	75		98A47-1	CN75JN150		N150L-75		Fixed Trimmer
C37	120		65B6-66	GP120K	D6-121	GP2K-120	1FM-315	S. IF Coupling
C38	5000		65A10-1	BPD-5	D6-502	811-005	29C1	S. IF Decoupling
C39	180		65B6-59	SI180JN030		N030L-180		Fixed Trimmer
C40	500		65B6-6	GP500M	D6-501	GP2K-500	1FM-35	Diode Load Cap.
C41	.002	600	64B5-14	P688-002	D6-202	GP2M-002	TM-26	De-emphasis
C42	.05	400	64B5-22	P488-05			TM-15	Audio Coupling
C43	5000		64B5-12	BPD-5	D6-502	811-005	29C1	Audio Coupling
C44	.01	400	64B5-25	P488-01	D6-103	821-01	TM-11	Audio Coupling
C45	.005	600	65A10-1	P688-005	D6-502	811-005	TM-25	Output Screen Bypass
C46	250		65B6-5	GP250M	D6-251	GP2K-250	1FM-325	Sync. Coupling ‡
C47	.01	600	64B5-10	P688-01	D6-103	821-01	TM-11	Sync. Coupling
C48	.05	400	64B5-7	P488-05			TM-15	Sync. Coupling
C49	.01	400	65A13-3	P488-01	D6-103	821-01	TM-11	Sync. Coupling
C50	.002	600	64B5-14	P688-002	D6-202	GP2M-002	TM-22	Integrator Net.
C51	.002	600	64B5-14	P688-002	D6-202	GP2M-002	TM-22	Integrator Net.
C52	4700	300	65B21-472	1467-005	D6-472	GP2M-0047	1FM-25	Integrator Net.
C53	6000	300	65B21-602	1467-006	D6-562	GP2M-0056	1FM-26	Vert. Osc. Grid Cap. *
C54	.05	600	64B5-7	P688-05			TM-15	Vert. Discharge
C55	.1	400	64B5-20	P488-1			TM-1	Vert. Sweep Coupling
C56	180		65B6-59	GP180K	D6-181	GP2K-180		Hor. Sync. Coupling
C57	.002	600	65A13-4	P688-002	D6-202	GP2M-002	TM-22	Hor. Sync. Coupling
C58	.02	400	64B5-24	P488-02			TM-12	AFC Filter
C59	.2	200	64B5-29	P488-22			68P18	AFC Filter
C60	.05	400	64B5-22	P488-05			TM-15	Hor. AFC Plate Bypass
C61	180		65B6-59	GP180K	D6-181	GP2K-180		Hor. Osc. Grid Cap.
C62	.01	600	64B5-25	P688-01			TM-11	Fixed Trimmer
C63	.002	600	64B5-14	P688-002	D6-202	GP2M-002	TM-22	Hor. Discharge
C64	470	500	65B21-471	1468-0005	D6-471	GP2K-470	1FM-35	Hor. Sweep Coupling
C65	.05	600	64B5-7	P688-05			TM-15	Hor. Output Screen Bypass
C66	.2	200	64B5-29	P488-22			TC-2	Hor. Output Cathode Bypass
C67	.035	600	64A2-5	P688-033				Damper Filter
C68	.05	600	64B5-22	P688-05			TM-15	Damper Filter

ADMIRAL CHASSIS 20X1, 20Y1, 20Z1,
RADIO CHASSIS 4L1, 4S1, 5B2

CAPACITORS (CONT.)

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	ADMIRAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	
C69	.035	600	64A2-5	P688-033				Fixed Trimmer † Hor. Sweep Coupling Hor. Feedback HV Filter
C70	.5	200	64B6-27	P288-5				
C71	7.5	1500	65A23-3					
C72	500	10000	65A11-2		TV2-501			

- * Not used in all models.
† Not used in early production runs.
‡ Some models use .005MFD in this application.
§ Early models use 120MMF in this application.
¶ Early models use 4700MMF in this application.
‡ Used only in chassis 20Y1 and 20Z1.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	ADMIRAL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	2000Ω	1/2	75B11-13			SBB-501-S	Contrast control-front Volume control and switch-rear Focus control-front-Wire Wound-See Note 1 and 2 Volume control and switch-rear-See Note 1 Brightness control Attach to R2A per instructions Brightness control-front-See Note 1 Contrast control-rear-See Note 1 Vert. hold control Attach to R3A per instructions Vert. hold control-panel-See note 1 Horiz. hold control-rear-See note 1 Horiz. hold control Focus control-Wire Wound Vert. linearity control Attach to R6A per instructions Height control Attach to R7A per instructions
R1A	250KΩ	4	75B12-5				
B	250KΩ	1/2	75A13-11	Q11-128	M-49-S	AN-40	Contrast control-front-See Note 1 Brightness control Attach to R2A per instructions Brightness control-front-See Note 1 Contrast control-rear-See Note 1 Vert. hold control Attach to R3A per instructions Vert. hold control-panel-See note 1 Horiz. hold control-rear-See note 1 Horiz. hold control Focus control-Wire Wound Vert. linearity control Attach to R6A per instructions Height control Attach to R7A per instructions
R2A	100KΩ	1/2	Not Req.	Not Req.	Not Req.	AK-4	
R2A	100KΩ	1/2	75B11-10				Contrast control-front-See Note 1 Brightness control Attach to R2A per instructions Brightness control-front-See Note 1 Contrast control-rear-See Note 1 Vert. hold control Attach to R3A per instructions Vert. hold control-panel-See note 1 Horiz. hold control-rear-See note 1 Horiz. hold control Focus control-Wire Wound Vert. linearity control Attach to R6A per instructions Height control Attach to R7A per instructions
B	2000Ω	1/2	75A13-8	Q11-138	M-83-S	AN-75	
R3A	1.5 Meg.	1/2	Not Req.	Not Req.	Not Req.	AK-4	Contrast control-front-See Note 1 Brightness control Attach to R2A per instructions Brightness control-front-See Note 1 Contrast control-rear-See Note 1 Vert. hold control Attach to R3A per instructions Vert. hold control-panel-See note 1 Horiz. hold control-rear-See note 1 Horiz. hold control Focus control-Wire Wound Vert. linearity control Attach to R6A per instructions Height control Attach to R7A per instructions
B	50KΩ	1/2	75B11-9				
R4	50KΩ	1/2	75A13-9	Q11-123		B-31	Contrast control-front-See Note 1 Brightness control Attach to R2A per instructions Brightness control-front-See Note 1 Contrast control-rear-See Note 1 Vert. hold control Attach to R3A per instructions Vert. hold control-panel-See note 1 Horiz. hold control-rear-See note 1 Horiz. hold control Focus control-Wire Wound Vert. linearity control Attach to R6A per instructions Height control Attach to R7A per instructions
R5	1350Ω	4	75A13-10		43-1500	SVS-925	
R6A	3000Ω	1/2	75A13-7	Q11-112	M-15-S	AN-7	Contrast control-front-See Note 1 Brightness control Attach to R2A per instructions Brightness control-front-See Note 1 Contrast control-rear-See Note 1 Vert. hold control Attach to R3A per instructions Vert. hold control-panel-See note 1 Horiz. hold control-rear-See note 1 Horiz. hold control Focus control-Wire Wound Vert. linearity control Attach to R6A per instructions Height control Attach to R7A per instructions
B	Shaft	1/2	Not Req.	Not Req.	Not Req.	AK-1	
R7A	2.5 Meg.	1/2	75A13-3	Q11-239	M-84-S	AN-83	Contrast control-front-See Note 1 Brightness control Attach to R2A per instructions Brightness control-front-See Note 1 Contrast control-rear-See Note 1 Vert. hold control Attach to R3A per instructions Vert. hold control-panel-See note 1 Horiz. hold control-rear-See note 1 Horiz. hold control Focus control-Wire Wound Vert. linearity control Attach to R6A per instructions Height control Attach to R7A per instructions
B	Shaft	1/2	Not Req.	Not Req.	Not Req.	AK-1	

- Note 1. Used in chassis 20X1 and 20Y1 only.
Note 2. Early models use 1500Ω, 2 watt control.

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	ADMIRAL PART No.	IRC PART No.	
R8	3900Ω	1/2	98A45-16	BTS-3900	ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED.
R9	47KΩ 20%	1/2	98A45-17	BTS-47K	
R10	10KΩ	1/2	98A45-18	BTS-10K	Ant. Coil Shunt AGC Network RF Plate/Coil Shunt RF Decoupling Mixer Grid Mixer Grid Mixer Plate Osc. Grid Osc. Plate Decoupling AGC Network AGC Network 1st Video IF Grid 1st Video IF Cathode 1st Video IF Decoupling 2nd Video IF Transformer Shunt 2nd Video IF Cathode 2nd Video IF Decoupling 3rd Video IF Transformer Shunt 3rd Video IF Cathode AGC Network AGC Rect. Diode Load Video Det. Diode Load Video Amp. Grid-See Note 3 Video Amp. Plate Isolation Isolation Voltage Divider Voltage Divider Picture Tube Cathode Sound IF Grid Sound IF Decoupling Ratio Det. Diode Load Ratio Det. Diode Load Balancing De-emphasis AF Amp. Grid AF Amp. Plate Output Grid Voltage Divider Filter Sync. Amp. Grid Sync. Amp. Plate Sync. Sep. Cathode Sync. Sep. Plate Voltage Divider Sync. Clipper Grid Sync. Clipper Plate Voltage Divider Integrator Network Integrator Network Integrator Network Vert. Osc. Grid Vert. Osc. Plate-See Note 4 Vert. Peaking Vert. Amp. Grid Vert. Amp. Cathode Horiz. AFC Grid Horiz. AFC Cathode Horiz. AFC Cathode-See Note 5 Horiz. AFC Filter Network Voltage Divider Horiz. Osc. Grid Horiz. Osc. Transformer Shunt Horiz. Osc. Transformer Shunt Horiz. Osc. Plate
R11	2200Ω 20%	1/2	98A45-19	BTS-2200	
R12	4700Ω	1/2	98A45-20	BTS-4700	
R13	420KΩ 20%	1/2	98A45-21	BTS-220K	
R14	15KΩ 20%	1/2	98A45-67	BTS-15K	
R15	10KΩ	1/2	98A45-18	BTS-10K	
R16	4700Ω	1/2	98A45-20	BTS-4700	
R17	1000Ω	1/2	60B8-102	BTS-1000	
R18	100KΩ	1/2	60B8-104	BTS-100K	
R19	1000Ω	1/2	60B8-102	BTS-1000	
R20	10KΩ 5%	1/2	60B7-103	BTS-10K-5%	
R21	82Ω	1/2	60B28-31		
R22	1000Ω	1/2	60B8-102	BTS-1000	
R23	18KΩ	1/2	60B8-183		
R24	82Ω	1/2	60B28-31		
R25	1000Ω	1/2	60B8-102	BTS-1000	
R26	10KΩ 5%	1/2	60B7-103		
R27	150Ω	1/2	60B8-151		
R28	560KΩ	1/2	60B8-564	BTS-560K	
R29	47KΩ	1/2	60B8-473	BTS-47K	
R30	4700Ω 5%	1/2	60B7-472	BTS-4700-5%	
R31	1.2 Meg.	1/2	60B8-125	BTS-1.2 Meg.	
R32	5600Ω	1	60B14-562	BTA-5600	
R33	10KΩ	1/2	60B7-103	BTS-10K	
R34	270KΩ	1/2	60B8-274	BTS-270K	
R35	100KΩ	1/2	60B8-104	BTS-100K	
R36	470KΩ	1/2	60B8-474	BTS-470K	
R37	470KΩ	1/2	60B8-474	BTS-470K	
R38	1 Meg.	1/2	60B8-105	BTS-1 Meg.	
R39	1000Ω	1/2	60B8-102	BTS-1000	
R40	10KΩ 5%	1/2	60B7-103	BTS-10K-5%	
R41	10KΩ 5%	1/2	60B7-103	BTS-10K-5%	
R42	390Ω	1/2	60B8-391		
R43	33KΩ	1/2	60B8-333	BTS-33K	
R44	4.7 Meg.	1/2	60B8-475	BTS-4.7 Meg.	
R45	470KΩ	1/2	60B8-474	BTS-470K	
R46	680KΩ 5%	1/2	60B7-684	BTS-680K-5%	
R47	820KΩ 5%	1/2	60B7-824	BTS-820K-5%	
R48	820Ω	2	60B20-821	B-2-820	
R49	2.2 Meg.	1/2	60B8-225	BTS-2.2 Meg.	
R50	47KΩ	1/2	60B8-473	BTS-47K	
R51	270KΩ	1/2	60B8-274	BTS-270K	
R52	270KΩ	1/2	60B8-274	BTS-270K	
R53	15KΩ	1/2	60B8-153	BTS-15K	
R54	1 Meg.	1/2	60B8-105	BTS-1 Meg.	
R55	22KΩ	1	60B14-223	BTA-22K	
R56	15KΩ	1/2	60B8-153	BTS-15K	
R57	22KΩ	1/2	60B8-223	BTS-22K	
R58	8200Ω	1/2	60B8-822	BTS-8200	
R59	8200Ω	1/2	60B8-822	BTS-8200	
R60	1.2 Meg.	1/2	60B8-125	BTS-1.2 Meg.	
R61	2.2 Meg.	1/2	60B8-225	BTS-2.2 Meg.	
R62	3900Ω	1/2	60B8-392	BTS-3900	
R63	2.2 Meg.	1/2	60B8-225	BTS-2.2 Meg.	
R64	470Ω	1/2	60B8-471	BTS-470	
R65	820KΩ	1/2	60B8-824	BTS-820K	
R66	150KΩ	1/2	60B8-154	BTS-150K	
R67	220KΩ	1/2	60B8-224	BTS-220K	
R68	8200Ω	1/2	60B8-822	BTS-8200	
R69	2.7 Meg.	1/2	60B8-275	BTS-2.7 Meg.	
R70	100KΩ 5%	1/2	60B8-104	BTS-100K-5%	
R71	8200Ω	1/2	60B8-822	BTS-8200	
R72	22KΩ	1/2	60B8-223	BTS-22K	
R73	75KΩ 5%	1/2	60B7-753		

ITEM No.	RATING		REPLACEMENT DATA	
	RESISTANCE	WATTS	ADMIRAL PART No.	IRC PART No.
R74	120KΩ	1/2	60B8-124	BTS-120K
R75	68KΩ	1/2	60B8-683	BTS-68K
R76	120KΩ	1	60B14-124	BTA-120K
R77	1500Ω	1	60B14-152	BTA-1500
R78	47Ω	1/2	60B8-470	
R79	470KΩ	1/2	60B8-474	BTS-470K
R80	82Ω	2	60B20-820	BW-2-82
R81	100Ω	1/2	60B8-101	
R82	8200Ω	2	60B20-822	BT-2-8200
R83	3.3Ω	1/2	60B28-10	
R84	1 Meg.	1		
R85	560KΩ	1/2	60B8-564	BTS-560K
R86	150Ω	1	60B14-151	BW-1-150
R87	750Ω	7.5	61A1-17	AB-750
R88	750Ω	7.5	61A1-17	AB-750
R89	270KΩ	1		BTA-270K

- Note 3. Not used in early production models.
Note 4. Some 20X1 chassis use 2.7 Meg. resistor in this application.
Note 5. Early production models use 150KΩ resistor in this application.
Note 6. Some models use 470KΩ resistor in this application.
Note 7. Not used in early production models.
Note 8. Used in some models use a 1500Ω focus control.
Note 9. Not used in all models.

TRANSFORMER

ITEM No.	RATING				ADMIRAL PART No.
	PRI.	SEC. 1	SEC. 2	SEC. 3	
T1	117VAC ① 1.7A	680VCT ② 200ADC	5VAC ③ 3A	6.3VAC ④ 8A	80B19 ①

- ① Includes rectifier socket.
(18) Add series resistor to reduce plate voltage.

TRANSFORMER

ITEM No.	RATING		ADMIRAL PART No.	STANCOR PART No.
	DC RESISTANCE	SEC.		
T2	162Ω	920Ω	79A18-1	A-8111 ②
T3A	465Ω	11Ω	79C28-1 ③	A-8128
	Tap ④	Tap ⑤		
	160Ω	.3Ω		
		SEC. 2		
		0Ω		
B	465Ω	11Ω	79C23-3 ④ ⑤	A-8128
	Tap ④	Tap ⑤		
	160Ω	.3Ω		
		SEC. 2		
		0Ω		
T4	730Ω	12Ω	79B24-1	A-8112
T5A-1	13Ω		94B24-2 ③	DY-1
B-1	62Ω			
T5A-2	13Ω		94B24-1 ④ ⑤	
B-2	62Ω			
T5A-3	14Ω		94B2-1 ④ ⑤	
B-3	68Ω			
T5A-4	14Ω		94B2-2 ④ ⑤	
B-4	68Ω			
T6A	240Ω		69B114-2 ⑦	
B	240Ω		69B35-2 ⑧	

- ② Drill one new mounting hole.
③ Used in late production models.
④ Used in early production models.
⑤ Replace with part No. 79C28-1.
⑥ When ordering replacement, order part No. 94B24-2.
⑦ Used in sets with picture positioning lever.
⑧ Used in sets without picture positioning lever.

TRANSFORMER

ITEM No.	RATING				ADMIRAL PART No.	STANCOR PART No.
	IMPEDANCE	DC RES.	PRI.	SEC.		
T7	4KΩ	3.3Ω	275Ω	.3Ω	Part of SPIE (15)	A-3849 ①

SPE

ITEM No.	RATINGS		ADMIRAL PART No.	JENSEN PART No.
	FIELD RES.	V. C. IMP.		
SPIA	PM	3.5Ω	78B44-3 ⑨ (11)	ST-102
B			78B50-1 ⑨ (12)	MOD. P12-
C			78B51-1 ⑨ (13)	
D	PM	3.3Ω	78B52-1 ⑨ (14)	ST-120
E			78C53-1 ⑨ (15)	MOD. P10-
F			78B54-1 ⑨ (16)	
SP2A	CONE DIA.	V. C. DIA.		
B	1 1/2"	1"		
C				
D				
E	9 1/2"	1"		
F				

FILTER

ITEM No.	RATINGS			ADMIRAL PART No.
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 Ω)	
L1	.200A	85Ω	2.5 Henry	Part of SPIE

OPTIONS (Continued)

IDENTIFICATION CODES
1. AFC Filter Network 2. Stage Divider 3. Stage Divider 4. Coupling 5. Parasitic Supp. 6. Output Grid 7. Output Cathode 8. Parasitic Supp. 9. Output Screen 10. Rect. Filament-Wire Wound 11. Filter-See Note 6 12. Feedback 13. Focus Coil Shunt-See Note 7 and 8 14. Focus Control-Wire Wound 15. Focus Control-Wire Wound-See Notes 7 and 8 16. Filter-See Note 9

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(POWER)

REPLACEMENT DATA		
STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
P-8159 (18)		

EEP CIRCUITS)

DATA	MERIT PART No.	CHICAGO PART No.	NOTES
0000 ② O-3	TBO-1 ② TFB-2		Vert. Block Osc. Trans. Hor. Output Trans.
O-3	TFB-2		Hor. Output Trans.
0036 -3	TSO-5		Vert. Output Trans. Hor. Deflection Coil Vert. Deflection Coil Hor. Deflection Coil Vert. Deflection Coil Hor. Deflection Coil Vert. Deflection Coil Hor. Deflection Coil Focus Coil Focus Coil

IO OUTPUT)

DATA	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
30	RO-6 ②		② Drill one new mounting hole. (15) Used in models 32X15 and 32X16.

UAM RT No.	INSTALLATION NOTES
IA (10)	(11) Used in models 32X26, 32X27, 32X35, 32X36 (12) Used in models 20X11, 20X12, 20X135, 20X136, 20X137, 12X11, 12X12 (13) Used in models 20X121, 20X122, 20X145, 20X146, 20X147, 22X12, 24A125AN. (14) Used in models 24X15, 24X15S, 24X16, 24X16S, 24X17. (15) Used in models 32X15, 32X16 (16) Used in models 22X25, 22X26, 22X37 ③ Includes output transformer.
IA (10)	(10) Remount output transformer and filter choke

MENT DATA	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
R C-2994 ②	TR-3300 ②		② Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	ADMIRAL PART No.	MEISSNER PART No.	
L2	Ant. Coil	0Ω	0Ω			Part of tuner 94C21-1
L3	RF Plate, Mixer Grid & Osc. Coils	0Ω				Part of tuner 94C21-1
L4	Fil. Choke	0Ω		98A45-13		
L5	Fil. Choke	0Ω		98A45-14		
L6	1st Video IF	.8Ω		98A45-77		
L7	Fil. Choke	0Ω		73A2-5		
L8	2nd Video IF	.3Ω	.3Ω	72A83-3		
L9	3rd Video IF	.3Ω	.3Ω	72A83-3		
L10	4th Video IF	.3Ω	.3Ω	72A83-3		
L11	Peaking	17Ω		73A5-6		Wound on 33KΩ resistor
L12	Peaking	17Ω		73A5-7		
L13	Peaking	7.2Ω		73A5-8		Wound on 22KΩ resistor
L14	Peaking	8.2Ω		73A5-9		Wound on 10KΩ resistor
L15	Sound IF	1Ω		72A60-1		
L16	Ratio Det. Trans.	3.8Ω	.2Ω	72B68		
L17	Horiz. Osc. Trans.	140Ω	38Ω	69B110		
L18	Horiz. Lin.	36Ω		94A3		
L19	Horiz. Size	.1Ω		94A4-1		
L20	Fil. Choke	0Ω		73A2-5		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					ADMIRAL PART No.		
MI	Bayonet	6-8	.15	Brown	82A10-8		Type #47

MISCELLANEOUS

ITEM No.	PART NAME	ADMIRAL PART No.	NOTES
M2A	RF Tuner	94C21-2	
B	RF Tuner	94C21-1	
M3	Ion Trap	94B6	
M4	Fuse	84A7-1	.25A 250V
M5	Dual Trimmer	66A32-1	Horiz. Drive 40-370MMFD
M6			Horiz. Range 10-160MMFD
M7A	Antenna Assembly	A3029	Models 20X135, 20X136, 20X137
B	Antenna Assembly	A3060	Models 20X11, 20X12, 20X121, 20X122, 24X15, 24X15S, 24X16, 24X16S, 24X17S
C	Antenna Assembly	A3072	Models 20X145, 20X146, 20X147
D	Antenna Assembly	A3029	Model 24A125AN
INDIVIDUAL CHANNEL COILS FOR TV TUNER 94C21-2:			
	Antenna	98A62-2	Channel 2
	Antenna	98A62-3	Channel 3
	Antenna	98A62-4	Channel 4
	Antenna	98A62-5	Channel 5
	Antenna	98A62-6	Channel 6
	Antenna	98A62-7	Channel 7
	Antenna	98A62-8	Channel 8
	Antenna	98A62-9	Channel 9
	Antenna	98A62-10	Channel 10
	Antenna	98A62-11	Channel 11
	Antenna	98A62-12	Channel 12
	Antenna	98A62-13	Channel 13
	Mixer-Osc.	98A63-2	Channel 2
	Mixer-Osc.	98A63-3	Channel 3
	Mixer-Osc.	98A63-4	Channel 4
	Mixer-Osc.	98A63-5	Channel 5
	Mixer-Osc.	98A63-6	Channel 6
	Mixer-Osc.	98A63-7	Channel 7
	Mixer-Osc.	98A63-8	Channel 8
	Mixer-Osc.	98A63-9	Channel 9
	Mixer-Osc.	98A63-10	Channel 10
	Mixer-Osc.	98A63-11	Channel 11
	Mixer-Osc.	98A63-12	Channel 12
	Mixer-Osc.	98A63-13	Channel 13
INDIVIDUAL CHANNELS COILS FOR TV TUNER 94C21-1:			
	Antenna	98A58-2	Channel 2
	Antenna	98A58-3	Channel 3
	Antenna	98A58-4	Channel 4
	Antenna	98A58-5	Channel 5
	Antenna	98A58-6	Channel 6
	Antenna	98A58-7	Channel 7
	Antenna	98A58-8	Channel 8
	Antenna	98A58-9	Channel 9
	Antenna	98A58-10	Channel 10
	Antenna	98A58-11	Channel 11
	Antenna	98A58-12	Channel 12
	Antenna	98A58-13	Channel 13
	Mixer-Osc.	98A59-2	Channel 2
	Mixer-Osc.	98A59-3	Channel 3
	Mixer-Osc.	98A59-4	Channel 4
	Mixer-Osc.	98A59-5	Channel 5
	Mixer-Osc.	98A59-6	Channel 6
	Mixer-Osc.	98A59-7	Channel 7
	Mixer-Osc.	98A59-8	Channel 8
	Mixer-Osc.	98A59-9	Channel 9
	Mixer-Osc.	98A59-10	Channel 10
	Mixer-Osc.	98A59-11	Channel 11
	Mixer-Osc.	98A59-12	Channel 12
	Mixer-Osc.	98A59-13	Channel 13
	Knob	33C28-29	Ebony Channel Selector
	Knob	33C28-19	Maroon Channel Selector
	Knob	33C28-38	Mahogany Channel Selector
	Knob	33C28-17	Gold Channel Selector
	Knob	33C28-20	Maroon Horiz. Hold, Contrast, Volume
	Knob	33C28-41	Mahogany Horiz. Hold, Contrast, Volume
	Knob	33C28-18	Gold Horiz. Hold, Contrast, Volume
	Knob	33C28-35	Brass Fine Tuning
	Knob	33C28-21	Maroon Fine Tuning
	Knob	33C28-36	Brass Vert. Hold, Brightness, Focus
	Knob	33C28-22	Maroon Vert. Hold, Brightness, Focus

ADMIRAL CHASSIS 20X1, 20Y1, 20Z1,
RADIO CHASSIS 411, 451, 5B2

RADIO PARTS LIST AND DESCRIPTIONS (CH. 5B2)

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		ADMIRAL PART No.	STANDARD REPLACEMENT		
V20	Converter	12AT7	12AT7	9A	Used in radio chassis 5B2
V21	IF Amp.	6BA6	6BA6	7BK	Used in radio chassis 5B2
V22	2nd FM IF Amp. - DET.	6BA6	6BA6	7BK	Used in radio chassis 5B2
V23	Ratio Det.	6AL5	6AL5	6BT	Used in radio chassis 5B2
V24	AF Amp.	6AU6	6AU6	7BK	Used in radio chassis 5B2
V25	Power Output	6V6GT	6V6GT	7AC	Used in power chassis 2PA1
V26	Rectifier	5Y3GT	5Y3GT	5T	Used in power chassis 2PA1

CAPACITORS

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

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	ADMIRAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	
C73A	40	350	67C7-16	AF888H8A			TVL-311	Filter
B	40	350						Filter
C	40	350						Filter
D	40	25						Output Cathode Bypass
C74	4	150	67A4-2	PRSI50/4			UT-41	Stabilizing Cap.
C75	5	300	65B6-61	1468-000005	D2-4.7	NPOK-5	MS-55	Ant. Coupling
C76	1000		65B6-41	GP1000M	D6-102	GP2L-001	1FM-21	RF Coupling
C77	10000		65A10-3	BPD-10	D6-103	821-01	36C1	Conv. Cathode Bypass
C78	10000		65A10-3	BPD-10	D6-103	821-01	36C1	Conv. Filament Bypass
C79	.68		65A16-1					Osc. Coupling
C80	40		65B6-67	SI40KN750	DN-39	N750L-40	1FM-44	Osc. Grid Cap.
C81	1000		65B6-41	GP1000M	D6-102	GP2L-001	1FM-21	Osc. Plate Bypass
C82	40	300	65B1-65	1469-000004	D2-39	NPOL-40	MS-44	Fixed Trimmer
C83	10000		65A10-3	BPD-10	D6-103	821-01	36C1	Decoupling
C84	10000		65A10-3	BPD-10	D6-103	821-01	36C1	Decoupling
C85	10000		65A10-3	BPD-10	D6-103	821-01	36C1	AVC Filter
C86	10000		65A10-3	BPD-10	D6-103	821-01	36C1	1st IF Screen Bypass
C87A	4000		65A17-1	BPD-5	D6-472	811-005	36C2	1st IF Filament Bypass
B	4000			BPD-5	D6-472	811-005		1st IF Filament Bypass
C88	10000		65A10-3	BPD-10	D6-103	821-01	36C1	RF Bypass
C89	250		65B6-5	GP250M	D6-251	GP2K-250	1FM-325	Diode RF Filter
C90	10000		65A10-3	BPD-10	D6-103	821-01	36C1	2nd IF Screen Bypass
C91	10000		65A10-3	BPD-10	D6-103	821-01	36C1	2nd IF Plate Decoupling
C92A	100		67A7-1	GP100M	D6-101	GPIK-100	1FM-31	Diode Load Cap. *
B	100		67A7-1	GP100M	D6-101	GPIK-100	1FM-31	Diode Load Cap. *
C93	1000		65B6-41	GP1000M	D6-102	GP2L-001	1FM-21	De-emphasis
C94	10000		65A10-3	BPD-10	D6-103	821-01	36C1	Audio Coupling
C95	100		65B6-68	GP100K	D6-101	GPIK-100	1FM-31	Tone Compensation
C96	1000		65B6-41	GP1000M	D6-102	GP2L-001	1FM-21	Tone Compensation
C97	10000		65A10-3	BPD-10	D6-103	821-01	36C1	Audio Coupling
C98	.1	400	64B1-20	P488-1			TM-1	AF Amp. Screen Bypass
C99	5000		65A10-1	BPD-5	D6-502	811-005	29C1	Tone Compensation
C100	.1	400	64B1-20	P488-1			TM-1	RF Bypass
C101	10000		65A10-3	BPD-10	D6-103	821-01	36C1	Ratio Det. Fil. Bypass
C102	10000		65A10-3	BPD-10	D6-103	821-01	36C1	Audio Coupling
C103	.005	600	64B1-12	P688-005	D6-502	811-005	TM-25	Output Plate Bypass

* When either items C92A or C92B are replaced, replace both with capacitors of equal value.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	ADMIRAL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R90A	2 Meg.		75B11-12			SBB-531-S	Tone control-front Volume control and switch-rear
B	2 Meg.						

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	ADMIRAL PART No.	IRC PART No.	
R91	1.5 Meg.		60B8-155	BTS-1.5 Meg.	Conv. Grid
R92	240Ω		60B7-241		Conv. Cathode
R93	22KΩ		60B8-223	BTS-22K	Osc. Grid
R94	470Ω		60B8-471	BTS-470	Osc. Plate
R95	470Ω		60B8-471	BTS-470	Conv. Plate Decoupling
R96	6200Ω		60B7-622		1st IF Screen
R97	27Ω		60B8-270	BW- $\frac{1}{2}$ -27	Decoupling-See Note 10
R98	1 Meg.		60B8-105	BTS-1 Meg.	AVC Network
R99	470KΩ		60B8-474	BTS-470K	2nd FM IF Grid
R100	10KΩ		60B8-103	BTS-10K	2nd FM IF Screen
R101	1000Ω		60B8-102	BTS-1000	2nd FM IF Plate Decoupling
R102	7500Ω		61A1-18	AB-7500	Bleeder-Wire Wound-See Note 11
R103	27Ω		60B8-270	BW- $\frac{1}{2}$ -27	Decoupling-See Note 12
R104	47KΩ		60B8-473	BTS-47K	Diode Filter
R105	390Ω		60B8-391		Balancing
R106	27KΩ		60B8-273	BW- $\frac{1}{2}$ -27K	De-emphasis
R107	15KΩ		60B8-153	BTS-15K	Ratio Det. Diode Load
R108	15KΩ		60B8-153	BTS-15K	Ratio Det. Diode Load
R109	100KΩ		60B8-104	BTS-100K	Tone Compensation
R110	10 Meg.		60B8-106	BTS-10 Meg.	AF Amp. Grid
R111	560KΩ		60B8-564	BTS-560K	AF Amp. Screen
R112	27Ω		60B8-270	BW- $\frac{1}{2}$ -27	Isolation-See Note 10
R113	270KΩ		60B8-274	BTS-270K	AF Amp. Plate
R114	470KΩ		60B8-474	BTS-470K	Output Grid
R115	200Ω		60B13-201		Output Cathode
R116A	2250Ω			AB-2250	Filter-Wire Wound
B	2000Ω	5	61A5-6	AB-2000	Filter-Wire Wound

Note 10. Some models use 22Ω resistor in this application.

Note 11. Some models use two resistors in parallel to obtain required resistance and wattage.

Note 12. Not used in all models.

RADIO PARTS LIST (Continued) (CH. 5B2)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	ADMIRAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T8	117VAC @ .65A	580VCT .098ADC	5VAC @ 2A	6.3VAC @ 2.4A	80B23-1	P-6312 (17)	P-2952 (17) (18)	PH-120

(17) Drill new mounting holes.

(18) Add series resistor to reduce plate voltage.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE	DC RES.	PRI.	SEC.	ADMIRAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
T9	3.5KΩ	3.5Ω	280Ω	.3Ω	72B31-2	A-3877	A-3018 ②	RO-8	② Drill one new mounting hole.
T10	5.5KΩ	3.5Ω	415Ω	.3Ω	72B31-3	A-3825	A-3019 ②	RO-9	

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 μ)	ADMIRAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L21	.200A	93Ω	3.1 Henry	74B18-2	C-2325 ②	C-3196	TR-4200 ②	② Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	ADMIRAL PART No.	MEISSNER PART No.	
L22	Loop Ant.	1.3Ω		69C116-1		Includes trimmer M14 Taps at 1Ω and 1.8Ω Wound on 820Ω resistor
L23	FM Built-In Antenna	0Ω		AB195		
L24	FM Ant.	0Ω		69A85		
L25	FM Osc.	0Ω		69A87		
L26	AM Osc.	7Ω		69A86-1		
L27	FM Pkaking	17Ω		73A5-11		
L28	1st FM IF	.1Ω	.5Ω	72B98		
L29	1st AM IF	3.1Ω	6Ω	72B97	16-6678	
L30	2nd FM IF	3Ω	.1Ω	72B76		
L31	2nd AM IF	6.5Ω	6.5Ω	72B94	16-6678	
L32	Ratio Det.					
L33	Trans.	2.3Ω	.1Ω	72B39		
	Fil. Choke	0Ω	0Ω	69A102		

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA				REMARKS
	ADMIRAL PART No.	ASTATIC PART No.	SHURE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE
M8	409A13-1	AC-AG-J	C-AG	P73-A	A65MG

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					ADMIRAL PART No.		
M9	Bayonet	6-8	.150	Blue	81A1-8		Type #47
M10	Bayonet	6-8	.150	Blue	81A1-8		Type #47
M11	Bayonet	6-8	.150	Blue	81A1-8		Type #47

MISCELLANEOUS

ITEM No.	PART NAME	ADMIRAL PART No.		NOTES
M12	Switch	76B22		Function Selector (AM-FM-Phono) Phono Motor Loop Antenna (2-20MMF) FM Oscillator (2.5-6MMF) Ceramic 4 Section Metal
M13	Switch	76A23		
M14	Trimmer	Part of 69C116-1		
M15	Trimmer	66A28-1		
M16	Tuning Gang	68B24		
	Dial Scale	22B22-1		
	Dial Pointer	25A37		

RADIO PARTS LIST AND DESCRIPTIONS (CH.4LI, 4SI.)

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		ADMIRAL PART No.	STANDARD REPLACEMENT		
V27	Converter	6BE6	6BE6	7CH	Used in radio chassis 4S1 and 4L1
V28	IF Amp.	6BA6	6BA6	7BK	Used in radio chassis 4S1 and 4L1
V29	DET. -AVC-AF	6AV6	6AV6	7BT	Used in radio chassis 4S1 and 4L1
V30	Power Output	6AQ5	6AQ5	7BZ	Used in radio chassis 4S1 and 4L1
V31	Rectifier	5Y3GT	5Y3GT	5T	Used in power chassis 1PA1 and 1PA2

CAPACITORS

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

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	ADMIRAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	
C104A	30	350	67C6-22	AF66J			TVL-206	• Filter
B	30	350						• Filter
C105	50	25	67A4-7	PRS25/50			TVA-7	Output Cathode Bypass
C106	5	300	65B1-62	1468-000005	D2-4.7	NPOK-5	MS-55	Ant. Coupling
C107	50		65B6-4	GP50M	D6-500	GPIK-50	1FM-45	Osc. Grid Cap.
C108	5000		65A10-1	BPD-5	D6-502	811-005	29C1	Osc. Anode Bypass
C109	.1	200	64B5-30	P286-1			TM-1	AVC Filter
C110	5000		65A10-1	BPD-5	D6-502	811-005	29C1	IF Screen Bypass
C111A	100		*	GP100M	D6-101	GPIK-100	1FM-31	Diode RF Filter
B	100			GP100M	D6-101	GPIK-100	1FM-31	Diode RF Filter

ADMIRAL CHASSIS 20X1, 20Y1, 20Z1,
RADIO CHASSIS 4L1, 4S1, 5B2

RADIO PARTS LIST (Continued) (CH. 4LI, 4SI.)

CAPACITORS (CONT.)

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	ADMIRAL PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C112	250		65B6-5	GP250M	D6-251	GP2K-250	IFM-325	Tone Compensation
C113	.01	400	64B5-25	P488-01	D6-103	821-01	TM-11	Tone Compensation
C114	.002	600	64B5-9	P688-002	D6-202	GP2M-002	TM-22	Tone Compensation
C115	.01	400	64B5-25	P488-01	D6-103	821-01	TM-11	Audio Coupling
C116	.1	400	64B5-20	P488-1			TM-1	AF Amp. Plate Decoupling
C117	.01	400	64B5-25	P488-01	D6-103	821-01	TM-11	Audio Coupling
C118	.002	600	64B5-14	P688-002	D6-202	GP2M-002	TM-22	Output Plate Bypass
C119	.1	400	64B5-20	P488-1			TM-1	RF Bypass

* Items C111A, C111B and R123 are combined into one unit obtainable under MFGR'S Part No. 63A3-1.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	ADMIRAL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R117A	2 Meg.			B11-139 *			Tone control-front
B	1 Meg.			B19-137X *		SBB-530-S	Volume control-rear-tapped at 500KΩ
C	Shaft End			E-202 *			Attach per instructions in "Concentrikrit"
D	Switch		75B11-11	76-1 *			Attach per instructions in "Concentrikrit"

* Additional parts to be used with "Concentrikrit".

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	ADMIRAL PART No.	IRC PART No.	
R118	22KΩ	$\frac{1}{2}$	60B8-223	BTS-22K	Osc. Grid
R119	27KΩ	1	60B14-273	BTA-27K	Osc. Anode
R120	150Ω	$\frac{1}{2}$	60B8-151	BW- $\frac{1}{2}$ -150	IF Cathode
R121	27KΩ	1	60B14-273	BTA-27K	IF Screen
R122	1 Meg.		60B8-105	BTS-1 Meg.	AVC Network
R123	47KΩ		60B8-473	BTS-47K	Diode Filter
R124	27KΩ		60B8-273	BTS-27K	Tone Compensation
R125	4.7 Meg.		60B8-475	BTS-4.7 Meg.	AF Amp. Grid
R126	470KΩ		60B8-474	BTS-470K	AF Amp. Plate
R127	47KΩ		60B8-473	BTS-47K	AF Amp. Plate Decoupling
R128	470KΩ		60B8-474	BTS-470K	Output Grid
R129	270Ω	2	60B20-271	BW-2-270	Output Cathode
R130	620Ω	5	61A3-12		Filter-Wire Wound-See Note 13
R131A	620Ω	5			Filter-Wire Wound-See Note 14
B	260Ω	5	61A5-5		Surge Limiter-Wire Wound-See Note 14

Note 13. Used in power supply chassis 2PA1 only.

Note 14. Used in power supply chassis 1PA2 only.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	ADMIRAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T11	117VAC @ .50A	480VCT .065ADC	5VAC @ 2A	6.3VAC @ 1.5A	80B1	P-6120 (17)	P-2952 (17)	PH-70 (17)

(17) Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ADMIRAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T12	4.3KΩ	3.5Ω	320Ω	.5Ω	79A22	A-3849 ②	A-3019 ②	RO-8	② Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	ADMIRAL PART No.	MEISSNER PART No.	
L34	Loop Ant.	1.5Ω		69C100-1		Includes M14
L35	Osc. Coil	6Ω		69A52-1	14-1073	Tap at .8Ω
L36	1st IF	20Ω	20Ω	72B28-7	16-6678	
L37	2nd IF	21Ω	21Ω	72B28-17	16-6678	

PHONO CARTRIDGE and NEEDLE

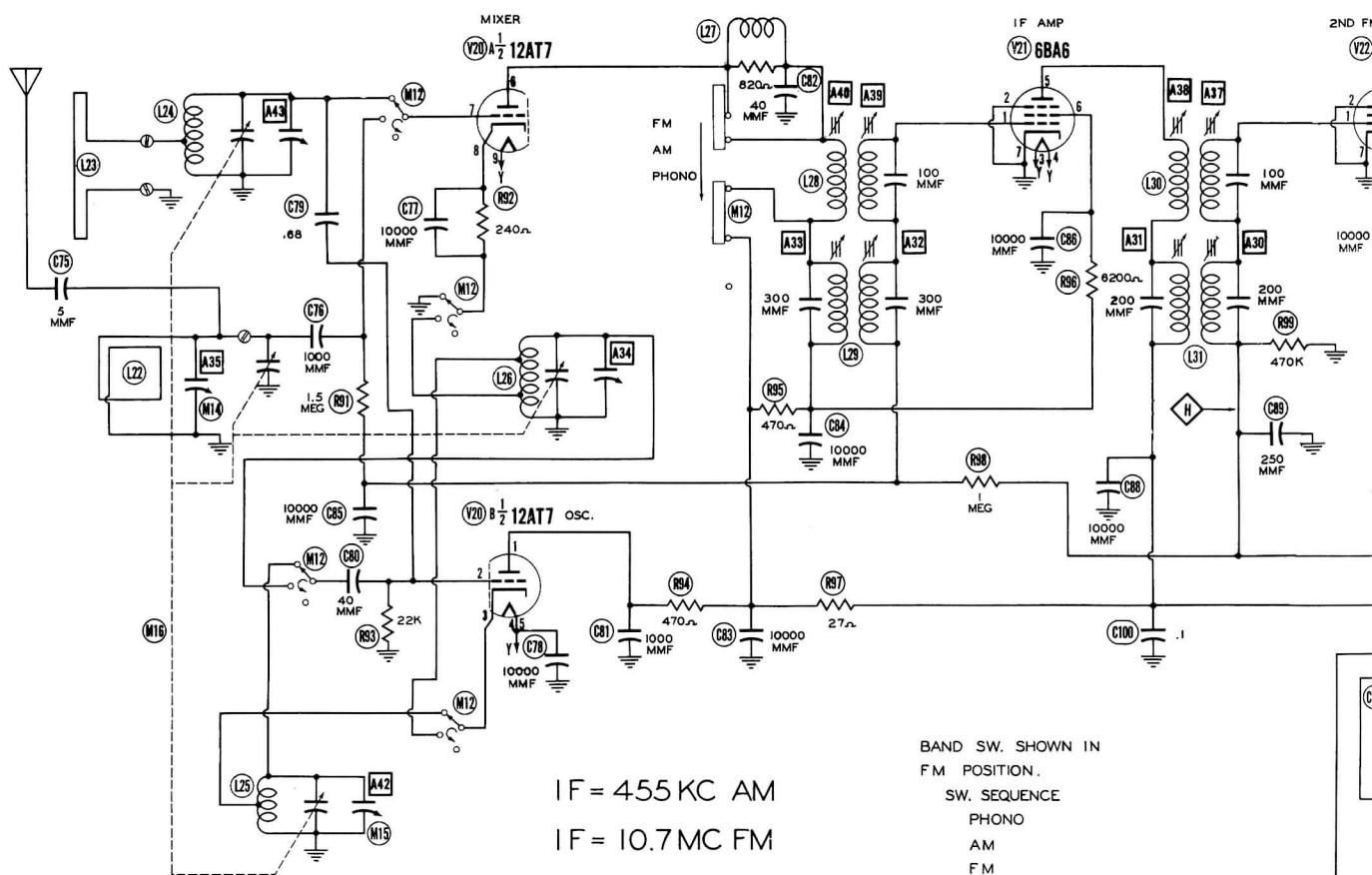
ITEM No.	REPLACEMENT DATA				REMARKS	
	ADMIRAL PART No.	ASTATIC PART No.		SHURE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE		NEEDLE
M17	409A13-1	AC-AG-J	C-AG	P73-A	A65MG	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					ADMIRAL PART No.		
M18	Bayonet	6-8	.150	Blue	81A1-8		Type #47
M19	Bayonet	6-8	.150	Blue	81A1-8		Type #47

MISCELLANEOUS

ITEM No.	PART NAME	ADMIRAL PART No.	NOTES
M20	Switch	77A31	Function Selector
M21	Trimmer	66B8-5	Loop Antenna
M22	Tuning Gang	68B32	(24-466MMF, 21-157MMF)
	Dial Scale	22B21	
	Dial Pointer	25A33	



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
† V20	12AT7	145VDC	5-2.7VDC	0V.	†	†	145VDC	0V.	1.3VDC	†
# V20	12AT7	145VDC	5-7VDC	0V.	†	†	145VDC	-1VDC	.6VDC	†
† V21	6BA6	-.6VDC	0V.	†	†	150VDC	110VDC	0V.		
† V22	6BA6	-.3VDC	0V.	†	†	130VDC	110VDC	0V.		
† V22	6BA6	-.4VDC	0V.	†	†	0V.	0V.	0V.		
# V23	6AL5	.5VDC	-.5VDC	†	†	0V.	0V.	0V.		
# V24	6AU6	-.5VDC	0V.	†	†	75VDC	42VDC	0V.		
# V25	6V6GT	0V.	†	280VDC	225VDC	.3VDC	0V.	†	9.8VDC	
# V26	5Y3GT	0V.	300VDC	0V.	310VAC	0V.	310VAC	0V.	300VDC	

† TAKEN WITH VACUUM TUBE VOLTMETER.
† TAKEN IN "FM" POSITION.
TAKEN IN "AM" POSITION.
† 6.3VAC MEASURED ACROSS FILAMENTS.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
† V20	12AT7	±4.5KΩ	22KΩ	0Ω	Inf.	Inf.	±4KΩ	0Ω	240Ω	Inf.
# V20	12AT7	±4.5KΩ	22KΩ	1.8Ω	Inf.	Inf.	±4.5KΩ	3 Meg.	240Ω	Inf.
† V21	6BA6	1.5 Meg.	0Ω	Inf.	Inf.	±4KΩ	±11KΩ	0Ω		
† V22	6BA6	470KΩ	0Ω	Inf.	Inf.	±5KΩ	±14KΩ	0Ω		
† V22	6BA6	470KΩ	0Ω	Inf.	Inf.	Inf.	Inf.	0Ω		
† V23	6AL5	15KΩ	15KΩ	Inf.	Inf.	Inf.	0Ω	Inf.		
† V24	6AU6	10 Meg.	0Ω	Inf.	Inf.	±270KΩ	±580KΩ	0Ω		
# V25	6V6GT	0Ω	Inf.	±400Ω	±2.2KΩ	470KΩ	Inf.	Inf.	200Ω	
# V26	5Y3GT	Inf.	10KΩ	Inf.	150Ω	Inf.	150Ω	Inf.	10KΩ	

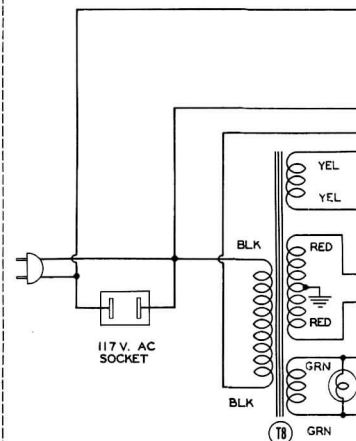
† TAKEN IN "FM" POSITION.
TAKEN IN "AM" POSITION.
± MEASURED FROM PIN 8 OF V26.

- DC Voltage measurements are at 20,000 ohms per volt. AC Voltages measured at 1,000 ohms.
- Socket connections are shown as bottom views.
- Measured values are from socket pin to common negative.
- Line voltage maintained at 117 volts for voltage readings.
- Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
- Volume control at maximum, no signal applied for voltage measurements.

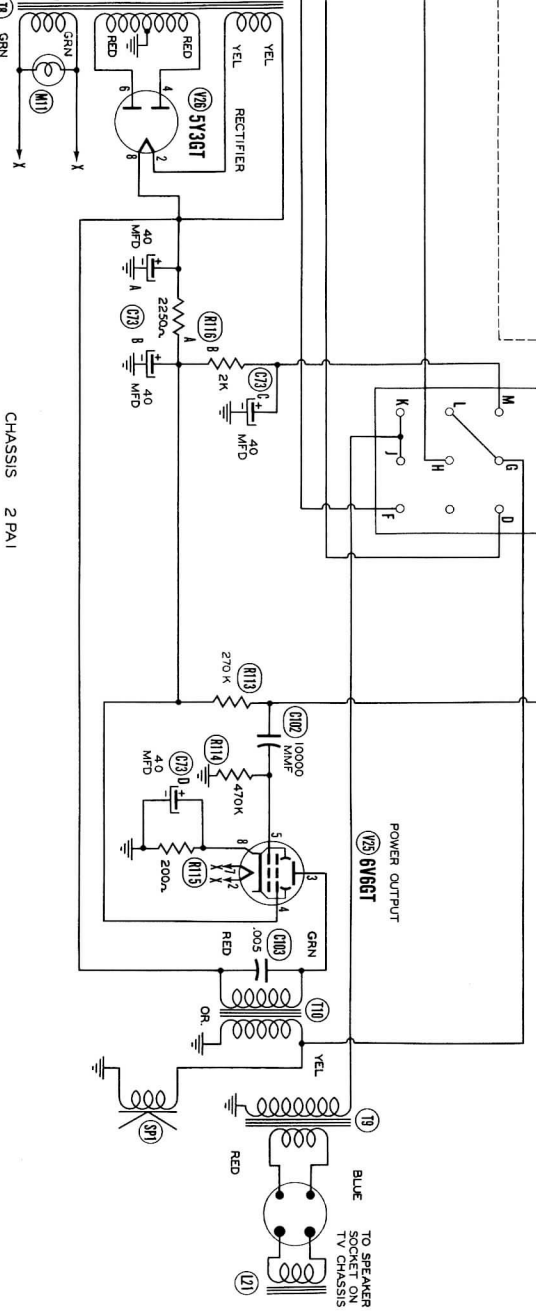
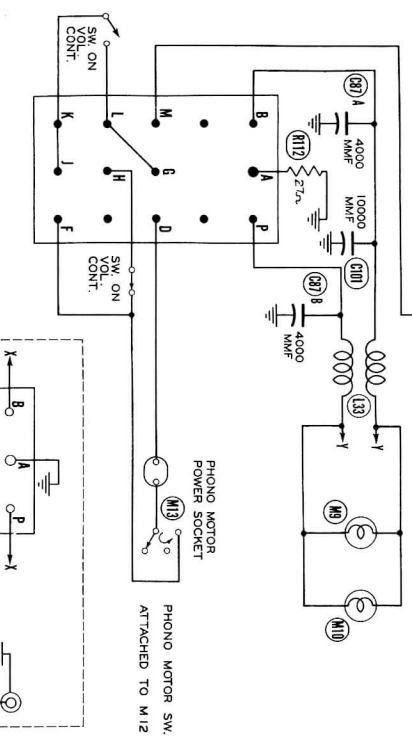
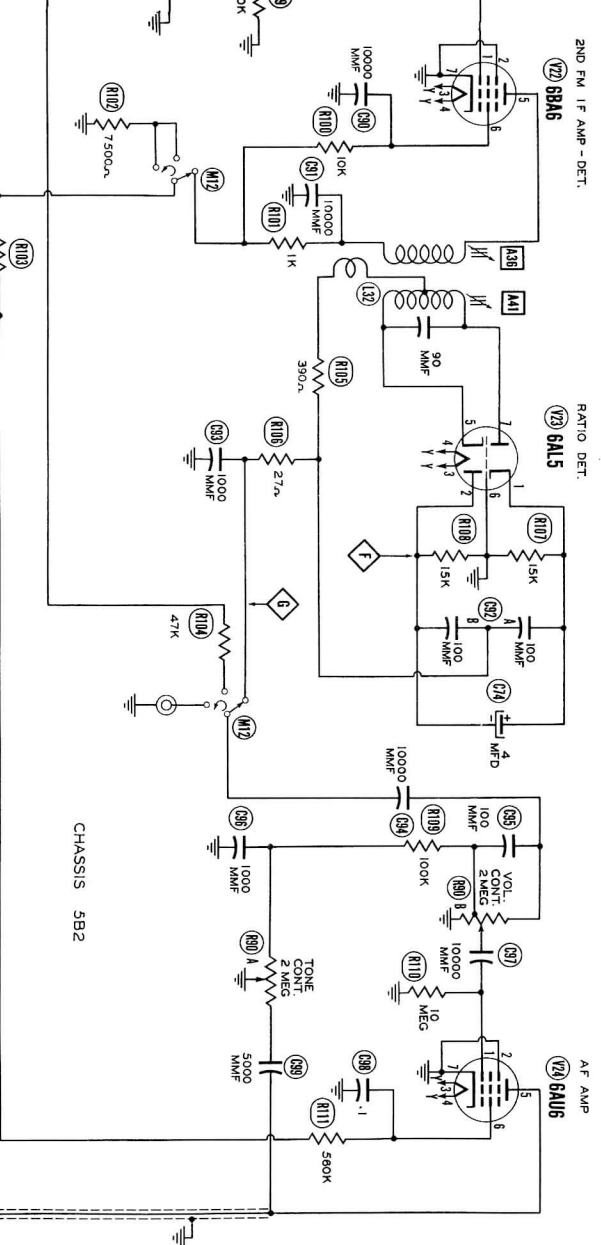
A PHOTOFAC STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1950

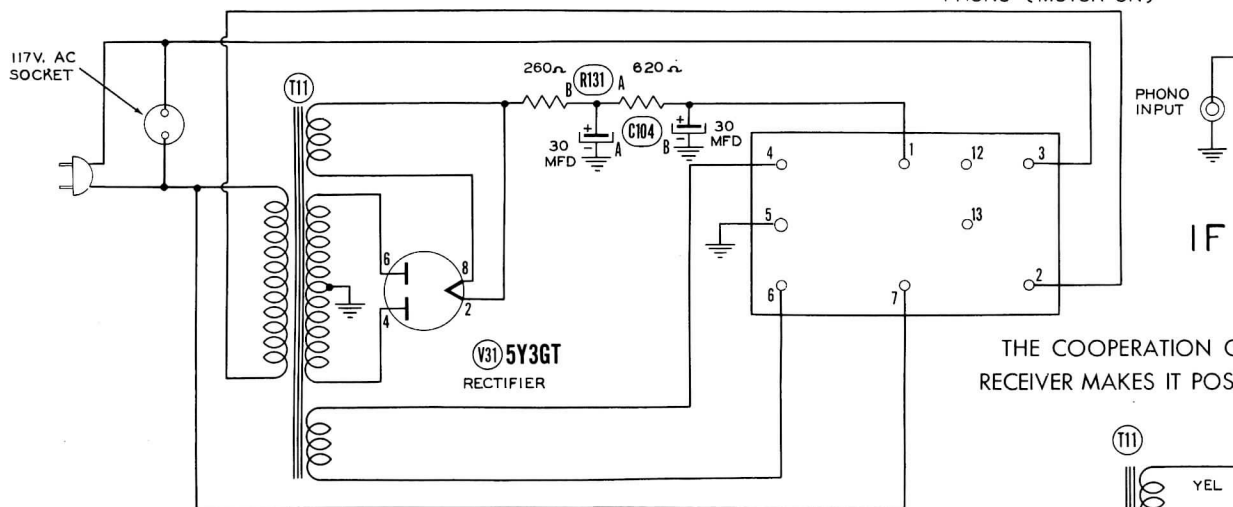
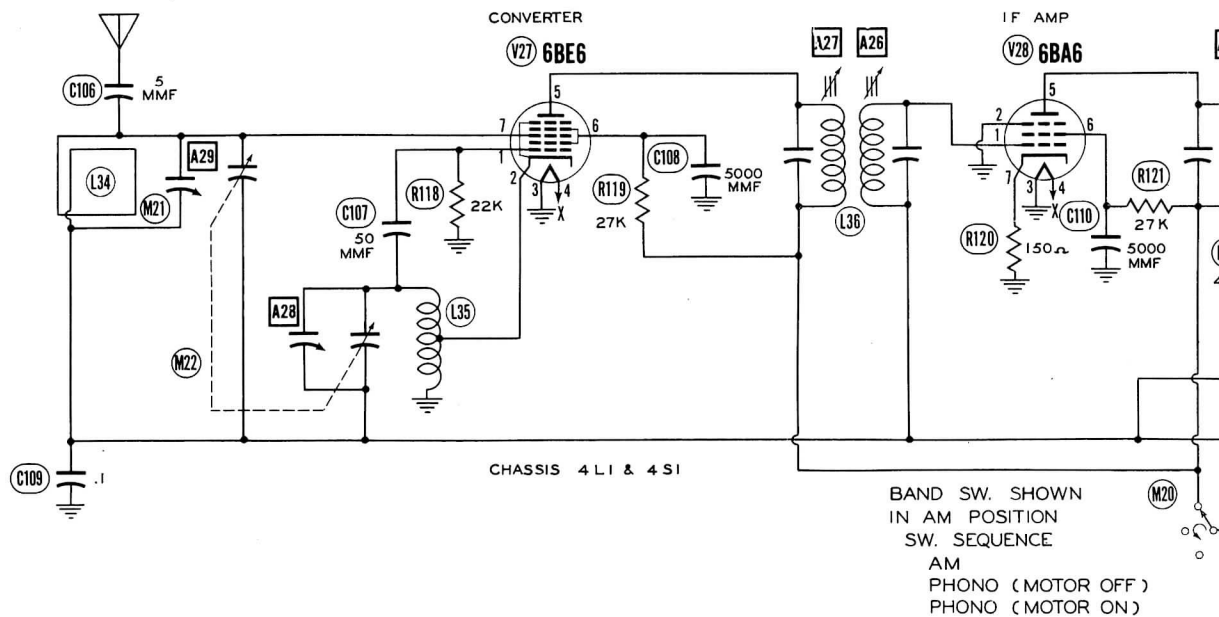
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

SW. ON VOL. CONT.



SCHEMATIC-RADIO





CHASSIS 1 PA 1

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V27	6BE6	§ -7VDC	0V.	0V.	6.3VAC	220VDC	125VDC	-.6VDC	
V28	6BA6	-.6VDC	0V.	0V.	6.3VAC	220VDC	125VDC	2VDC	
V29	6AV6	-.4VDC	0V.	0V.	6.3VAC	-.5VDC	-.6VDC	65VDC	
V30	6AQ5	0V.	12VDC	0V.	6.3VAC	210VDC	220VDC	0V.	
V31	5Y3GT	0V.	245VDC	0V.	255VAC	0V.	255VAC	0V.	245VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V27	6BE6	22KΩ	.8Ω	0Ω	.1Ω	†640Ω	†27KΩ	1.8 Meg.	
V28	6BA6	1.8 Meg.	0Ω	0Ω	.1Ω	†640Ω	†27KΩ	150Ω	
V29	6AV6	4.7 Meg.	0Ω	0Ω	.1Ω	900KΩ	1.8 Meg.	†510KΩ	
V30	6AQ5	470KΩ	270Ω	0Ω	.1Ω	†940Ω	†620Ω	470KΩ	
V31	5Y3GT	Inf.	100KΩ	Inf.	150Ω	Inf.	150Ω	Inf.	100KΩ

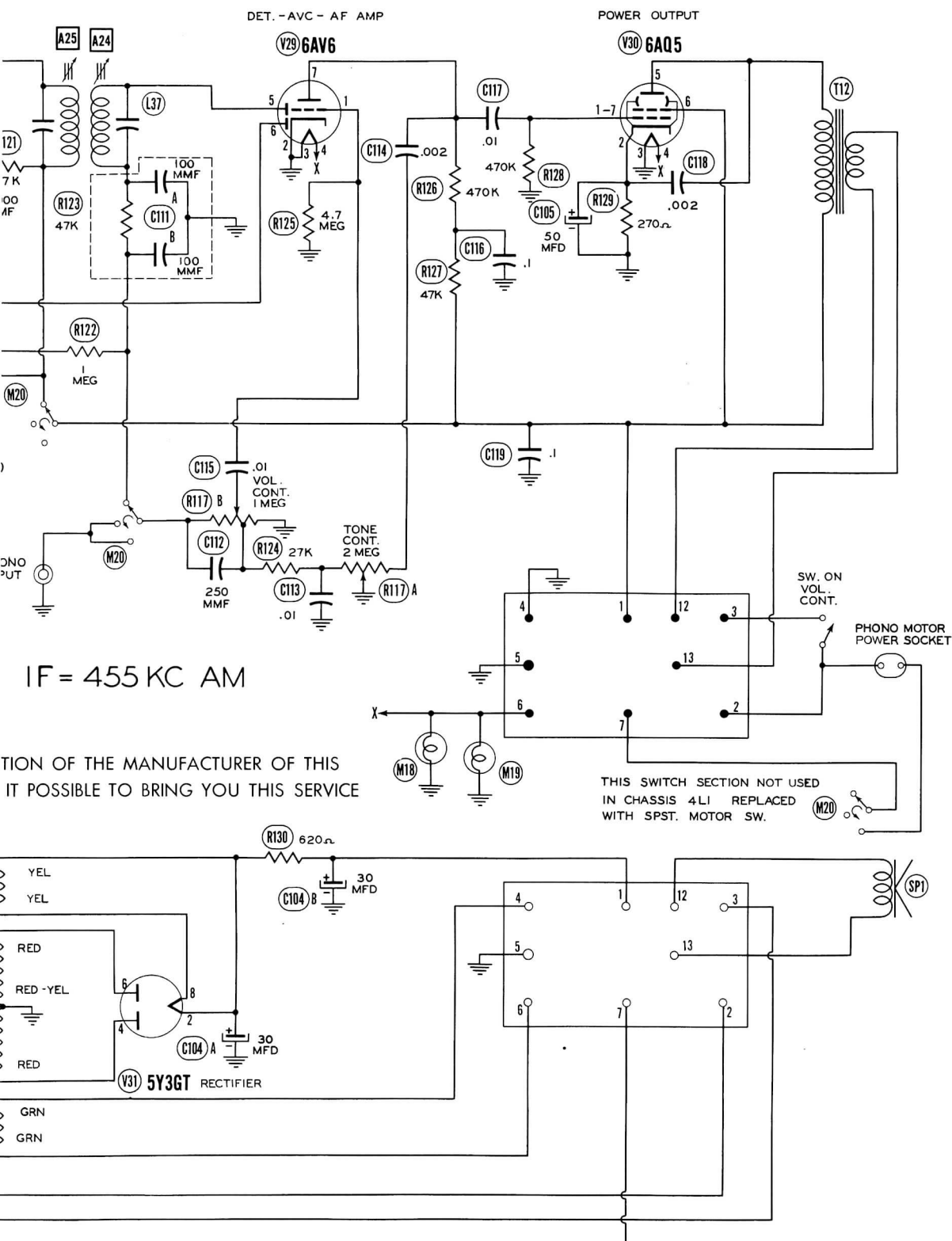
VOLTAGE AND RESISTANCE MEASUREMENTS TAKEN IN BROADCAST POSITION.
§ TAKEN WITH VACUUM TUBE VOLTMETER.
† MEASURED FROM PIN 2 OF V31.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1950

- DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
- Socket connections are shown as bottom views.
- Measured values are from socket pin to common negative.
- Line voltage maintained at 117 v voltage readings.
- Nominal tolerance on component values makes possible a variation of voltage and resistance readings.
- Volume control at maximum, no signal for voltage measurements.

SCHEMATIC-RADIO CH



IF = 455 KC AM

ATION OF THE MANUFACTURER OF THIS
IT POSSIBLE TO BRING YOU THIS SERVICE

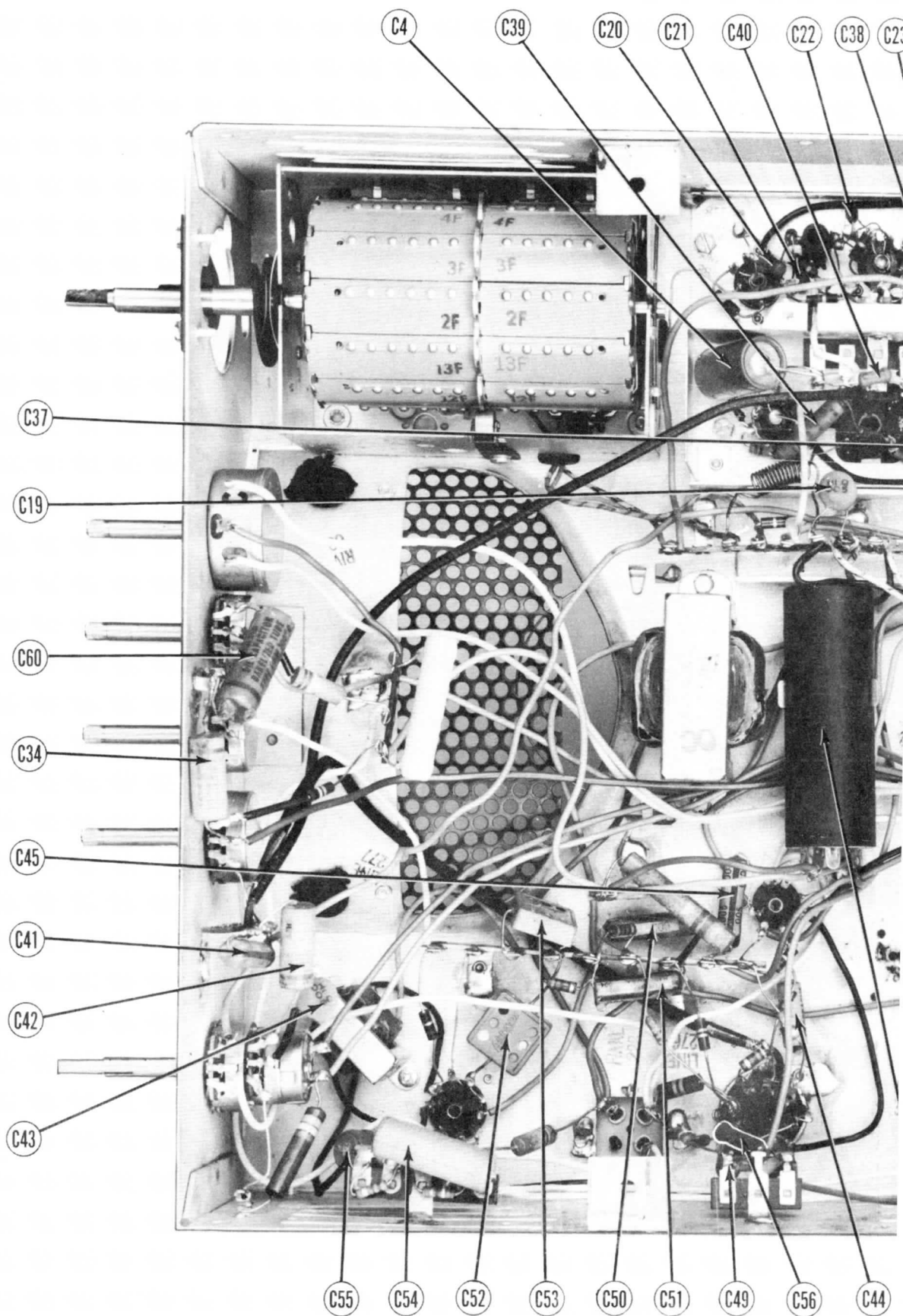
THIS SWITCH SECTION NOT USED
IN CHASSIS 4L1 REPLACED
WITH SPST. MOTOR SW.

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component values
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imum, no signal ap-
measurements.

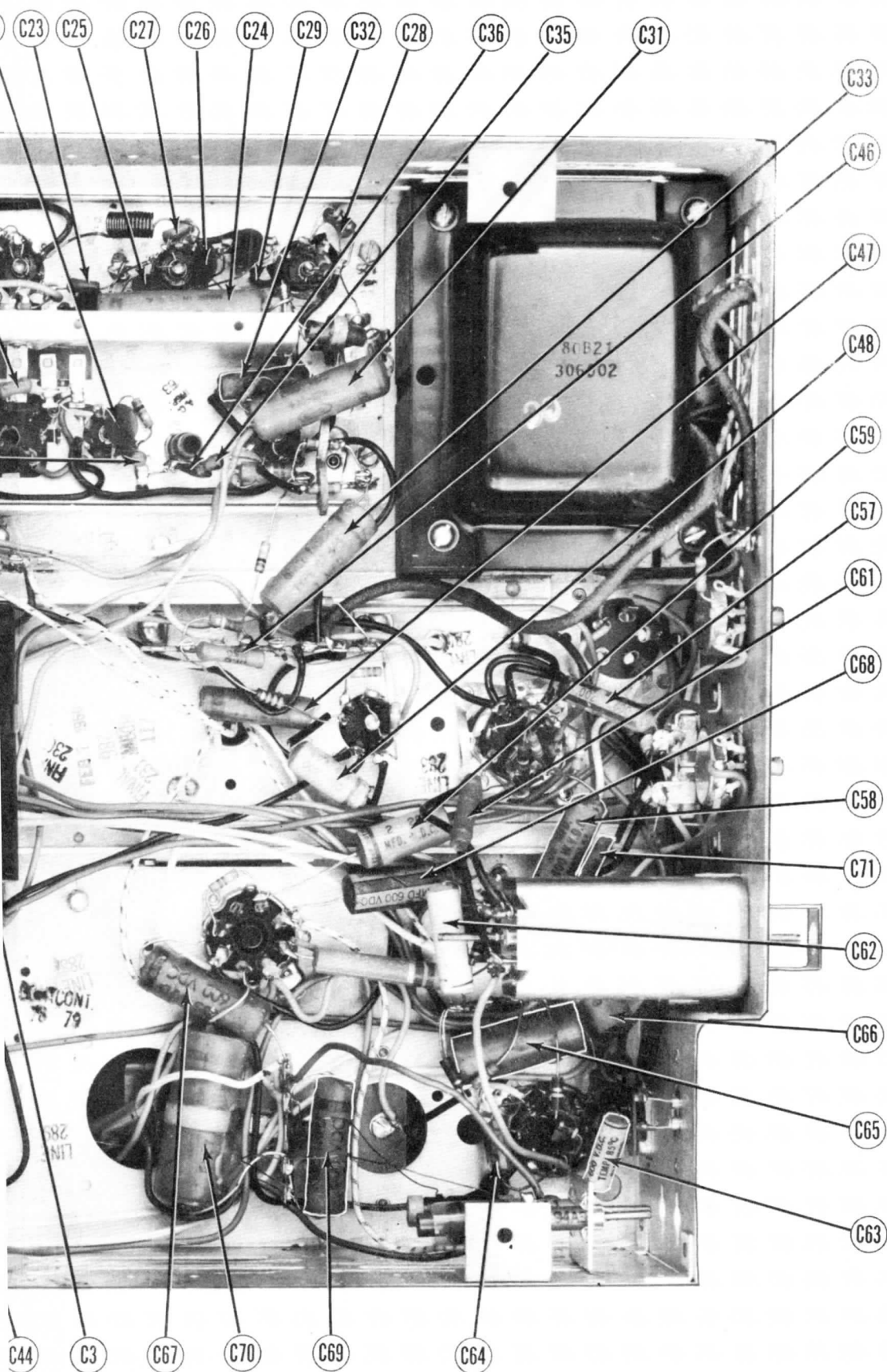
CHASSIS 1 PA 2

CHASSIS 4L1, 4S1

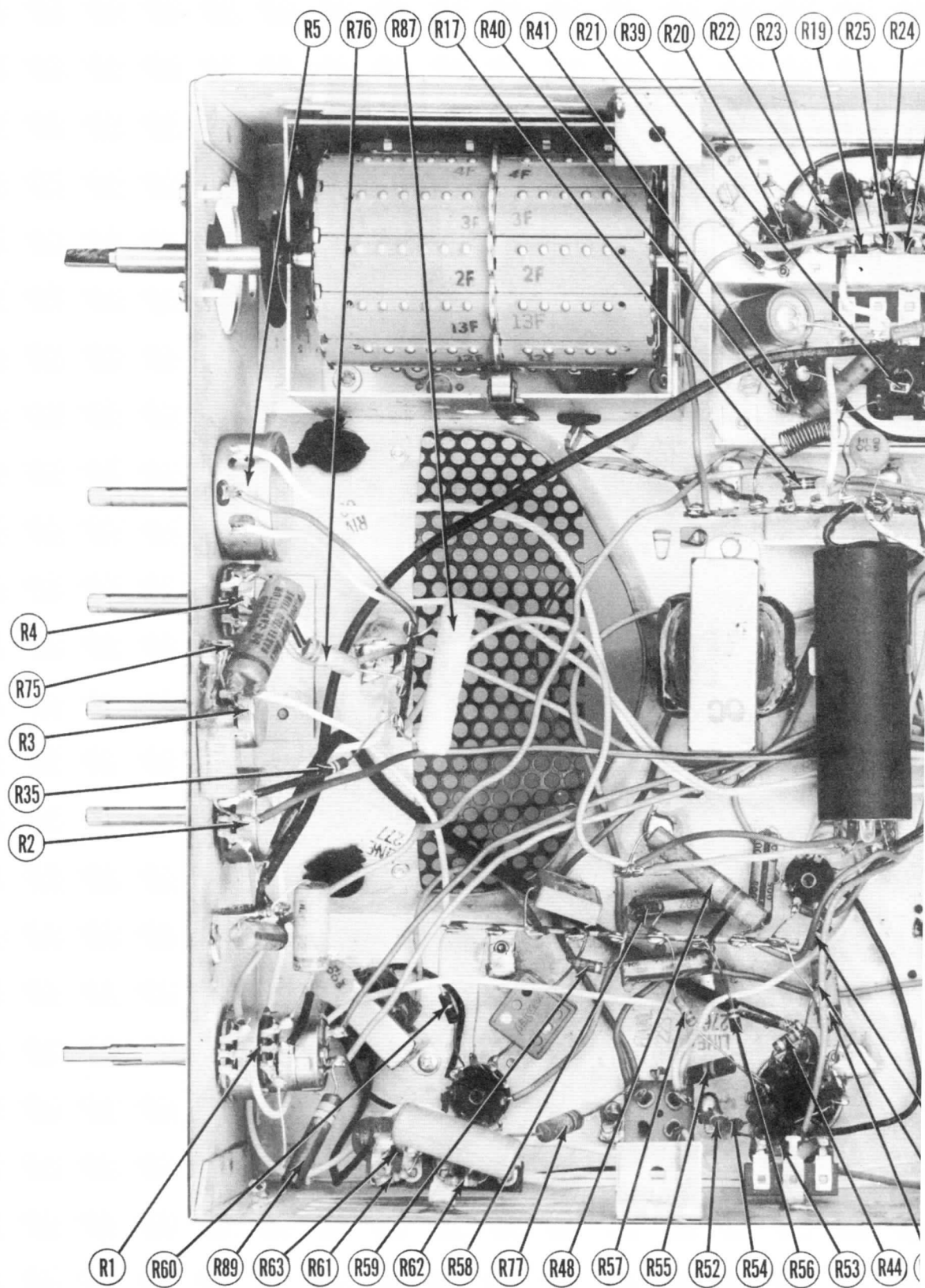


TV CHASSIS BOTTOM VIEW-

ADMIRAL CHASSIS 20X1, 20Y1, 20Z1,
RADIO CHASSIS 4L1, 4S1, 5B2

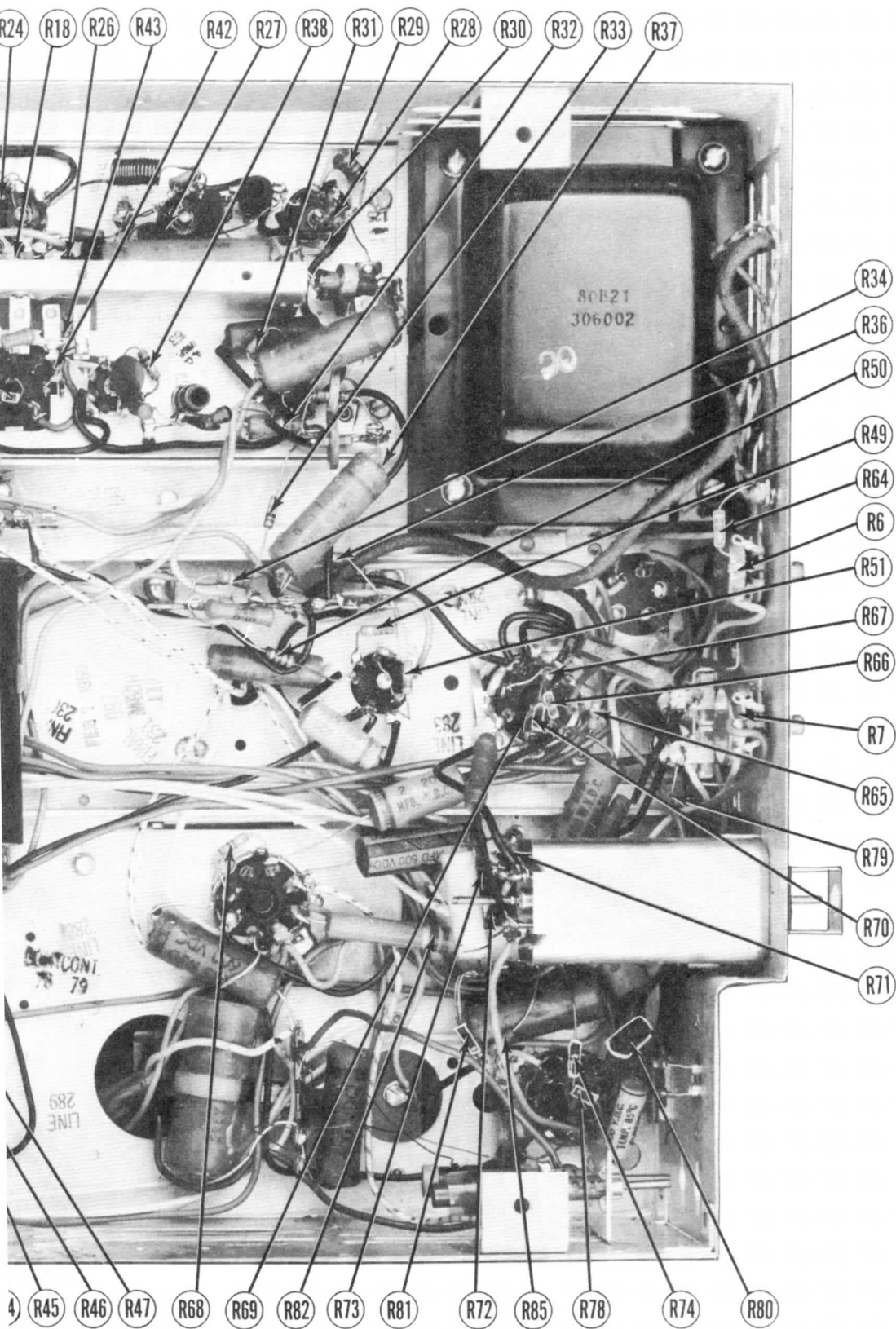


N-CAPACITOR IDENTIFICATION

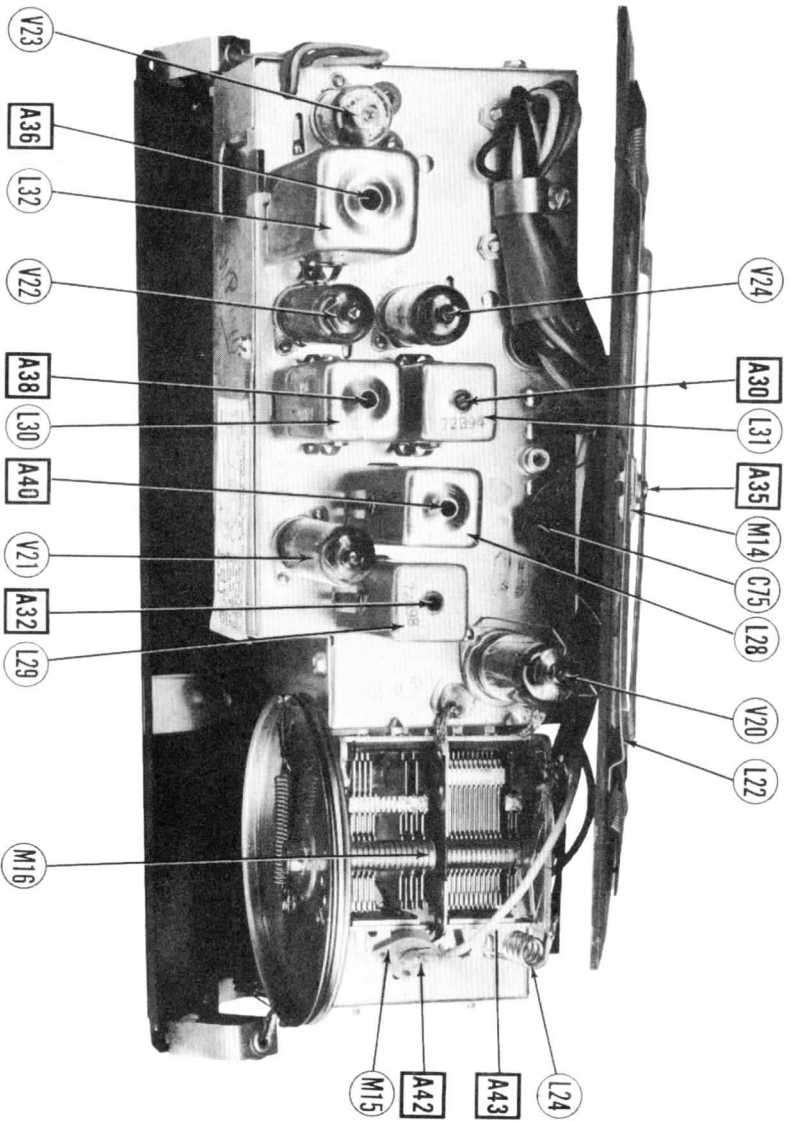


TV CHASSIS BOTTOM VIEW

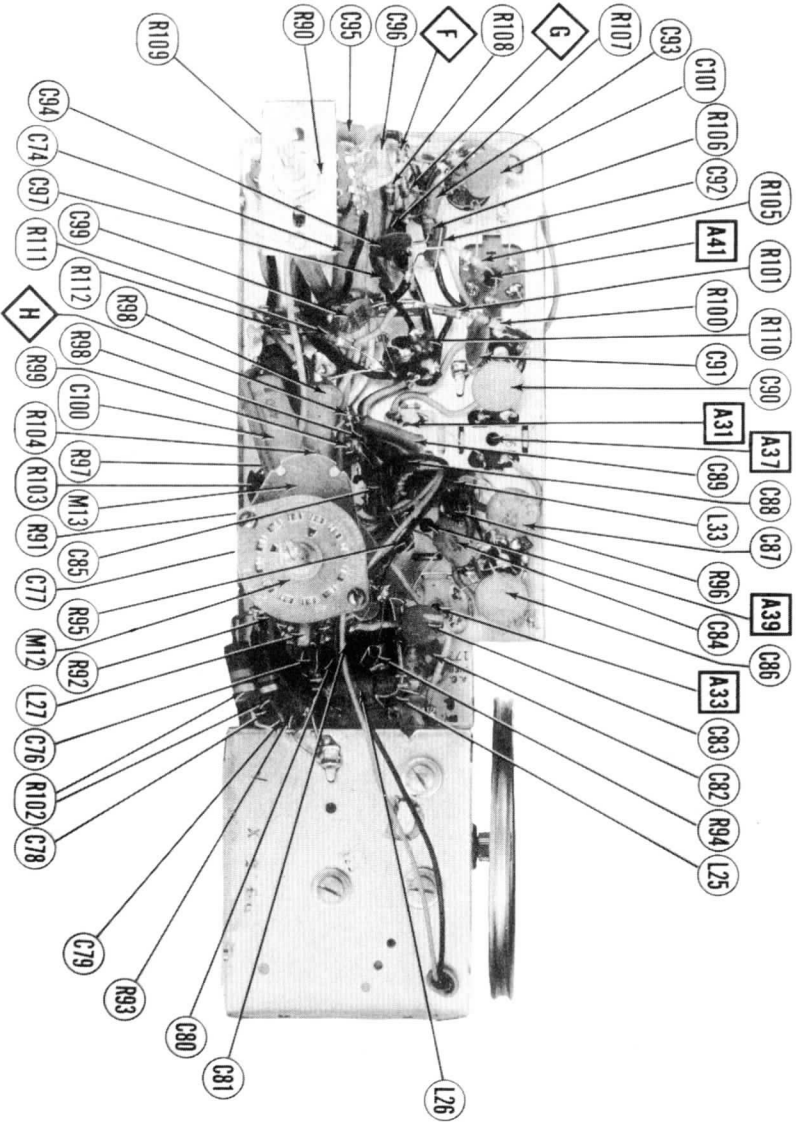
ADMIRAL CHASSIS 20X1, 20Y1, 20Z1,
RADIO CHASSIS 4L1, 4S1, 5B2



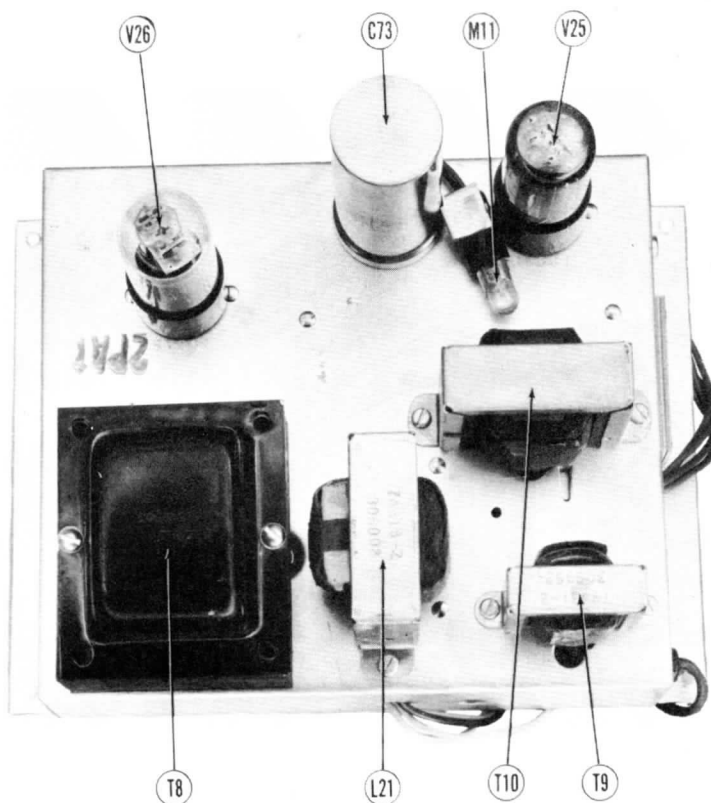
N-RESISTOR IDENTIFICATION



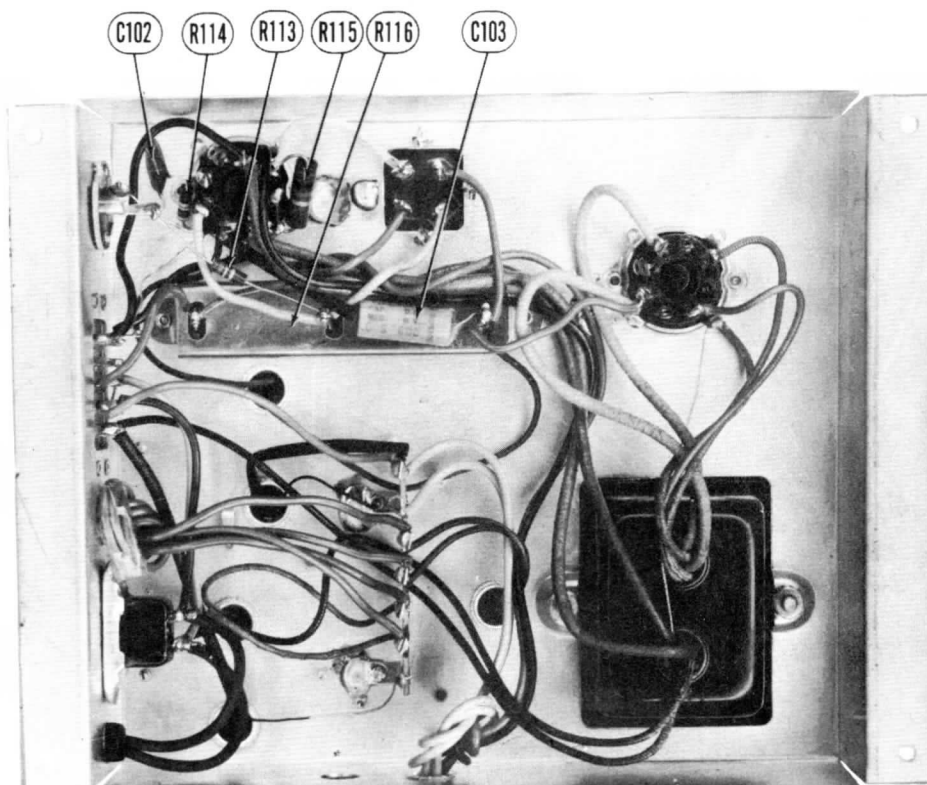
RADIO CHASSIS 5B2 - TOP VIEW



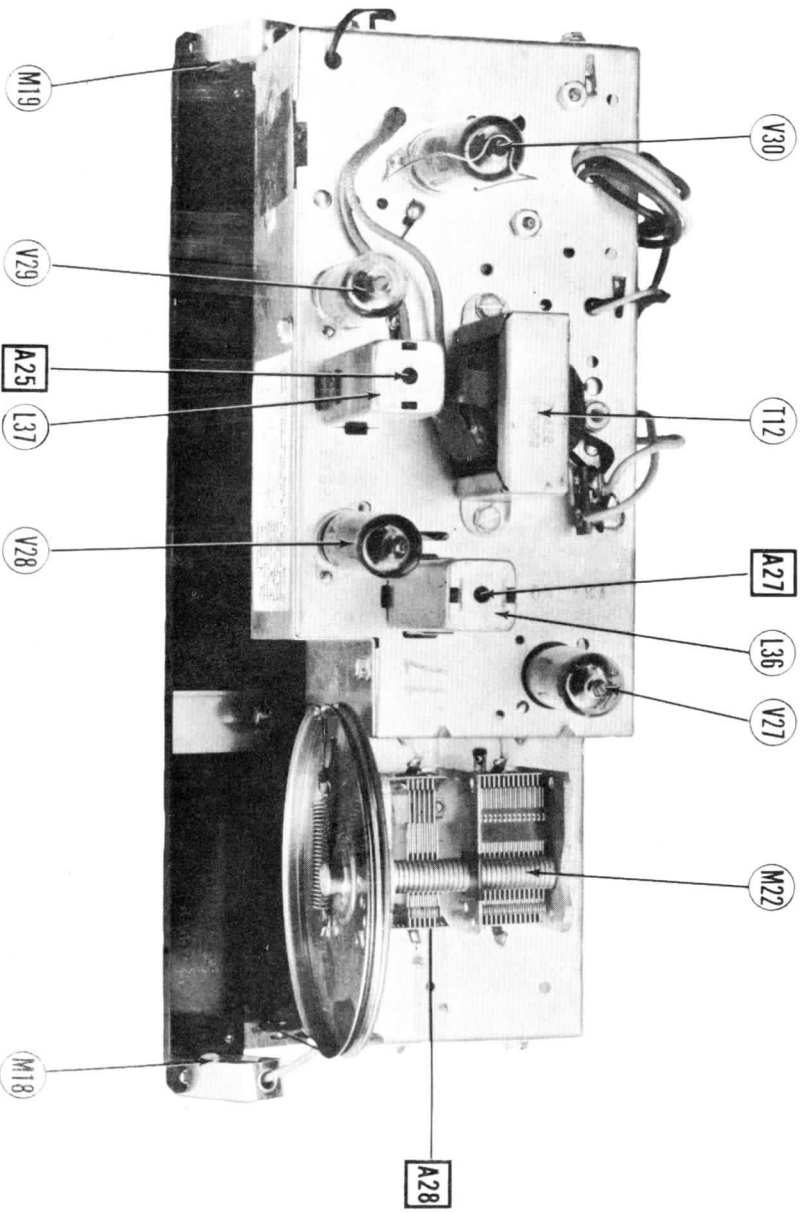
RADIO CHASSIS 5B2-BOTTOM VIEW



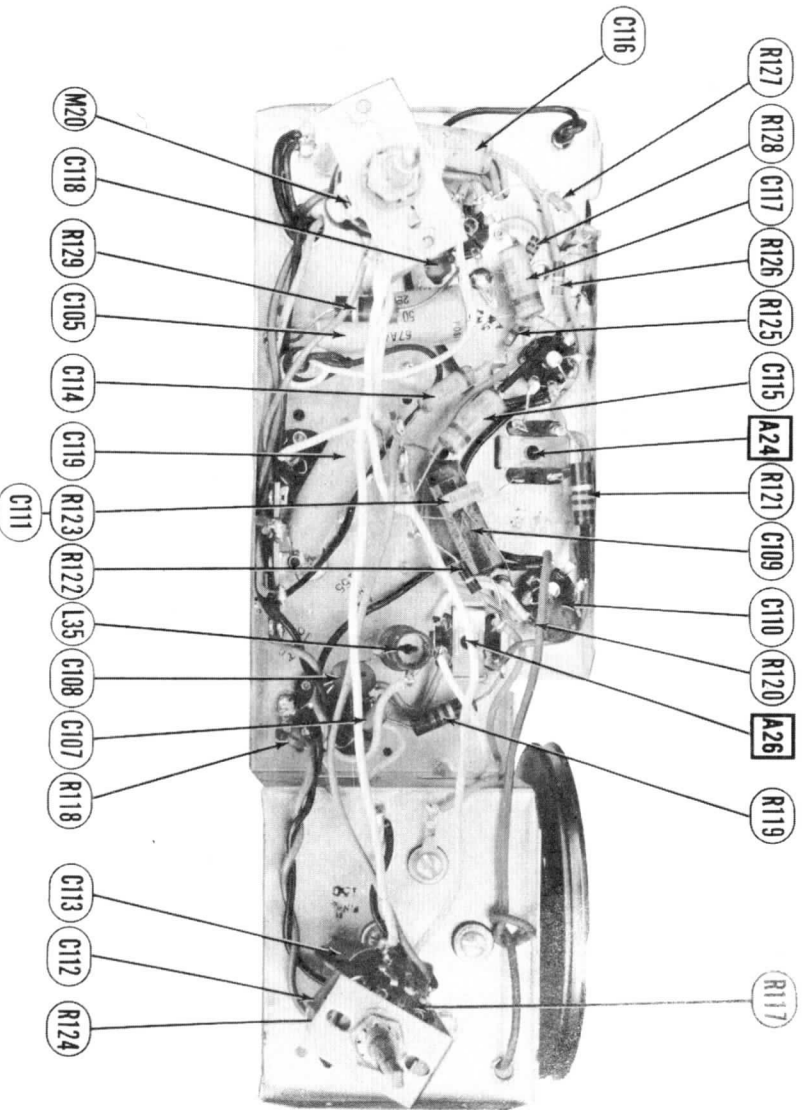
RADIO CHASSIS 4SI -TOP VIEW



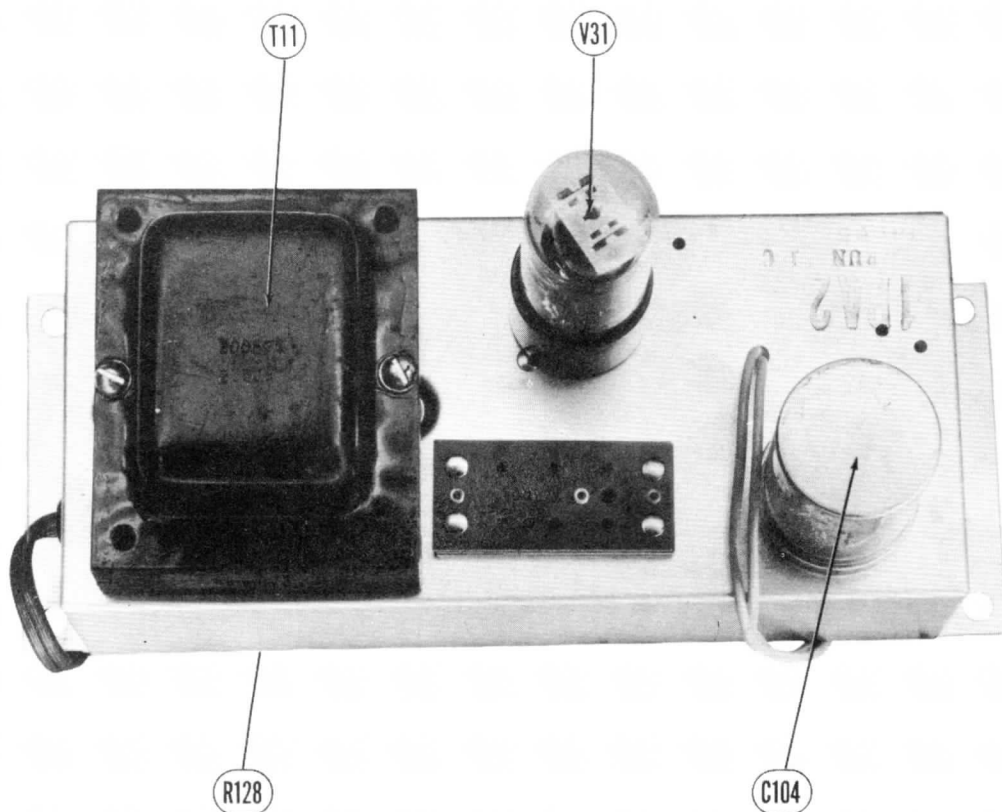
RADIO CHASSIS 4SI-BOTTOM VIEW



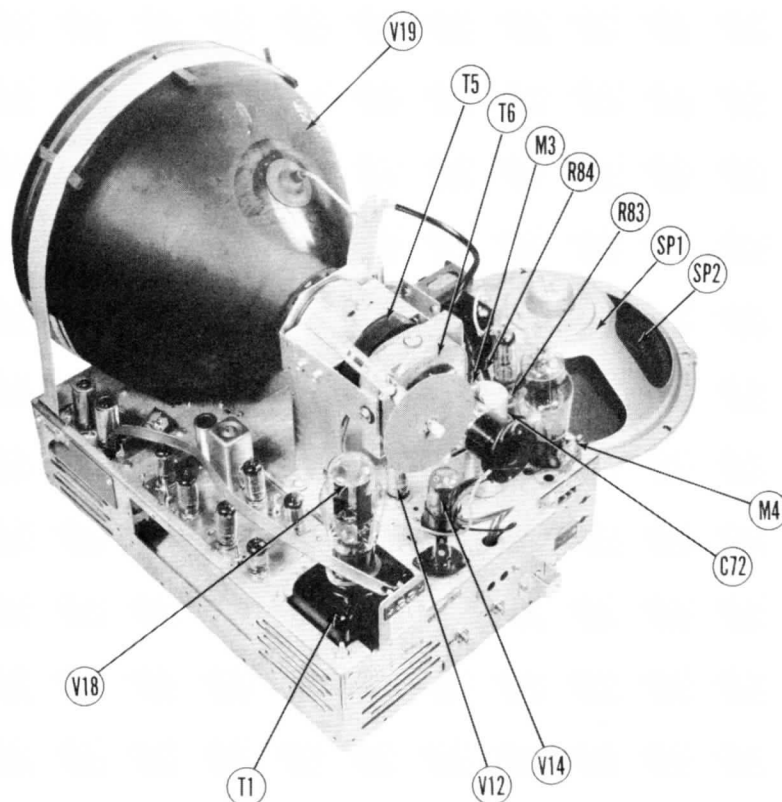
POWER SUPPLY 2PAI -TOP VIEW



POWER SUPPLY 2PAI -BOTTOM VIEW



POWER SUPPLY IPA2 -TOP VIEW



TV CHASSIS TOP VIEW

DISASSEMBLY INSTRUCTIONS

TV CHASSIS

1. Remove four push-on type control knobs from front of cabinet.
2. Remove six phillips head screws holding rear cover. Remove cover,
3. Remove TV audio output and pilot light plugs from chassis.
4. Disconnect built-in antenna leads at chassis terminal.
5. Remove four 7/16" hex head bolts holding chassis at bottom. Remove chassis.

SPEAKER

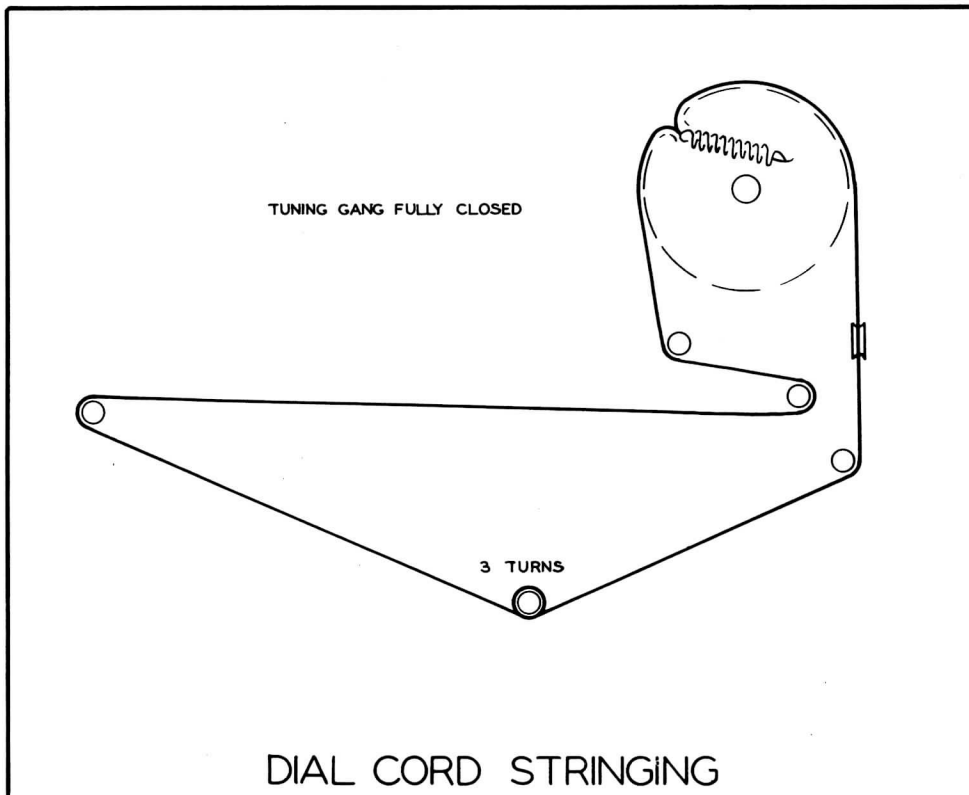
1. Remove four 11/32" hex nuts holding speaker.
2. Pull speaker out to rear of cabinet and unsolder leads.

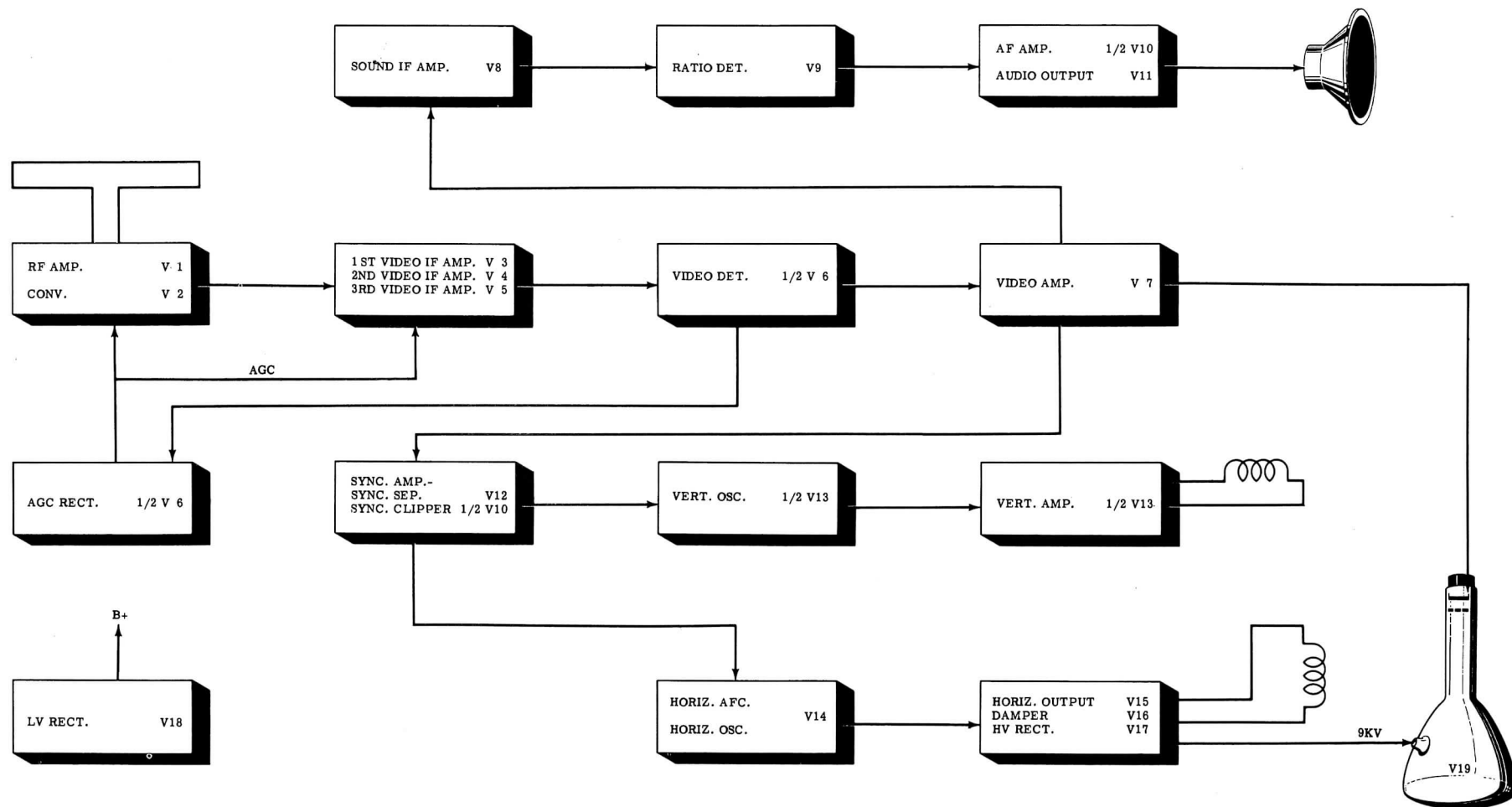
POWER SUPPLY

1. Remove radio and phono plugs from power chassis.
2. Remove pilot light from front of cabinet.
3. Remove four 5/16" hex head bolts holding chassis from inside record compartment. Remove chassis.

RADIO CHASSIS 5B2

1. Loosen three power supply cable clamps on cabinet and radio-phono unit. Pull cable through hole in cabinet.
2. Remove two screws holding loop antenna and unsolder both antenna leads. Remove loop.
3. Disconnect FM antenna leads at rear cabinet terminal. Remove two phillips head screws holding terminal.
4. Remove seven phillips head screws at sides and on underside of front radio housing.
5. Pull chassis forward until you can reach in and disconnect the phono pick-up and power plugs. Remove chassis.
6. Remove four push-on type control knobs from from of radio chassis.
7. Remove five phillips head screws on bottom of chassis holding front dial cover. Remove cover.





BLOCK DIAGRAM