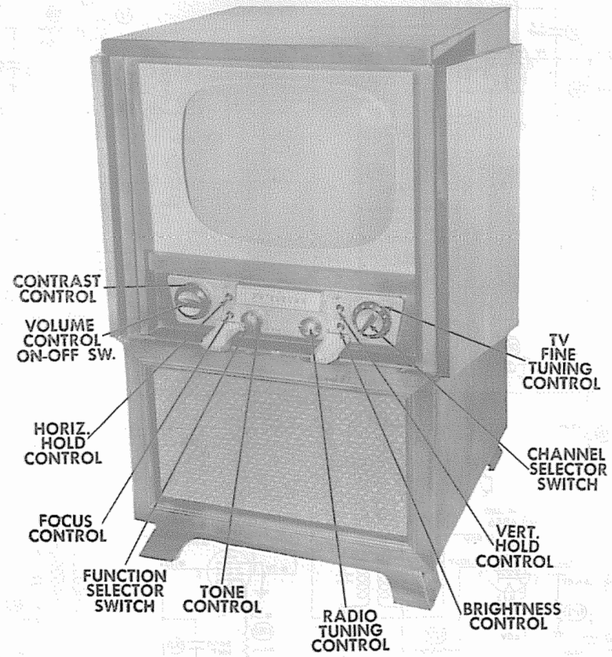
PHOTOFACT* Folder

*TRADE MARK

ADMIRAL CHASSIS
21W1, 21Y1, 21Z1, 21Z1A



ADMIRAL 47M15

TRADE NAME	Admiral	MODELS	CHASSIS		RECORD CHANGER
		37M25, 37M26, 37M27	21Z1	.... Runs 1 thru 26	RC550A or RC550GA
		47M15	21W1	.... Runs 1 thru 26	
		47M15A	21Z1	.... Runs 1 thru 26	
		47M16, 47M17	21W1	.... Runs 1 thru 26	
		47M35, 47M36, 47M37	21Z1	.... Runs 1 thru 26	
		57M10, 57M11, 57M12	21Z1A	.... Runs 1 thru 26	
		57M16, 57M17	21Z1	.... Runs 1 thru 26	
		321M25, 321M26, 321M27	21Y1	.... Runs 1 thru 26	RC550A or RC550GA
		421M15, 421M 16	21Y1	.... Runs 1 thru 26	
		521M15, 521M16, 521M17	21Y1	.... Runs 1 thru 26	
MANUFACTURER	Admiral Corp., 3800 W. CortlandSt., Chicago 47, Ill.				
TYPE SET	Television - AM Receiver				
TUBES	Twenty-three				
POWER SUPPLY	110-120 Volts AC-60 Cycle			RATING 1.85Amp. @ 117 Volts AC	
TUNING RANGE	535-1620 KC (AM) - Channels 2 thru 13 (TV)				

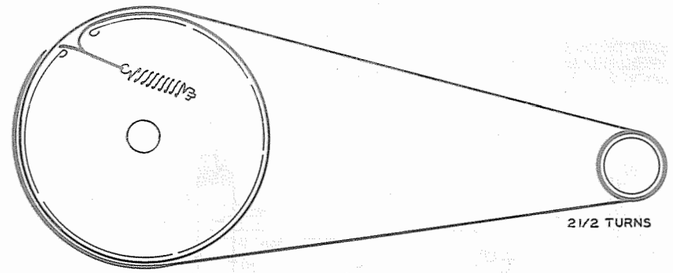
INDEX

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

DATE 8-52 SET 177 FOLDER 2

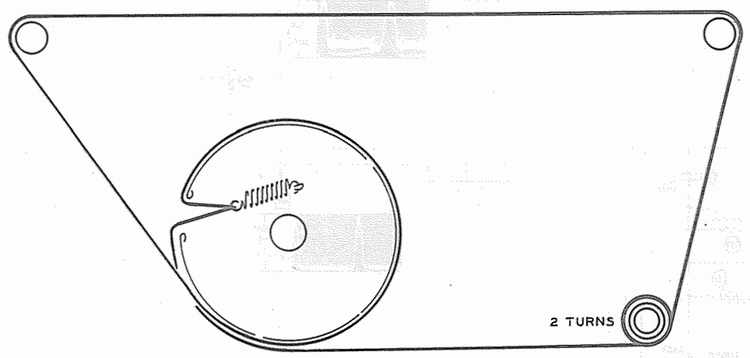
ADMIRAL CHASSIS
21W1, 21Y1, 21Z1, 21Z1A

TONE CONTROL FULLY TO THE LEFT

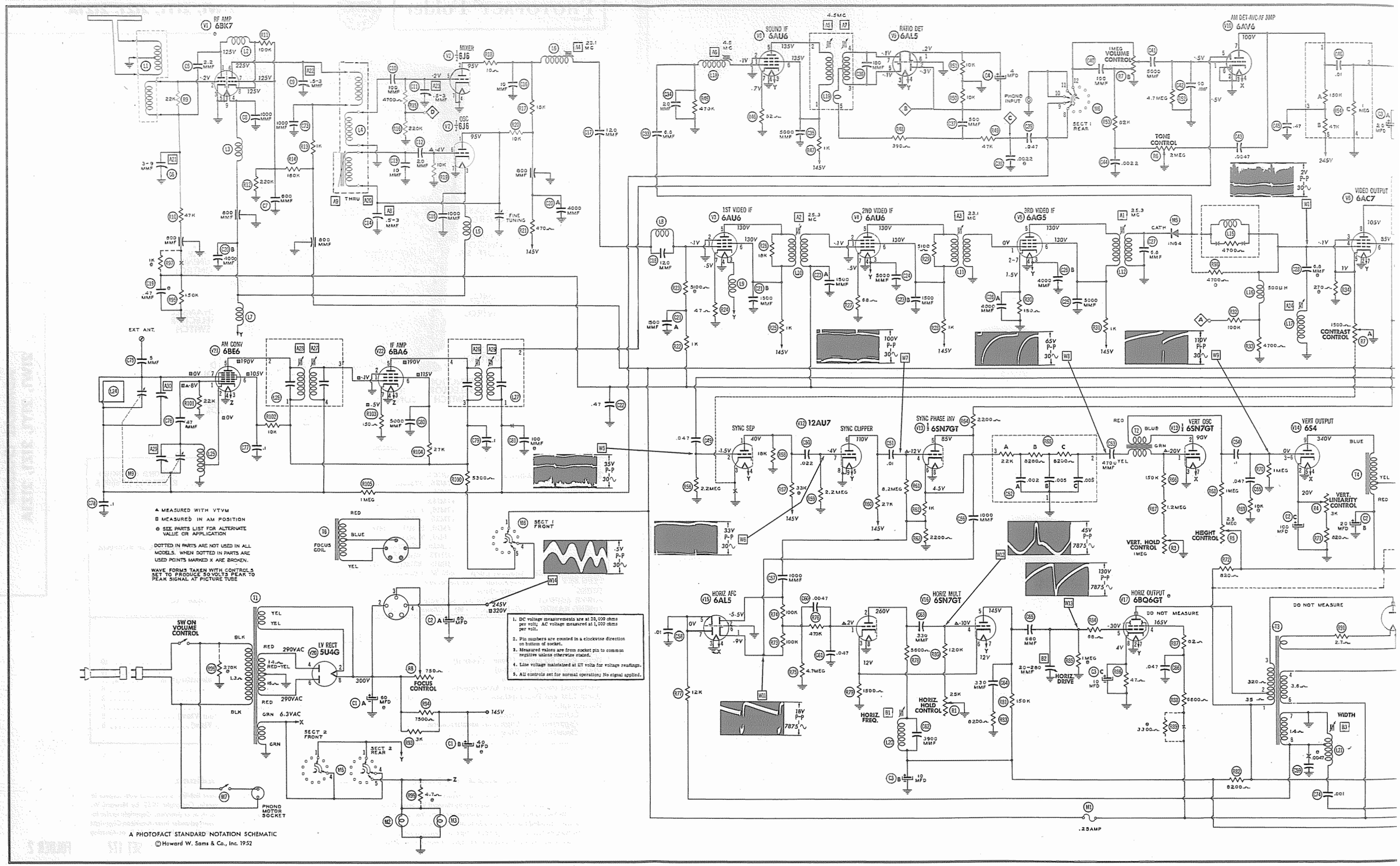


TONE CONTROL DRIVE CORD STRINGING

TUNING GANG FULLY CLOSED



RADIO DIAL CORD STRINGING


RF AMP 6BK7
MIXER 1/2 6J6
OSC 1/2 6J6
SOUND IF 6AU6
RATIO DET 6AL5
AM DET-AVC-AF AMP 6AV6
1ST VIDEO IF 6AU6
2ND VIDEO IF 6AU6
3RD VIDEO IF 6AG5
VIDEO OUTPUT 6AC7
AM CONV 6BE6
IF AMP 6BA6
LV RECT 5U4G
SYNC SEP 1/2 12AU7
SYNC CLIPPER
SYNC PHASE INV 1/2 6SN7GT
VERT OSC 1/2 6SN7GT
VERT OUTPUT 6S4
HORIZ AFC 6AL5
HORIZ MULT 6SN7GT
HORIZ OUTPUT 6BQ6GT
1MEG VOLUME CONTROL
TONE CONTROL
CONTRAST CONTROL
HEIGHT CONTROL
VERT. HOLD CONTROL
VERT. LINEARITY CONTROL
HORIZ. HOLD CONTROL
HORIZ. FREQ.
HORIZ. DRIVE
WIDTH
FOCUS COIL
FOCUS CONTROL
SW ON VOLUME CONTROL
PHONO MOTOR SOCKET
SECT 1 FRONT
SECT 1 REAR
SECT 2 FRONT
SECT 2 REAR
PHONO INPUT
EXT ANT.
THRU
FINE TUNING
CATH
DO NOT MEASURE
▲ MEASURED WITH VTVM
B MEASURED IN AM POSITION
⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN.
WAVE FORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK TO PEAK SIGNAL AT PICTURE TUBE
1. DC voltage measurements are at 20,000 ohms per volt; AC voltage measured at 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation; No signal applied.
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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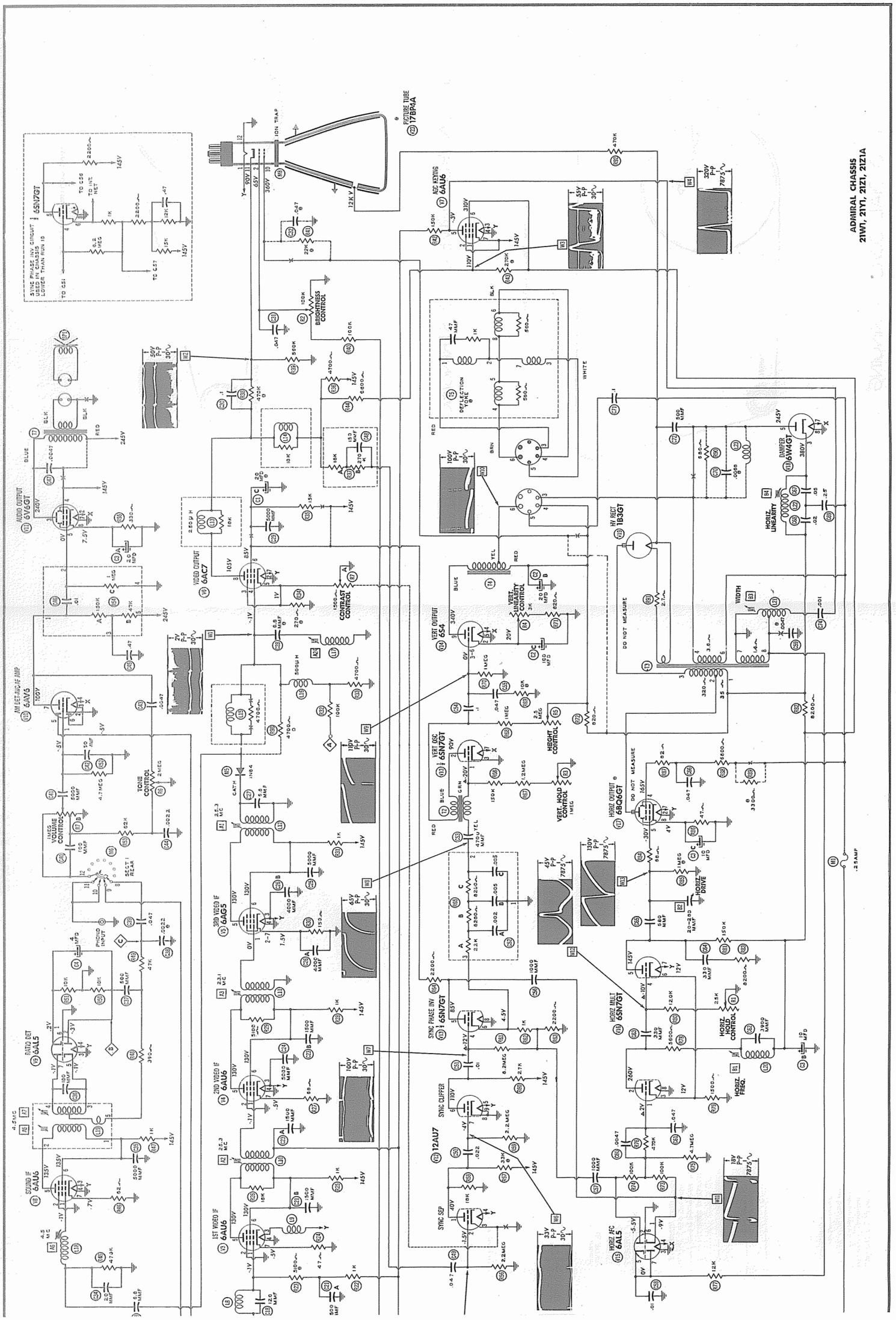
ADMIRAL CHASSIS
21W1, 21Y1, 21Z1, 21Z1A



RF TUNER-RIGHT SIDE

RF TUNER-BOTTOM VIEW

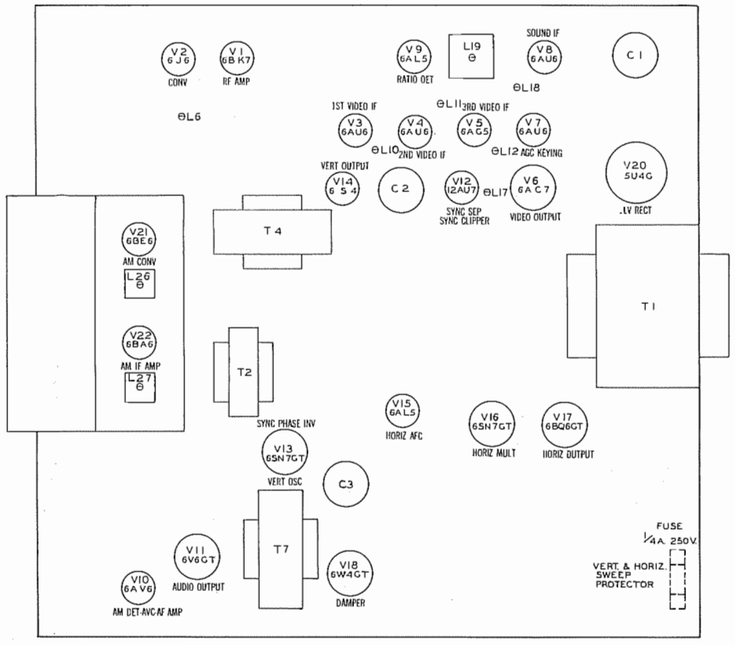
CHASSIS TOP VIEW

ADMIRAL CHASSIS
21W1, 21Y1, 21Z1, 21Z1A

RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BK7	200KΩ	200KΩ	0Ω	.1Ω	0Ω	†1.2KΩ	100KΩ	200KΩ	0Ω
V 2	6J6	†12KΩ	†17KΩ	.1Ω	0Ω	220KΩ	10KΩ	0Ω		
V 3	6AU6	156KΩ	0Ω	.1Ω	0Ω	†3.1KΩ	†3.1KΩ	47Ω		
V 4	6AU6	150KΩ	0Ω	.1Ω	0Ω	†3.1KΩ	†3.1KΩ	68Ω		
V 5	6AG5	.4Ω	150Ω	.1Ω	0Ω	†3.1KΩ	†3.1KΩ	150Ω		
V 6	6AC7	0Ω	0Ω	100Ω	4.7KΩ	100Ω	†17KΩ	.1Ω	†6.8KΩ	
V 7	6AU6	†13KΩ	†2.1KΩ	.1Ω	0Ω	300KΩ	#8.2KΩ	†2.1KΩ		
V 8	6AU6	470KΩ	0Ω	.1Ω	0Ω	†3.1KΩ	†3.1KΩ	82Ω		
V 9	6AL5	10KΩ	10KΩ	0Ω	.1Ω	INF	0Ω	INF		
V 10	6AV6	4.7Meg	0Ω	0Ω	.1Ω	¤1Meg	0Ω	†200KΩ		
V 11	6V6GT	INF	.1Ω	†535Ω	†2.1KΩ	1Meg	†47KΩ	0Ω	330Ω	
V 12	12AU7	12KΩ	2.2Meg	0Ω	.1Ω	.1Ω	†29KΩ	2.2Meg	0Ω	0Ω
V 13	6SN7GT	2Meg	#2.6Meg	0Ω	8.2Meg	†19KΩ	3.2KΩ	.1Ω	0Ω	
V 14	6S4	INF	1.3KΩ	1Meg	.1Ω	0Ω	1Meg	INF	INF	#2.2KΩ
V 15	6AL5	4.8Meg	4.8Meg	0Ω	.1Ω	12KΩ	0Ω	12KΩ		
V 16	6SN7GT	5.1Meg	#13KΩ	1.5KΩ	140KΩ	#160KΩ	1.5KΩ	.1Ω	0Ω	
V 17	6BQ6GT	1Meg	0Ω	INF	†7.1KΩ	1Meg	#13KΩ	.1Ω	47Ω	TOP CAP #47Ω
V 18	6W4GT	INF	INF	60KΩ	INF	†270Ω	INF	.1Ω	0Ω	
V 19	1B3GT	PINS	1 - 8	HAVE	INF	RESISTANCE				TOP CAP #367Ω
V 20	5U4G	INF	23KΩ	INF	14Ω	INF	16Ω	INF	23KΩ	
V 21	6BE6	22KΩ	.8Ω	¤.1Ω	0Ω	¤†5.5KΩ	¤†15KΩ	¤2Meg		
V 22	6BA6	¤2Meg	0Ω	¤.1Ω	0Ω	¤†5.5KΩ	¤†32KΩ	150Ω		
V 23	17BP4A	.1Ω	50KΩ	PIN 10 #830	PIN 11 250KΩ	PIN 12 0Ω				

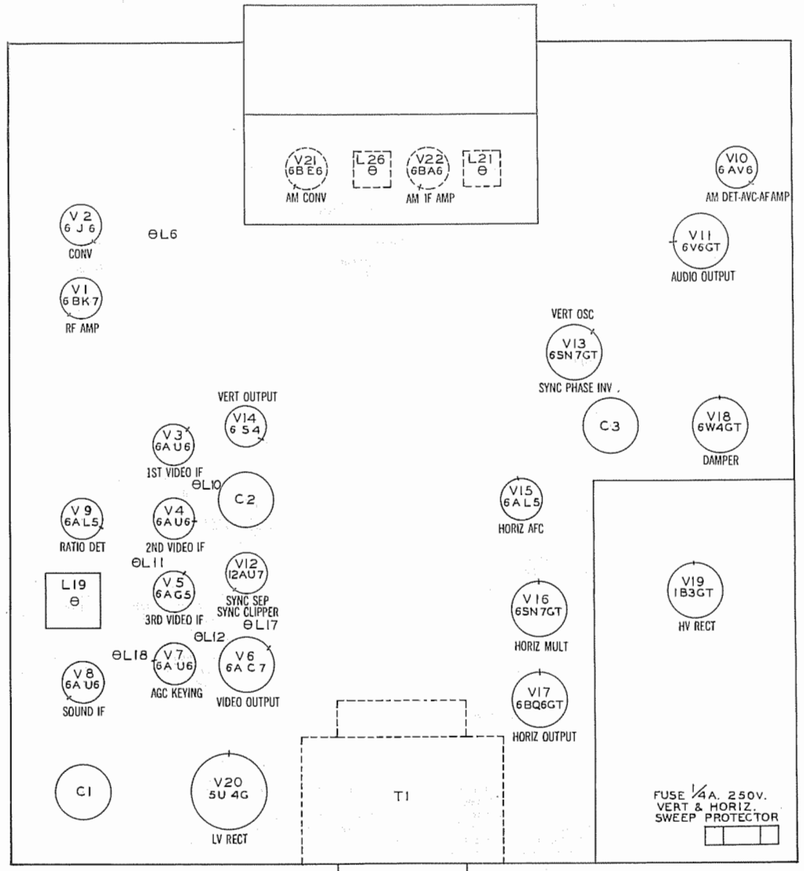
ALL MEASUREMENTS TAKEN IN "TV" POSITION UNLESS NOTED
ALL CONTROLS SET FOR NORMAL OPERATION, NO SIGNAL APPLIED
† MEASURED FROM PIN 8 OF V20
# MEASURED FROM PIN 3 OF V18
¤ MEASURED IN "AM RADIO" POSITION



BOTTOM VIEW

TUBE PLACEMENT CHART

TUBE PLACEMENT CHART



TOP VIEW

TUBE FAILURE CHECK CHART

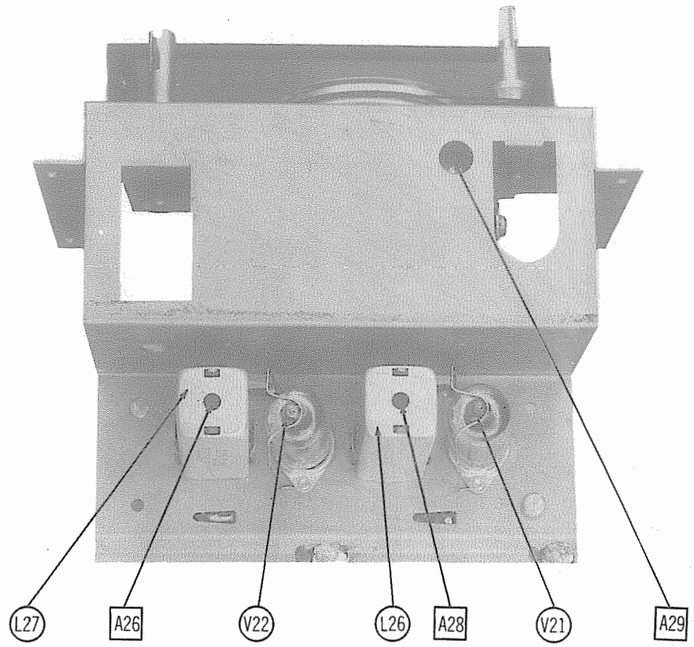
The following chart lists tubes whose failures are most likely to produce the indicated symptoms.
Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No Raster, No Sound - V20

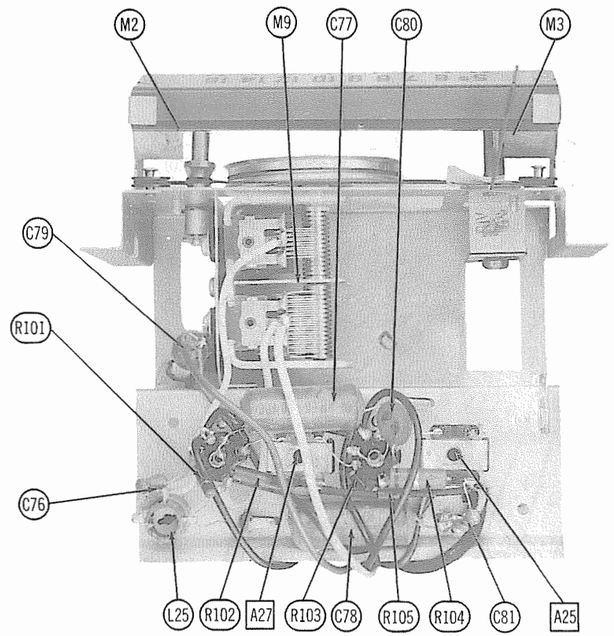
LOSS OF PICTURE OR SOUND
No Pic, No Sound, Has Raster - V2, V3, V4, V5
No Pic, No Sound, Has Snow - V1, V2, V3
No Pic, Has Sound, Has Raster - V6, V23
Has Pic, No Sound, - V8, V9, V10, V11
Overloaded Picture - V7

SYNC FAILURE
No Vert. Sync - V13
No Horizl Sync - V13, V15, V16
No Vert. or Horiz. Sync - V12, V13

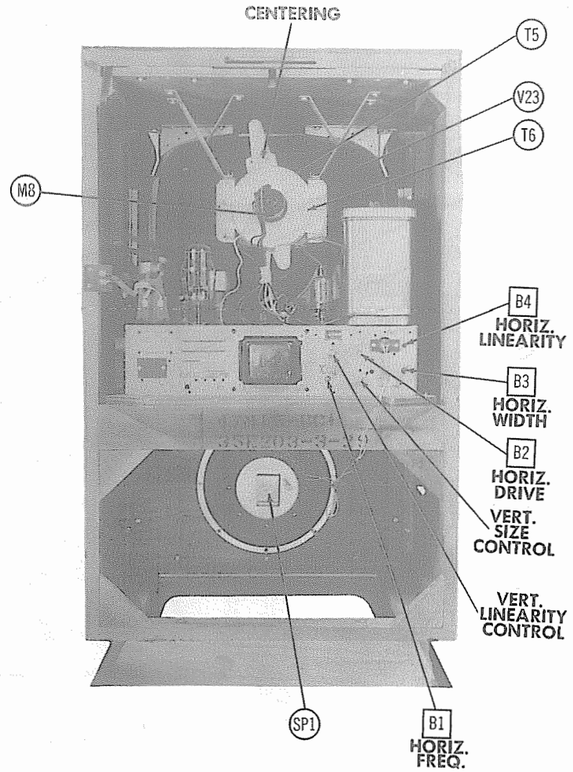
SWEEP FAILURE
No Raster, Has Sound - V16, V17, V18, V19, V23, Fuse (M1)
No Vertical Deflection - V14
Poor Vert. Linearity or Foldover - V13, V14
Poor Horiz. Linearity or Foldover - V16, V17, V18
Narrow Picture - V16, V17, V18, V20
Vert. Off Freq. - V13
Horiz. Off Freq. - V13, V15, V16



RADIO CHASSIS-TOP VIEW



RADIO CHASSIS-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

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

Turn the horizontal hold control fully clockwise.

If the picture is not in sync adjust the horizontal lock slug (B1) until the picture is in sync.

Adjust B1 counter clockwise until picture loses sync. Then slowly turn B1 clockwise until picture just falls into sync.

Adjust the horizontal drive trimmer B2 as far as possible counter clockwise without producing white vertical lines in the picture. On some sets this adjustment may not produce white vertical lines in which case B2 should be set at maximum counter clockwise position while still maintaining slight tension on the trimmer plate.

Adjust the width contrd slug (B3) for a picture slightly wider than enough to fill the picture mask horizontally.

Adjust the horizontal linearity slug (B4) for a picture that is symmetrical from left to right.

DISASSEMBLY INSTRUCTIONS

1. Remove 6 rush on type control knobs from front pannel.
2. Remove 4 wood screws and 2 staples. Remove back cover.
3. Disconnect speaker, focus and deflection plugs, antenna lead from antenna bracket on chassis, CRT socket, ground lead from HV cage and HV lead to CRT.
4. Remove 4 chassis bolts. Remove chassis.
5. Remove 4 speakers nuts. Remove speaker.

NOTE: FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA ADMIRAL PART No.	REPLACEMENT DATA STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	6BK7	6BK7	9AJ	
B	RF Amplifier	6BQ7	6BQ7	9AJ	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6AU6	6AU6	7BK	
V4	2nd. Video IF Amp.	6AU6	6AU6	7BK	
V5	3rd. Video IF Amp.	6AG5	6AG5	7BD	
V6	Video Output	6AC7	6AC7	8N	
V7	AGC Keying	6AU6	6AU6	7BK	
V8	Sound IF Amp.	6AU6	6AU6	7BK	
V9	Ratio Detector	6AL5	6AL5	6BT	
V10	AM Detector-AVC-AF Amplifier	6AV6	6AV6	7BT	
V11	Audio Output	6V6GT	6V6GT	7AC	
V12	Sync Separator-Sync Clipper	12AU7	12AU7	9A	
V13	Vert. Oscillator-Sync Phase Inv.	6SN7GT	6SN7GT	8BD	
V14	Vert. Output	6S4	6S4	9AC	
V15	Horiz. AFC	6AL5	6AL5	6BT	
V16	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V17A	Horiz. Output	6BQ6GT	6BQ6GT	6AM	Used in 21W1, and 21Z1A Chassis.
B	Horiz. Output	6CD6G	6CD6G	5BT	Used in 21Y1 Chassis.
V18	Damper	6W4GT	6W4GT	4CG	
V19	HV Rectifier	1B3GT	1B3GT	3C	
V20	LV Rectifier	5U4G	5U4G	5T	
V21	AM Converter	6BE6	6BE6	7CH	
V22	IF Amplifier	6BA6	6BA6	7BK	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA ADMIRAL PART No.	REPLACEMENT DATA SYLVANIA PART No.		RTMA BASE TYPE	NOTES
V23A	17BP4A	17BP4A		12D	① Circuit changes necessary
		17BP4 ①		12D	
		17HP4 ①		12C	
		17RP4 ①		12C	
B	21EP4A	21EP4A		12D	Used only in chassis 21Y1
		21EP4 ①		12D	
		21FP4A		12C	
		21FP4		12C	

CAPACITORS

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

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA ADMIRAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	▲60	400	67C15-21	AFH3-46		UPT6245		FP447	TVL-2770	Note 7
B	■40	350				BR4035			TVA-1608	Note 7
C	▲20	350								Note 7
C2A	■80	350	67C15-18	AFH3-182		UPT315		FP235	TVL-3722	
B	▲20	450						TC3501		
C	▲100	50								
C3A	▲20	25	67C15-19	AFH3-125		UP1145C		FP345.2	TVL-3719	
B	■10	450								
C	10	25								
C4	4	50	67A4-9	PRS150/4		BR550		TC30	TVA-1303	
C5	2.2		94C37-97		TCZ-2.2		NP0K-2R2		5TCCB-V22	
C6	3-9		98A45-96		829-10					
C7	800		94C37-91	BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C8	1000		98A45-24	S11000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C9	.5-3		98A45-23		829-3			CT-565A		
C10	100		98A45-26	S1100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C11	.5-3		98A45-23		829-3			CT-565A		
C12	20		98A45-27	S120NP0	TCZ-20		NP0K-200	ZT-542	5TCC-Q2	
C13	10		98A45-79	S110N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C14	.5-3		98A45-23		829-3			CT-563A		
C15	1000		67B6-41	S11000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C16	10		98A45-64	S110NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C17	120		98A45-78	S1120	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C18	120		65B1-10	S1120	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C19	.47	200	64A10-1	P288-47		PJ2P5		PT405	2TM-P47	Note 5
C20A	4000		65A17-1	BPD-2X004	D6-402	TM5DD4	822-004	DCD-524	5HK-2D4	
B	4000				D6-402					
C21A	1500		65A17-2	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C22	.47	100	64B9-35	P288-47		PJ2P5		PT405	2TM-P47	
C23A	1500		65A17-2	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C24	5000		65A10-1	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C25	5000		65A10-1	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C26A	4000		65A17-1	BPD-2X004	D6-402	TM5DD4	822-004	DCD-524	5HK-2D4	
B	4000				D6-402					
C27	6.8		65C6-71	S16.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C28	6.8		65C6-71	S16.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	Note 6
C29	5000		65A10-1	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C30	.1	400	64B 5-20	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C31	.047	400	64B9-28	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C32	.047	600	64B8-9	P688-047	DF-503	PTE6S47		PT6147	6TM-S47	Note 1
C33	6.8		65B6-71	S16.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C34	20		65B6-51	S120NP0	TCZ-20		NP0K-200	ZT-542	5TCC-Q2	
C35	5000		65A10-1	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C36	180		65B6-59							
C37	500		65B6-6	S1500	D6-501	TM5T5	GP2K-501	UC-535	5GA-T5	
C38	.0022	600	64B9-17	P688-0022	D6-222	PTE6D22	GP2-333-202	PT6222	6TM-D22	Note 4
C39	.047	400	64B9-41	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C40	100		65C6-3	S1100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C41	5000		65A10-1	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C42	50		65B6-4	S150	D6-500	TM5Q5	GP1K-500	UC-545	5GA-Q5	
C43	.0047	600	64B9-12	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C44	.0022	200	64B9-14	P688-0022	D6-222	PTE6D22	GP2-333-222	PT6222	6TM-D22	
C45	.47	400	64B8-72	484-5		PJ4P5		PT405	4TM-P5	

PARTS LIST AND DESCRIPTIONS (Continued)

MISCELLANEOUS

ITEM No.	PART NAME	ADMIRAL PART No.	NOTES
M4	RF Tuner	94C37-1	
M5	Crystal		1N64
M6A	Switch	77B40	Function (TV-Radio-Phono)
B	Switch	77B39-1	Alternate (TV-Radio-Phono)
C	Switch	77B39	Alternate (TV-Radio-Phono)
M7A	Switch	77B39-16	Phono Motor (on/off)
B	Switch	77B39-15	Alternate
C	Switch	77B39-14	Alternate
M8	Ion Trap	94A15-2	
M9	Tuning Cap	68B49	For Radio (30-460MMF, 18-164MMF)
B2	Trimmer	66A30-1	Horiz. Drive (20-280MMF)
	Ant. Coil	94C37-53	Channel #3
	Ant. Coil	94C37-54	Channel #4
	Ant. Coil	94C37-55	Channel #5
	Ant. Coil	94C37-56	Channel #6
	Ant. Coil	94C37-57	Channel #7
	Ant. Coil	94C37-58	Channel #8
	Ant. Coil	94C37-59	Channel #9
	Ant. Coil	94C37-60	Channel #10
	Ant. Coil	94C37-61	Channel#11
	Ant. Coil	94C37-62	Channel #12
	Ant. Coil	94C37-63	Channel #13
	RF, Mixer Grid & Osc. Coil	94C37-73	Channel #3
	RF, Mixer Grid & Osc. Coil	94C37-74	Channel #4
	RF, Mixer Grid & Osc. Coil	94C37-75	Channel 5
	RF, Mixer Grid & Osc. Coil	94C37-76	Channel 6
	RF, Mixer Grid & Osc. Coil	94C37-77	Channel 7
	RF, Mixer Grid & Osc. Coil	94C37-78	Channel #8
	RF, Mixer Grid & Osc. Coil	94C37-79	Channel #9
	RF, Mixer Grid & Osc. Coil	94C37-80	Channel #10
	RF, Mixer Grid & Osc. Coil	94C37-81	Channel #11
	RF, Mixer Grid & Osc. Coil	94C37-82	Channel #12
	RF, Mixer Grid & Osc. Coil	94C37-83	Channel #13
	Knob	33C53-9	Channel Selector (with gold inserts) (Maroon)
	Knob	33C53-5	Channel Selector (less inserts) (Maroon)
	Knob	33C53-10	Fine Tuning (Maroon)
	Knob	33C53-11	Off/On Volume (with gold inserts) (Maroon)
	Knob	33C53-7	Off/On Volume (less inserts) (Maroon)
	Knob	33C53-12	Contrast (Maroon)
	Knob	33C53-13	Channel Selector (With gold Inserts) (Ebony)
	Knob	33C53-1	Channel Selector (less inserts) (Ebony)
	Knob	33C53-2	Fine Tuning (Ebony)
	Knob	33C53-15	Off/On Volume (with gold inserts) (Ebony)
	Knob	33C53-3	Off/On Volume (less inserts) (Ebony)
	Knob	33C53-4	Contrast (Ebony)
	Knob	33C53-17G	Channel Selector (with gold inserts) (Brown)
	Knob	33C53-17	Channel Selector (less inserts) (Brown)
	Knob	33C53-18	Fine Tuning (Brown)
	Knob	33C53-19G	Off/On Volume (with gold inserts) (Brown)
	Knob	33C53-19	Off/On Volume (less inserts) (Brown)
	Knob	33C53-20	Contrast
	Knob	33C83-1	Radio Tuning (with gold cap) (Maroon)
	Knob	33D55-36	Tone (Maroon)
	Knob	33C83-2	TV-Radio & Phono (with gold cap) (Maroon)
	Knob	33C83-3	Radio Tuning (with gold cap) (Ebony)
	Knob	33D55-39	Tone (Ebony)
	Knob	33C83-4	TV-Radio & Phono (with gold cap) (Ebony)
	Knob	33C83-7	Radio Tuning (less gold cap) (Brown)
	Knob	33D55-45	Tone (Brown)
	Knob	33C83-8	TV-Radio & Phono (less gold Cap) (Brown)
	Knob Spring	18A43-3	Channel Selector
	Knob Spring	18A43-1	Fine Tuning
	Knob Spring	18A43-2	Off/on Volume
	Felt washer	5A4-14	Channel Selector & Contrast
	Felt washer	5A4-11	Radio Control Knobs
	Back Cover	A3631	Models 47M15, -16, -17
	Window Glass	21B49-19	Less frame, Models 47M15, -16, -17
	Mask	23D116	Plastic Models 47M15, -16, -17
	Back Cover	A3608	Models 321M25, 26, 27, 421M15, 16, 521M15, 16, 17
	Window Glass	21B49-16	Less frame Models 321M25, 26, 27, 421M15, 16, 521M15, 16, 17
	Mask	23D115	Plastic Models 321M25, 26, 27, 421M15, 18, 521M15, 16, 17
	Back Cover	A3696	Models 37M25, 26, 27, 57M16, 17
	Back Cover	A3702	Models 47M15A
	Back Cover	A3695	Models 47M35, 36, 37
	Back Cover	A3424	Models 57M10, 11, 12
	Window Glass	21B49-24	Models 57M10, 11, 12
	Mask	23D122	Metal (Models 57M10, 11, 12)
	Window	23C118-1	Radio Dial (Models 57M10, 11, 12)
	Back Cover	A3695	Models 47M35, 36, 37
	Back VCover	A3696	Models 57M16, 17, 37M25, 26, 27
	Window	21B62-5	Models 47M35, 36, 37, 47M15A
	Window	21B62-1	Models 57M16, 17, 37M25, 26, 27
	Back Cover	A3702	Model 47M15A

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	ADMIRAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C46	.01		†63B6-3	P688-01	†PC-177	PTE6S1	GP2-333-103	PT611	6TM-S1	
C47	.0047	600	64B5-12	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C48	150		‡ 63B6-4	SI150	†PC-178	TM5T15	GP2K-151	UC-5315	5GA-T15	
C49	.047	400	64B5-28	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C50	.022	400	64B5-24	P488-022	DF-203			PT4122	4TM-S22	
C51	.01	400	64B5-25	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C52A	.002		} ◇63B6-2	{ P688-002		PTE6D2	GP2-333-202	PT622	} ◇101C1	
B	.005			{ P688-005	◇PC-100	PTE6D5	GP2-333-502	PT625		
C	.005			P688-005		PTE6D5	GP2-333-502	PT625		
C53	4700	500	65B21-472	1464-005		IDR5D5		MCB465	MS-25	
C54	.1	600	64B5-5	PTE6P1		PTE6P1		PT601	6TM-P1	
C55	.047	600	64B8-9	P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C56	1000	500	65D21-102	1468-001	D6-102	1W5D1	GP2L-102	MC255	1FM-21	
C57	1000	500	65B21-102	1468-001	D6-102	1W5D1	GP2L-102	MC255	1FM-21	
C58	.01	400	64B5-25	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C59	.0047	600	64B9-15	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	Notes 2, 3
C60	.0047	600	64B5-12	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C61	.047	400	64B9-28	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C62	3900	500	05B1-63	1464-004		IDR5D4		MCB463		
C63	330	500	65B21-331	1469-00035						
C64	330	500	65B21-331	1469-00035						
C65	680	500	65B21-681	1479-0007		2R5T7			MS-37	
C66	.047	600	64B5-7	P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C67	.05	200	64A2-8	P288-05		PJ2S5		PT415	2TM-S5	
C68	.02	400	64A2-9	P488-02		PTE4S2		PT412	4TM-S2	
C69	.25	600	64B5-3	684-25		PTE6P25		PT6025	6TM-P25	
C70	.0068	600	64A2-15	P688-0068		PTE6D68			6TM-D68	Note 1
C71	.1	400	64A2-10	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C72	500	20000	65B18-5	HV20C	TV3-502	MM-C20T5	413-501		20DK-T5	
C73	1000		94A45-24	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C74	.001	600	64B0-19	P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C75	5	500	65B1-62							
C76	47		65B6-4	SI47	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C77	.1	400	64B5-20	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C78	.1	200	64B5-30	P288-1	DF-104	PJ2P1		PT401	2TM-P1	
C79	.1	400	46B5-20	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C80	5000		65A10-1	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C81	100		65C6-3	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	Note 1

Note 1. Not used in all models.
Note 2. Used only in chassis 21Y1 after Run 24.
Note 3. Some models may use .0022MFD in this application (Part #64B9- 11)
Note 4. Some models may use .001MFD in this application (Part #64B9-19)
Note 5. Component was 1000MMF (Part #65C6-41) in chassis stamped lower than Run 25.
Note 6. Not used in chassis prior to run 22.
Note 7. In some models C1B may be two 20MFD sections, C1C is separate unit.
(C1 part no. becomes 67C-15-17) (C1C separate unit part no. is 67A21-1)
† Items C46, R54A, R54B, R54C are combined in one unit.
‡ Items C48, R37A, R37B are combined in one unit.
◇ Items C52A, C52B, C52C, R65A, R65B, R65C are combined in one unit.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	ADMIRAL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	25KΩ	½	75B13-13	Q11-120	AG-40-S	AB-26	U-29	Horiz. Hold
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R1A
R2A	100KΩ	½	75B13-12	Q11-128	AG-49-S	AB-40	U-41	Brightness
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R2A
R3A	1Meg	½	75B13-14	Q11-137	AG-61-S	AB-69	U-54	Vert. Hold
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R3A
R4A	3000Ω	½	75B13-7	Q11-112	AG-15-S	AB-8	SU-14	Vert. Linearity
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R4A
R5A	2.5Meg	½	75B13-3	Q11-239	AG-84-S	AB-83-S	SU-565	Height
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R5A
R6A	2Meg	½	75B1-50	PQ11-139	AG-83-S	AB-75	U-56	Tone
B	Shaft		Not Req.	Not Req.	RS-2	AK-8	Not Req.	Attach to R6A
R7A	1500Ω	½	75B11-20	QJ-330*	RTV-327	SBBT-709-S	UF152R UR16T35	Contrast-Panel Volume-Tapped ⓐ 330KΩ-Rear
B	1Meg	½						
C	Switch		Not Req.				US-26	Attach to R7B
R8	750Ω	2	75B13-16	WK-750L				Focus-Wire Wound

* CONCENTRIKIT EQUIVALENT - KIT K-2 BASE ELEMENTS & SHAFTS B17-110 & P1-126 (Panel), B19-137X & R2-212 (Rear) & SWITCH 76-1

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	ADMIRAL PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE NOTED
R0	22KΩ 20%	½	98A45-16		Antenna Coil Shunt
R10	47KΩ 20%	½	98A45-17	BTS-47K	RF Amp. Grid
R11	100KΩ 20%	½	94C37-87	BTS-100K	Voltage Divider
R12	220KΩ 20%	½	98A45-21		RF Amp. Grid
R13	1000Ω	½	94C37-86	BTS-1000	RF Amp. Plate Decoupling
R14	180KΩ	½	98A45-21	BTS-180K	Voltage Divider
R15	4700Ω	½	98A45-20	BTS-4700	Mixer Grid
R16	220KΩ 20%	½	98A45-21		Mixer Grid
R17	15KΩ	½	98A45-67		Mixer Plate
R18	10Ω	½	94C37-88		Parasitic Suppressor
R19	10KΩ	½	98A45-18	BTS-10K	Osc. Grid
R20	10KΩ	½	98A45-18	BTS-10K	Osc. Plate
R21	470Ω	½	60B8-471	BTS-470	Decoupling
R22	1000Ω	½	60B8-102	BTS-1000	AGC Network
R23	5100Ω 5%	½	60B7-512		1st. Video IF Amp. Grid - See Note 7
R24	47Ω	½	60B2B-47		1st. Video IF Amp. Cathode
R25	1000Ω	½	60B8-102	BTS-1000	1st. Video IF Amp. Decoupling
R26	18KΩ	½	60B8-183		2nd. Video IF Coil Shunt
R27	68Ω	½	60B2B-44		2nd. Video IF Amp. Cathode
R28	1000Ω	½	60B8-102	BTS-1000	2nd. Video IF Amp. Decoupling
R29	5100Ω 5%	½	60B7-512		3rd. Video IF Coil Shunt
R30	150Ω	½	60B8-151	BTS-150	3rd. Video IF Amp. Cathode
R31	1000Ω 20%	½	60B8-102	BTS-1000	3rd. Video IF Amp. Decoupling
R32	100KΩ 20%	½	60B8-104	BTS-100K	Series Test Point
R33	4700Ω 5%	½	60B7-472	BTS-4760 5%	Video Det. Load

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	ADMIRAL PART No.	IRC PART No.	IDENTIFICATION CODES
R34	270Ω	½	60B8-271	BTS-270	Video Output Cathode-See Note 8
R35	15KΩ	1	60D14-153	BTA-15K	Video Output Screen
R36	4700Ω	2	60B20-472	BTB-4700	Video Output Plate
R37A	18KΩ	½	} †63B6-4	{ BTS-18K	Isolation
B	270KΩ	½		BTS-270K	Isolation
R38	470KΩ	½	60B8-474	BTS-470K	Video Peaking - See Note 11
R39	560KΩ	½	60B8-564	BTS-560K	Picture Tube Cathode
R40	100KΩ	½	60B8-104	BTS-100K	Picture Tube Grid
R41	22KΩ	½	60B8-223	BTS-22K	ACC, Anode Load - See Note 1
R42	150KΩ	½	60B8-154	BTS-150K	AGC Network
R43	270KΩ	½	60B8-274	BTS-270K	Keyed AGC Grid - See Note 5
R44	6800Ω	½	60B8-682	BTS-6800	Isolation
R45	470KΩ	½	60B8-474	BTS-470K	Sound IF Amp. Grid
R46	82Ω	½	60B28-31	BTS-82Ω	Sound IF Amp. Cathode
R47	1000Ω	½	60B8-102	BTS-1000	Sound IF Amp. Cathode
R46	390Ω	½	60B8-391	BTS-390	Balancing
R49	47KΩ	½	60B8-473	BTS-47K	De-emphasis
R50	10KΩ 5%	½	60B7-103	BTS-10K 5%	Ratio Det. Diode Load
R51	10KΩ 5%	½	60B7-103	BTS-10K 5%	Ratio Det. Diode Load
R52	4.7Meg	½	60B8-475	BTS-4.7Meg	AF Amp. Grid
R53	82KΩ	½	60B8-823	BTS-82K	Tone Compensation
R54A	150KΩ	½		{ BTS-150K	AF Amp. Plate
B	47KΩ	½	} †63B6-3	BTS-47K	AF Amp. Plate Decoupling
C	1Meg	½		BTS-1Meg	Output Grid
R55	330Ω	1	60B14-331	BTA-330	Output Cathode
R56	2.2Meg	½	60B8-225	BTS-2.2Meg	Sync Separator Grid
R57	33KΩ	2	60D20-333	BTB-33K	Sync Separator Plate - See Note 6
R58	18KΩ	1	60B14-183	BTA-18K	Voltage Divider
R59	2.2Meg	½	60B8-225	BTS-2.2Meg	Sync Clipper Grid
R60	27KΩ	2	60B20-273	BTB-27K	Sync Clipper Plate
R61	8.2Meg	½	60B8-825	BTS-8.2Meg	Sync Phase Inv. Grid
R62	1000Ω	½	60B8-102	BTS-1000	Sync Phase Inv. Cathode
R63	2200Ω	½	60B8-222	BTS-2200	Sync Phase Inv. Cathode
R64	2200Ω	½	60B8-222	BTS-2200	Sync Phase Inv. Plate
R65A	22KΩ	½		{ BTS-22K	Integrator Network
B	8200Ω	½	} ◇63B6-2	BTS-8200	Integrator Network
C	8200Ω	½		BTS-8200	Integrator Network
R66	150KΩ	½	60B8-154	BTS-150K	Vert. Osc. Grid
R67	1.2Meg	½	60B8-125	BTS-1.2Meg	Vert. Osc. Grid
R68	1Meg	½	60B8-105	BTS-1Meg	Vert. Osc. Plate
R69	10KΩ 5%	½	60B7-103	BTS-10K 5%	Vert. Peaking - See Note 10
R70	1Meg	½	60B8-105	BTS-1Meg	Vert. Output Grid
R71	820Ω	2	60B8-821	BTS-820	Vert. Output Cathode
R72	820Ω	2	60B20-821	BTB-820	Vert. Output Decoupling
R73	100KΩ 5%	½	60B7-104	BTS-100K 5%	Horiz. AFC Diode Load
R74	100KΩ 5%	½	60B7-104	BTS-100K 5%	Horiz. AFC Diode Load
R75	4.7Meg	½	60B8-475	BTS-4.7Meg	Horiz. AFC Diode Load
R76	470KΩ	½	60B8-474	BTS-470K	Horiz. AFC Filter
R77	12KΩ	2	60B20-123	BTB-12K	Horiz. Feedback
R78	5600Ω	½	60B8-562	BTS-5600	Horiz. MV Plate
R79	1500Ω	½	60B8-152	BTS-1500	Horiz. MV Cathode
R80	120KΩ	½	60B8-124	BTS-120K	Horiz. MV Grid
R81	150KΩ	½	60B8-154	BTS-150K	Horiz. MV Plate
R82	8200Ω	1	60B14-822	BTA-8200	Horiz. MV Decoupling
R83	8200Ω	½	60B8-822	BTS-8200	Horiz. Peaking
R84	68Ω	½	60B28-44		Parasitic Suppressor
R85	1Meg	½	60B8-105	BTS-1Meg	Horiz. Output Grid - See Note 3
R86	47Ω	1	60B28-45	BW-1-47	Horiz. Output Cathode
R87	82Ω	½	60B28-31		Parasitic Suppressor
R88	6800Ω	2	60B20-682	BTB-6800	Horiz. Output Screen
R89	3300Ω	2	60B20-332	BTB-3300	Horiz. Output Screen - See Note 2
R90	680Ω	2	60B20-681	BTB-680	Anti-ringing Coil Shunt
R91	2.7Ω	½	60B28-47		HV Rectifier Filament
R92	470KΩ	1	60B28-43		HV Filter
R93	3000Ω	15	61A3-14	2D-3000	Decoupling - Wire Wound
R94	7500Ω	5	61A1-18	1 3/4A-7500	Decoupling - Wire Wound
R95	150KΩ	½	60B8-154	BTS-150K	AGC Network
R96	270KΩ	1	60B14-274	BTA-270K	Line Isolation - See Note 1
R97	1000Ω	½	60B8-102	BTS-1000	AGC Network - See Note 4
R98	4700Ω	½	60B8-472	BTS-4700	Video Peaking Coil Shunt - See Note 9
R99	4.7Ω	½			Series Dial Light - See Note 12
R100	5300Ω	5	61A3-16	1 3/4A-5000	Decoupling - Wire Wound
R101	22KΩ	½	60B8-223	BTS-22K	Osc. Grid
R102	10KΩ	1	60B14-103	BTA-10K	Osc. Anode
R103	150Ω	½	60B8-151	BTS-150	IF Amp. Cathode
R104	27KΩ	1	60B14-273	BTA-27K	IF Amp. Screen
R105	1Meg	½	60B8-105	BTS-1Meg	AVC Network

Note 1. Not used in all models.
Note 2. Used only when V17 is a 6CD6G, R88 is changed to 3300Ω (2Watt).
Note 3. Chassis 21Y1 stamped lower than Run 21 use a 470KΩ resistor in this application
Note 4. Used only in chassis stamped lower than Run 25
Note 5. Chassis stamped lower than Run 25 use a 220KΩ resistor in this application
Note 6. Chassis stamped lower than Run 25 use a 39KΩ resistor in this application
Note 7. Early production models use a 10KΩ resistor in this application (part #60B7-103)
Note 8. Early production models use a 470Ω resistor in this application (part #60B8-471)
Note 9. Not used in chassis stamped lower than Run 22
Note 10. Models using a 17" picture tube use a 8200Ω resistor in this application.
Note 11. Early production models use a 560KΩ resistor in this application
Note 12. Used only in chassis 21Z1A
† Items R37A, R37B & C48 are combined in one unit.
† Items R54A, R54B, R54C & C46 are combined in one unit.
◇ Items R65A, R65B, R65C, C52A, C52B, C52C are combined in one unit.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	ADMIRAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC ⓐ 1.85A	580VCT .225ADC	5VAC ⓐ 3A	6.3VAC ⓐ 9A	80C26-1	P-8164	P-3077	TP-225	R-39BC ①

① Drill new mtg. holes

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	ADMIRAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T2	190Ω	1060Ω	7TA10-4	A-8125	A-3000 ①	TBO-2 ②	A-97X ①	Vert. Osc. Trans.
T3	355Ω	3.6Ω	79C30-4	A-8134	HVO-7 ①			Horiz. Output Trans.
	Tap ⓐ 35Ω							
		SEC. 2 1.4Ω						
		SEC. 3 0Ω						
T4	1390Ω	10.2Ω	79B39-1	A-8112 ①	A-3036 ①	TSO-5 ①	A-99X ①	Vert. Output Trans.
T5A	16Ω		79B40-1 ③					
B	47Ω		94C30-3	Dy-8	MDF-70	TY-2	Y-17	Horiz. Deflection Coils
T6	270Ω		94C30-1 ④					Vert. Deflection Coils
	Tap ⓐ 90Ω		69C117-9					Focus Coil
			69C117-3 ⑤					

① Drill new mtg. holes
② Mount on top of chassis.
③ Alternate Vert. Output Trans.
④ Alternate deflection yoke used with 17" and 20" picture tubes which mount on chassis.
⑤ Alternate focus coil used in Chassis 21Y1, 21Z1, 21Z1A

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	ADMIRAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T7	5KΩ	3.5Ω	275Ω	.5Ω	79C33-2	A-3877 ①	A-3019 ①	RO-9	S-5X ①	① Drill one new mtg. hole.

SPEAKER

ITEM No.	RATINGS SIZE	RATINGS FIELD	RATINGS V. C. IMP.	ADMIRAL PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	10"	PM	3.5Ω	78B47-2	ST-119 Mod. P10-T	10A4A	

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	ADMIRAL PART No.	MERIT PART No.	NOTES
L1	Ant. Coil	0Ω		94C37-52		Channel #2
L2	RF Choke	0Ω		94C37-89		
L3	Fil. Choke	0Ω		98A45-13		
L4	RF, Mixer Grid & Osc. Coils	0Ω		94C37-72		Channel #2
L5	Fil. Choke	0Ω		98A-45-14		
L6	1st. Video IF	.8Ω		08A-45-77		
L7	Fil. Choke	0Ω		73A2-5		
L8	Adj. Channel Sound Trap	0Ω		72A102		
L9	Fil. Choke	0Ω		73A2-5		
L10	2nd. Video IF	.4Ω	.4Ω	72C96-14		
L11	3rd. Video IF	.4Ω	.4Ω	72C96-14		
L12	4th. Video IF	.4Ω	.4Ω	72C96-14		
L13	Peaking Coil	6.4Ω		73A5-14	*TV-185	Blue Dot, 250 Microhenries, Wound on 18KΩ resistor, Chassis stamped lower than Run 22 Use coil part #73A5-13, white dot, wound on 33KΩ resistor
L14	Peaking Coil	22.2Ω		73A11-1	†TV-188	Wound on 10KΩ resistor, Chassis stamped lower than Run 22. Use Coil part #73A5-9
L15	Peaking Coil	5.3Ω		73A5-15	◇TV-181	Wound on 4.7KΩ resistor, 4.7KΩ resistor was not used in early sets.
L16	Peaking Coil	17Ω		73A5-7	TV-186	500 Microhenries
L17	4.5MC Trap	4.8Ω		72B99-3	TV-151	Includes C28, not used in chassis stamped lower than Run 22
L18	Sound IF	6.2Ω		72B99-4	TV-151	
L19	Ratio Det.	3.6Ω	.3ΩCT	72B68	TV-110	Tertiary Winding .6Ω
L20	Horiz. Osc.	58Ω		94A17	TV-163	Includes R78 and C62
L21	Width Coil	10Ω		94A39-1		Early sets used 2 terminal coil part #04A29-1
L22	Horiz. Lin.	12.5Ω		94A29		Tap ⓐ 7.5Ω
L23	Plate Choke			72B8-2		Used only in chassis 21Y1 stamped Run 24 or higher
L24	Loop Ant.	.2Ω		69C152-1		
L25	Osc. Coil	6Ω		69A52-1		Tap ⓐ .8Ω
L26	Input IF	20Ω	20Ω	72B28-7	BC-352	
L27	Output IF	20Ω	20Ω	72B28-7	BC-353	

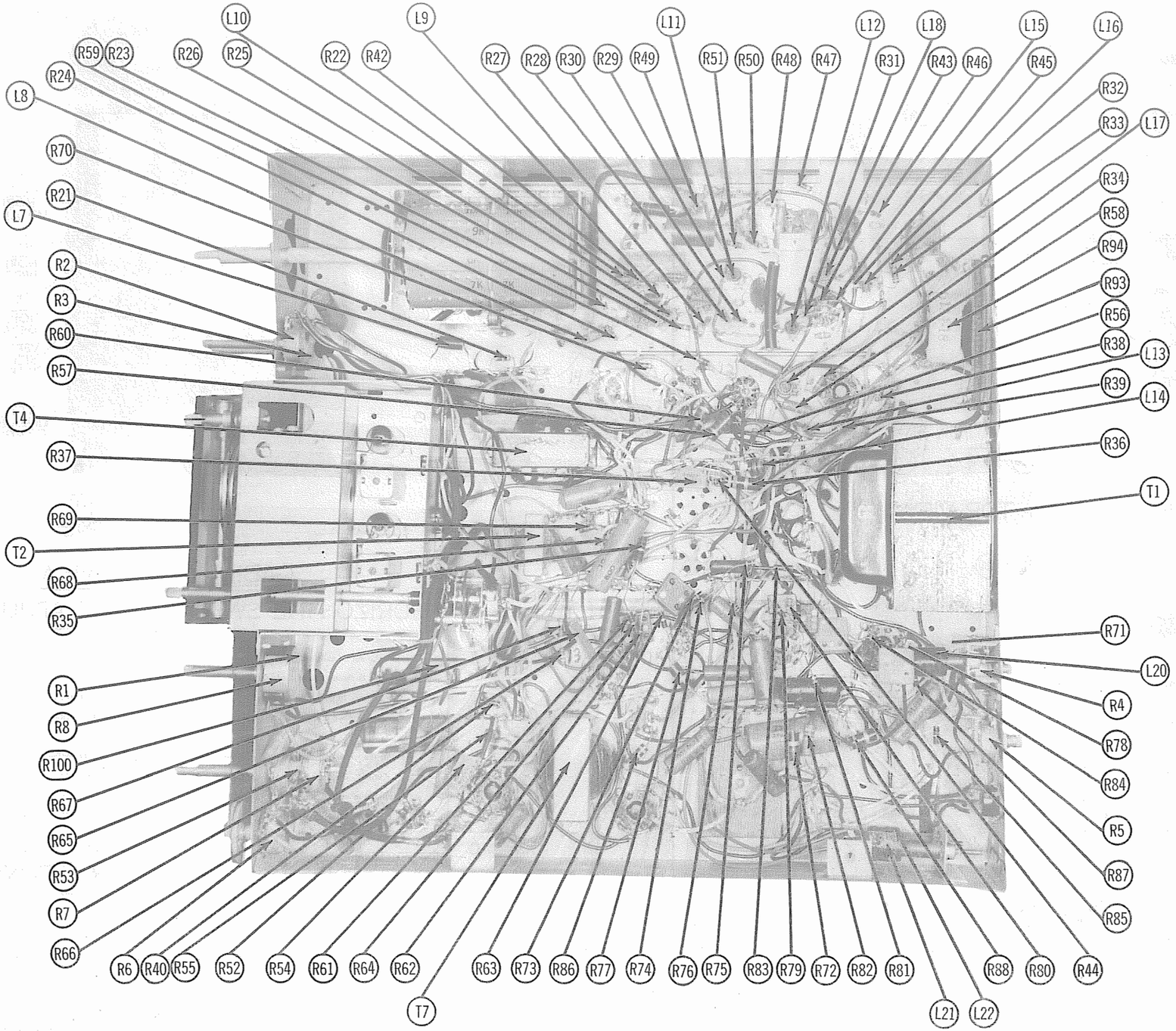
* Parallel with 18KΩ resistor
◇ Parallel with 4.7KΩ resistor
† Parallel with 10KΩ resistor

FUSES

ITEM No.	TYPE	RATING	ADMIRAL PART No. FUSE	ADMIRAL PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M1	8AG	1/4 A. 250V.	84A4-2	84A5-1	362.250	387001	AGX 1/4	4520

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	ADMIRAL PART No.	NOTES
M2	Bayonet	6-8	.15	Brown	81A1-8	Type #47
M3	Bayonet	6-8	.15	Brown	81A1-8	Type #47



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Remove the converter tube, V2, and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	25.3MC (Unmod.)	Any	DC probe to point (A). Common to chassis.	A1, A2	Adjust for maximum deflection.
2.	"	"	23.1MC	"	"	A3, A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the negative lead of a 3 volt battery to the ungrounded side of C22. Connect the positive lead to chassis.
Connect the synchronized sweep voltage from the signal 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
3.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	24MC (10MC Swp)	21.25MC 22.MC 24.3MC 25.75MC	Any	Vert. amp. to point (A). Low side to chassis.		Check for response curve similar to fig.1 If necessary retouch A1 thru A4 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Set contrast control fully clockwise.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	.01MFD	High side to point (A). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to point (B). Common to chassis.	A5, A6	Adjust for maximum deflection.
5.	"	"	"		DC probe to point (C). 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.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	.01MFD	High side to point (A). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. amp. to point (B). Low side to chassis.	A5, A6	Disconnect stabilizer capacitor C4. Adjust for curve of maximum amplitude and symmetry as per fig. 2.
5.	"	"	"	"	"	Vert. amp. to point (C). Low side to chassis.	A7	Reconnect capacitor C4. Adjust so that 4.5MC occurs at center of crossover lines as per fig. 3. SLIGHTLY retouch A5 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
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 A8. It should be noted that this is an all channel oscillator circuit adjustment and should not be used to correct for any individual channel. If adjustment of A8 will not bring all channels well within the range of the fine tuning control it will be necessary to adjust the channel strip adjustment for each channel that is off frequency.
The channel adjustment 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.
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
6.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. amp. to point (A). Low side to chassis.	A9	Adjust to place sound and Video markers as in fig. 4. Video marker should be at 50%.
			207 MC (10MC Swp)	205.25MC 209.75MC	12		A10	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A11	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A12	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A13	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A14	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A15	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A16	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A17	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A18	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A19	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A20	

TV ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT

Connect 3 volt bias battery as under "Overall Video IF Response Check".

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to point (D). Low side to chassis.	A21, A22, A23.	Adjust for response curve similar to fig. 5. with markers above 90%.
8.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check all channels for response similar to fig. 5. If markers fall below 70% on any channel make slight compromise adjustments of A21, A22, A23 with channel switch set for that channel. Recheck all channels to see that they have not been seriously affected.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75 MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC.	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

4.5MC TRAP ADJUSTMENT

Tune in a TV station and adjust the fine tuning control to the point where a 4.5 MC beat pattern is just visible in the picture.
Adjust A24 for MINIMUM 4.5MC pattern.

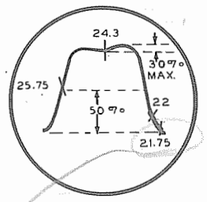


FIG.1

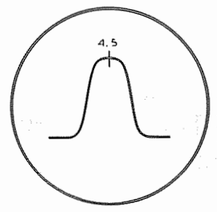


FIG. 2

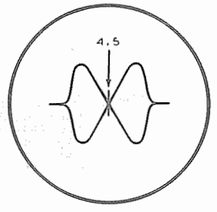


FIG. 3

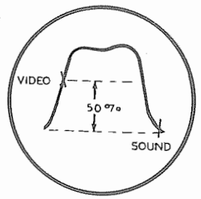


FIG.4

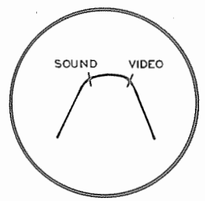


FIG. 5

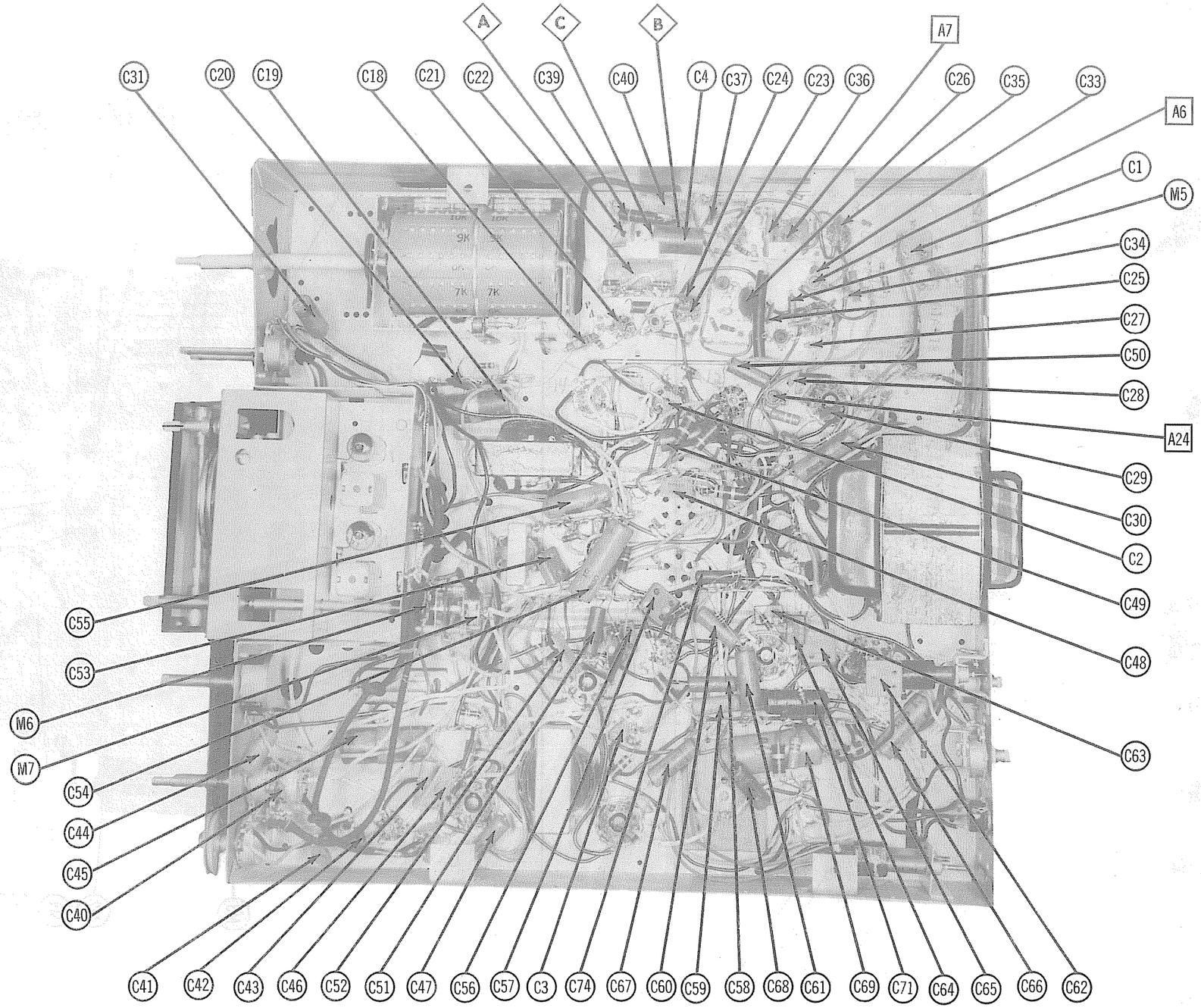
2.25 corrected in re-print

RADIO ALIGNMENT INSTRUCTIONS

RADIO ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.
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 screw-driver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
9.	.01MFD	High side to stator plates of rear section of tuning gang. Low side to chassis.	455KC (400%Mod.)	AM	Tuning gang fully open	Across voice coil	A25, A26 A27, A28	Adjust for maximum output.
10.	"	"	1620 KC	"	"	"	A29	"
11.		Loop	1400 KC	"	Tune to 1400KC signal	"	A30	"



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION