

CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Set the Horizontal Hold to the center of its range. Proper adjustment is indicated when it is possible to switch from one channel to another without the picture losing sync.

Tune in a TV station and adjust the Horizontal Frequency Slug (B1) until the picture synchronizes horizontally.

DISASSEMBLY INSTRUCTIONS

- CHASSIS REMOVAL**

 1. Remove knobs from front. Remove rear cover (9 screws).
 2. Remove 2 bolts from bottom holding chassis, and 1 holding chassis bracket at top.
 3. Unplug yoke, picture tube socket, and speaker. Remove H. V. anode lead and ground wire to picture tube strap.
- 4. Remove chassis.**

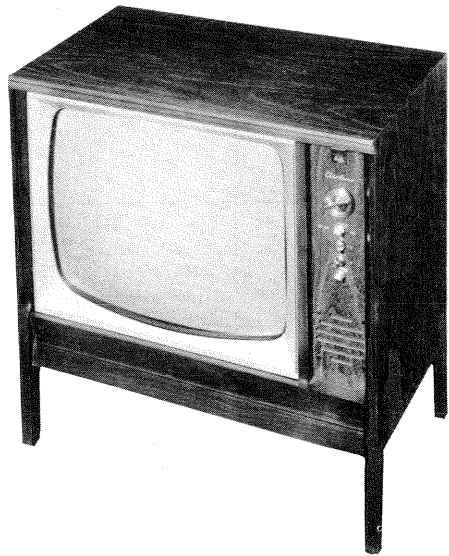
PICTURE TUBE REMOVAL

It is necessary to remove chassis to remove picture tube.

SET 609 FOLDER 1

PHOTOFACT® Folder

AIRLINE MODELS WG-5221/22/25
/27/31/32/36/40/46/77/78/79/5321
/22/25/27/31/32/36/40/46/77/78/79



MODEL WG-5277A

CAUTION
ONE SIDE OF AC LINE CONNECTED TO CHASSIS

TRADE NAME	AIRLINE	MODELS	CHASSIS
		WG-5221A, B/22A/25A/27A, B/31A, B/32A/36A, B/40A, B/46A, B/77A/78A/79A ...	23S15
		WG-5321A, B/22A/25A/27A, B/31A, B/32A/36A, B/40A, B/46A, B/77A/78A/79A ...	23S15U
		VHF Tuner ... 25A1213, With UHF Switch ... 2A523	
		VHF Tuner ... 25A1230-2, With UHF Switch ... 2A553	UHF Tuner ... 25A1193-1
SUPPLIER	Montgomery Ward & Co., 619 Chicago Avenue, Chicago 7, Illinois		
TYPE SET	Television Receiver		
TUBES	VHF - Fourteen, UHF - Fifteen		
POWER SUPPLY	110-120 Volts AC, 60 Cycle		
TUNING RANGE	Channel 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)		
		RATING	125 Watts, 1.2 Amp. @ 117 Volts AC

SERVICING IN THE FIELD

SAFETY GLASS REMOVAL

For picture tube and safety glass cleaning, it is necessary to remove the chassis. (See "Disassembly Instructions".)

FUSE OR FUSE DEVICE

A 4.7Ω fusible resistor (R56) is used for low voltage power supply protection. (For location, see "Chassis-Top View".)

TUNER OSCILLATOR ADJUSTMENT

To touch up the VHF Oscillator, remove Channel Selector and Fine Tuning knobs.

AGC

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

FOCUS

The focus may be varied by the position of a strap on the base of the picture tube.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Coarse adjustment of the Horizontal Hold is accomplished by the proper setting of the Horizontal Frequency. (For location, see "Tube Placement Chart".)

BUZZ ADJUSTMENT

To eliminate intercarrier buzz, adjust the Buzz control for MINIMUM buzz and maximum sound. (For location, see "Tube Placement Chart".)

CENTERING

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

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

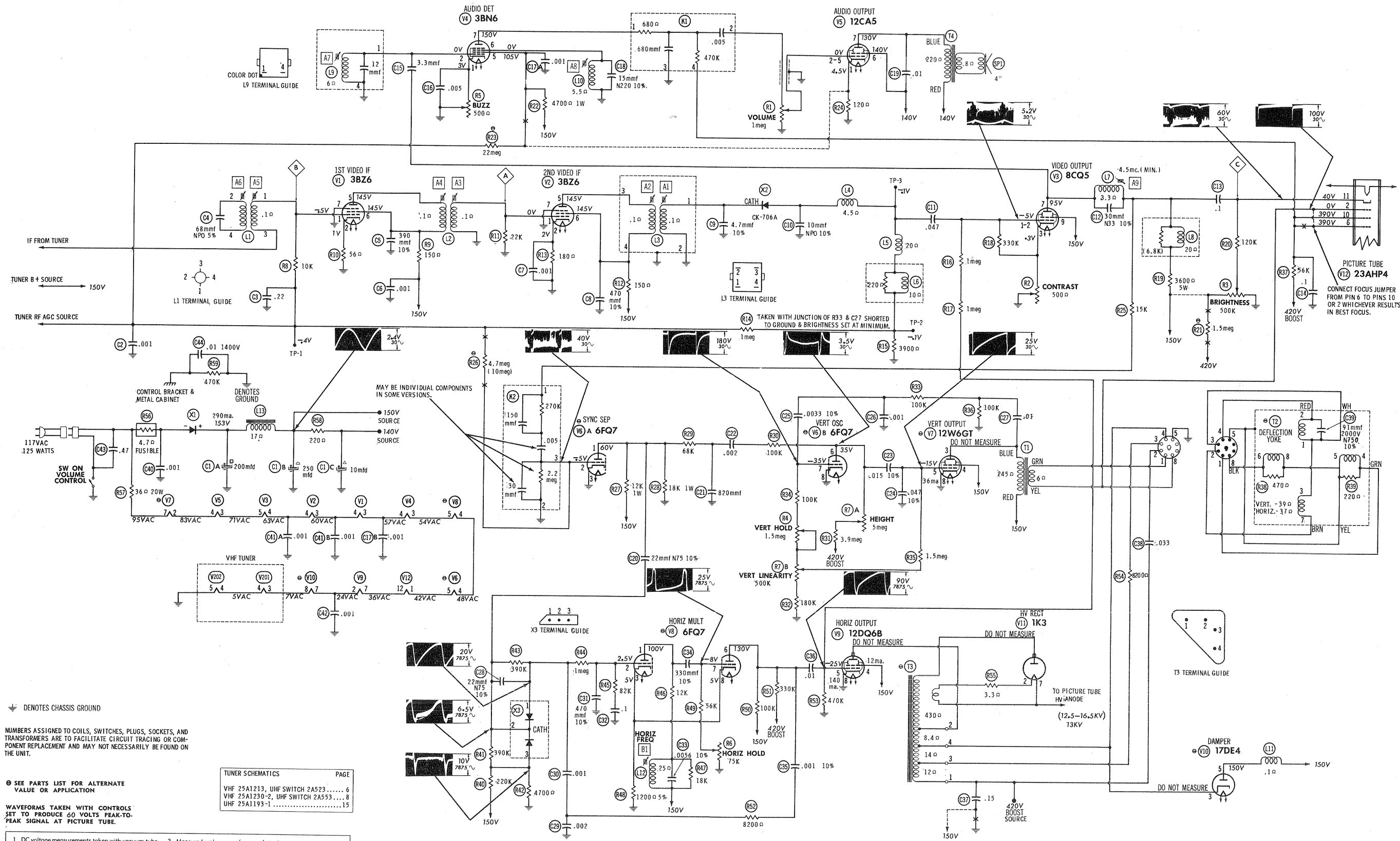


The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of LA721

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AIRLINE MODELS WG-5221/22/25
/27/31/32/36/40/46/77/78/79/5321
/22/25/27/31/32/36/40/46/77/78/79

SET 609 FOLDER 1



⏏ DENOTES CHASSIS GROUND

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

⊙ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 60 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE.

TUNER SCHEMATICS	PAGE
VHF 25A1213, UHF SWITCH 2A523.....	6
VHF 25A1230-2, UHF SWITCH 2A553.....	8
UHF 25A1193-1.....	15

A PHOTOFAC STANDARD NOTATION SCHEMATIC
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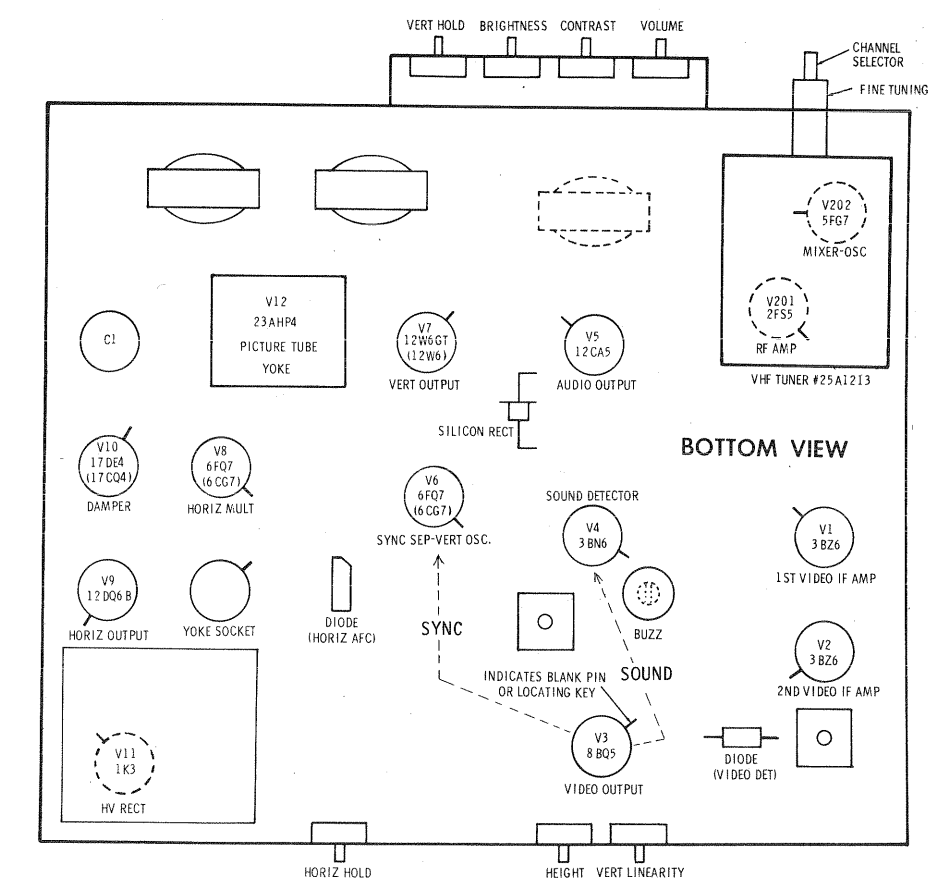
AIRLINE MODELS WG-5221/22/25/27/31/32/36/40/46/77/78/79
/5321/22/25/27/31/32/36/40/46/77/78/79

FOLDER 1

RESISTANCE MEASUREMENTS

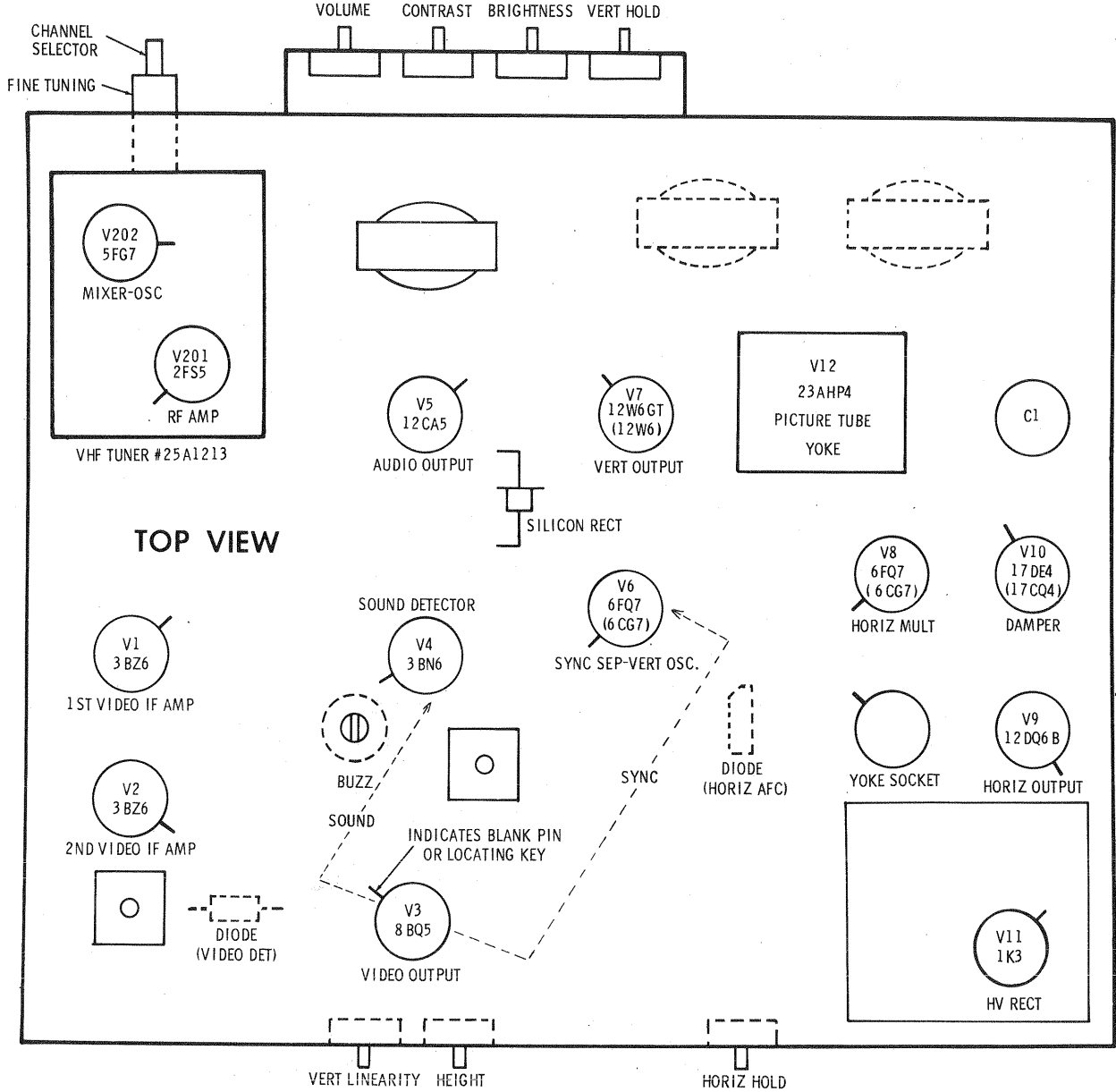
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	3BZ6	990K	56Ω	13.5Ω	15Ω	†160Ω	†160Ω	0Ω		
V2	3BZ6	.1Ω	180Ω	15Ω	16Ω	†160Ω	†160Ω	0Ω		
V3	8BQ5	NC	330K	3Ω	16Ω	17.5Ω	NC	†3600Ω	NC	†17Ω
V4	3BN6	1Ω	6Ω	12.5Ω	13.5Ω	†4700Ω	5.5Ω	†500K		
V5	12CA5	120Ω	NC	17.5Ω	20Ω	800K	†237Ω	†457Ω		
V6	6FQ7	†12K	1.6meg	0Ω	10.5Ω	0Ω	7meg	1.2meg	0Ω	TP
V7	12W6GT	TP	20Ω	†262Ω	†17Ω	2.5meg	TP	23Ω	0Ω	
V8	6FQ7	†12K	1.5meg	1200Ω	10.5Ω	12.5Ω	†100K	60K	1200Ω	TP
V9	12DQ6B	TP	5Ω	NC	†17Ω	470K	NC	7.5Ω	0Ω	TOP CAP
V10	17DE4	TP	NC	400K	NC	†17Ω	NC	5Ω	1.7Ω	†8.4Ω
V11	1K3	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP
V12	23AHP4	7.5Ω	11Ω				†56K	Pin 10	Pin 11	Pin 12
							†56K	†56K	†510K	9Ω
*V201	2FS5	890K	0Ω	1.7Ω	1Ω	†120Ω	†120Ω	0Ω		
*V202	5FG7	15K	†10K	0Ω	1Ω	0Ω	†2200Ω	†50K	0Ω	220K

† THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM OUTPUT OF X1.
† MEASURED FROM PIN 3 OF V10.
NC NO CONNECTION
TP TIE POINT
* VHF TUNER 25A1213



TUBE PLACEMENT CHART

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

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

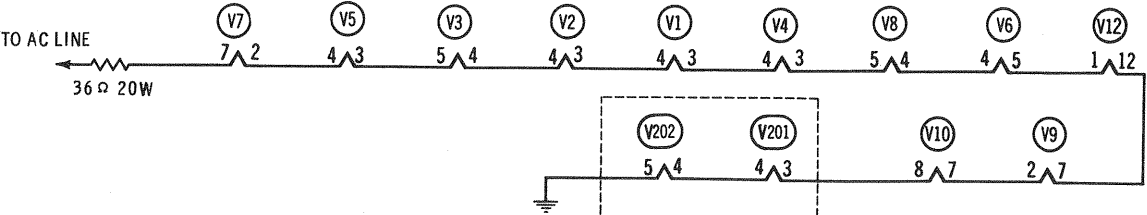
POWER SUPPLY FAILURE
No raster, no sound Fusible Resistor R56, Selenium Rectifier X1

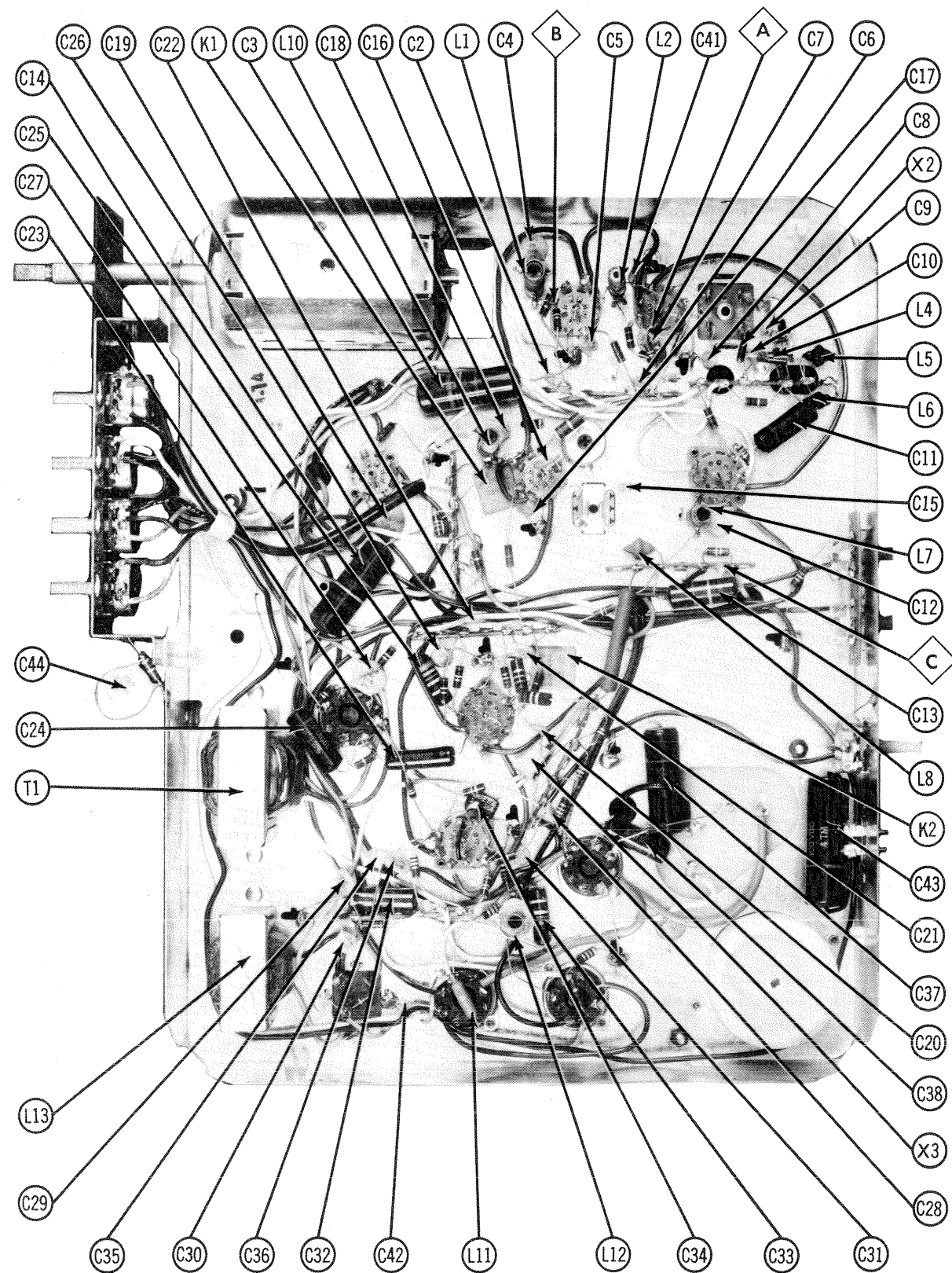
SWEEP FAILURE
No raster, has sound V8, V9, V10, V11, V12
No vertical deflection V8, V7
Poor vert. linearity or foldover V6, V7
Poor horiz. linearity or foldover V8, V9, V10
Narrow picture V8, V9, V10, X1
Vert. off freq. V6, V7
Horiz. off freq. AFC Diode X3, V8

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, Video Det. X2, V3
No pic, no sound, has snow V201, V202, V1
No pic, has sound, has raster V3, V12
Has pic, no sound V4, V5

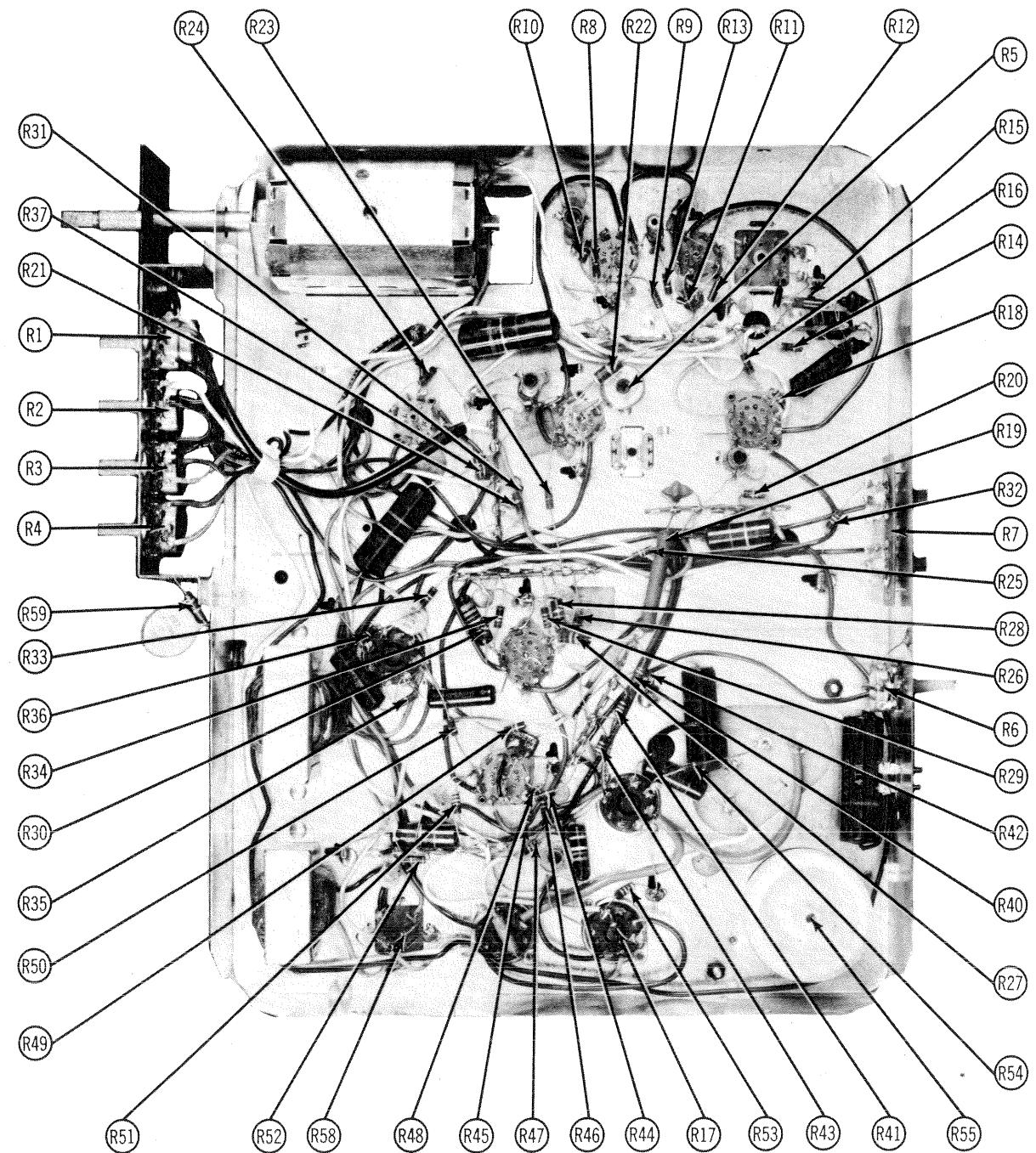
SYNC FAILURE
No vert. sync V8
No horiz. sync V6
No vert. or horiz. sync V8

This receiver employs tubes used in a series filament network, an open filament in any tube will cause the set to be inoperative. (See circuit below.)

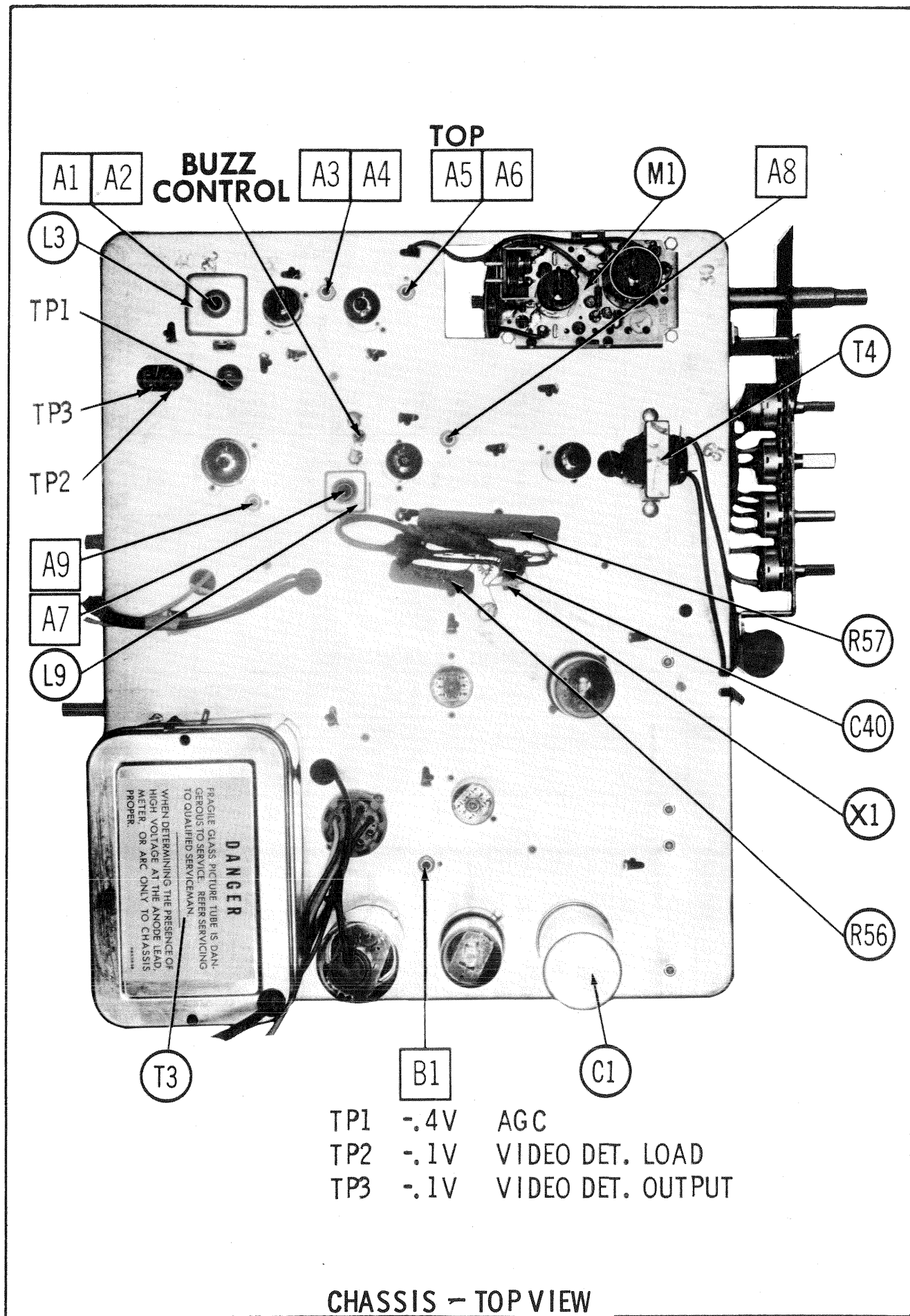




CHASSIS BOTTOM VIEW — CAPACITOR, INDUCTOR, ALIGN. IDENT.



CHASSIS BOTTOM VIEW — RESISTOR IDENT.



ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

USE AN ISOLATION TRANSFORMER TO PROTECT THE TEST EQUIPMENT.
The High Voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: A1 thru A9 GENERAL CEMENT #8282, 8606, 8606L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545

VIDEO IF ALIGNMENT

Use only enough generator output to provide a usable indication.
Disable oscillator grid by removing a pin of a test tube.
Connect the negative lead of a 3 volt bias supply to TP-1. Positive to chassis.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	High side to Point \diamond . Low side to chassis.	44MC (10MC Sweep)	42.4MC 45.75MC	Any non-interfering channel	Vert. Amp. to TP-3. Low side to chassis.	A1, A2	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. A1 controls symmetry of curve and A2 controls marker position.
2.	High side to Point \diamond . Low side to chassis.	"	42.4MC 43.5MC 44.5MC 45.75MC	"	"	A3, A4	Adjust for maximum gain and symmetry of response similar to Fig. 2 with markers as shown.
3.	High side to ungrounded tube shield over Mixer-Osc. Low side to chassis.	"	41.25MC 42.4MC 43.5MC 44.5MC 45.75MC	"	"	A5, A6, Mixer Plate Coil	Adjust for maximum gain and symmetry of response similar to Fig. 3 with markers as shown. A6 places 41.25MC marker in trap notch.

SOUND IF ALIGNMENT

Tune in a strong TV station and disconnect antenna to reduce signal until a hiss is heard in the sound.
Adjust A7 and A8 for maximum undistorted sound. Adjust Buzz Control(R5) for maximum sound with MINIMUM hiss.

4.5MC TRAP ALIGNMENT

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	High side to TP-3. Low side to chassis.	4.5MC (Unmod.)	Any non-interfering channel	AC Probe to Point \diamond . Common to chassis.	A9	Adjust for MINIMUM deflection.

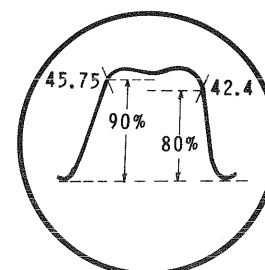


FIG. 1

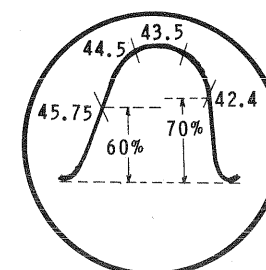


FIG. 2

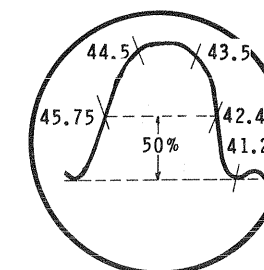
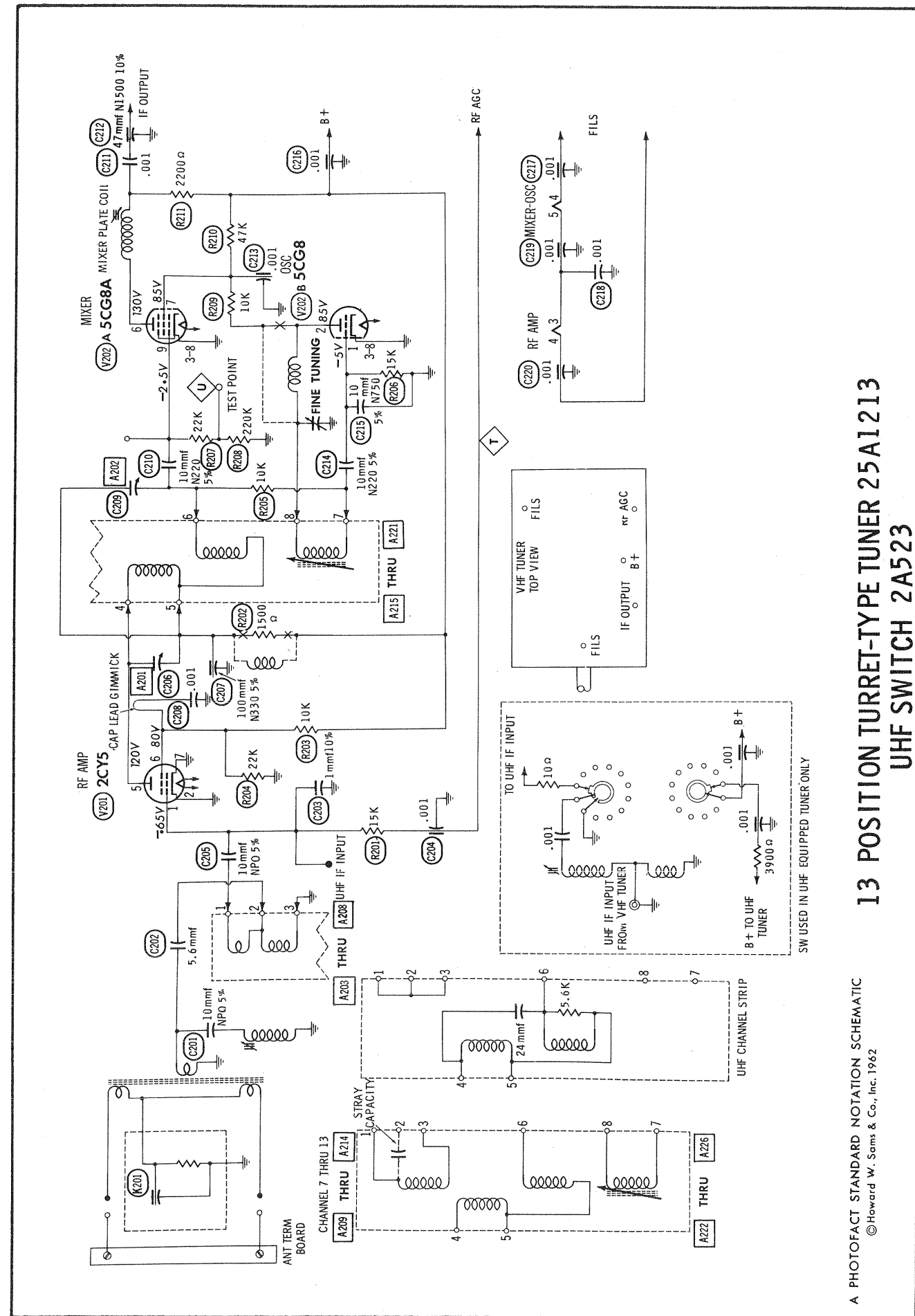


FIG. 3

AIRLINE MODELS WG-5221/22/25
/27/31/32/36/40/46/77/78/79/5321
/22/25/27/31/32/36/40/46/77/78/79

FOLDER 1



PARTS LIST AND DESCRIPTIONS-VHF TUNER 25A1213

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V201	RF Amp.	2CY5	V202	Mixer - Osc.	5CG8

FIXED CAPACITORS

ITEM No.	RATING		REMARKS	REPLACEMENT DATA						
				AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.	
C201	10	NPO 5%	#2101-569	NPO-DI 10	DTZ-10	C10QC	CCTO-100	CNO-410	10TCC-Q10	
C202	5.6									10TCC-V56
C203	1mmf	10%			NPO-SI 1.0	TCZ-1			CNO-510	10TCC-V10
C204	.001				EF-001	MFT-1000			CT280A	
C205	10	NPO 5%	#273-101	NPO-DI 10	DTZ-10	C10QC	CCTO-100	CNO-410	10TCC-Q10	
C206										
C207	100	N3300 5%			BPD-001	DD-102	BYA10DI	CCD-102	B-210	5HK-D10
C208	.001									
C209			#227-100							
C210	10	N220 5%			BPD-001	DD-102	BYA10DI	CCD-102	B-210	10TCR-Q10
C211	.001									5HK-D10
C212	47	N1500 10%								
C213	.001		#267-470	EF-001	MFT-1000		CCF-102	CT280A		
C214	10	N220 5%								
C215	10	N750 5%								
C216	.001									
C217	.001		#227-100	N750-DI 10	N750-DI 10	C10QU	CCTN-100	CN7-410	10TCR-Q10	
C218	.001				EF-001	MFT-1000		CCF-102	CT280A	10TCU-Q10
C219	.001				EF-001	MFT-1000		CCF-102	CT280A	
C220	.001				EF-001	MFT-1000		CCF-102	CT280A	

Sarkes Tarzian Part Number

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

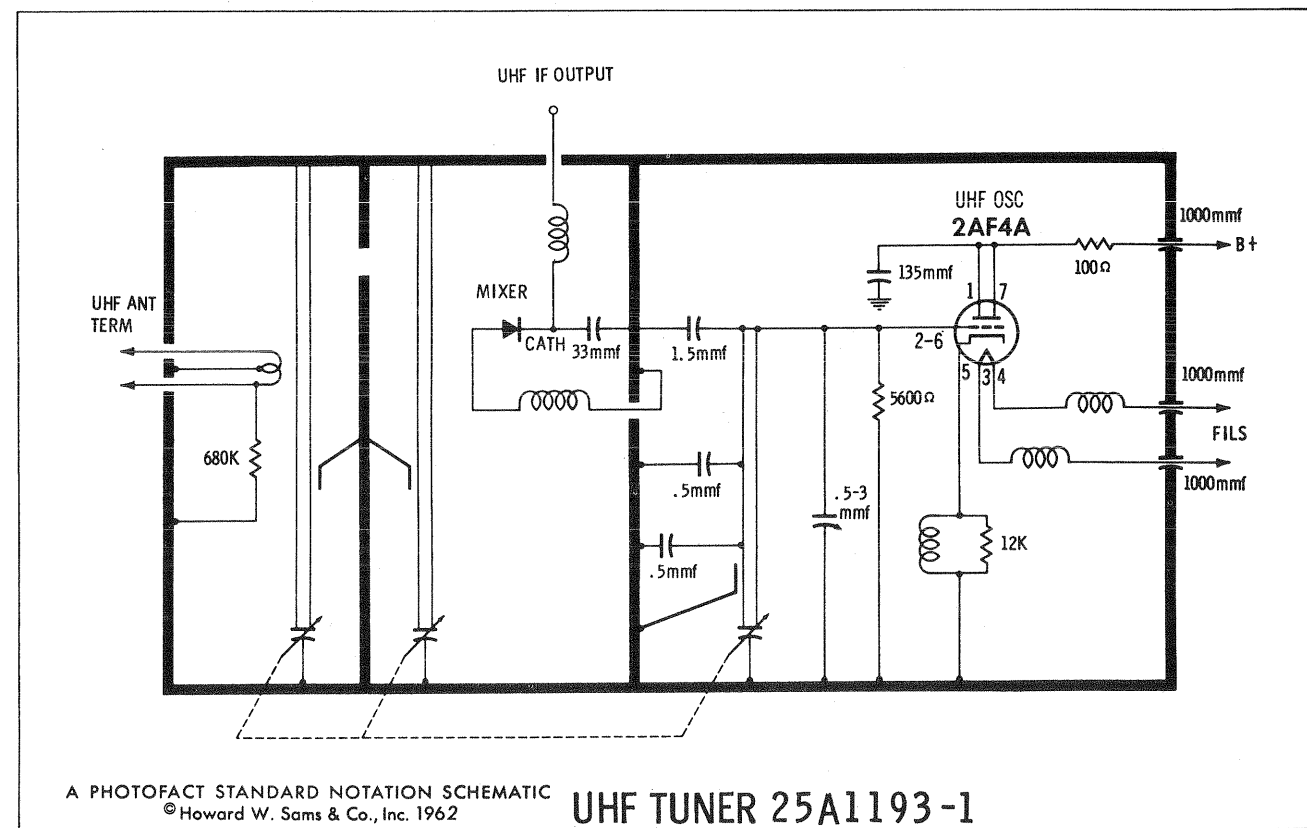
RESISTORS

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

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R201	15K				R207	22K			
R202	1500Ω				R208	220K			
R203	10K				R209	10K			
R204	22K				R210	47K			
R205	10K				R211	2200Ω			
R206	15K								

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	PART No.	REPLACEMENT DATA
K201	Antenna Filter		330-1 *	* Sarkes Tarzian Part Number



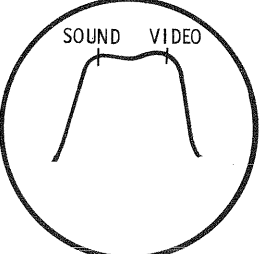
ALIGNMENT INSTRUCTIONS
VHF TUNER 25A1213

PRE-ALIGNMENT INSTRUCTIONS

USE AN ISOLATION TRANSFORMER TO PROTECT THE TEST EQUIPMENT
The High Voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested alignment tools: A201, A202 GENERAL CEMENT #5000, 5003, 5014, 5015, 5016, 8276, 8290
WALSCO #2512, 2515, 2522, 2523, 2525, 2537
A203 thru A214 None Required
A215 thru A226 GENERAL CEMENT #8282
WALSCO #2526

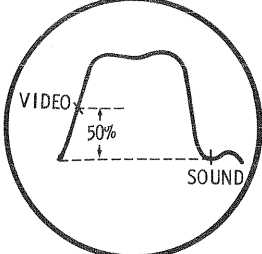
VHF RF AND MIXER ALIGNMENT

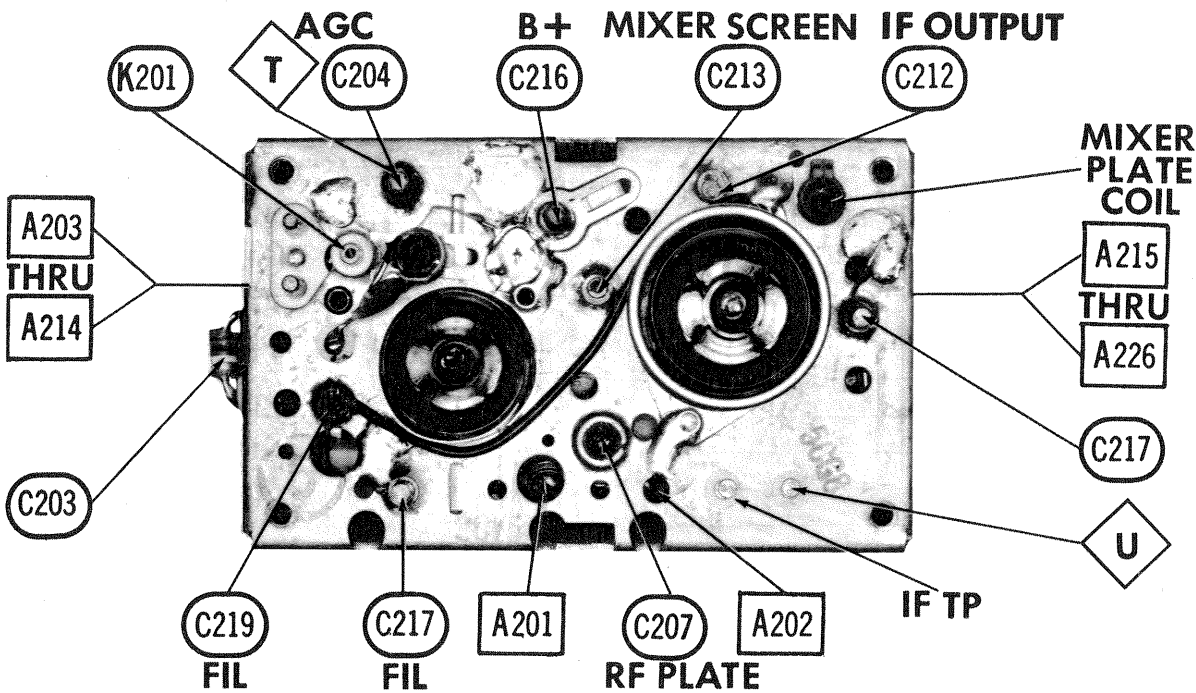
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Connect the negative lead of a 2.5 volt bias supply to point \diamond . Positive to chassis.
Use only enough sweep generator output to provide a usable pattern on scope.
Use 10MC unless otherwise noted.
Coils not containing adjustable cores are adjusted by expanding or compressing coil turns.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1. Two 120 Ω Carbon Resistors	Across antenna terminals with 120 Ω in each lead.	195MC	193. 25MC 197. 75MC	10	Vert. Amp. thru 10K to point \diamond . Low side to chassis.	A201 A202	Adjust A201 and A202 for maximum amplitude and symmetry with markers as shown in Fig. 201.
2. "	"	213MC	211. 25MC 215. 75MC	13	"	A203	Adjust for maximum amplitude of response similar to Fig. 201. Adjust by expanding or compressing coil turns.  FIG.201
		207MC	205. 25MC 209. 75MC	12		A204	
		201MC	199. 25MC 203. 75MC	11		A205	
		195MC	193. 25MC 197. 75MC	10		A206	
		189MC	187. 25MC 191. 75MC	9		A207	
		183MC	181. 25MC 185. 75MC	8		A208	
		177MC	175. 25MC 179. 75MC	7		A209	
		85MC	83. 25MC 87. 75MC	6		A210	
		79MC	77. 25MC 81. 75MC	5		A211	
		69MC	67. 25MC 71. 75MC	4		A212	
		63MC	61. 25MC 65. 75MC	3		A213	
		57MC	55. 25MC 59. 75MC	2		A214	

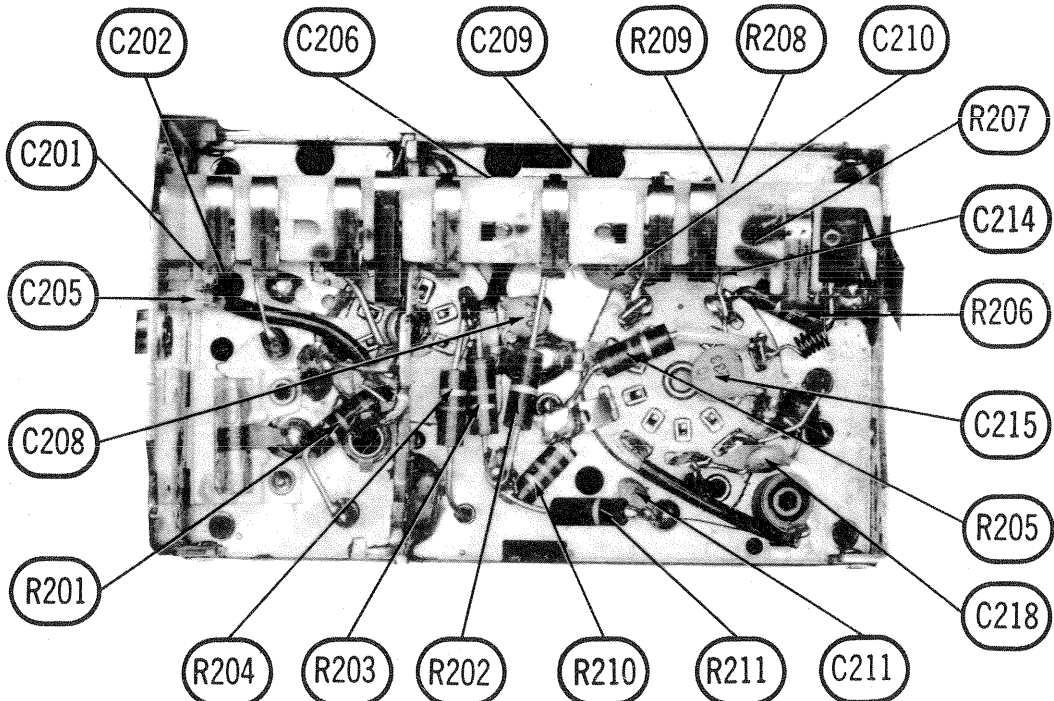
VHF OSCILLATOR ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the Fine Tuning to the center of its range.
Use only enough sweep generator output to provide a usable pattern on scope.
Connect variable bias to IF AGC line. Adjust bias to obtain response curve which shows no indication of overloading.
Use 10MC sweep unless otherwise noted.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3. Two 120 Ω Carbon Resistors	Across antenna terminals with 120 Ω in each lead.	213MC	211. 25MC 215. 75MC	13	Vert. Amp. thru 47K across Video Det. load.	A215	Adjust to place sound marker in trap notch as in Fig. 202. Video marker should fall at 50%.  FIG.202
		207MC	205. 25MC 209. 75MC	12		A216	
		201MC	199. 25MC 203. 75MC	11		A217	
		195MC	193. 25MC 197. 75MC	10		A218	
		189MC	187. 25MC 191. 75MC	9		A219	
		183MC	181. 25MC 185. 75MC	8		A220	
		177MC	175. 25MC 179. 75MC	7		A221	
		85MC	83. 25MC 87. 75MC	6		A222	
		79MC	77. 25MC 81. 75MC	5		A223	
		69MC	67. 25MC 71. 75MC	4		A224	
		63MC	61. 25MC 65. 75MC	3		A225	
		57MC	55. 25MC 59. 75MC	2		A226	



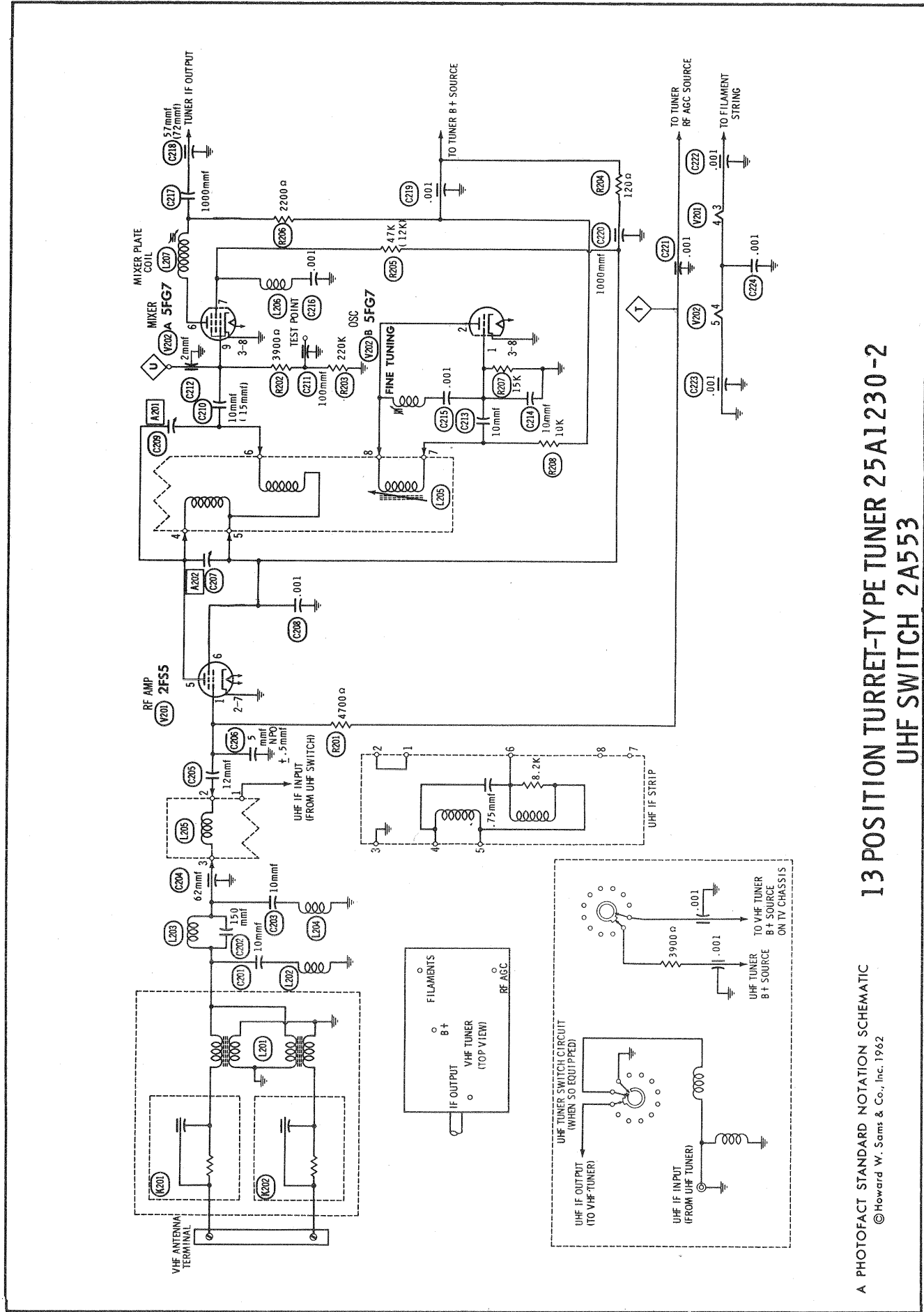
VHF TUNER 25A1213 - TOP VIEW



VHF TUNER 25A1213 - BOTTOM VIEW

AIRLINE MODELS WG-5221/22/25/27/31/32/36/40/46/77/78/79
/5321/22/25/27/31/32/36/40/46/77/78/79

FOLDER 1



A PHOTOFACT STANDARD NOTATION SCHEMATIC
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13 POSITION TURRET-TYPE TUNER 25A1230-2
UHF SWITCH 2A553

ALIGNMENT INSTRUCTIONS
VHF TUNER 25A1230-2

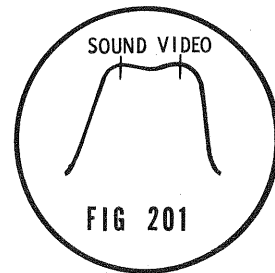
PRE-ALIGNMENT INSTRUCTIONS

USE AN ISOLATION TRANSFORMER TO PROTECT THE TEST EQUIPMENT.
The High Voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: A201 and A202 ... GENERAL CEMENT #8607, 9291, 9294
WALSCO #2520, 2522, 2523, 2524, 2534, 2537
A203 thru A214 ... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532

VHF RF AND MIXER ALIGNMENT

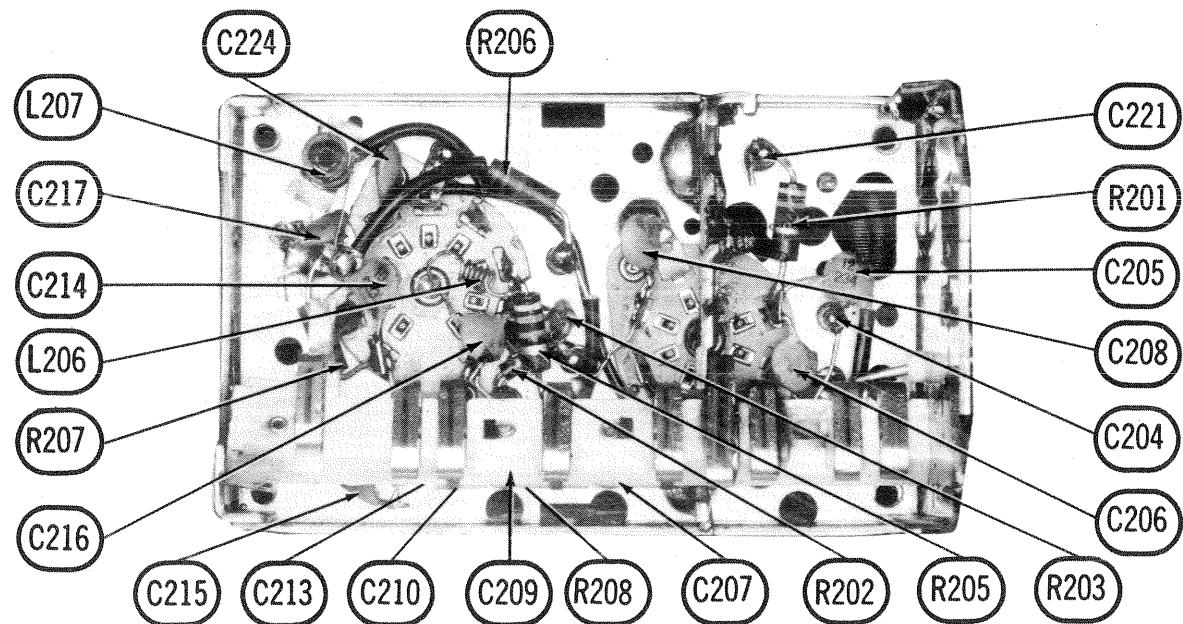
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
Use only enough sweep generator output to provide a usable pattern on scope.
Use 10MC sweep unless otherwise noted.
Connect the negative lead of a 2.5 volt bias supply thru 10K to point \diamond . Positive to chassis.

SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1. Across VHF Antenna Terminals with 120 Ω in each lead.	201MC	199.25MC 203.75MC	11	Vert. Amp. thru 10K to point \diamond . Low side to chassis.	A201, A202	Adjust for maximum gain and symmetry of response similar to Fig. 201 with markers as shown.
"	213MC	211.25MC 215.75MC	13	"		
"	207MC	205.25MC 209.75MC	12	"		
"	201MC	199.25MC 203.75MC	11	"		
"	195MC	193.25MC 197.75MC	10	"		
"	189MC	187.25MC 191.75MC	9	"		
"	183MC	181.25MC 185.75MC	8	"		
"	177MC	175.25MC 179.75MC	7	"		
"	85MC	83.25MC 87.75MC	6	"		
"	79MC	77.25MC 81.75MC	5	"		
"	69MC	67.25MC 71.75MC	4	"		
"	63MC	61.25MC 65.75MC	3	"		
"	57MC	55.25MC 59.75MC	2	"		



VHF OSCILLATOR ALIGNMENT

The individual channel adjustment screws are accessible thru a hole in the front of the tuner, as the Channel Selector is rotated.
Set the Fine Tuning to the center of its range and switch to the channel to be adjusted. Adjust for best picture and sound.



VHF TUNER 25A1230-2 - BOTTOM VIEW

AIRLINE MODELS WG-5221/22/25/27/31/32/36/40/46/77/78/79
/5321/22/25/27/31/32/36/40/46/77/78/79

FOLDER 1

PARTS LIST AND DESCRIPTION-VHF TUNER 25A1230-2

TUBES

AMPEREX		GENERAL ELECTRIC		RCA	RAYTHEON	SYLVANIA	
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE	
V201	RF Amp.	2F55		V202	Mixer - Osc.	5FG7	

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	10	#267-620	DI-10	DD-100	L10Q1	CCD-100	GP410	10TS-Q10
C202	150		DI-150	DD-151	L10T15	CCD-151	GP315	10TS-T15
C203	10		DI-10	DD-100	L10Q1	CCD-100	GP410	10TS-Q10
C204	62		DI-10	DD-100	L10Q1	CCD-100	GP410	10TS-Q10
C205	12	#3118-1	DI-12	DD-120	L10Q12	CCD-120	GP412	10TS-Q12
C206	5 NPO ±.5mmf		NPO-DI-5	DTZ-4R7	C10V5C	CCTO-050	CNO-550	10TCC-Q50
C207	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C208	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C209	.001	#3118-1 (15mmf) †	DI-10	DD-100	L10Q1	CCD-100	GP410	10TS-Q10
C210	10		DI-10	DD-100	L10Q1	CCD-100	GP410	10TS-Q10
C211	100		DI-100	DD-100	L10Q1	CCD-100	GP410	10TS-Q10
C212	2		DI-10	DD-100	L10Q1	CCD-100	GP410	10TS-Q10
C213	10	#274-209	DI-10	DD-100	L10Q1	CCD-100	GP410	10TS-Q10
C214	10		DI-10	DD-100	L10Q1	CCD-100	GP410	10TS-Q10
C215	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-110	5HK-D10
C216	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-110	5HK-D10
C217	.001	(72mmf) †	BPD-001	DD-102	BYA10D1	CCD-102	B-110	5HK-D10
C218	57		EF-6-50	MFT-50				
C219	.001		EF-6-1000	MFT-100		CCF-102	CT280A	BH-340
C220	.001		EF-6-1000	MFT-100		CCF-102	CT280A	BH-340
C221	.001	(.002)	EF-6-1000	MFT-100		CCF-102	CT280A	BH-340
C222	.001		EF-6-1000	MFT-100		CCF-102	CT280A	BH-340
C223	.001		EF-6-1000	MFT-100		CCF-102	CT280A	BH-340
C224	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10

* Sarkes Tarzian Part Number

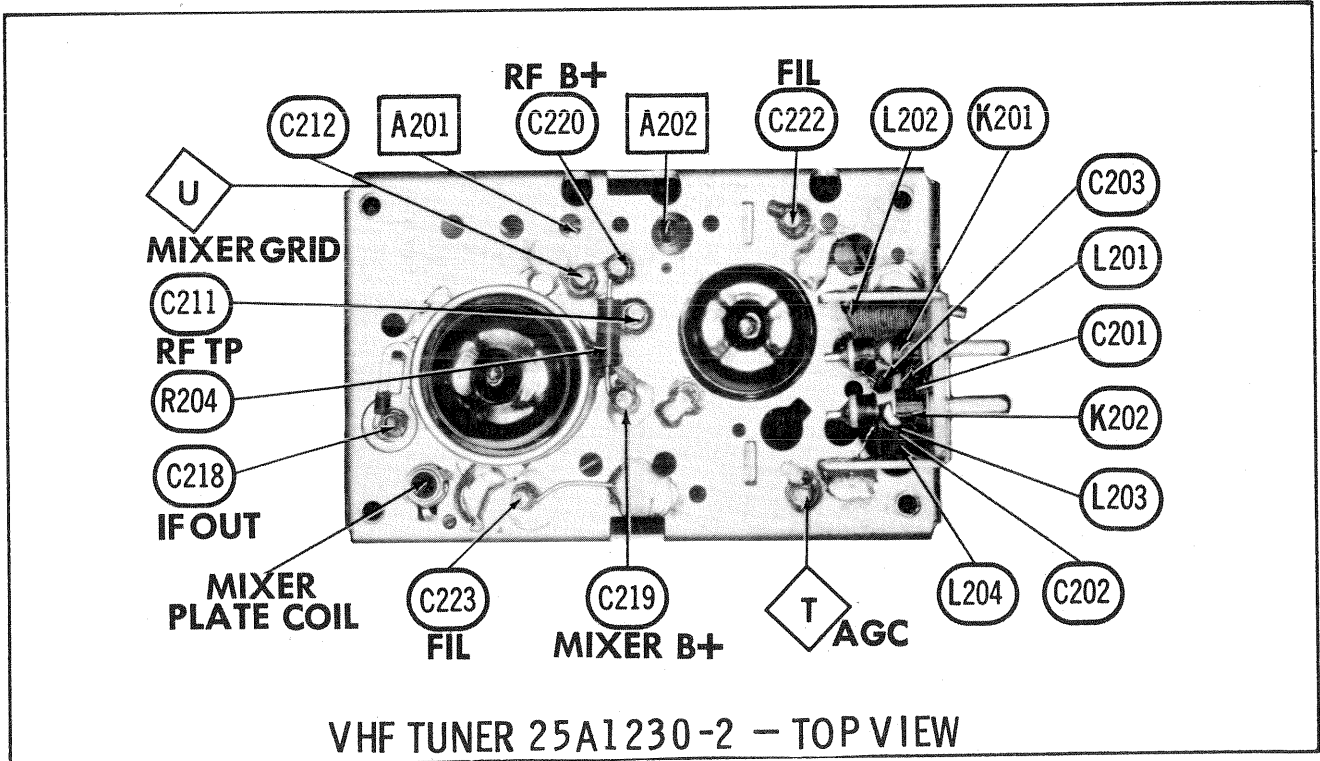
† Alternate Value

RESISTORS					
All wattages 1/2 watt, or less, unless otherwise listed.					
ITEM No.	RATING	REPLACEMENT DATA			REMARKS
		IRC PART No.	WORKMAN PART No.	REMARKS	
R201	4700Ω				
R202	3900Ω				
R203	220K				
R204	120Ω				

ITEM No.	RATING	REPLACEMENT DATA			REMARKS
		IRC PART No.	WORKMAN PART No.	REMARKS	
R205	47K				
R206	2200Ω				
R207	15K				
R208	10K				(12K) *

* Alternate

COMPONENT COMBINATIONS				
ITEM No.	USE	DESCRIPTION	* PART No.	REPLACEMENT DATA
K201	Antenna Filter		330-1	* SARKES TARZIAN Part No.
K202	Antenna Filter		330-1	



PARTS LIST AND DESCRIPTIONS

TUBES					
AMPEREX		GENERAL ELECTRIC		RAYTHEON	
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	1st Video IF Amp.	3BZ6	V7	Vert. Output	12W6GT (12W6) *
V2	2nd Video IF Amp.	3BZ6	V8	Horiz. Mult.	6FQ7 (6CG7) *
V3	Video Output	8BQ5	V9	Horiz. Output	12DQ6B
V4	Sound Detector	3BN6	V10	Damper	17DE4 (17CQ4) *
V5	Audio Output	12CA5	V11	H. V. Rectifier	1K3
V6	Sync Sep. - Vert. Osc.	6FQ7 (6CG7) *			

* Alternate

PICTURE TUBE					
ITEM No.	REPLACEMENT DATA				
	AIRLINE PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.
V12	23AHP4	23AHP4 ①	23AHP4 ①		23AHP4 ②

① Aluminized
② Silver Screen "85"

POWER RECTIFIERS & SIGNAL DIODES					
ITEM No.	CURRENT RATING (Measured)	ORIGINAL Part or Type No.	RECTIFIERS		NOTES
			RCA PART No.	SARKES TARZIAN PART No.	
X1	.28 Amp.	66X23	1N3194	40H	Silicon Video Detector (CK-706A) Horiz. Phase Det.
X2		66X20			
X3		66X21			

ELECTROLYTIC CAPACITORS								
ITEM No.	RATING		REPLACEMENT DATA					
	CAP.	VOLT.	AIRLINE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	200	200	45X445	AFHS3-13-90		XC3-20	FP318.8	TVL-3490
B	250	200						
C	10	200						

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	.001	#DD-300	BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C3	.22		P288N-22	DTZ-68	CUB2P22	2DP-4-224	GEM-202	2TM-P22
C4	68		DI-390	DD-391	L10T39	C10Q68C	CNO-468	10TCC-Q68
C5	390		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C6	.001	#DD-150	BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C7	.001		DI-470	DD-471	5R5T47	CCD-471	GP347	10TS-T47
C8	470		NPO-SI 4.7	TCZ-4R7	C10V47C	CCTO-4R7	CNO-547	10TCC-V47
C9	4.7		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C10	10	#DD-200	P288N-047	DD-503	CUB4S47	4DP-3-473	GEM-4047	4TM-S47
C11	.047		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C12	30		P888N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C13	.1		NPO-SI 3.3	TCZ-3R3	C10V33C	CCTO-3R3	CNO-533	10TCC-V33
C14	.1	#DD-220	BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C15	3.3		BPD-005	DD-502	BYA10D5	CCD-102	B-210	5HK-2D10
C16	.005		BPD-005	DD-502	BYA10D5	CCD-102	B-210	5HK-2D10
C17A	.001		BPD-2X001	DD3-102	BYD6DD1	CCD-102	B-210	5HK-S10
C18	15	#DD-150	BPD-01	DD-102	BYA10S1	CCD-103	B-110	5HK-D10
C19	.01		BPD-01	DD-102	BYA10S1	CCD-103	B-110	5HK-D10
C20	.22		DI-820	CCD-821	BYA10T82	CCD-821	B-382	10TS-T82
C21	820		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C22	.002	#DD-220	BE6S15	DD-202	PM6S15	6DP-2-153	GEM-1615	6TM-S15
C23	.015		BE2S47	DD-202	PM2S47	4DP-3-473	GEM-1615	2TM-S47
C24	.047		BE6D33	DD-202	PM6D33	6DP-1-332	GEM-16233	6TM-D33
C25	.0033		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C26	.001	#DD-220	BPD-001	DD-102	BYA10S1	CCD-103	B-110	5HK-S10
C27	.01		BPD-01	DD-102	BYA10S1	CCD-103	B-110	5HK-S10
C28	.22		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C29	.002		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C30	.001	#DD-220	DI-470	DD-471	5R5T47	CCD-471	GP347	10TS-T47
C31	470		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C32	.1		1469-00033	DD-102	5R5T33	CM-19B-331K	MCB241	MS-333
C33	.0056		BPD-01	DD-103	5R5D1	CCD-102	GP210	10TS-D10
C34	330	#DD-220	P888N-15	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C35	.001		P888N-15	DD-103	CUB6P15	6DP-5-154	GEM-6015	6TM-P15
C36	.01		P888N-033	DD-303	CUB6S33	6DP-3-333	GEM-6133	6TM-S33
C37	.15							
C38	.033	#DD-220						
C39	91							

SET 609

FOLDER 1

AIRLINE MODELS WG-5221/22/25
27/31/32/36/40/46/77/78/79/5321
22/25/27/31/32/36/40/46/77/78/79

FOLDER 1

COILS (SWEEP CIRCUITS)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C40	.001		BPD-001	DD-102	BYA10DI	CCD-102	B-210	5HK-D10
C41A	.001		BPD-2X001	DD3-102	BYD6DDI	CCD-102	B-210	5HK-2D10
B						CCD-102	B-210	
C42	.001		BPD-001	DD-102	BYA10DI	CCD-102	B-210	5HK-D10
C43	.47 400V		P488N-47	CUBA4P1	16D-6-474	GEM-4047	4TM-P47	
C44	.01 1400V		DAC-27	DD16-103	HVE16DI	10DP-3-103	UAC-110	BL-S10

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

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

ITEM No.	USE	RESIST- ANCE	REPLACEMENT DATA				
			AIRLINE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume, Power On-Off Switch	1meg	36X433	B-69, KR-1, or (F1-1meg, SU204, KR-1)	A47-1meg-S, FS-3, SWE-12	Q11-137, 76-1, or (BU11, CF17, SSI, DC1) *	U54, U8-26, or (UA16L, SF1000, U841)
R2	Contrast	500Ω	40X505	B-415, or (F5-750, SU204)	Q17-106, or (BU11, CF5, SSI, DC1) *	U155, or (UA52R, SF1000)	
R3	Brightness	500K	40X506	B-59, or (F1-500K, SU204)	A47-500K-S, FS-3	Q11-133, or (BU11, CF16, SSI, DC1) *	U50, or (UA55L, SF1000)
R4	Vertical Hold	1.5meg	40X507	B-742, or (F1-1.5meg, SU204)	A47-1.5meg-S, FS-3	Q11-138, or (BU11, CF18, SSI, DC1) *	U155, or (UA155L, SF1000)
R5	Buzz	500Ω	40X472			110-600	PFL-600
R6	Horizontal Hold	75K	40X509	TT-35, or (F1-75K, SN010)	B47-100K-S	B11-125, TM4	PTA15L, or (TA56L)
R7A	Height	5meg	40X508	TT-87, or (F1-5meg, SN010)	B47-5meg-S	HLC5	PTA56L, or (TA56L)
B	Vertical Linearity	500K		TT-59, or (F1-500K, SN010)	B47-500K-S	B11-133, TM4, or (BU11, CF16, SS6) *	PTA55L, or (TA55L)

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

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R8	10K				R34	100K			
R9	150Ω				R35	1.5meg			
R10	56Ω				R36	100K			
R11	22K				R37	56K			
R12	150Ω				R38	470Ω			
R13	180Ω				R39	220Ω			
R14	1meg				R40	220K			
R15	3900Ω				R41	390K			
R16	1meg				R42	4700Ω			
R17	1meg				R43	390K			
R18	330K				R44	1meg			
R19	3600Ω	5W	5G-3600	#43X331B	R45	82K			
R20	120K				R46	12K			
R21	1.5meg			①	R47	18K			
R22	4700Ω 1W				R48	1200Ω 5%			
R23	22meg			①	R49	56K			
R24	120Ω				R50	100K			
R25	15K				R51	330K			
R26	4.7meg			① (10meg) *	R52	8200Ω			
R27	12K 1W				R53	470K			
R28	18K 1W				R54	8200Ω			
R29	68K				R55	3.3Ω			
R30	100K				R56	4.7Ω			
R31	3.9meg				R57	36Ω 20W		F4. 7	#43X431
R32	180K				R58	220Ω			#43X402
R33	100K				R59	470K			

* Alternate Value

Airline Part Number

① Not used in some versions.

ITEM No.	USE	REPLACEMENT DATA						NOTES
		AIRLINE PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman PART No.		
L1A	1st Video IF	9A2436	TV-156	6221 †	RTC-8552 †	TC250	† Disregard Secondary.	
L1B	41.25MC Tral.							
L2	2nd Video IF	9A2390				TC223		
L3	3rd Video IF	9A2486						
L4	RF Choke (7.5uh)	9A2432	BC-565	4611	RTC-8521	T859	Resistor.	
L5	Peaking (290uh)	36A22	TV-199	6155	RTC-8587	T318	* Shunt with 220Ω	
L6	Peaking (110uh)	36A19	TV-182 *	6153 *	RTC-8585 *	T307 *	Resistor.	
L7	4.5MC Tral.	9A2366	TV-151	1465 *	RTC-8602	T249	▲ Disregard Tap.	
L8	Peaking (350uh)	36A28	TV-190 ▲	6132 ▲	RTC-8577 ▲	T319 ▲	② Wound on 6800Ω	
L9	Sound Takeoff	9A2434	TV-155	1470-A	RTC-8604	T247	Resistor.	
L10	Quadrature	9A2387	TV-121	1480	RTC-9605	T251	▲ Shunt with 6800Ω	
L11	RF Choke (1.5uh)	9A2380	BC-562	4600	RTC-8516	T856	Resistor.	

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
			AIRLINE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T4	3800Ω	3-4Ω	51X192-2	A-2998	A-3328	24948	S-6X	

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
				AIRLINE PART No.	QUAM PART No.	
SPI	4"	PM	3-4Ω	12A580	4A07	

ITEM No.	USE	DESCRIPTION	AIRLINE PART No.	REPLACEMENT DATA
K1 K2	Audio Coupling Sync Sep. Grid	680mmf, .005mfd, 680Ω, 470K 30mmf, 150mmf, .005mfd, 270K, 2.2meg	76X37 76X44	

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
MI	VHF Tuner	25A1230-2	STANDARD COIL REPLACEMENT *GG5-4221A; Used in Models: WG-5321B/27B/31B/77A/78A/79A and WG-5321B/27B/31B/77A/78A/79A.
	VHF Tuner	25A1213	STANDARD COIL REPLACEMENT *GG5-4221A; Used in Models: WG-5221A/22A/25A/27A/31A/32A/36A/36B/40A/ 40B/46A/46B; & WG-5321A/22A/25A/27A/31A/32A/36A/36B/40A/ 40B/46A/46B.
	UHF Tuner	25A1193-1	All "U" Chassis.
	UHF Switch	2A553	All "U" Chassis.
	UHF Switch	2A523	All "U" Chassis.

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

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

[illegible]

AIRLINE MODELS WG-5221/22/25
27/31/32/36/40/46/77/78/79/5321
22/25/27/31/32/36/40/46/77/78/79

FOLDER 1