

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT									
To set pointer turn tuning cap. fully closed and set pointer to end of right angle line at extreme left end of dial. Use insulated alignment screwdriver for all adjustments.									
AM ALIGNMENT									
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT AFTER	ADJUST	REMARKS		
1. 1 MFD.	High side to Pin 1 (Grid) 6BA6, 2nd IF Tube (4). Low side to chassis.	455KC	AM (center position)	550KC	Across voice coil	A1	Adjust for maximum output.		
2. 1 MFD.	High side to Pin 1 (Grid) 6BA6, 1st IF Tube (3). Low side to chassis.	"	"	"	"	A2, A3	"		
3. 1 MFD.	High side to Pin 1 (Grid) 7F8 converter tube (2). Low side to chassis.	"	"	"	"	A4, A5	"		
4.	Connect loop to center of tuning cap. terminals on ant. terminal strip. Use radiation loop.	1500KC	"	1500KC	"	A6	Position loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.		
5.	"	1400KC	"	"	"	A7, A8	Adjust for maximum output.		
6.	"	600KC	"	"	"	A9	Rock tuning cap. and adjust for maximum output. Repeat Steps 4, 5 & 6 until no further improvement can be made.		
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		
7. 0.01 MFD.	High side to center of tuning cap. Low side to chassis.	10.7 MC (modulated)	FM (fully counter-clockwise)	Tuning cap. fully closed	DC probe to Point to Common to chassis	A10, A11, A12	Short rear FM stator of tuning cap. to chassis. Detune secondaries of FM IF trans. by tightening A13, A14, A15 & A17 turn. Then adjust A10, A11 & A12 for maximum deflection.		
8. 0.01 MFD.	"	"	"	"	"	A13, A14	Adjust for maximum deflection.		
9. 0.01 MFD.	"	"	"	"	"	A15, A16, A17	Adjust for zero deflection. Repeat Steps 9 & 10 until no further improvement can be made. Remove short from rear FM stator of tuning cap. Continue with FM IF alignment Step 11.		

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE									
Use free modulated signal with 80% modulation and about 500 mV. Use 120°C. watch voltage in scope for signal reflection or leads from signal generator otherwise the true IF pattern will not be obtained on scope. When alignment of the IF stages will result, place leads as far away as possible from stages already aligned and stage being aligned.									
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS		
7. 0.01 MFD.	High side to Pin 1 (Grid) 6BA6, 1st IF Tube (3). Low side to chassis.	10.7 MC (freq. mod.)	FM (counter-clockwise)	Tuning cap. fully closed	Vertical input to Point to Ground to chassis.	A10, A11, A12	Short rear FM stator of tuning cap. to chassis. Adjust for maximum amplitude, symmetry & coincidence of pattern per Fig. 1.		
8. 0.01 MFD.	High side to Pin 1 (Grid) 7F8 converter tube (2). Low side to chassis.	"	"	"	"	A15, A16, A17	Adjust A16 for maximum amplitude. Adjust A17 for maximum straightness of crossover lines with center of pattern per Fig. 2. Remove short from tuning cap. Continue with FM IF alignment Step 11.		
FM RF ALIGNMENT									
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS		
11. 75 ohm resistor	High side to ungrounded FM ant. terminal. Low side to chassis.	105 MC	FM	105 MC	DC probe to Point to Common to chassis	A18	Adjust for maximum deflection.		
12.	"	90 MC	"	"	"	A19	Rock tuning cap. and adjust for maximum output. Seal A19 and A20 with SPEAKER cement.		

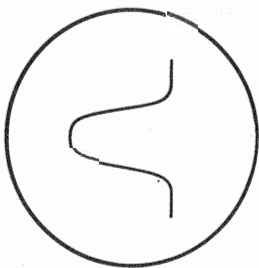


FIG. 1

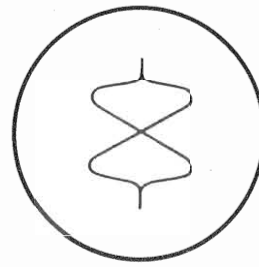
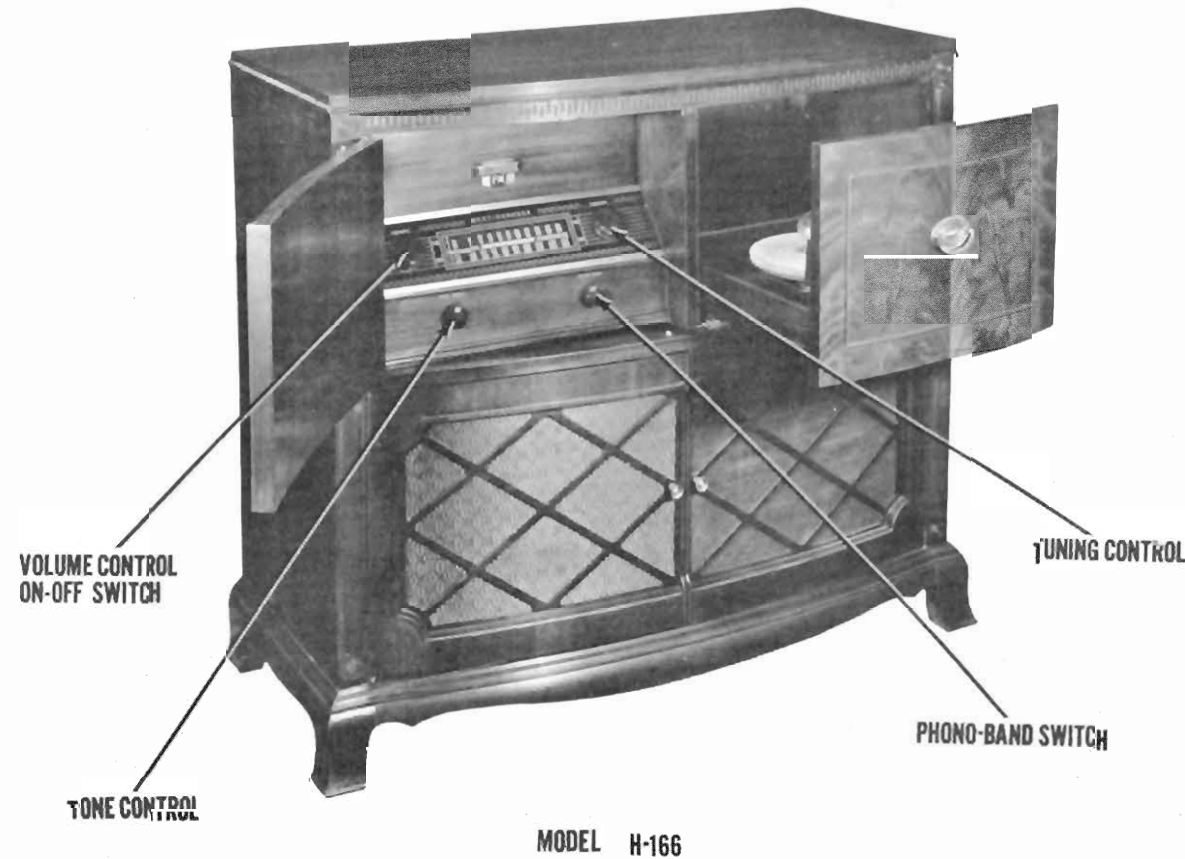


FIG. 2

## WESTINGHOUSE MODELS H-164, H-166, H-167 (Ch. V-2119-1)

PHOTOFACT\* Folder

WESTINGHOUSE MODELS H-164, H-166, H-167 (Ch. V-2119-1)



TRADE NAME	Westinghouse, Models H-164, H-166, H-167 (Ch. V-2119-1)		
MANUFACTURER	Westinghouse Electric Corp., Receiver Div., Sunbury, Pa.		
TYPE SET	AC Operated Combination Phono-Radio AM-FM Superheterodyne Receiver		
TUBES (TWELVE)	Types, 7F8 RF Amp., 7F8 Converter, 6BA6 1st IF Amp., 6BA6 2nd IF Amp., 6AU6 Limiter, 6H6 FM Det., 6X4 Rectifier-AVC, 6SC7 Phono Pre-Amp., 6AT6 Phase Inv., (2) 6Y6GT Power Output, 5U4G Rectifier.		
POWER SUPPLY	110-120 Volts AC		
TUNING RANGE-BROADCAST	540-1620KC	FREQ. MOD.	38-105MC

## HOWARD W. SAMS & CO., INC.

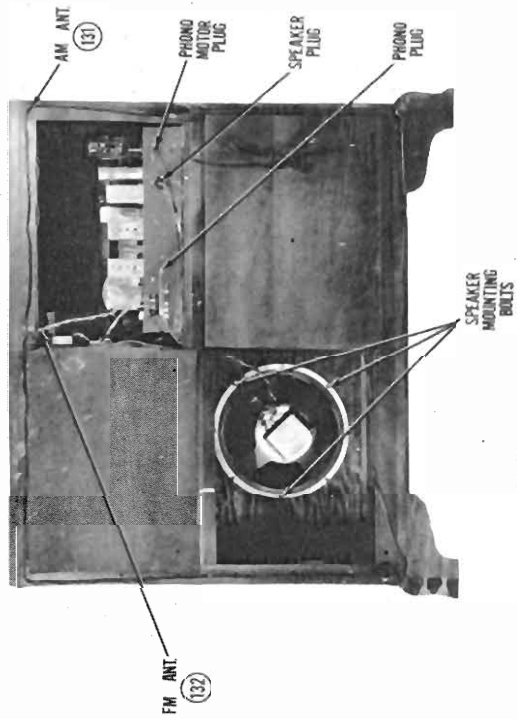
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial con-

## Indianapolis, Indiana

tent, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1948 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. A. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc."

DATE 3/48-#486-28 SET #36-FOLDER #25

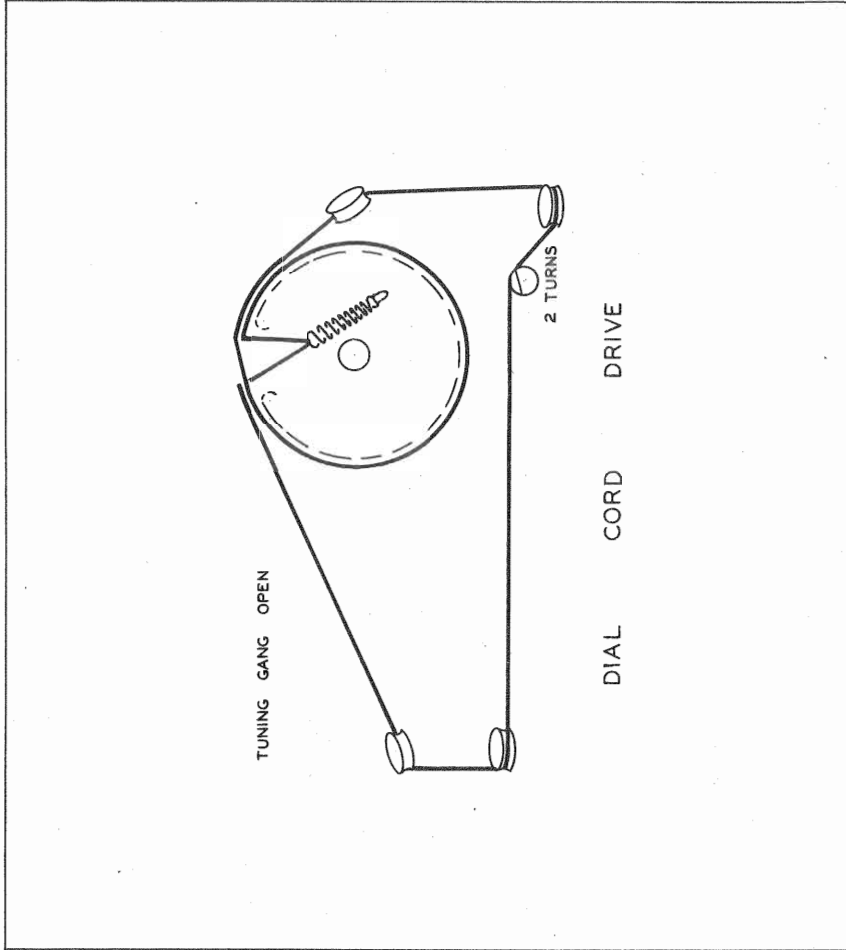
## WESTINGHOUSE MODELS H-164, H-166, H-167 (Ch. V-2119-1)



MODEL H-166

DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Remove speaker plug from chassis.
3. Remove FM leads from chassis.
4. Remove loop antenna leads from chassis.
5. Remove phono-pickup plug from phono pre-amp. chassis.
6. Remove phono-motor plug from chassis.
7. Remove phono-pre-amp. power supply plug from tuning chassis.
8. Remove pre-amp. output plug from tuning chassis.
9. Remove four screws holding tuning chassis in cabinet. Remove chassis from cabinet.
10. Remove two wood screws holding phono pre-amp. chassis in cabinet. Remove from cabinet.
11. Remove four screws holding speaker in cabinet. Remove speaker from cabinet.



ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to end of right angle line at extrem. left end of dial. Use insulated alignment screwdriver for all adjustments.									
AM ALIGNMENT									
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		
1 .1 MFD.	High side to Pin 1 (grid) 6B46, 2nd IF tube (4). Low side to chassis.	455KC	AM (center position)	550KC	Across voice coil	A1	Adjust for maximum output		
2 .1 MFD.	High side to Pin 1 (grid) 6B46, 1st IF tube (3). Low side to chassis.	"	"	"	"	A2, A3	"		
3 .1 MFD.	High side to Pin 1 (grid) 7F8 converter tube (2). Low side to chassis.	"	"	"	"	A4, A5	"		
4	Connect loop to ant. terminals on strip. Use radiation loop.	1500KC	"	1500KC	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.		
5	"	1400KC	"	Tune for maximum output.	"	A7, A8	Adjust for maximum output.		
6	"	900KC	"	"	"	A9	Rock tuning cap. and adjust for maximum output. Repeat Steps 4, 5 & 6 until no further improvement can be made.		
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		
7 .001MFD	High side to center FM stator of tuning cap. Low side to chassis.	10.7MC (unmodulated)	FM (fully counter-clockwise)	Tuning cap. fully closed	DC probe to point to common to chassis	A10, A11, A12	Short rear FM stator of tuning cap. to chassis by tune secondaries of FM trans. by tightening A13, A14, A15 & A17. Then adjust A10, A11 & A12 for maximum deflection.		
8 .001MFD	"	"	"	"	"	A13, A14	Adjust for maximum deflection.		
9 .001MFD	"	"	"	"	"	A15	Adjust for zero deflection. Repeat Steps 8 & 9 until no further improvement can be made.		
10 .001MFD	"	"	"	"	DC probe to point to common to chassis	A16, A17	Adjust for zero deflection. Repeat Steps 8 & 9 until no further improvement can be made. Remove short from rear FM stator of tuning cap. Continue with FM RF alignment Step 11.		

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use freq. modulated signal with 50% modulation and 2000 cps sweep. Use 120V a.c. source. Voltage in scope for horizontal deflection. Care should be exercised in placement of leads from signal generator otherwise the true IF pattern will not be obtained on scope and misalignment of the IF stages will result. Place leads as far away as possible from stages already aligned and stage being aligned.							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
7 .001MFD	High side to Pin 1 (grid) 6B46, 1st IF Tube (3). Low side to chassis.	10.7MC (freq. mod.)	FM (counterclockwise)	Tuning cap. fully closed	Vertical input to point to common to chassis.	A13, A14, A15	Short rear FM stator of tuning cap. to chassis. Adjust for maximum amplitude, symmetry & coincidence of pattern per Fig. 1.
8 .001MFD	High side to Pin 1 (grid) 7F8 converter tube (2). Low side to chassis.	"	"	"	"	A15, A12	"
9 .001MFD	High side to Pin 1 (grid) 6B46, 1st IF Tube (3). Low side to chassis.	"	"	"	Vertical input to point to ground to chassis.	A16, A17	Adjust A16 for maximum amplitude. Adjust A17 for maximum straightness of crossover lines with center of pattern per Fig. 2. Remove short from tuning cap. Continue with FM RF alignment Step 11.
FM RF ALIGNMENT							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
11 722 carbon resistor between ground and low side to chassis.	High side to ungrounded FM ant. side to chassis.	100MC	FM	100MC	DC probe to point to common to chassis	A18	Adjust for maximum deflection.
12 "	"	90MC	"	Tune for maximum deflection.	"	A19	Rock tuning cap. and adjust for maximum output. Seal A19 and A20 with speaker cement.

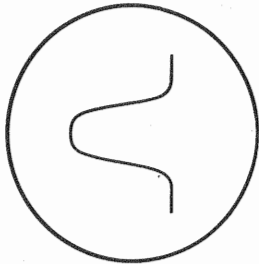


FIG. 1

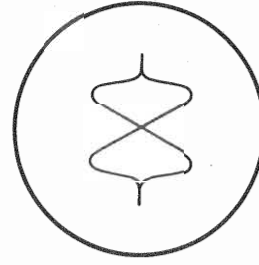
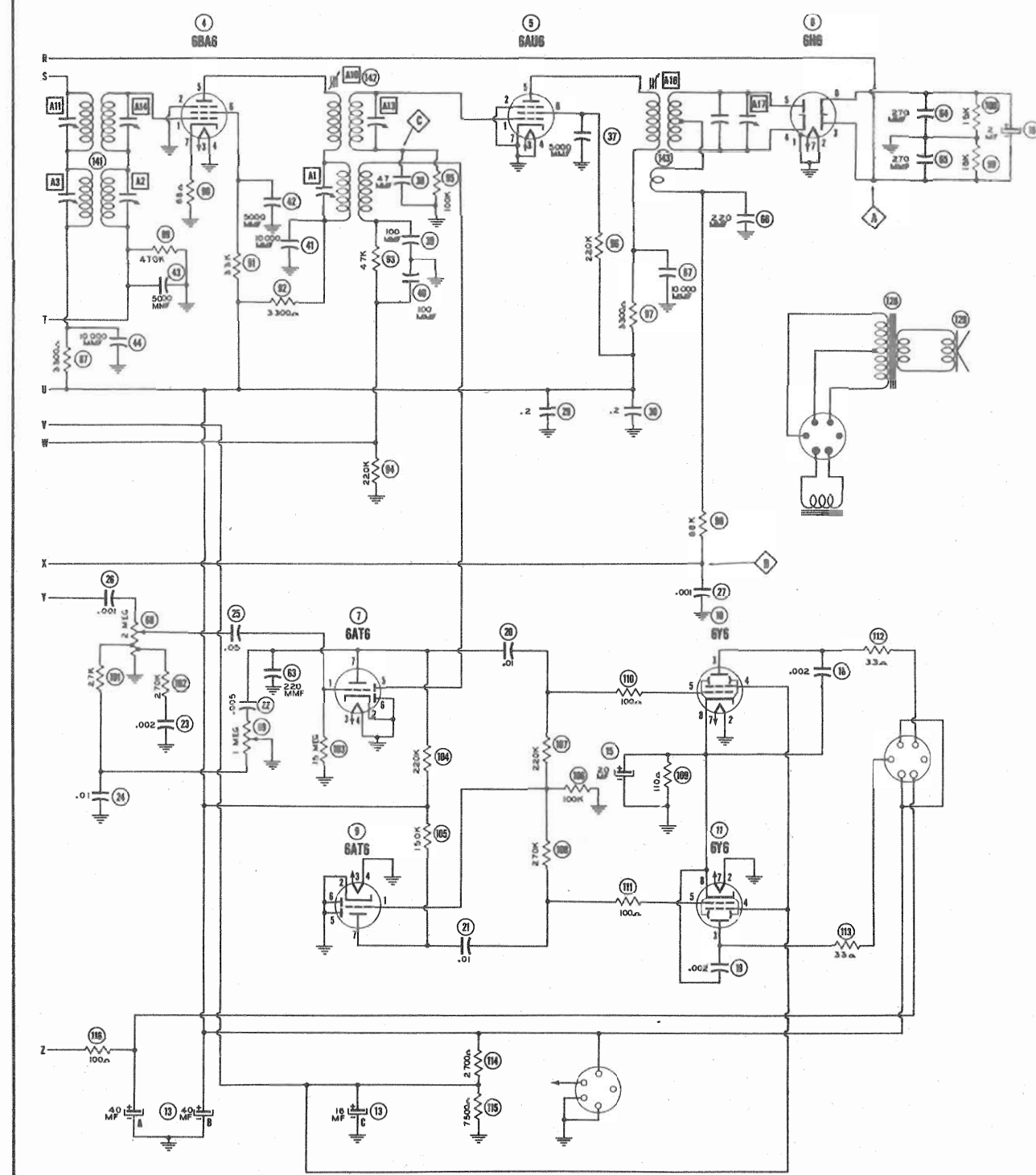
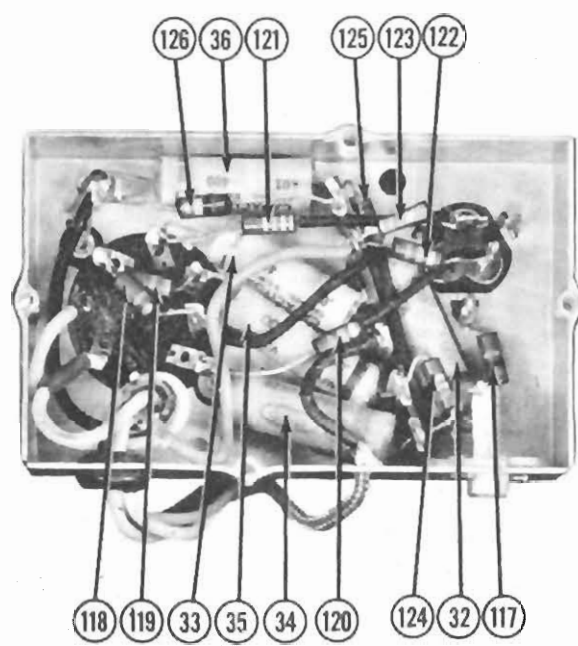
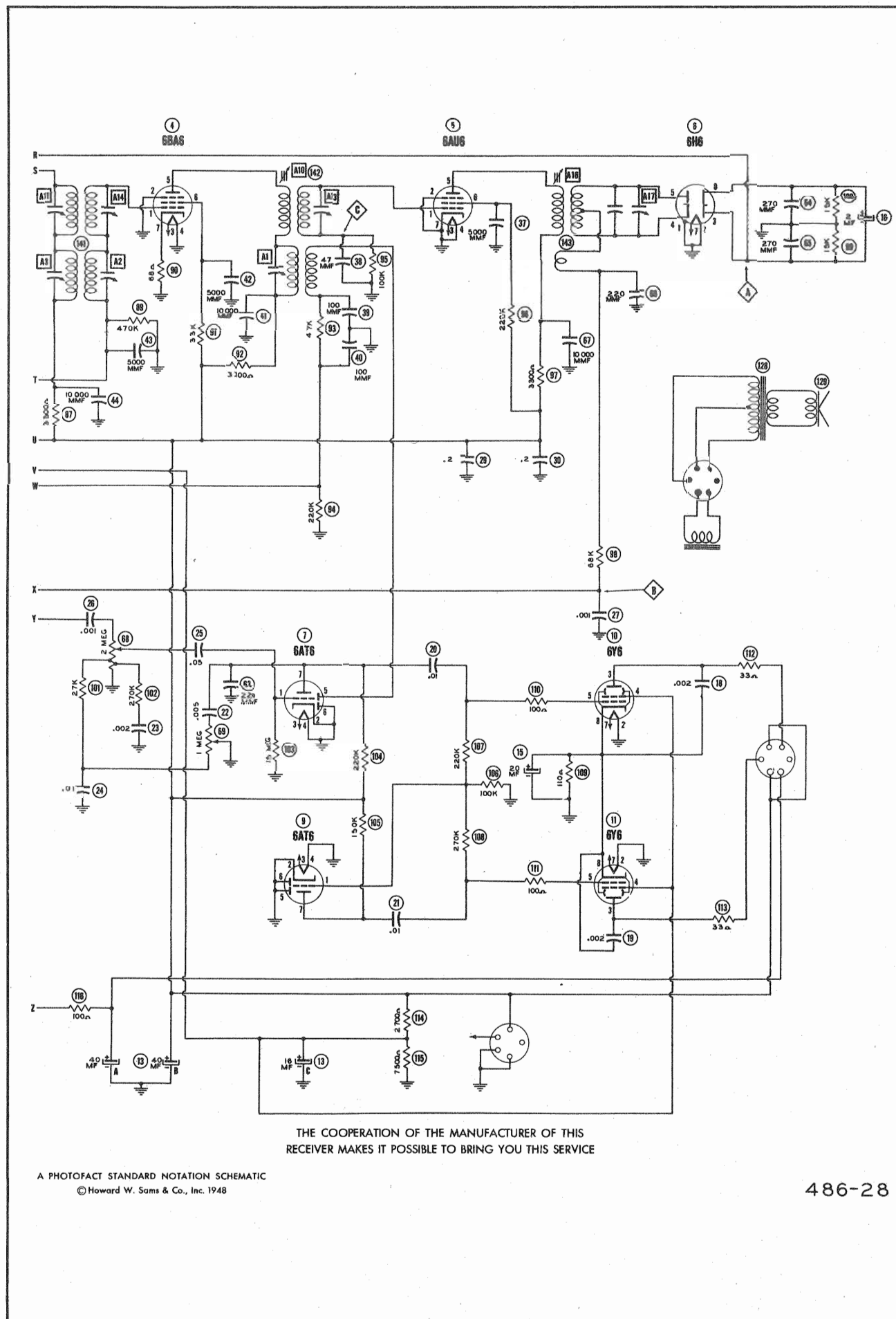
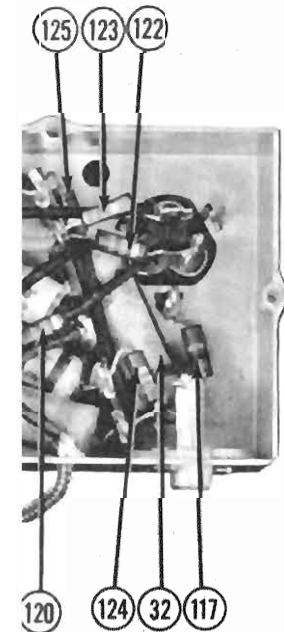


FIG. 2



486-28



VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

\*\* RADIO-PHONO SWITCH IN PHONO POSITION.

† VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
† 1	7F8	-.1VDC	0V.	175VDC	0V.	1VDC	190VDC	6.4VAC	0V.
2	7F8	-.1.6VDC	.4VAC	165VDC	4.3VDC	4.3VDC	162VDC	6VAC	-16VDC
3	6BA6	-.1VDC	0V.	6.4VAC	0V.	215VDC	107VDC	1VDC	-
4	6BA6	-.1VDC	0V.	6.4VAC	0V.	215VDC	94VDC	1VDC	-
† 5	6AU6	-.4VDC	0V.	6.4VAC	0V.	237VDC	50VDC	0V.	-
† 6	6H6	0V.	0V.	-.5VDC	.05VDC	1VDC	-.5VDC	6.4VAC	.5VDC
7	6AT6	-.6VDC	0V.	6.4VAC	0V.	-.2VDC	0V.	92VDC	-
** 8	6SC7	0V.	127VDC	-.4VDC	-.3VDC	95VDC	0V.	6.4VAC	0V.
9	6AT6	-1.6VDC	0V.	6.4VAC	0V.	0V.	0V.	70VDC	-
10	6Y6	0V.	0V.	232VDC	170VDC	-.15VDC	-.15VDC	6.4VAC	16.5VDC
11	6Y6	0V.	0V.	237VDC	170VDC	-.2VDC	-.2VDC	6.4VAC	16.5VDC
12	5U4G	0V.	295VDC	0V.	300VAC	0V.	300VAC	0V.	295VDC

‡ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
† 1	7F8	230KΩ	0Ω	15KΩ	0Ω	110Ω	15KΩ	.1Ω	0Ω
2	7F8	4.5 Meg.	1Ω	42KΩ	500Ω	500Ω	19KΩ	1Ω	25KΩ
3	6BA6	1.7 Meg.	0Ω	.1Ω	0Ω	12KΩ	24KΩ	75Ω	-
4	6BA6	500KΩ	0Ω	.1Ω	0Ω	12KΩ	42KΩ	70Ω	-
† 5	6AU6	100KΩ	0Ω	.1Ω	0Ω	13KΩ	250KΩ	0Ω	-
† 6	6H6	0Ω	0Ω	15KΩ	INF.	INF.	15KΩ	.1Ω	15KΩ
7	6AT6	15 Meg.	0Ω	.1Ω	0Ω	250KΩ	0Ω	240KΩ	-
** 8	6SC7	0Ω	69KΩ	3.8 Meg.	3 Meg.	140KΩ	0Ω	.1Ω	0Ω
9	6AT6	100KΩ	0Ω	.1Ω	0Ω	0Ω	0Ω	150KΩ	-
10	6Y6	0Ω	0Ω	9KΩ	7KΩ	210KΩ	210KΩ	.1Ω	120Ω
11	6Y6	0Ω	0Ω	9KΩ	7KΩ	380KΩ	380KΩ	.1Ω	120Ω
12	5U4G	INF.	9KΩ	INF.	22Ω	INF.	20Ω	INF.	9KΩ

RESISTANCE READINGS IN THE 8+ CIRCUITS MAY VARY WIDELY  
ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

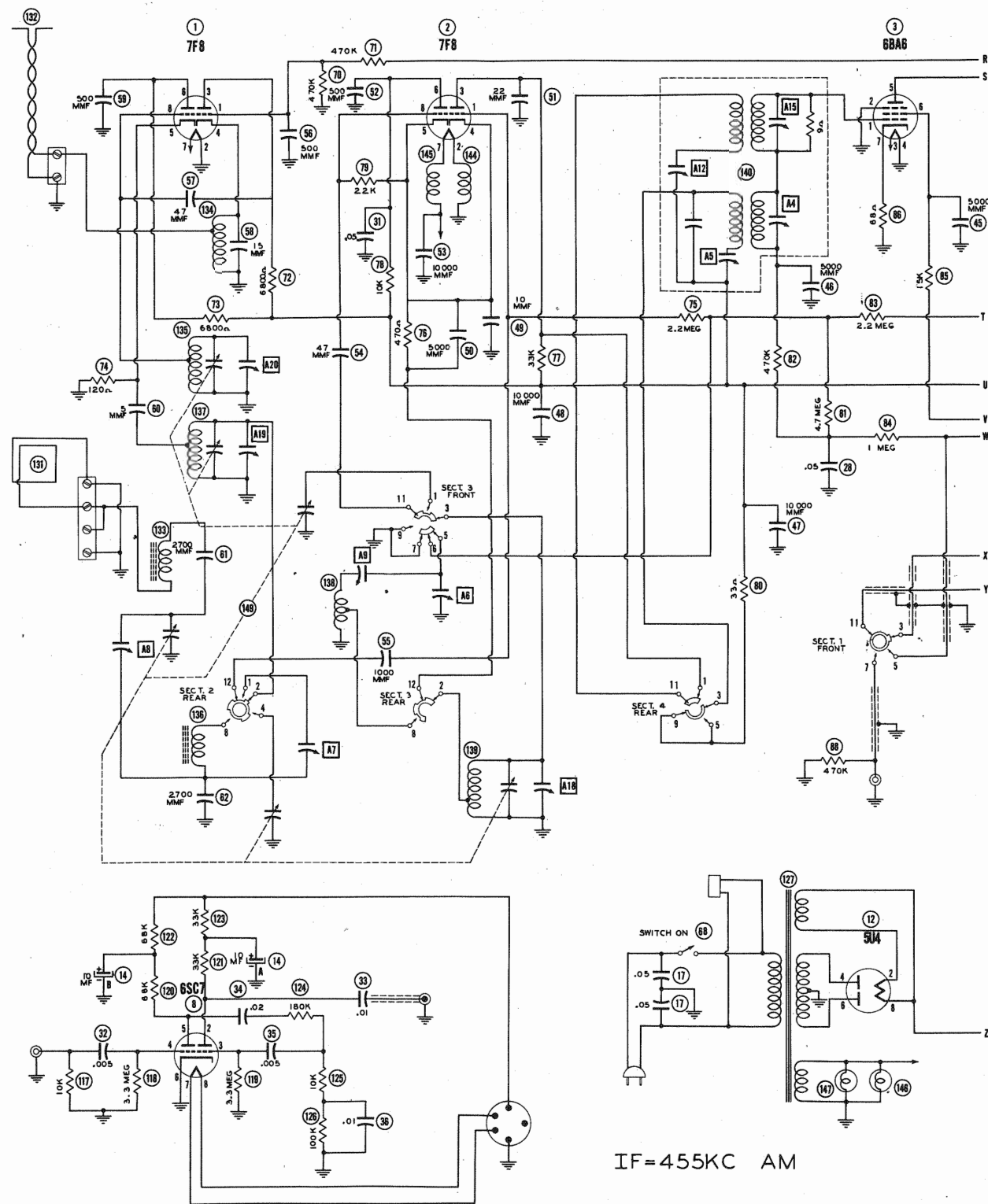
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values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

STAGE GAIN MEASUREMENTS

ANTENNA TO CONVERTER GRID	10X	600KC
CONVERTER GAIN	3X	IN 600KC OUT 455KC
1st IF TRANS.	.7X	455KC
1st IF TUBE	70X	455KC
2nd IF TRANS.	.55X	455KC
2nd IF TUBE	250X	455KC
3rd IF TRANS.	.95X	455KC
PHONO PRE-AMP. 1st AUDIO	35X	400~
PHONO PRE-AMP. 2nd AUDIO	35X	400~
AUDIO	40X	400~
OUTPUT	30X	400~

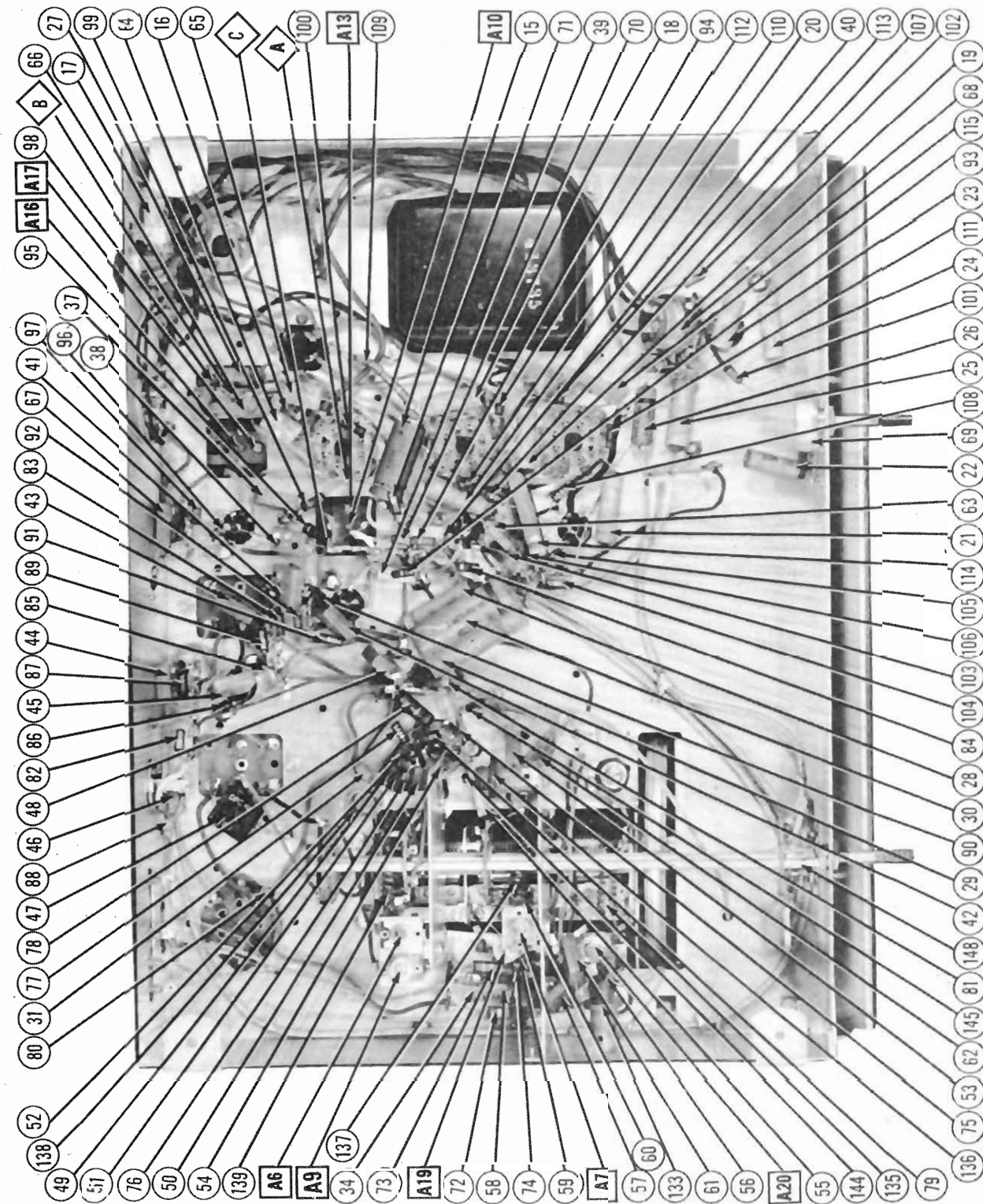
The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.





A PHOTOFAC STANDARD NOTATION SCHEMATIC  
© Howard W. Sams & Co., Inc. 1948

486-28



## PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA			INSTALLATION NOTES
		WESTINGHOUSE PART No.	STANDARD REPLACEMENT	RMA BASE TYPE	
1	RF Amp.	7F8	7F8	8B4	
2	Converter	7F8	7F8	8B4	
3	1st IF Amp.	8BA6	8BA6	7B4	
4	2nd IF Amp.	8BA6	8BA6	7B4	
5	Limiter	8AU6	8AU6	7B4	
6	FM Det.	6H6	6H6	7Q	
7	AM Det.-AVC	6AT6	6AT6	7B7	
8	Phono Pre-Amp.	6SC7	6SC7	89	
9	Phase Inv.	6AT6	6AT6	7B7	
10	Power Output	6Y6G	6Y6G	7AC	
11		6Y6G	6Y6G	7AC	
12	Rectifier	5040	5040	5T	

## PARTS LIST AND DESCRIPTIONS (Continued)

## RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	PART No.	HOUSE	
99	15KΩ		RTS-15K	RC20AEL15K	Br.-Grn.-Or. Halo Detector Blade Load
100	15KΩ		RTS-15K	RC20AEL15K	Br.-Grn.-Or.
101	27KΩ		RTS-27K	RC20AEL27K	Red-Vl.-Or. Tone Compensation
102	270KΩ		RTS-270K	RC20AEL270K	Red-Vl.-Or. Tone Compensation
103	3.5 Meg.		RTS-3.5 Meg.	RC20AEL3.5 Meg.	Br.-Grn.-Blk. AF Grid
104	250KΩ		RTS-250K	RC20AEL250K	Red-Red-Vl. AF Plate Load
105	15KΩ		RTS-15K	RC20AEL15K	Br.-Grn.-Vl. AF Plate Load
106	15KΩ		RTS-15K	RC20AEL15K	Br.-Grn.-Vl. Phase Inverter Plate Load
107	270KΩ		RTS-270K	RC20AEL270K	Br.-Blk.-Vl. Phase Inverter Grid
108	270KΩ		RTS-270K	RC20AEL270K	Red-Red-Vl. Output Grid
109	110KΩ		AD-100	RC20AEL100	Red-Vl.-Vl. Output Cathode
110	100KΩ		BM-100	RC20AEL101M	Br.-Blk.-Br. Parabolic Suppressor
111	100KΩ		BM-100	RC20AEL101M	Br.-Blk.-Br.
112	33KΩ		BM-33	RC20AEL33M	"
113	33KΩ		BM-33	RC20AEL33M	"
114	2700Ω		BT-2-2700	RC20AEL2700	Red-Vl.-Red Filter
115	7500Ω		AD-7500	RC20AEL7500	Bleeder
116	100KΩ		AD-100K	RC20AEL100K	Surge Limiter-See Note 2
117	10KΩ		RTS-10K	RC20AEL10K	Br.-Blk.-Or. Photo Shunt
118	3.3 Meg.		RTS-3.3 Meg.	RC20AEL3.3 Meg.	Or.-Or.-Grn. 1st Photo Amp. Grid
119	3.3 Meg.		RTS-3.3 Meg.	RC20AEL3.3 Meg.	Blue-Gray-Or. 2nd Photo Amp. Grid
120	68KΩ		RTS-68K	RC20AEL68K	Blue-Gray-Or. 1st Photo Amp. Plate Load
121	33KΩ		RTS-33K	RC20AEL33K	Or.-Or.-Or. 2nd Photo Amp. Plate Load
122	68KΩ		RTS-68K	RC20AEL68K	Blue-Gray-Or. 1st Photo Amp. Plate Decoupling
123	33KΩ		RTS-33K	RC20AEL33K	Or.-Or.-Or. 2nd Photo Amp. Plate Decoupling
124	100KΩ		RTS-100K	RC20AEL100K	Br.-Gray-Vl. Tone Compensation
125	100KΩ		RTS-100K	RC20AEL100K	Br.-Blk.-Or.
126	100KΩ		RTS-100K	RC20AEL100K	Br.-Blk.-Vl.

## 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		WESTINGH. PART No.	SPRAGUE PART No.	REPLACEMENT DATA		SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOL.			AEROVOX PART No.	CORNFEL- PART No.		
13A	40	450	V-300L	EL-240	UP4445	DI-4001	Filter	
13B	40	400		UT-183	HR1L35		"	
14A	16	350	V-4928	EL-210	UP1145		"	
15	20	25	V-3226	TA-25	PR525-25	M-25-25	Cathode Bypass	
16	50	50	V-4890	TA-55	PR5450-2	M-4-150	Stabilizing Cap.	
17A	.05	600	V-3241	TC-15	634-05	MN-6-05	Line Filter	
18	.02	600	RCF10705202	TC-22	634-02	MN-6-02	Output Plate Bypass	
19	.02	600	RCF10705103	TC-22	634-02	MN-6-02	"	
20	.01	400	RCF10704103	TC-11	484-01	M-4-01	Audio Coupling	
21	.01	400	RCF10704103	TC-11	484-01	M-4-01	"	
22	.06	600	RCF10704503	TC-25	634-06	S-6-06	Tone Comp.	
23	.02	600	RCF10706202	TC-22	634-02	M-4-02	"	
24	.01	400	RCF10704103	TC-11	484-01	M-4-01	Audio Coupling	
25	.05	400	RCF107045103	TC-15	634-05	M-4-05	"	
26	.06	600	RCF107045103	TC-21	634-06	M-4-06	De-emphasis	
27	.06	400	RCF107045103	TC-15	634-06	M-4-06	AVC Filter	
28	.02	400		TC-12	484-02	M-4-02	RF Bypass Pwr. Supply	
29	.02	400	RCF107045103	TC-12	484-02	M-4-02	"	
30	.02	400	RCF107045103	TC-25	634-05	M-4-05	Osc. Plate Bypass	
31	.05	400		TC-25	634-05	M-4-05	Phono Coupling	
32	.05	400	RCF107045103	TC-25	634-05	M-4-05	Audio Coupling	
33	.01	400	RCF107044103	TC-12	484-01	M-4-01	Tone Comp.	
34	.02	400	RCF107045103	TC-12	484-02	M-4-02	Limit Screen Bypass	
35	.02	600	RCF107045103	TC-25	634-02	M-4-02	Limit Grid Filter	
36	.01	400	RCF107044103	TC-11	484-01	M-4-01	Diode RF Filter-Cer.	
37	37	5000	RCF107045103	TC-25	634-05	M-4-05	"	
38	38	47	RCF107045103	TC-25	634-05	M-4-05	2nd if Plate Decoupling	
39	39	100	RCF107045103	TC-25	634-05	M-4-05	1st if Screen Bypass	
40	40	1000	RCF107045103	TC-25	634-05	M-4-05	AVC Filter	
41	10000	41	RCF107045103	TC-11	484-01	M-4-01	1st if Plate Decoupl.	
42	42	5000	RCF107045103	TC-25	634-05	M-4-05	1st if Screen Bypass	
43	43	5000	RCF107045103	TC-25	634-05	M-4-05	AVC Filter	
44	44	10000	RCF107045103	TC-11	484-01	M-4-01	RF Bypass Pwr. Supply	
45	45	8000	RCF107045103	TC-25	634-05	M-4-05	RF Bypass-Cer.	
46	46	8000	RCF107045103	TC-25	634-05	M-4-05	Conv. Cathode Bypass	
47	47	10000	V-5040-15	TC-11	484-01	M-4-01	Fixed Triode	
48	48	10	RCF107045103	TC-11	484-01	M-4-01	Osc. Plate Bypass	
49	49	500	RCF107045103	TC-11	484-01	M-4-01	Osc. Plate Bypass-Cer.	
50	50	500	RCF107045103	TC-11	484-01	M-4-01	Filement Bypass	
51	51	22	RCF107045103	TC-11	484-01	M-4-01	Osc. Grid Cap.-Cer.	
52	52	1000	RCF107045103	TC-11	484-01	M-4-01	RF Coupling-Cer.	
53	53	47	RCF107045103	TC-11	484-01	M-4-01	"	
54	54	1000	RCF107045103	TC-11	484-01	M-4-01	"	
55	55	1000	RCF107045103	TC-11	484-01	M-4-01	"	
56	56	500	RCF107045103	TC-11	484-01	M-4-01	"	

## PARTS LIST AND DESCRIPTIONS (Continued)

## CAPACITORS

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

[illegible]

\*Items 29 & 30 may be replaced by a single .1 MFD resonant cap. part number V-5442-1.  
t150 not use bypass section.

Do not use bypass section.

## CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESIST. ANCE	WATTS	WESTING. PART No.	IRC PART No.	CLAROSTAT PART No.	
68A 2 Meg. B Shaft		½	V-3293 Not Req.	D13-139XX 41		Volume Control tapped to 500KΩ & 1 Meg. Attach to 68A per instructions
69A 1 Meg. B Shaft		½	V-3205 Not Req.	D13-137 A		Tone Control Attach to 69A per instructions

## RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	WESTINGHOUSE	IBC PART No.	
70	470KΩ	1/2	RC20A474N1	BTS-470K	Y1-V1-Y1, 1st RF Grid-See Note 1
71	470KΩ	1/2	RC20A474N1	BTS-470K	Y1-V1-Y1, AVC Network
72	6800Ω	1/2	RC20A682K	BTA-6800	Blue-Gray-Red 1st RF Plate Load
73	6800Ω	1/2	RC20A682K	BTA-6800	Blue-Gray-Red 2nd RF Plate Load
74	120Ω	1/2	RC20A121K	Br.-Red-Br.	2nd RF Cathode
75	2.2 Meg.	1/2	RC20A22M	BTS-2.2 Meg.	Red-Red-Grn. Converter Grid
76	470Ω	1/2	RC20A471K	BTS-470	Y1-V1-Br. Converter Cathode
77	330Ω	1/2	RC20A333K	BTS-33K	Or.-Or.-Or. Converter Plate Load
78	10KΩ	1/2	RC20A103M	Br.-Blk.-Or.	Oscillator Plate Load
79	22KΩ	1/2	RC20A223K	BTS-22K	Red-Red-Or. Oscillator Grid
80	33Ω	1/2	RC20A333K	BTS-470	Or.-Or.-Blk. Farastatic Suppressor
81	4.7 Meg.	1/2	RC20A475M	Y1-V1-Grn. AVC Network	Y1-V1-Y1, AVC Network
82	470KΩ	1/2	RC20A474N1	BTS-470K	Y1-V1-Y1, AVC Network
83	2.2 Meg.	1/2	RC20A22M	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
84	1 Meg.	1/2	RC20A103M	Br.-Blk.-Gn.	AVC Network
85	15KΩ	1/2	RC20A153K	Br.-Gn.-Or.	1st IF Screen Dropping
86	68Ω	1/2	RC20A683K	BTS-15K	Blue-Gray-Blk. 1st IF Cathode
87	3300Ω	1/2	RC20A333M	BTS-3300	Or.-Or.-Red 1st IF Plate Decoupling
88	470KΩ	1/2	RC20A474N1	BTS-470K	Y1-V1-Y1, Phone Shunt
89	470KΩ	1/2	RC20A474N1	BTS-470K	Y1-V1-Y1, AVC Network
90	68Ω	1/2	RC20A683K	BTS-33K	Blue-Gray-Blk. 2nd IF Cathode
91	330Ω	1/2	RC20A333K	BTS-3300	Or.-Or.-Or. 2nd IF Screen Dropping
92	330Ω	1/2	RC20A333M	BTS-47K	Or.-Or.-Red 2nd IF Plate Decoupling
93	47KΩ	1/2	RC20A473M	Y1-V1-Or.	Diode RF Filter
94	220KΩ	1/2	RC20A224K	Red-Red-Y1	Diode Load
95	10KΩ	1/2	RC20A104K	Br.-Blk.-Y1	Limiter Grid
96	220KΩ	1/2	RC20A224K	BTS-220K	Red-Red-Y1, Limiter Screen Dropping
97	330Ω	1/2	RC20A333M	Or.-Or.-Red	Limiter Plate Decoupling
98	68KΩ	1/2	RC20A683M	BTS-68K	Blue-Gray-Or. De-emphasis

## PARTS LIST AND DESCRIPTIONS (Continued)

## RF COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PHI.	SEC.	WESTINGHOUSE	MEISSNER PART No.
131	Loop Ant.				
132	FM Ant.		1.2Q	V-5283-3	
133	EC Ant..Ldg.		INF.	V-4777	
134	FM Ant..Coil		2Q	V-4751	
135	FM EF Coil		OQ	V-4887	
136	BC Conv. "		2.8Q	V-5048	
137	FM " "			V-4752	
138	BC Osc. "			V-4755	
139	FM " "		OQ	V-4753	
140	FM " "		OQ	V-4756	
140A	AM Input IF		92.11	V-5357	
141	B FM		Inf.		14-1040
141A	AM Inter. IF		6.5Q†	V-5368	
142	B FM		10.5Q		
142A	AM Output IF		92.**	V-4623	
143	B FM		1Q		
143A	FM Trans..5Q		1Q	V-4824	
144	Phil. Choke		10	V-4886	
145			10	V-4888	

†† Includes both AM and FM secondary.  
 ‡ Includes both AM and FM primary and sec  
 \*\* Includes both AM and FM primary

††Includes both AM and FM secondary.

†Includes both AM and FM primary and sec.

## Includes both AM and FM primary

## DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					WESTINGHOUSE	PART No.	
146	Bayonet	6-8	0.25	Blue	No. 44	No. 44	TYPE 44
147					No. 44	No. 44	"

## MISCELLANEOUS

ITEM No.	PART NAME	WESTINGHOUSE PART No.	NOTES
148	Switch	V-4780	Band-Photo
149	3 Gang. Var. Cap.	V-4780	(1B-48359) each section
A6	Trimmer Strip	V-4749	(BC Quc. Adj.)
A7	Trimmer	V-4747	BC " Pad
A8		V-4747	BC RF Adj.
A18		V-4746	BC Ant. Adj.
A19	Trimmer Strip	V-4748	(FM Quc. Adj.)
A20			(FM RF Adj.)
A21			(FM Ant. Adj.)

DATE 3/48-#486-28 SET #36-FOLDER #28