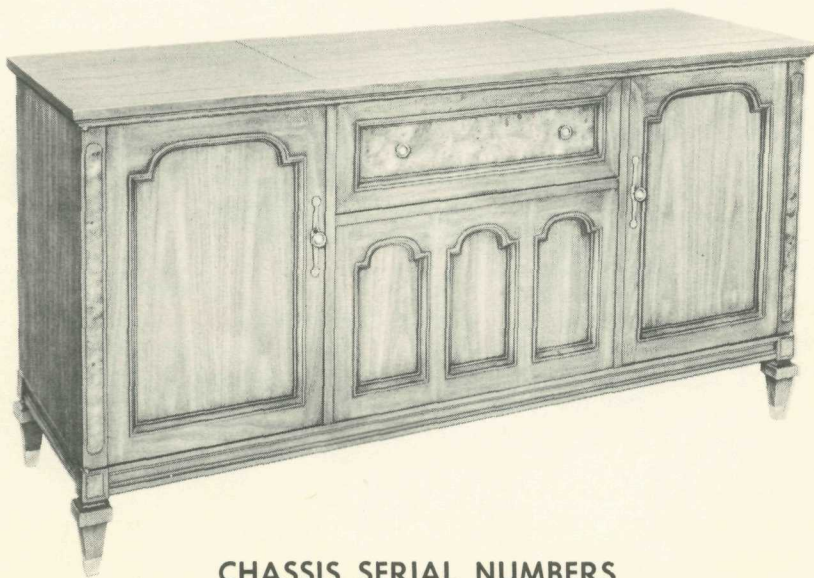


*Stereophonic*

**THE FISHER  
EXECUTIVE VIII  
SERVICE  
MANUAL**



MODEL 950

CHASSIS SERIAL NUMBERS  
FROM 10001 TO 19999 INCLUSIVE

PRICE: \$1.00

**FISHER RADIO CORPORATION • NEW YORK**

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**THE FISHER 950**



# PARTS DESCRIPTION LIST

## "EXECUTIVE"

Symbol	Description	Part No.	Symbol	Description	Part No.
C11	Capacitor, Ceramic Trimmer	C662-123	L9	Coil, AM Oscillator	L50210-28
C12	Capacitor, FM-AM Variable	C965-115	L10	Choke, 1 uH	L50066-2
C23, 32	Capacitor, Ceramic Trimmer	C662-123	L11	Coil, FM Oscillator Assembly	AS965-120
C34	Capacitor, Ceramic, 8pF, NPO, 1000V	C50070-14	L12, 13,		
C37	Capacitor, Ceramic, 8pF, N330, 500V	CC205J080D5	L14	Choke, 1 uH	L50066-2
C65	Capacitor, Electrolytic, 2uf, 70V	C721-142	L16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26,		
C66	Capacitor, Polystyrene, 1800pF, 5%, 125V	CP50394-11	27	Choke Filament, Ferrite Bead	L592-187
C67	Capacitor, Electrolytic, .5uf, 350V	C50283-7	L28	Choke, 3.3 uH	L50066-8
C87	Capacitor, Electrolytic, 4-Section: A — 20uf, 300V B — 40uf, 400V C — 40uf, 450V D — 40uf, 500V	C50180-49	M1	Meter, Tuning	M990-124
C91	Capacitor, Electrolytic, 4-Section: A — 50uf, 250V B — 50uf, 250V C — 50uf, 250V D — 200uf, 250V	C50180-48	PC1	Printed Circuit, AM Oscillator	PC50434
C95	Capacitor, Electrolytic, 2-Section: A — 1000uf, 35V B — 1000uf, 35V	C50180-38	PC2, 3	Printed Circuit, High Filter	PC50187-2
C98	Capacitor, Electrolytic, 200uf, 250V	C50180-20	PC4, 5	Printed Circuit, Tone Control	PC50187-9
C104, 110	Capacitor, Molded, .01uf, 20%, 600V	C2747	PC6, 7	Printed Circuit, Equalization	PC50187-3
C111	Capacitor, Electrolytic, 8uf, 50V	C629-138	RL1	Relay	K50314
R1, 6	Resistor, Wirewound, 25, 10%, 5W	R688-117	S1	Switch, Selector	S990-131
R39, 40	Potentiometer, 25K, Phase Inverter Adj.	R50103-2	S3	Switch, Speaker	S990-130
R47	Potentiometer, 500K, Dual Volume	R50160-104	S4	Switch, Loudness	S990-129
R57	Potentiometer, 300K, Dual Balance	R50160-130	S2, 5, 6, 7	Switch, Slide	S50200-5
R79, 80	Potentiometer, 500K, Dual Treble & Bass	R50160-101-2	S8	Switch, Power	Part of R47
R121, 124, 129	Resistor, Glass, 180, 10%, 3W	RPG3W181K	SR1	Rectifier, Selenium Bridge	SR50253-1
R127	Resistor, Wirewound, 15, 10%, 5W	R719-106	T1	Transformer, Power	T990-115
R128	Resistor, Glass, 1.2K, 10%, 7W	RPG7W122K	T2, 3	Transformer, Output	T990-116
R141, 142	Resistor, Glass, 330K, 5%, 1W	R30G334J	Z1	Transformer, AM IF	ZZ50210-41
R144, 146	Resistor, Glass, 2.7K, 5%, 1/2 W	R20G272J	Z2	Transformer, FM IF	ZZ50210-39
CR1, 2, 3, 4, 5	Silicon Diode, Type 1112	V-1112	Z3	Transformer, FM IF	ZZ50210-39
CR6, 7	Diode, Silicon, Power	SR806-126	Z4	Transformer, AM IF	ZZ2984
F1	Fuse, 3.2 amp., Slo-Blo	F3319	Z5	Transformer, FM IF	ZZ50210-2
I1, 4	Bulb, #470F	I50009-4	Z6	Coil, FM Limiter	ZZ50210-6
I2, 3	Lamp, Dial	I50082-8	Z7	Ratio Detector, FM	ZZ50210-9
L1	Coil, FM Antenna	L965-119	—	Tape Recorder, Ampex, Model 1200	A50381
L2	Antenna, AM Loop	L990-132	—	Automatic Turntable, Garrard, Model A	RC832-109
L4	Choke, 1.5 uH	L50066-4	—	45 RPM Spindle	A50412-3
L5	Transformer, AM RF	L50210-35	—	Microphone	Q776-109
L6	Coil, FM RF	L965-116	—	Microphone Stand	A776-110
L7	Coil, FM-Mixer	L965-117	—	Assembly, Automatic Shut-off	AS988-115
L8	Choke, 1 uH	L50066-2	—	Switch, Automatic Shut-off	S50358-4
			—	Dipole Assembly	AS50227-3
			—	Phono Cartridge	G50286-1
			—	Dial Glass	N990-107

## SPEAKER SYSTEM

Symbol	Description	Part No.
LS1	Speaker, Woofer, 12", 8 ohms	W-102
LS2, 3	Speaker, Midrange, 5", 8 ohms	M-108
LS4	Speaker, Tweeter, 3 1/2", 8 ohms	T-109
C1	Capacitor, 4uf	C-306
C2	Capacitor, 1uf	C-307
L1	Coil	L-206
R1	Resistor, 33 ohms	R-406
R2	Potentiometer	P-500

# PARTS DESCRIPTION LIST • MULTIPLEX SECTION

## CAPACITORS

10% tolerance for all fixed capacitors, unless otherwise noted or marked GMV (guaranteed minimum value). All capacitors not marked uf are pF (uuf).

Symbol	Description	Part No.
C200	Ceramic, .01uf, +80 -20%, 500V	C50089-7
C201	Ceramic, 680, 1000V	C50072-2
C203	Ceramic, 220, 1000V	C50183-3
C204	Polystyrene, 470, 5%, 500V	C50394-1
C205	Ceramic, 82, N1500, 1000V	C50089-7
C206	Ceramic, .001uf, GMV, 500V	C50089-2
C207	Ceramic, .005uf, +80 -20%, 500V	C50089-6
C208, 209	Mica, 4700, 5%, 500V	C50332-5
C210	Electrolytic, 1uf, 350V	C50283-3
C211, 212	Ceramic, .001uf, GMV, 500V	C50089-2
C213	Ceramic, .05uf, +80 -20%, 100V	C50073-2
C214	Mylar, .0047uf, 400V	C50197-25
C215	Mica, 3900, 5%, 500V	C50332-6
C216, 217	Ceramic, .001uf, GMV, 500V	C50089-2
C218	Ceramic, .02uf, 20%, 500V	C50089-5
C219	Ceramic, 330, 1000V	C50072-1
C220	Ceramic, .02uf, 20%, 500V	C50089-5
C221, 222	Mylar, .047uf, 10%, 250V	C50197-52
C223, 224	Ceramic, .001uf, 1000V	C50072-3
C225, 226	Ceramic, 2200, 1000V	C50072-5

## RESISTORS AND POTENTIOMETERS

In ohms, 10% tolerance, 1/2 watt, unless otherwise noted. K=Kilohm, M=Megohm.

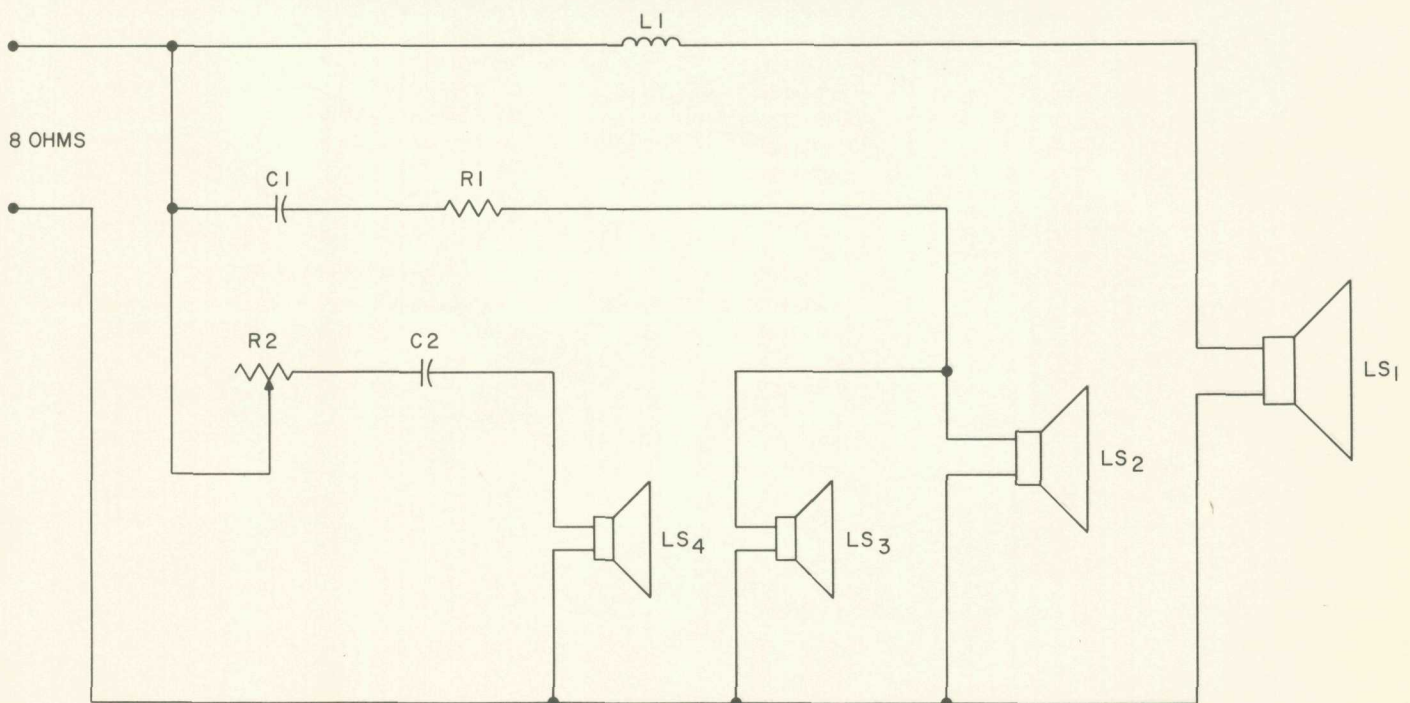
Symbol	Description	Part No.
R200	Composition, 22M	RC20BF226K

R201	Composition, 4.7K, 5%	RC20BF472J
R202	Composition, 15K, 5%	RC20BF153J
R203	Composition, 10M	RC20BF106K
R204	Dep. Carbon, 1M, 5%, 1/8 W	R12DC105J
R205	Dep. Carbon, 330K, 5%, 1/3 W	R33DC334J
R206	Dep. Carbon, 1M, 5%, 1/8 W	R12DC105J
R207	Dep. Carbon, 1.5M, 5%, 1/3 W	R33DC155J
R208	Dep. Carbon, 22K, 5%, 1/8 W	R12DC223J
R209, 210, 211, 212	Dep. Carbon, 33K, 5%, 1/8 W	R12DC333J
R213, 214	Dep. Carbon, 100K, 5%, 1/8 W	R12DC104J
R215	Potentiometer, 50K, MPX-separation	R50150-4
R216	Composition, 10M	RC20BF106K
R217, 218	Dep. Carbon, 18K, 5%, 1/3 W	R33DC183J
R219, 220	Dep. Carbon, 15K, 5%, 1/3 W	R33DC153J
R221	Composition, 10M	RC20BF106K
R222, 223, 224, 225	Dep. Carbon, 22K, 5%, 1/8 W	R12DC223J
R226, 227, 228, 229, 230	Dep. Carbon, 1M, 5%, 1/8 W	R12DC105J

## MISCELLANEOUS

Symbol	Description	Part No.
CR100, 101, 102, 103	Diode, Type 1112	V-1112
L100	Coil, Low Pass	L50210-30
L101	Coil, 5.25 M.H., 5%	L50334-1
L102, 103	Coil, 20 M.H., 5%	L50334-2
Z100	Transformer, 19Kc	ZZ50210-34
Z101	Coil, 38Kc	ZZ50210-33

# SCHEMATIC DIAGRAM • SPEAKER SYSTEMS



INS152

# ALIGNMENT INSTRUCTIONS

Read These Instructions With Extreme Care Before Attempting Alignment.

**CHASSIS:** Turn the station selector completely counterclockwise, without forcing. Dial pointer should be at zero index mark on logging scale. If not, reset the dial pointer. Disconnect the external antennas and the antenna link. Set Ferrite Loop to normal position, parallel to rear panel. When using an oscilloscope for alignment, set the output level controls for no overload, as shown by the proper waveform shape. Connect loads to main output and turn volume control to minimum.

**SIGNAL GENERATORS:** The signal generator equipment must be able to supply the following: FM RF modulated 30% ( $\pm 22.5$  KC deviation) at 400 cps; AM RF modulated 30% at 400 cps;

AM IF with 30KC sweep for AM bandwidth adjustment.

**INDICATOR:** DC VTVM, AC VTVM, and scope for alignment.

**ALIGNMENT:** Allow the chassis and test instruments to warm up for at least fifteen minutes. Adjust the line voltage for 117 volts AC, 50-60 cycles. Use fully insulated tools: a small screwdriver for all trimming capacitors; a K-Tran tool for Z1, Z2, Z3, Z4, Z5; a hex tool for L1, L5, L6, L7, L9, L11, Z6 and Z7. For AM alignment, short AVC lead to ground.

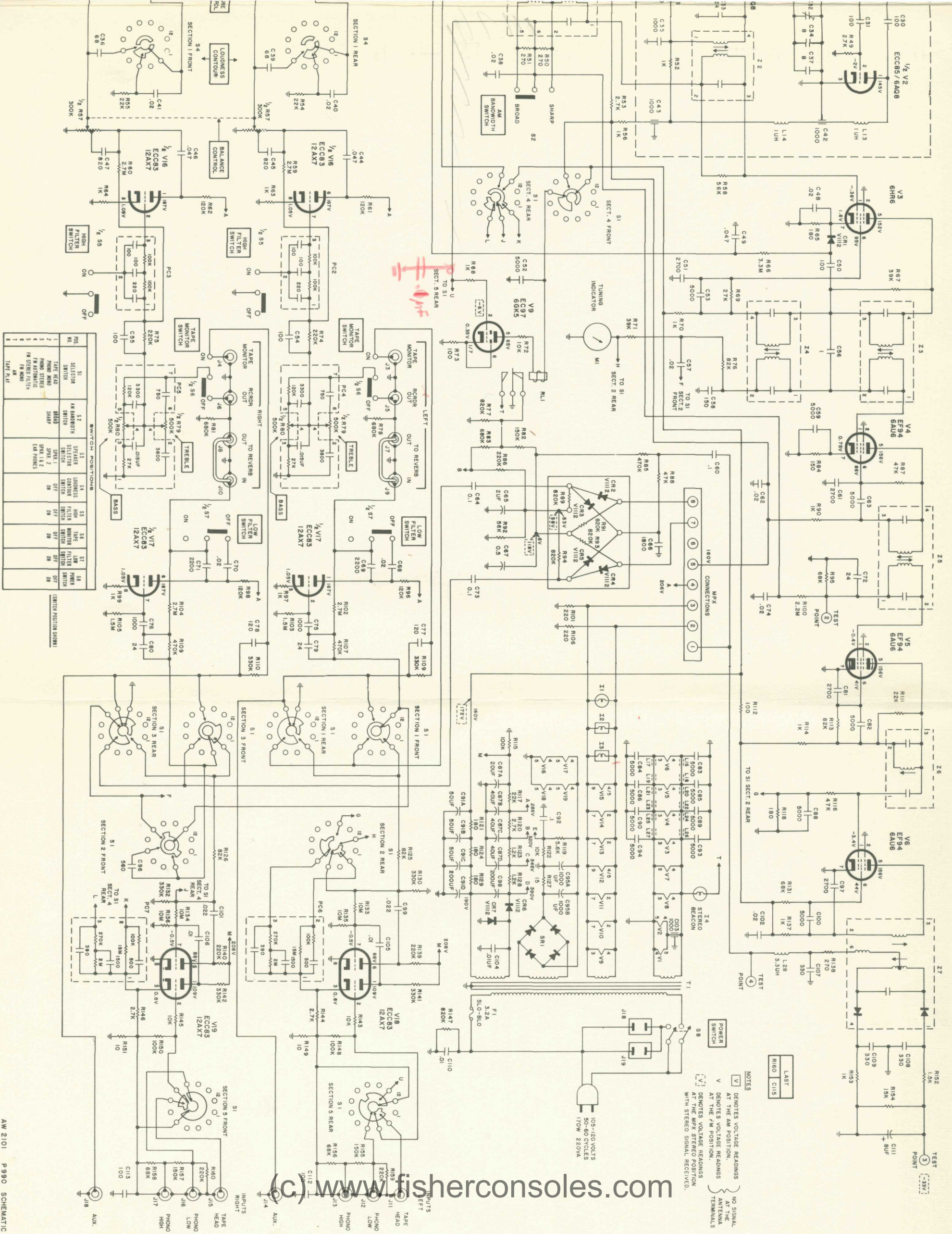
**NOTE: For calibrating both the AM and FM, use as low an output voltage as possible from your signal generator.**

STEPS	CHASSIS			SIGNAL GENERATOR			INDICATOR		ALIGNMENT	
	AM BANDWIDTH	SELECTOR	STATION SELECTOR	COUPLING	FREQ.	MOD.	TYPE	CONNECTION	ADJUST	INDICATION
1	SHARP	AM	Point of no signal and no interference	AM Gen. connected thru .01-uf cap. in series with hot lead to V8, Pin 7	455 KC	30% AM at 400 cps	AC VTVM to Left	Rec. Output	Z1, Z4 top and bottom	Maximum voltage
2	BROAD	AM	Point of no signal and no interference	AM Gen. connected thru .01-uf cap. in series with hot lead to V8, Pin 7	455 KC	30 KC sweep	Scope to Left	Rec. Output	Z4 bottom	Adjust slightly for symmetrical curve
3	SHARP	AM	600 KC	AM Gen. connected thru 220-uf to the AM antenna terminal. Disconnect link between terminals.	600 KC	30% AM at 400 cps	AC VTVM to Left	Rec. Output	L9, L5, L2	Maximum voltage
4	SHARP	AM	1400 KC	AM Gen. connected thru 220-uf to the AM antenna terminal. Disconnect link between terminals.	1400 KC	30% AM at 400 cps	AC VTVM to Left	Rec. Output	C12J, C12G, C12E	Maximum voltage
5	Repeat steps 3 and 4 for proper dial calibration and maximum output.									
6		FM	Point of no signal and no interference	FM Gen. connected to ungrounded tube shield of V2	10.7 MC	None	DC VTVM to test point 3		Z2, Z3, Z5, Z6 Z7, top and bottom	Maximum negative voltage
7		FM	Point of no signal and no interference	FM Gen. connected to ungrounded tube shield of V2	10.7 MC	None	Connect hot lead of DC VTVM to TSP4, ground to junction of resistors (47K) connected in series from TSP3 to GND.		Z7, top	Zero reading on zero center scale
8		FM	90 MC	FM Gen. connected thru two 120-ohm carbon resistors in series with lead to antenna terminals DISTANCE.	90 MC	30% FM (22.5 KC Dev.) at 400 cps	DC VTVM to TSP3 and scope to Left	Rec. output	L11, L7, L6, L1	Check for sine waveform and adjust for maximum negative voltage
9		FM	106 MC	FM Gen. connected thru two 120-ohm carbon resistors in series with lead to antenna terminals DISTANCE.	106 MC	30% FM (22.5 KC Dev.) at 400 cps	DC VTVM to TSP3 and scope to Left	Rec. output	C32, C23, C11	Check for sine waveform and adjust for maximum negative voltage
10	Repeat steps 8 and 9 for proper dial calibration and maximum output.									

## AM ALIGNMENT

## FM ALIGNMENT





POS	1	2	3	4	5	6	7	8
40	TAPE HEAD	TAPE HEAD	TAPE HEAD	TAPE HEAD	TAPE HEAD	TAPE HEAD	TAPE HEAD	TAPE HEAD
41	FM STEREO FILTER	FM STEREO FILTER	FM STEREO FILTER	FM STEREO FILTER	FM STEREO FILTER	FM STEREO FILTER	FM STEREO FILTER	FM STEREO FILTER
42	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO
43	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO
44	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO
45	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO
46	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO
47	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO
48	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO
49	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO
50	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO	FM MONO

NOTES  
 [V] DENOTES VOLTAGE READINGS AT THE AM POSITION.  
 [V] DENOTES VOLTAGE READINGS AT THE FM POSITION.  
 [V] DENOTES VOLTAGE READINGS ON THE MPX STEREO SIGNAL WITH STEREO SIGNAL RECEIVED.  
 [ ] NO SIGNAL AT THE ANTENNA TERMINALS

# ALIGNMENT INSTRUCTIONS • MULTIPLEX SECTION

STEPS	GENERATOR			INDICATOR	ALIGNMENT		
	CONNECTION	AUDIO FREQUENCY	RF MODULATION	TYPE & CONNECTION	ADJUST	INDICATION	NOTES
1	Audio oscillator connected to lug 1	80 KC—1 volt	None	AC VTVM to junction of C210 and R228	L100 (Use hex alignment tool)	Minimum voltage	
2	Multiplex generator audio output to lug 1 (See Note 1)	19 KC ( $\pm 5$ cps) pilot tone, 100 mv	None	DC VTVM to T.S.P. 101	Z100 top and bottom (Use hex alignment tool)	Maximum voltage	1
3	Same as Step 2	19 KC pilot tone, 50 mv	None	Scope horiz. input to 19 KC output of gen.; vert. input to junction of C216 and R209. External sweep	Z101 (Use K-tran alignment tool)	Stable 2:1 Lissajous pattern. Disregard phase of pattern	1
4	Same as Step 2	19 KC	None	Same as Step 3	Vary generator 19 KC output from 50 to 200 mv	Lissajous pattern should remain stationary over the entire 150 mv range	1, 2
5	Same as Step 2	1000 cps on left (A) channel only, 1 volt rms (2.8 P-P)	None	AC VTVM and scope vert. input to channel A output lug. Internal sweep. DC VTVM to T.S.P. 101	Z100 top (Use hex tool)	Maximum indication on AC VTVM. Clean 1000 cps waveform on scope	1, 3
6	Same as Step 2	1000 cps on right (B) channel only, 1 volt rms (2.8 P-P)	None	Same as Step 5	MPX separation R215	Minimum reading on AC VTVM should be at least 33 db below reading obtained in Step 5	1
7	Same as Step 2	Same as Step 6	None	Move scope input and AC VTVM to channel B output lug	-----	Note and record voltage reading on AC VTVM	1
8	Same as Step 2	1000 cps on left (A) channel only, 1 volt rms (2.8 P-P)	None	Same as Step 7	-----	AC VTVM reading should be at least 33 db below reading observed in Step 7	1
9	Same as Step 2	8000 cps on right (B) channel only, 1 volt rms (2.8 P-P)	None	Same as Step 7	-----	AC VTVM reading should be the same as observed in Step 7	1
10	Same as Step 2	8000 cps on left (A) channel only, 1 volt rms (2.8 P-P)	None	Same as Step 7	-----	AC VTVM reading should be at least 18 db below reading observed in Step 9	1
11	Repeat Steps 9 and 10 with scope and AC VTVM connected to channel A output lug, but start with 8000 cps applied to left channel for first reading, then switch to right channel for second reading.						
12	Multiplex generator RF output to 300-ohm antenna terminals	1000 cps on left (A) channel only	100% (75 KC Dev.) No pre-emphasis	Move scope input and AC VTVM to channel A output lug	-----	Note and record voltage reading on AC VTVM	4
13	Same as Step 12	1000 cps on right (B) channel only	Same as Step 12	Same as Step 12	R215	Minimum reading on AC VTVM should be at least 33 db below reading observed in Step 12	4
14	Same as Step 12	8000 cps on left (A) channel only	Same as Step 12	Same as Step 12	-----	AC VTVM reading should be 10 db below reading observed in Step 12	4
15	Same as Step 12	8000 cps on right (B) channel only	Same as Step 12	Same as Step 12	-----	AC VTVM reading should be 28 db below reading observed in Step 12	4

**NOTE:** The above procedure is based on the use of the FISHER Model 300 Multiplex Generator.

1 — In steps 2 through 11, the audio output of the Multiplex Generator should be connected to lug 1 of the multiplex sub-chassis through a 12,000 ohm, ½-watt, carbon resistor, and a 180 uuf capacitor should be connected between lug 1 and ground. The wiring from the MPX TEST jack on the main chassis to lug 1 must be disconnected during Steps 2 through 11.

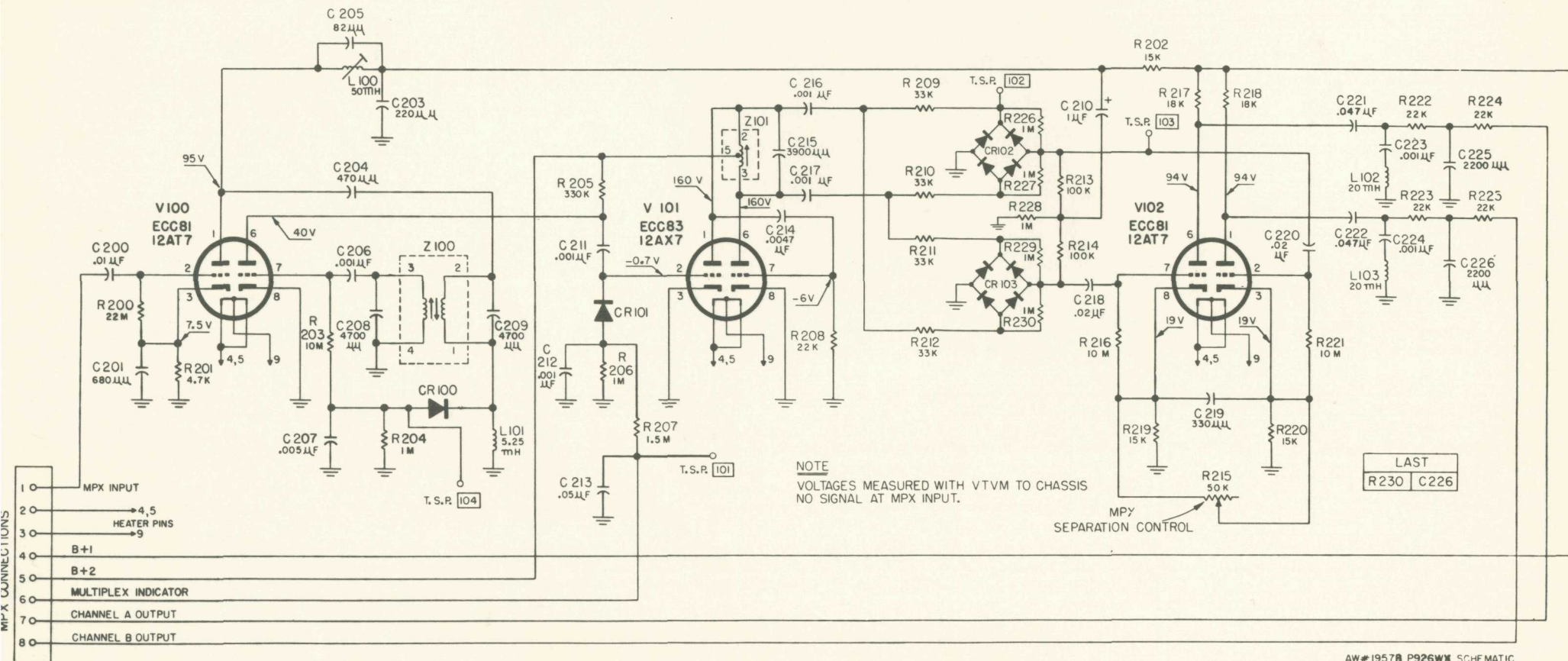
2 — The vertical amplitude of the Lissajous pattern will increase slightly

as the generator output is increased. This is a normal occurrence.

3 — If DC VTVM reading falls below -9 volts when maximum reading is obtained on the AC VTVM, readjust bottom of Z100, then repeat Step 5. Repeat this procedure until maximum AC VTVM reading is obtained with DC VTVM reading greater than -9 volts.

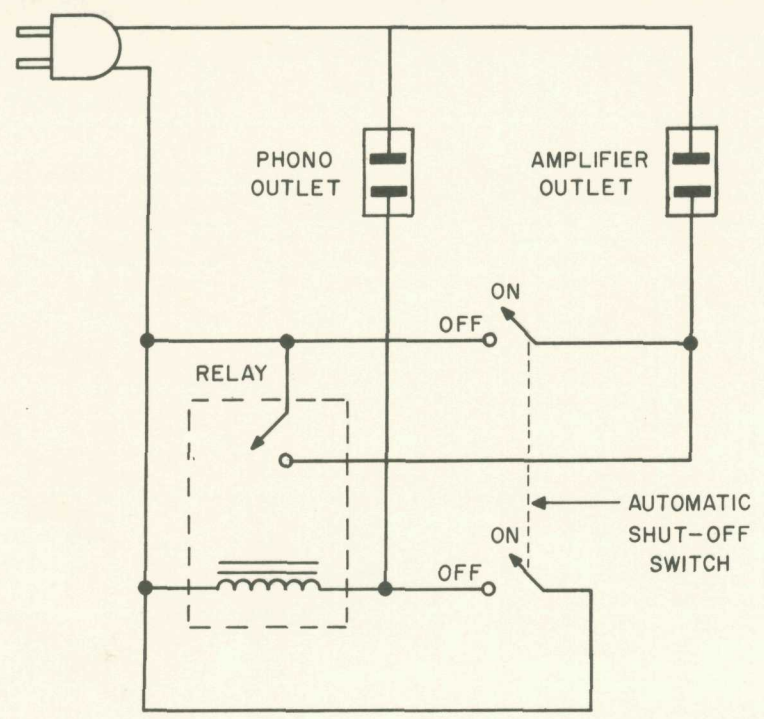
4 — Tune the FISHER to the RF output frequency of the Multiplex Generator.

# SCHEMATIC DIAGRAM • MULTIPLEX SECTION



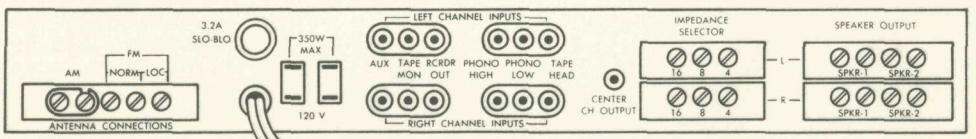
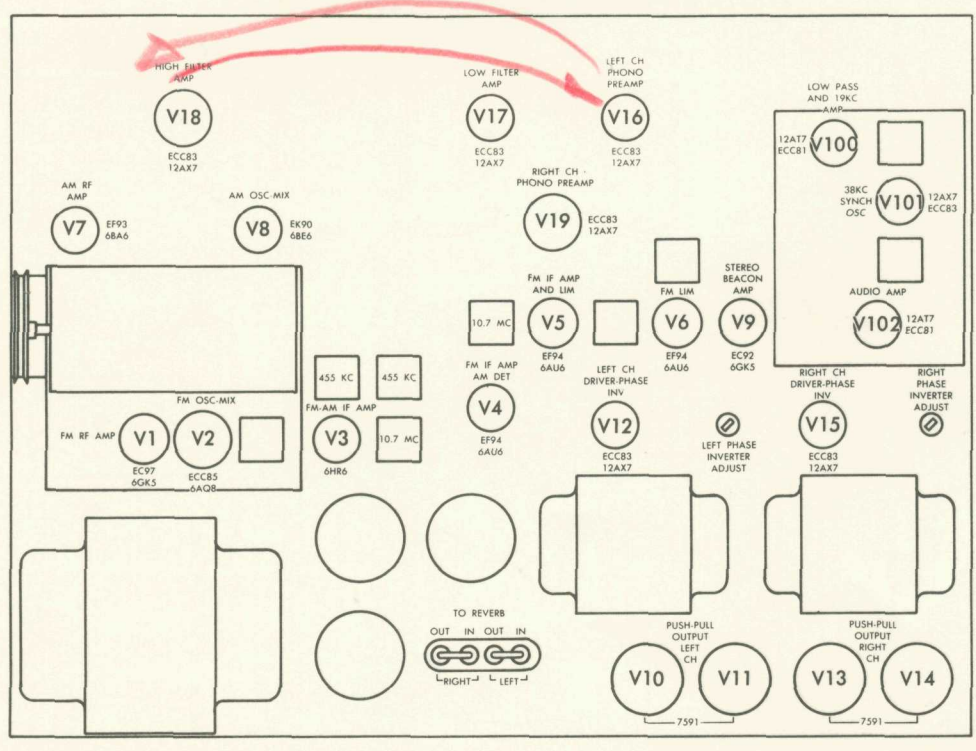


# SCHEMATIC • AUTOMATIC SHUT-OFF ASSEMBLY

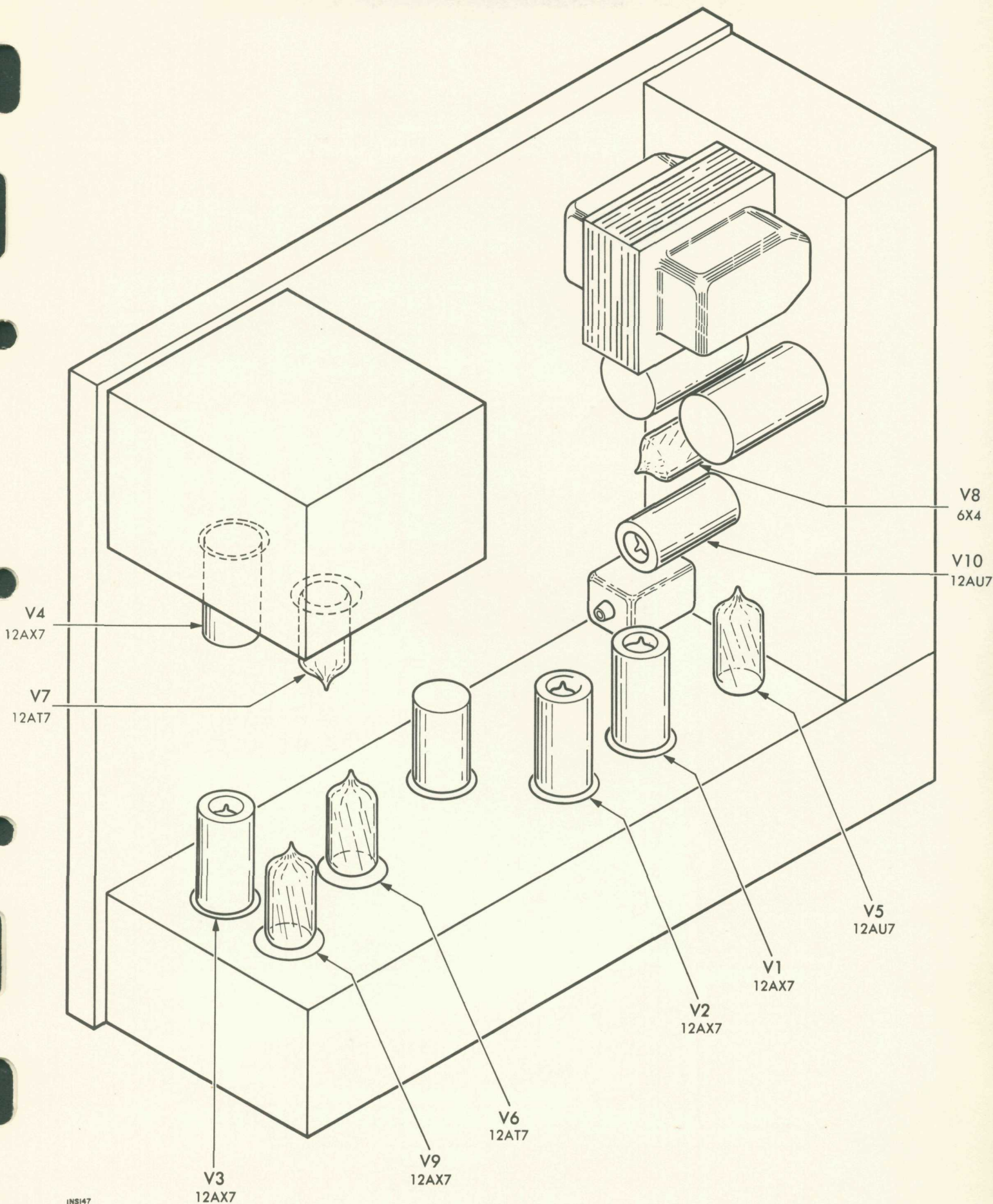


INS 157

# TUBE LAYOUT



# TUBE LAYOUT TAPE RECORDER



INSI47

**SERVICE NOTES**



**FISHER RADIO CORPORATION • NEW YORK**

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