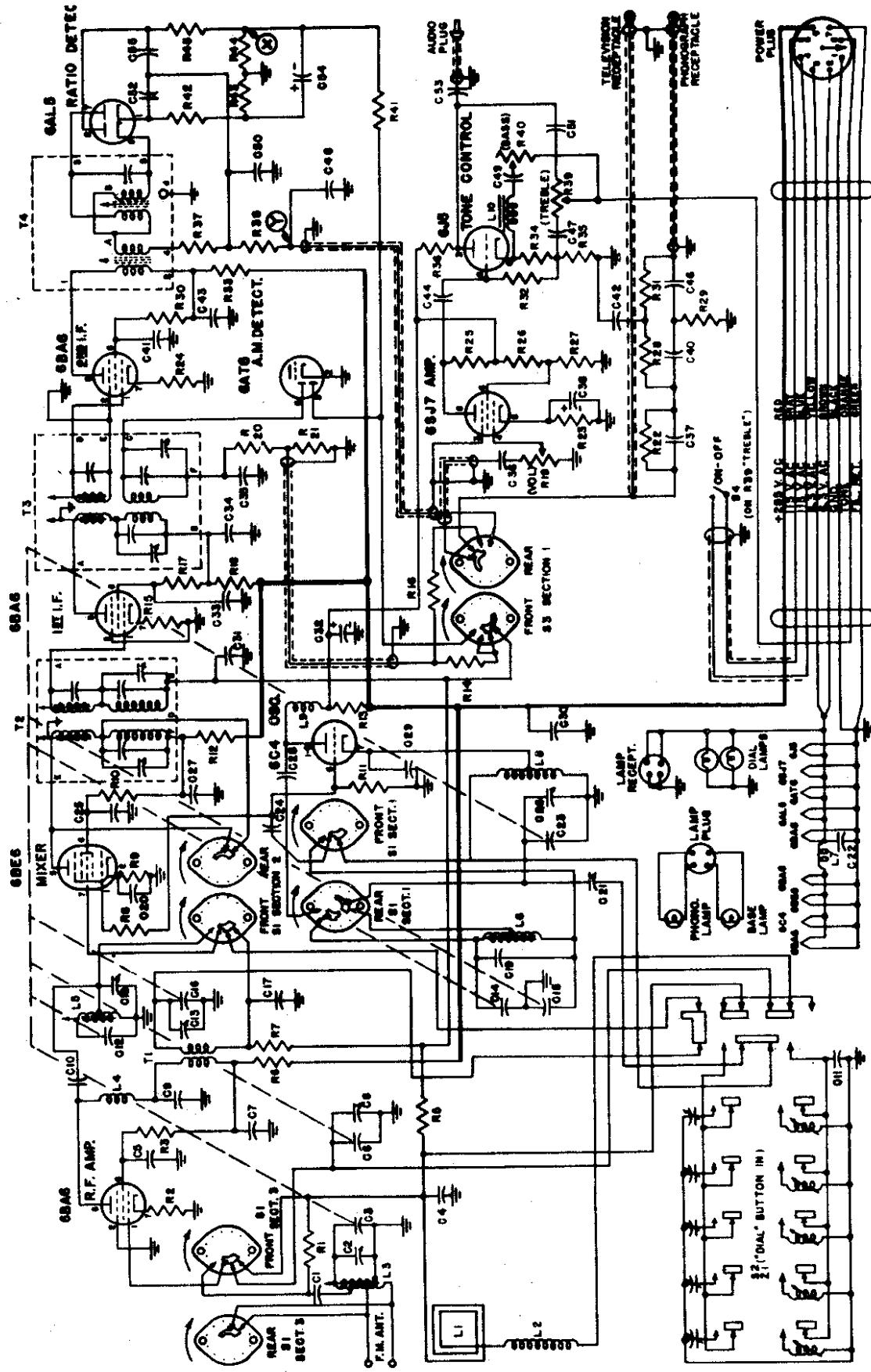


HOFFMAN RADIO CORP.

MODELS B502, chassis 113,
B504, chassis 123



SPECIFICATIONS

- TUNING RANGES
 - Broadcast Band 535 Kc to 1650 Kc
 - FM Band 88 Mc to 108 Mc
- INTERMEDIATE FREQUENCIES:
 - Broadcast Band 455 Kc
 - FM Band 10.7 Mc.

NORMAL OPERATING CURRENTS

- 5U4G Cathode Current 170 Ma
- 6V6 Cathode Current (both tubes) 75 Ma

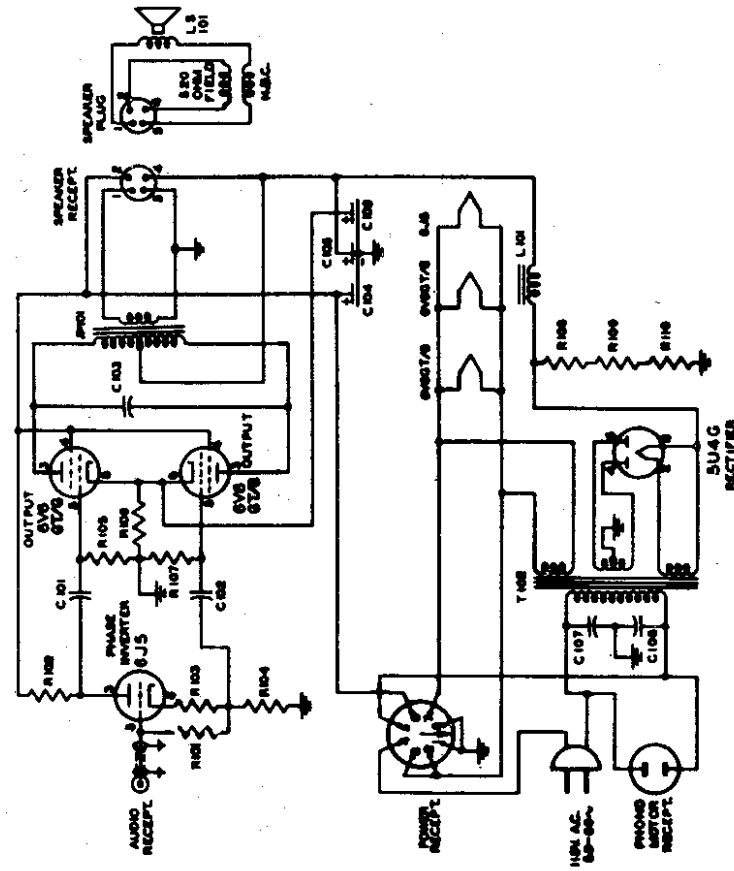


Fig. 5—Power Supply Schematic Diagram

POWER SUPPLY CHASSIS		HOFFMAN NO.
C101, C102	.05 Mfd. 400 Volt Tub. Paper	4101
C103	470 Mmf. ±20% Mica	4003
C104, C105	20/20 Mfd. 450V. 20 Mfd. 25V. Electrolytic	4200
C106, C107, C108	.01 Mfd. 600 Volt, Metal Case	4105
R101	1 Meg. ±20% ½ Watt	4513
R102, R104	47000 Ohm ±10% ½ Watt	4559
R103	2200 Ohm ±20% ½ Watt	4512
R105, R107	.22 Meg. ±20% ½ Watt	4500
R108, R109	220 Ohm ±20% 3 Watt W.W.	4706
R110	10,000 Ohm ±10% 2 Watt	4503
L101	Filter Choke	5116
T101	Audio Output Transformer	5108
T102	Power Transformer	5007
LS101	Speaker—12" Electrodynamic	9044

*Prices Subject To Change Without Notice

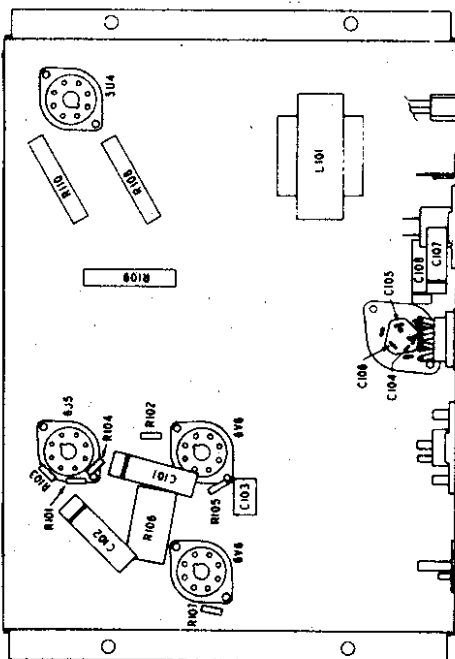
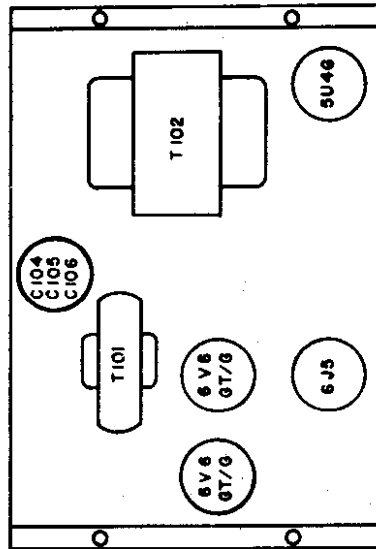


Fig. 4—Bottom of Power Supply Chassis



Power Supply Chassis

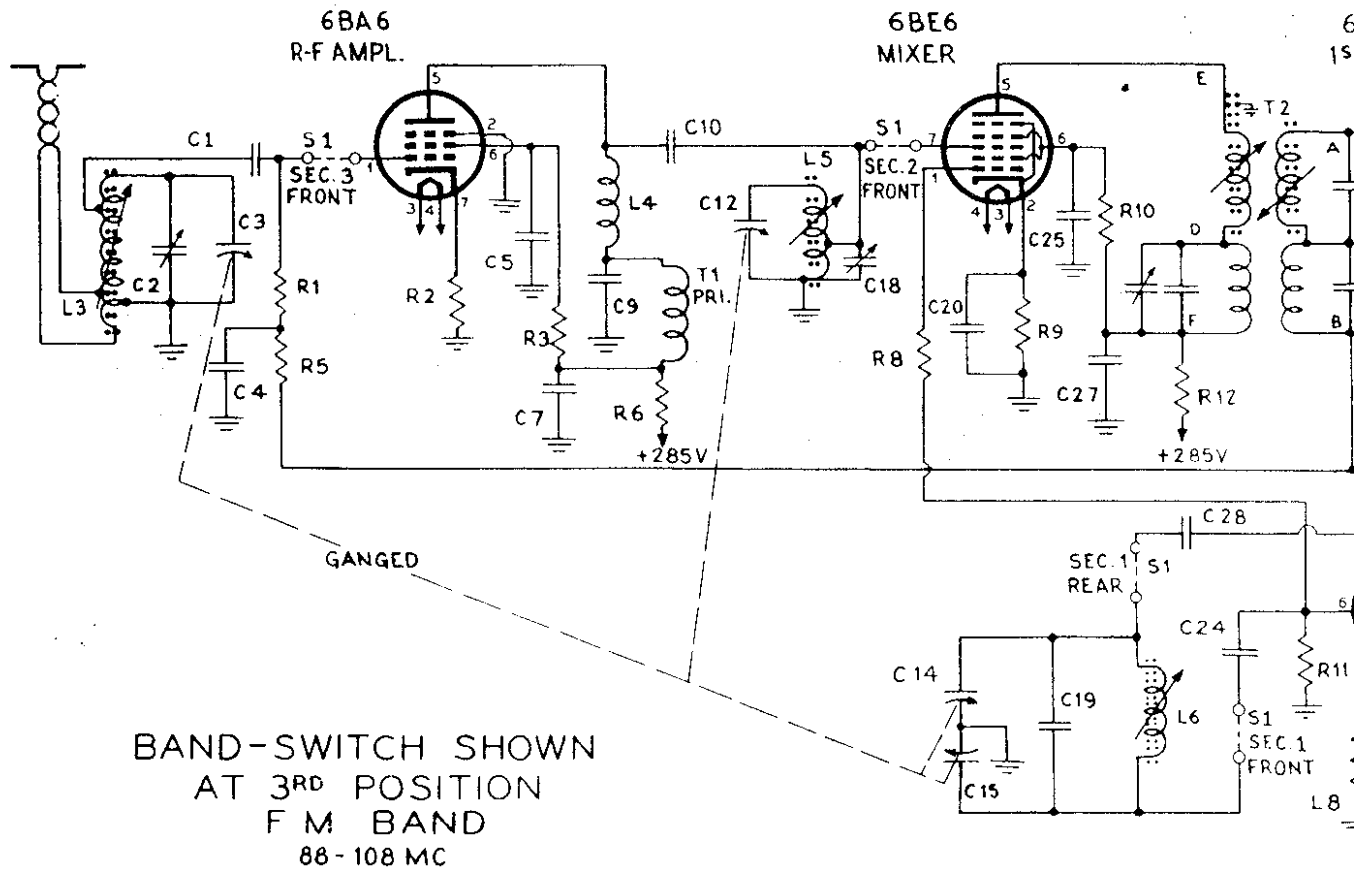
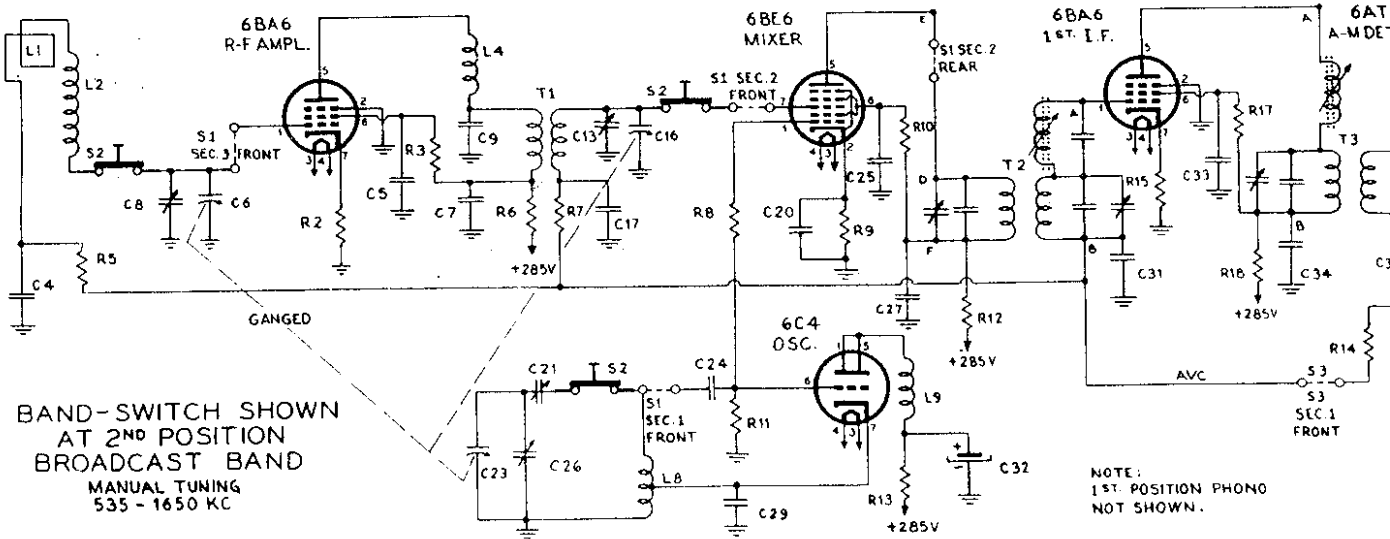
AUTOMATIC RECORD CHANGER

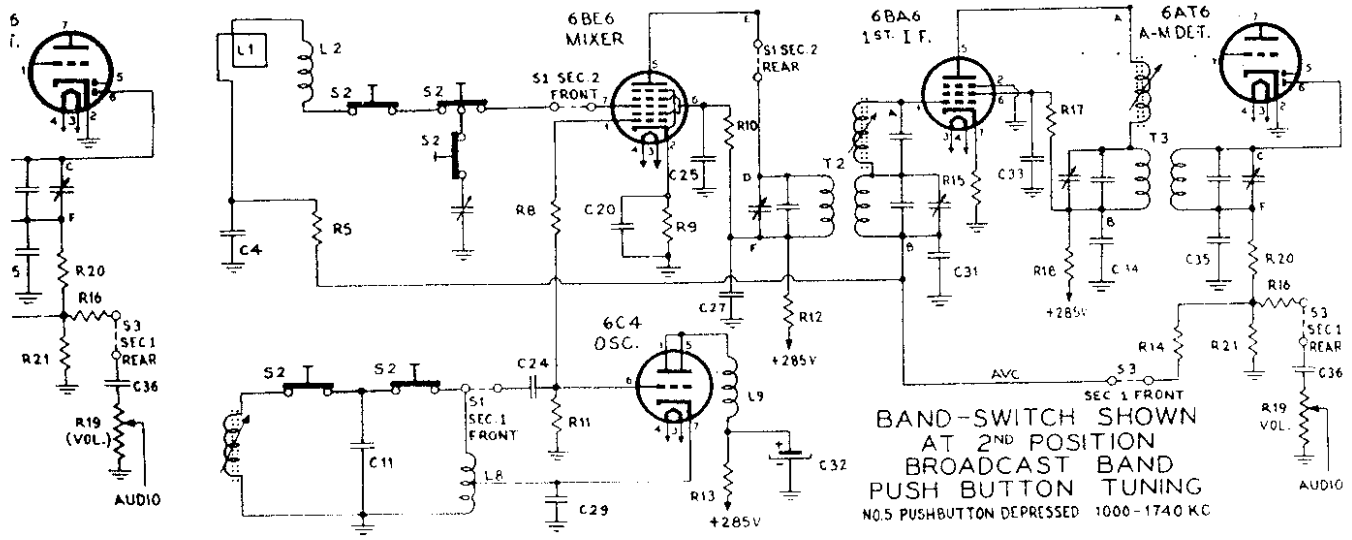
The automatic record changer used with this receiver is a Webster Model 56.

17-3,4

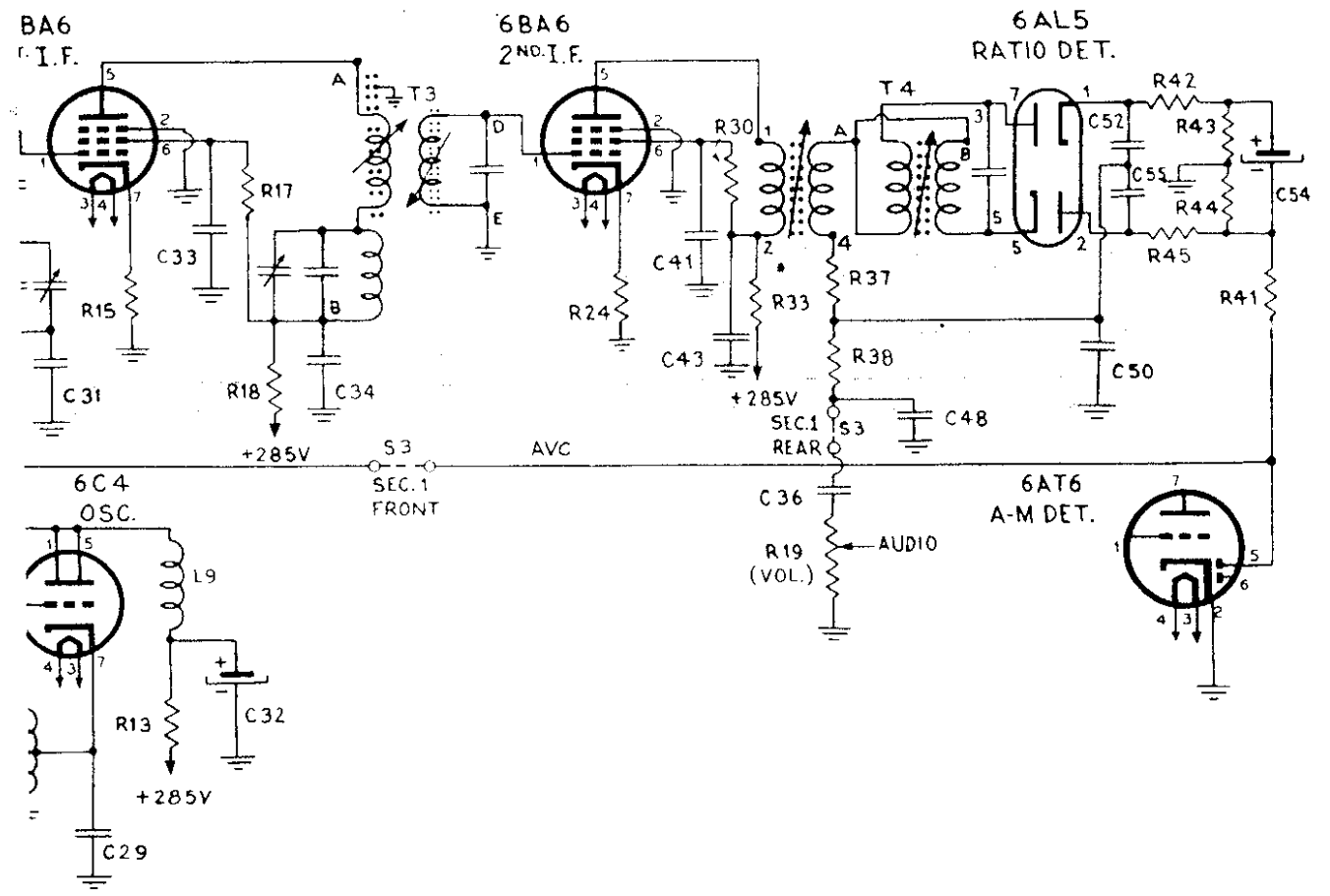
"clarified sche

HOFFMAN RAD





BAND-SWITCH SHOWN
AT 2ND POSITION
BROADCAST BAND
PUSH BUTTON TUNING
NO.5 PUSHBUTTON DEPRESSED 1000-1740 KC



NOTE

IT IS PARTICULARLY IMPORTANT THAT AM ALIGNMENT BE DONE BEFORE FM ALIGNMENT. THIS IS TO AVOID POSSIBLE INTERACTION BETWEEN FM AND AM ADJUSTMENTS.

AM ALIGNMENT

I.F. ALIGNMENT:

1. Set tuning condenser on high frequency end of tuning range (minimum capacity).
2. Set band switch to AM position.
3. Depress Manual pushbutton.
4. Turn receiver on and let it warm up for fifteen minutes or longer in order to minimize drift effects.
5. Connect output meter across speaker voice coil and set meter on lowest range, but not below 2.5 volt scale.
6. Connect output of signal generator to stator of C16 (see schematic diagram and chassis layout) through a .1 mfd. condenser; connect ground side of generator directly to chassis of receiver. Set signal generator on 455 Kc modulated.
7. Adjust I.F. trimmers on T2 and T3 for maximum reading on the output meter. Keep the meter reading on the lower half of the scale.

(NOTE: The above mentioned trimmers are on the top of their respective I.F. cans and are not to be confused with the iron core adjustments also coming out of the tops of the FM IF cans. Keep the signal generator output low and the volume control on the receiver wide open during adjustment.)

R.F. ALIGNMENT:

After following the steps outlined above for I.F. alignment, proceed as follows:

1. Connect signal generator to "hot" side of loop through a .1 mfd condenser and a 400 ohm resistor in series.
2. Set signal generator to 1650 Kc. (modulated) and adjust oscillator trimmer (C26) to signal frequency. (Tuning gang should be at minimum capacity setting for this adjustment).
3. Set signal generator to 535 Kc. (Modulated) and adjust oscillator padder (C21) to signal frequency. (Gang should be at maximum capacity setting for this adjustment).
4. Repeat steps 2 and 3 to insure correct adjustment.
5. Set signal generator to 1400 Kc. (modulated). Tune signal in by rotating condenser gang until signal is heard. Adjust trimmers C8 and C13 for maximum reading on output meter. Keep signal generator output low so that meter reading is on lower half of scale.

FM ALIGNMENT

I.F. ALIGNMENT:

1. Set band switch in the FM position.
2. Set tuning condenser to high frequency end of tuning range (minimum capacity).
3. Solder a 5,000 ohm 1/2 w. carbon resistor between terminals A and B of T2. Solder another 5,000 ohm 1/2 w. carbon resistor between terminals D and E of transformer T3. DO NOT USE WIRE WOUND RESISTORS.
4. Connect the negative side of a 20,000 ohm/volt D.C. voltmeter or vacuum tube voltmeter to point "X" on diagram. Connect the positive side of meter to ground.
5. Connect output of signal generator directly to stator of C12. Adjust signal generator to 10.7 Mc.
6. Adjust the tuning slugs on transformers T2 and T3 for maximum output. (Note: There are two slugs on each I.F. transformer, one on the top of the can and one on the bottom of the can under the chassis. It is desirable to make this adjustment with an insulated alignment screw driver.) While making the above adjustments, keep the output of the signal generator low so that the D.C. reading on the meter is always between 1/2 volt and 1 volt.
7. Adjust the iron slug on the top only of T4 for maximum reading on the meter as outlined in step 6 above.
8. Remove meter lead from point "X" and connect to point "Y". Set meter to most sensitive D.C. voltage range.
9. Adjust the iron slug on the bottom only of T4 for a zero reading on the meter. It will be noted that as this slug is adjusted the meter will go from a positive indication

to a negative indication. Proper adjustment is obtained when the meter is at the zero point between negative and positive swings of the meter. (CAUTION: This adjustment must be made with an insulated alignment screw driver).

NOTE

The above adjustments must be made in sequence and the operator should take particular care that the frequency setting on the signal generator is not touched during alignment. BE SURE THAT THE TWO 5,000 OHM RESISTORS ARE REMOVED FROM THE CIRCUIT AFTER I.F. ALIGNMENT IS COMPLETED. The above adjustments should be made on the basis of meter readings only and no attention should be paid to what is heard coming out of the speaker.

R.F. ALIGNMENT:

1. Set tuning condenser to 100 Mc on the dial.
2. Set band switch to FM position.
3. Connect DC voltmeter to point "X" as outlined above in step 4.
4. Connect output of signal generator to antenna terminals on receiver through 150-ohm carbon resistors. One resistor should be connected in series with the "hot" side of the signal generator and the other resistor should be connected in series with the ground side of the generator. Set signal generator on 100 Mc.
5. Adjust tuning slug on L6 for maximum indication on meter.
6. Set signal generator to 90 Mc.
7. Tune set by rotating gang condenser until meter reads maximum. Now adjust tuning slugs on L3 and L5 for maximum meter reading. While making the above adjustments keep the output on the signal generator low so that the meter reading is between 1/2 volt and 1 volt.
8. Set signal generator to 106 Mc.
9. Tune set by rotating gang condenser until meter reads maximum. Now adjust tubular trimmers C2 and C18 for maximum meter reading.
10. Repeat steps 6 through 9 inclusive twice for proper alignment.

CAUTION: The above adjustments should be made on the basis of meter readings only and no attention should be paid to what is heard coming out of the speaker.

PUSHBUTTON ADJUSTMENTS

The frequency ranges for the pushbuttons are given in figure 2. A layout of the pushbutton adjustments is shown in Figure 3. Note that in this figure, pushbutton number 1 is now to the extreme right, since the pushbutton assembly is being viewed from the rear. To make pushbutton adjustments, proceed as follows:

1. Turn the receiver on and let it warm up for fifteen minutes or longer in order to minimize drift effects.
2. Depress the DIAL pushbutton and tune in the station which is to be set on pushbutton number 1.
3. Now depress pushbutton number 1 and adjust tuning slug 1a and trimmer 1b (Figure 3) until the station is accurately tuned in again.



PUSHBUTTON NO.	1	2	3	4	5	DIAL
FREQUENCY RANGE IN HILICYCLES	480 TO 540	550 TO 600	610 TO 670	680 TO 740	750 TO 810	700 TO 1740

Figure 2—Pushbutton Frequencies

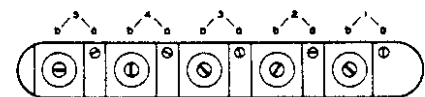


Figure 3—Pushbutton Adjustments

POWER SUPPLY CHASSIS

Pin No.	1	2	3	4	5	6	7	8
6J5	0	0	+190	—	+65*	+80	6.3 AC	+85
6V6	0	0	+310	+285	0	—	6.3 AC	+16.5
6V6	0	0	+310	+285	0	—	6.3 AC	+16.5
5U4	0	+335 5.0 AC★	—	370 AC	—	370 AC	—	+335 5.0 AC★

D.C. voltages measured with 20,000 ohm/volt meter.

A.C. voltages measured with 1000 ohm/volt meter.

*Measured with V.T.V.M. (subject to wide variations because of tubes and V.T.V.M. used).

All voltages measured with reference to chassis except as follows:

★Measured between pin numbers 2 and 8 on 5U4 socket.

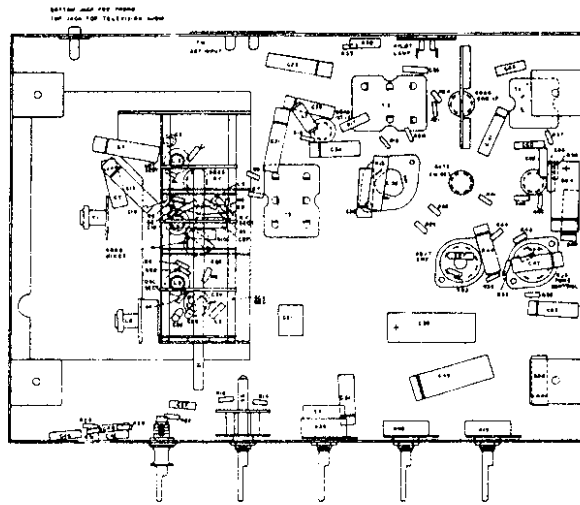
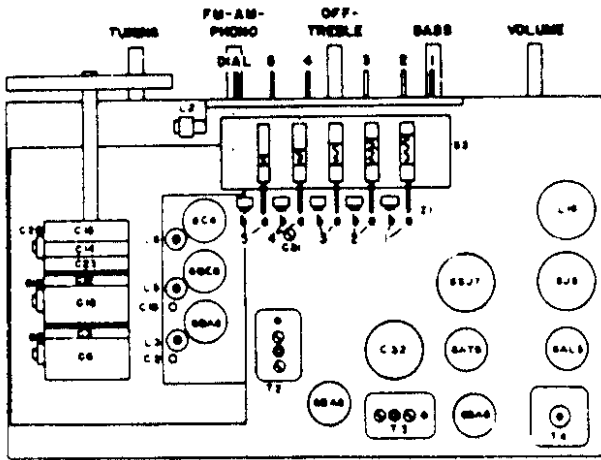
NOTE: Above readings are obtained with no signal input to receiver and band switch in phono position.

NORMAL OPERATING VOLTAGES

The following tables list the normal operating voltages to be expected at the various tube socket terminals.

TUNER CHASSIS

Pin No.	1	2	3	4	5	6	7	8
6BA6 (R.F.)	—4*	0	6.3AC	0	+260	+97	+1.0	—
6BE6 (Conv.)	—14*	—4	6.3AC	0	+270	+65	—4*	—
6C4 (Osc.)	+230	—	6.3AC	0	+230	—14*	0	—
6BA6 (1st I.F.)	—4*	0	6.3AC	0	+260	+97	+1.0	—
6BA6 (2nd I.F.)	0	0	6.3AC	0	+260	+93	+1.0	—
6AL5 Ratio Det.	+5*	—5*	6.3AC	0	+25*	—	+25*	—
6AT6 AM Det.	—	0	6.3AC	0	—5*	—5*	—	—
6SI7 A.F.	0	6.3AC	0	0	+1.0	+23	0	+155
6J5 Tone Control	0	6.3AC	+180	+230	+40*	+44	0	+50



Tuner Chassis
TUNER CHASSIS

Bottom of Tuner Chassis

SYMBOL	DESCRIPTION	HOFFMAN NO.					
C1, C9, C10, C28, C35, C37	100 Mmf. ±10% Ceramic	4012	C49	.5 Mfd. 200 Volt Tub. Paper	4110		
C2, C18	1 - 8 Mmf. Trimmer	4315	C54	5 Mfd. 50 Volt Electrolytic	4209		
C3, C6, C12, C14, C15, C16, C23	3 Sect. Variable with Split Stator	4408	C43	2300 Mmf. ±5% Mica	4006		
C4, C17, C22, C31	.05 Mfd. 200 Volt Tub. Paper	4100	R1	.27 Meg. ±20% ½Watt	4545		
C5, C25	470 Mmf. ±20% Mica	4003	R2, R9, R15, R24	56 Ohm ±10% ½Watt	4561		
C7, C30, C34, C44, C51, C53	.01 Mfd. 400 Volt Tub. Paper	4112	R3, R10, R17, R30	33,000 Ohm ±20% 1 Watt	4556		
C8, C13, C26	1.8 - 30 Mmf. Trimmer	4313	R5, R7	.1 Meg. ±20% ½Watt	4511		
C11	500 Mmf. ±5% Silver Mica	4004	R6, R12, R18, R33	1500 Ohm ±20% ½Watt	4534		
C19	50 Mmf. ±2% Ceramic	4023	R8	22 Ohm ±20% ½Watt	4560		
C20	220 Mmf. ±20% Ceramic	4026	R11, R35, R36	22,000 Ohm ±20% ½Watt	4501		
C21	110-560 Mmf. Trimmer	4301	R13	4700 Ohm ±20% 2 Watt	4551		
C24	22 Mmf. ±10% Ceramic	4021	R14	2.2 Meg. ±20% ½Watt	4502		
C27	5000 Mmf. (Min.) Ceramic	4029	R16, R32	1 Meg. ±20% ½Watt	4513		
C29	50 Mmf. ±20% Ceramic	4031	R19	.5 Meg. Pot. (Volume)	4804		
C32	20 Mfd. 450 Volt Electrolytic	4207	R20, R38	47,000 Ohm ±20% ½Watt	4506		
C33, C41	.001 Mfd. 600 Volt Tub. Paper	4104	R21	.68 Meg. ±20% ½Watt	4555		
C36	.02 Mfd. 400 Volt Tub. Paper	4106	R22	4.7 Meg. ±20% ½Watt	4544		
C38	25 Mfd. 25 Volt Electrolytic	4205	R23, R34	2200 Ohm ±20% ½Watt	4512		
C40, C46, C50, C52, C55	330 Mmf. ±5% Mica	4010	R25	.22 Meg. ±20% ½Watt	4500		
C42	650 Mmf. ±5% Mica	4011	R26	.12 Meg. ±10% ½Watt	4548		
C47	.005 Mfd. 600 Volt Tub. Paper	4102	R27	15,000 Ohm ±20% ½Watt	4521		
C48	.002 Mfd. 600 Volt Tub. Paper	4118	R28, R31	47,000 Ohm ±10% ½Watt	4559		
			R29	22,000 Ohm ±5% ½Watt	4538		
			R37	120 Ohm ±10% ½Watt	4546		
			R39	.25 Meg. Pot. With Switch (Treble)	4805		
			R40	50,000 Ohm Pot. (Bass)	4806		
					R41	.47 Meg. ±20% ½Watt	4506
					R42, R45	390 Ohm ±10% ½Watt	4549
					R43, R44	6800 Ohm ±10% ½Watt	4557
					L1	Loop Antenna	55210
					L2	Antenna Coil—Broadcast	5265
					L3	Coil—F.M. Ant.	5253
					L4, L9	Coil—R.F.	5254
					L5	Coil—F.M. R.F.	5252
					L6	Coil—F.M. Osc.	5251
					L7	Coil—Fil. R.F.	5266
					L8	Coil—B.C. Osc.	5263
					L10	Choke—Bass	5103
					S1	Band Switch (R.F.)	6014
					S2	Pushbutton Switch Assem.	6004
					S3	Band Switch (Audio)	6015
					T1	Transformer—R.F. Interstage	5264
					T2	Transformer—1st I.F.	5272
					T3	Transformer—2nd I.F.	5273
					T4	Transformer—Ratio Detect.	5270
					Z1	Pushbutton Tuning Assembly	55200