MODELS 6-S-27, 6-S-52
MODELS 7-M-91S, 7-M-91D
MODELS 7-S-28, 7-S-53
Alignment, Voltage

ZENITH RADIO CORP.

SOCKET VOLTAGES 7-M-91S, 7-M-91D

Tube	Position	1	2	3	4	5	6	7	8	9
6K7	R.F. Amp.	0	5.8	250	100	5.2	—	0	5.2	0
6A8	1st Det. Osc.	0	0	250	100	—23	165	5.8	5.2	0
6K7	I.F. Amp.	0	5.8	240	100	6.7	—	0	6.7	0
6Q7	2nd Det. A. V. C. 1st Audio	0	0	145	—2	—2	—	5.8	1.6	0
6C5	Driver	0	0	240	0	0	—	5.8	8.2	—
6N7	Class B Power	0	0	250	0	0	250	5.8	0	—
6X5	RECT.	0	0	AC	—	AC	—	5.8	250	—

All voltages measured with 1000 ohms per volt D. C. meter. Voltage at Battery 6V.
Total current consumption 8.2 Amperes. Voltage at Switch 5.8V.
Sensitivity at one watt output 1MV. Antenna disconnected.
Maximum power output 9 watts at 6 volts.

Models 7-M-91S and 7-M-91D. (Chassis No. 5706)

The sensitivity switch should be in the clockwise or sensitive position during adjustment. The output meter may be connected across the voice coil connections at the speaker socket.

"A" Connect the service oscillator to the control grid of the 6A8 tube and the chassis.

Connect the output meter across the primary of the speaker transformer.

Set the service oscillator to 252.5 K.C., and adjust the trimmers on the I. F. transformers for the greatest output reading. These adjustments should be repeated several times using as weak an input signal as possible so as to obtain greater accuracy.

"B" Change the service oscillator lead from the grid of the 6A8 to the antenna connection. A male Delco Remy connector may be used in making a connection to the antenna lead.

Set the service oscillator at 1400 K.C.

Rotate the gang condenser one and one fourth turns from the minimum setting. At the proper position eight teeth on the tuning gear will be visible past the gear bracket.

Adjust the oscillator, R.F. and antenna trimmers in that order to the point giving the greatest output.

"C" Set the service oscillator at 600 K.C. and rotate the gang condenser to tune in this signal. Move the gang condenser to and fro past the signal meanwhile adjusting the oscillator padder condenser until the combination of adjustments giving the greatest reading of the output meter is obtained.

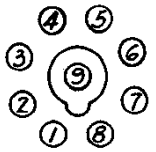
"D" Repeat operation "B."

Socket Voltages

MODELS 7-S-28, 7-S-53
CHASSIS #5704

TUBE	POSITION	1	2	3	4	5	6	7	8	9
6K7	R.F.	0	6_{ac}	250	75	0	-	0	0	-.1
6A8	1st.Det. Osc.	0	6_{ac}	250	75	-1	195	0	0	-.1
6K7	I. F.	0	6_{ac}	250	75	0	-	0	0	-.1
6H6	2nd Det. A.V.C.	0	6_{ac}	-2	-2.5	-2	-	0	-2.5	-
6K7	1st Audio	0	6_{ac}	65	14	-1	-	0	- 1	-.1
6F6	PWR.	0	6_{ac}	235	250	-10	-	0	-5	-
5Y3	Rect.	0	310	-	250_{ac}	-	250_{ac}	-	310	-

Line Voltage 115 Antenna and Ground Disconnected



All voltages measured from point indicated to ground, using a 1000 ohm per volt D.C. meter (unless marked otherwise).

Alignment

The use of an accurately calibrated service oscillator is imperative in the alignment of modern superheterodynes. The alignment procedure is as follows:

(1) Connect service oscillator to grid of 6A8 and ground. Balance I.F. trimmers at 466 K.C.

(2) Connect service oscillator to antenna and ground binding posts and set at 6 megacycles. Adjust trimmer on gang for correct dial reading, (6 megacycles on Band B).

(3) Set service oscillator and pointer to 21 megacycles and adjust S.W. trimmer (through hole in top of chassis) for correct dial reading.

(4) Recheck 6 megacycle adjustment.

(5) Set service oscillator and pointer to 1700 K. C. (Band A) and adjust broadcast trimmer (through hole in top of chassis) for correct dial reading.

(6) Set service oscillator at 600 K.C. Adjust broadcast padder (through hole in top of chassis next to I.F. transformer), meanwhile rocking pointer to and fro past 600 K.C. on dial to combination giving greatest output.

(7) Readjust at 1700 K.C.

Note: These adjustments affect each other slightly and the entire procedure should be repeated to secure maximum results.

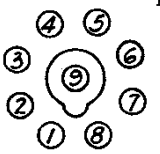
For other data see index

Socket Voltages

MODELS 6-S-27, 6-S-52
CHASSIS #5619

TUBE	POSITION	1	2	3	4	5	6	7	8	9
6A8	1st.Det. Osc.	0	5_{ac}	225	70	-.1	190	0	0	0
6K7	I.F.	0	5_{ac}	225	70	0	-	0	0	0
6H6	2nd Det.	0	5_{ac}	-1	-2.5	-1	-	0	-2.5	-
6K7	1st.Aud.	0	5_{ac}	60	14	-2.5	-	0	-2.5	0
6F6	PWR	0	5_{ac}	220	225	-2.5	-	0	-2.5	-
5Y3	Rect.	0	300	-	305_{ac}	-	305_{ac}	-	300	-

Line voltage 110. Antenna and Ground disconnected.



All voltages measured from point indicated to ground, using a 1000 ohm per volt D.C. meter (unless marked otherwise).

Alignment

(1) Balance I.F. transformers at 252½ K.C. with test oscillator connected to control grid of 6A8 and ground.

(2) Turn band switch to "C" Band. Connect test oscillator to antenna and ground leads and set for 15 megacycles. Adjust oscillator trimmer on gang condenser to secure correct dial reading.

(3) Adjust detector trimmer (located on bracket on top of detector coil) for maximum output.

(4) Turn band switch to "A" Band. Adjust oscillator trimmer (through hole in top of chassis next to oscillator) for correct dial reading at 1400 K.C. Also adjust preselector and detector trimmers on gang for maximum output.

(5) Adjust oscillator padder (next to oscillator section of gang through hole in top of chassis) while rocking pointer back and forth past 600 K.C. to the combination giving greatest output.

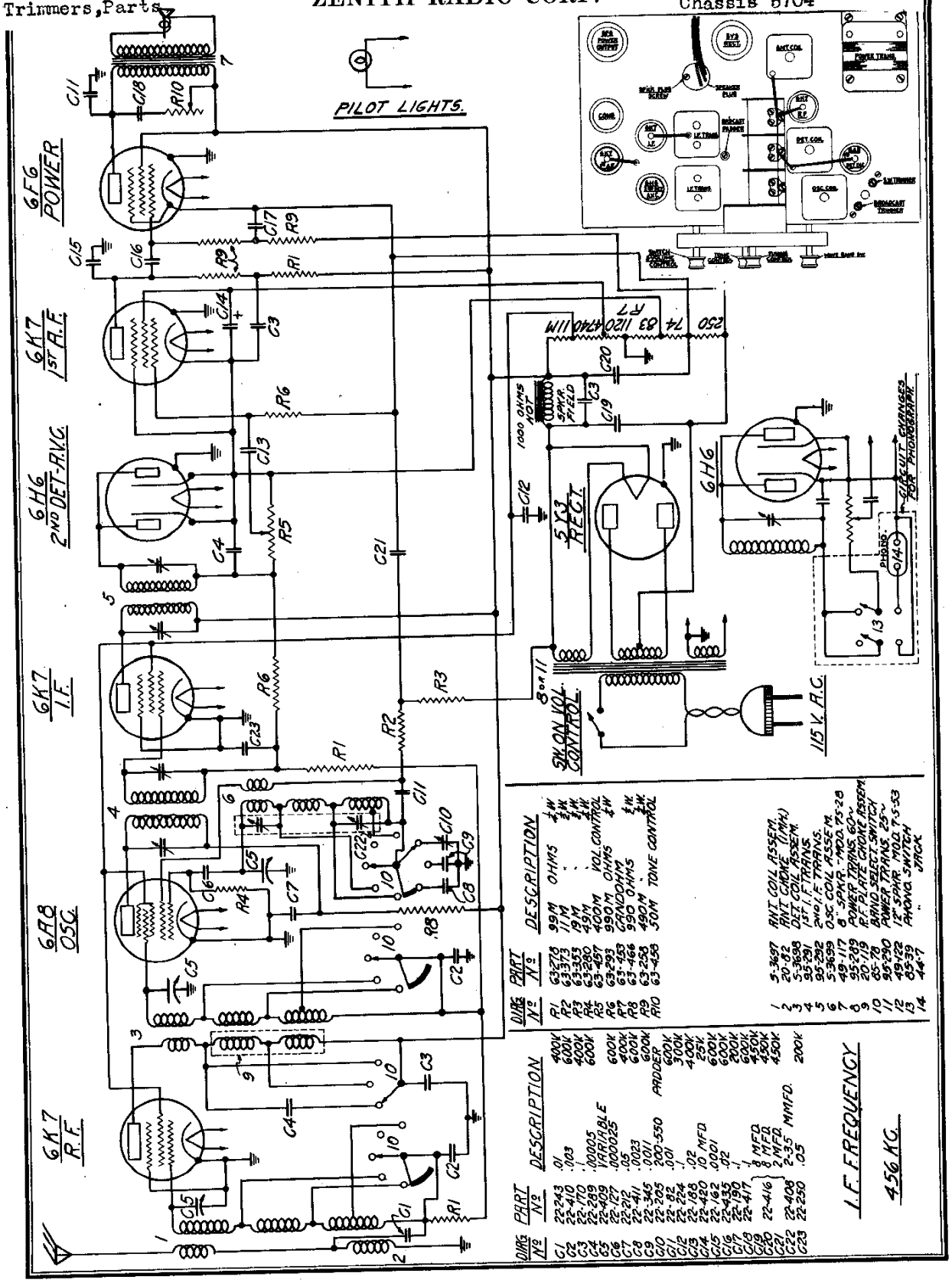
(6) Recheck at 1400 K.C.

(7) Repeat entire procedure.

Schematic, Socket Trimmers, Parts

ZENITH RADIO CORP.

MODELS 7-S-28, 7-S-53
Chassis 5704



LINE No.	PART No.	DESCRIPTION	OHMS	
1	5-3697	ANT. COIL ASSEM.		
2	20-82	ANT. CHOKE (MW.)		
3	5-3698	OSC. COIL ASSEM.		
4	95-291	1ST I.F. TRANS.		
5	95-292	2ND I.F. TRANS.		
6	5-3699	OSC. COIL ASSEM.		
7	49-117	8" SPKR. - MOD. 75-28		
8	95-289	POWER TRANS. 60~		
9	20-119	R.F. PLATE CHOKE ASSEM.		
10	65-78	BAND SELECT SWITCH		
11	95-290	POWER TRANS. 25~		
12	19-122	12" SPKR. MOD. 7-S-53		
13	65-39	PHONO. SWITCH		
14	44-7	JACK		
R1	63-270	99 M	½ W.	
R2	63-373	11 M	½ W.	
R3	63-353	19 M	½ W.	
R4	63-280	49 M	½ W.	
R5	63-457	400 M	VOL. CONTROL	½ W.
R6	63-293	990 M	OHMS	½ W.
R7	63-466	63-463	GRADUATED	½ W.
R8	63-258	990 OHMS		
R9	63-458	490 M	TONE CONTROL	

PART No.	DESCRIPTION		
22-243	.01	400 V.	
22-410	.003	600 V.	
22-170	.1	400 V.	
22-289	.00005	600 V.	
22-409	VARIABLE		
22-127	.000025	600 V.	
22-212	.05	400 V.	
22-411	.0023	600 V.	
22-345	.0011	600 V.	
22-205	200-550	PADDER	
22-82	.001	600 V.	
22-224	.1	300 V.	
22-188	.02	400 V.	
22-480	.10 MFD.	25 V.	
22-162	.0001	600 V.	
22-435	.02	600 V.	
22-190	.1	600 V.	
22-417	.1 MFD.	600 V.	
	.8 MFD.	450 V.	
22-416	.8 MFD.	450 V.	
	2 MFD.		
22-408	2-35 MMFD.		
22-230	.05	200 V.	

DIMS No.	PART No.	DESCRIPTION
G1	22-243	.01
G2	22-410	.003
G3	22-170	.1
G4	22-289	.00005
G5	22-409	VARIABLE
G6	22-127	.000025
G7	22-212	.05
G8	22-411	.0023
G9	22-345	.0011
G10	22-205	200-550
G11	22-82	.001
G12	22-224	.1
G13	22-188	.02
G14	22-480	.10 MFD.
G15	22-162	.0001
G16	22-435	.02
G17	22-190	.1
G18	22-417	.1 MFD.
G19		.8 MFD.
G20	22-416	.8 MFD.
G21		2 MFD.
G22	22-408	2-35 MMFD.
G23	22-230	.05