the hallicrafters co.

SERVICE BULLETIN FOR MODEL S-40A

GENERAL

Tubes . . . . . .Eight plus rectifier

Speaker . . . . . .5-inch PM

Speaker V.C. Impedance.. .3.2 ohms

Headset Output . . . . . .Low Impedance

Antenna . . . . . .Provision for external antenna

Tuning. . . . . .Manual

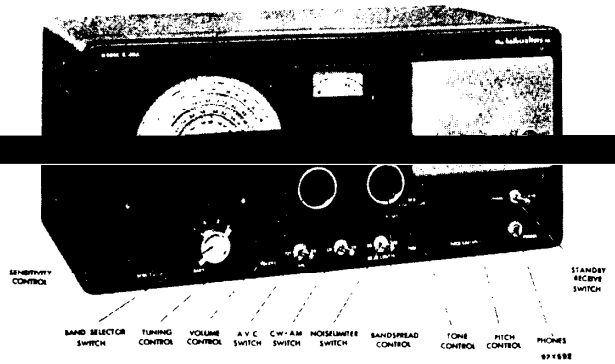
Tuning Range. . . . . .

Band Selector Position	Frequency Range
1.	540 kc - 1680 kc
2.	1680 kc - 5.4 mc
3.	5.3 mc - 15.5 mc
4.	15.5 mc - 44 mc

Intermediate Frequency . . 455 kc.

Power Supply. . . . . .Standard Model 105-125 V. 60 cycles AC
Universal Model 105-250 V. 25/60 cycles AC

Power Consumption . . . . 75 Watts



RESTRINGING DIAL CORD

To restring the general coverage tuning dial cord, cut an 18-inch length of 30 lb. test dial cord and tie one end to the tension spring of the main tuning capacitor drive pulley at position "1" on the diagram. Follow the numbers "1" through "4", and at position "4" stretch the tension spring and tie the cord securely.

To restring the band spread tuning dial cord, cut a 36-inch length of dial cord and follow the procedure as above, starting at position "A" on the diagram. Note that the tuning drive shafts are wrapped with three turns of dial cord for proper traction.

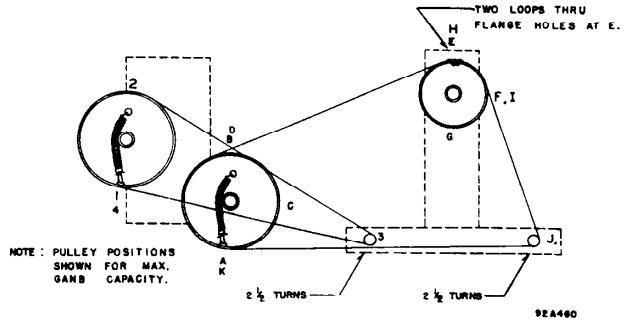


Fig. 1. Dial cable stringing procedure

REPLACING LAMPS

Refer to Fig. 4 for the location of the two dial lamps used in the receiver. To gain access to the defective lamps, lift the cabinet cover and unclip the dial lamp sockets. The sockets may then be brought out into the open to change the defective lamp. Replace defective lamps with 6-8 V. Mazda #44 (Blue bead) lamps or equivalent.

ALIGNMENT PROCEDURE

Set the following controls before alignment.

SENSITIVITY . . . . . .Set at maximum

VOLUME. . . . . .Set at maximum

AVC switch. . . . . .Set at OFF

Band Spread . . . . . .Set at zero

CW/AM . . . . . .Set at AM (See step 2)

NOISE LIMITER . . . . . .Set at OFF

STANDBY RECEIVE. . . . . .Set at RECEIVE

TONE SWITCH . . . . . .Set at HIGH

For the settings of the remaining controls, see alignment chart.

Access to the i-f amplifier alignment adjustments may be had through the cabinet top cover. R-F alignment should be done through the holes provided in the cabinet bottom because the oscillator calibration will be effected slightly by changes in the capacity between the cabinet bottom and the r-f coils and wiring.

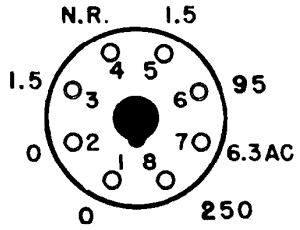
Before starting the alignment procedure, check the position of the general coverage dial index marker on the low frequency end of the range and the bandspread dial zero position. The general coverage condenser should index at max. capacity, and the bandspread condenser at min. capacity.

The standard RMA dummy antenna mentioned in the alignment chart consists of a 200 mmf. condenser in series with a 20 uh r-f choke which is shunted by a 400 mmf condenser in series with a 400 ohm carbon resistor.

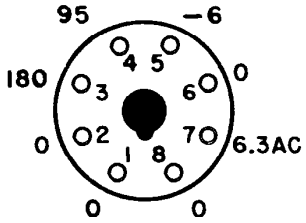
TUBE TERMINAL VOLTAGES (PIN VIEW)

ALL VOLTAGES ARE POSITIVE DC UNLESS OTHERWISE SPECIFIED

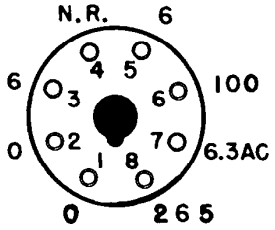
V_1



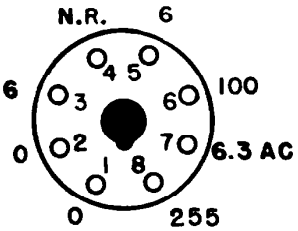
V_2



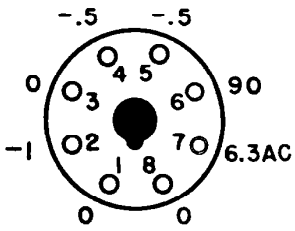
V_3



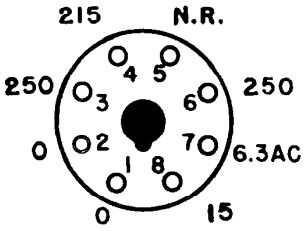
V_4



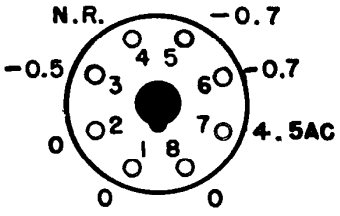
V_5



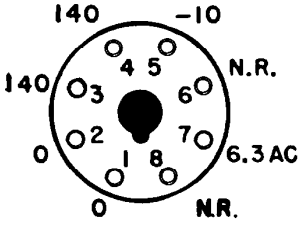
V_6



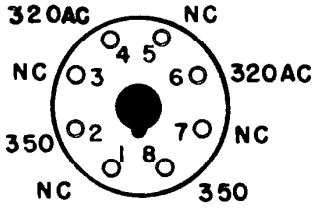
V_7



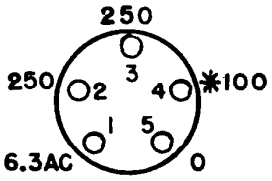
V_8



V_9



SO_2



*"S" METER SWITCH CLOSED (MAX. CLOCKWISE);
NR - NOT READABLE WITH METER USED.
ALL READINGS TAKEN AT 117 V. AC LINE VOLTAGE; WITH 20,000 OHM/VOLT METER; NO SIGNAL BEING RECEIVED; CONTROLS SET AS FOLLOWS: STANDBY/RECEIVE SWITCH AT "RECEIVE"; AVC, NOISE LIMITER AT "ON"; AM/CW SWITCH AT "CW"; SENSITIVITY AND VOLUME CONTROLS FULL CLOCKWISE; TUNING, PITCH CONTROL AND TONE CONTROLS IN ANY POSITION AS THEY DO NOT AFFECT READINGS. BAND SELECTOR SET AT BAND 1.
NC-NO CONNECTION.

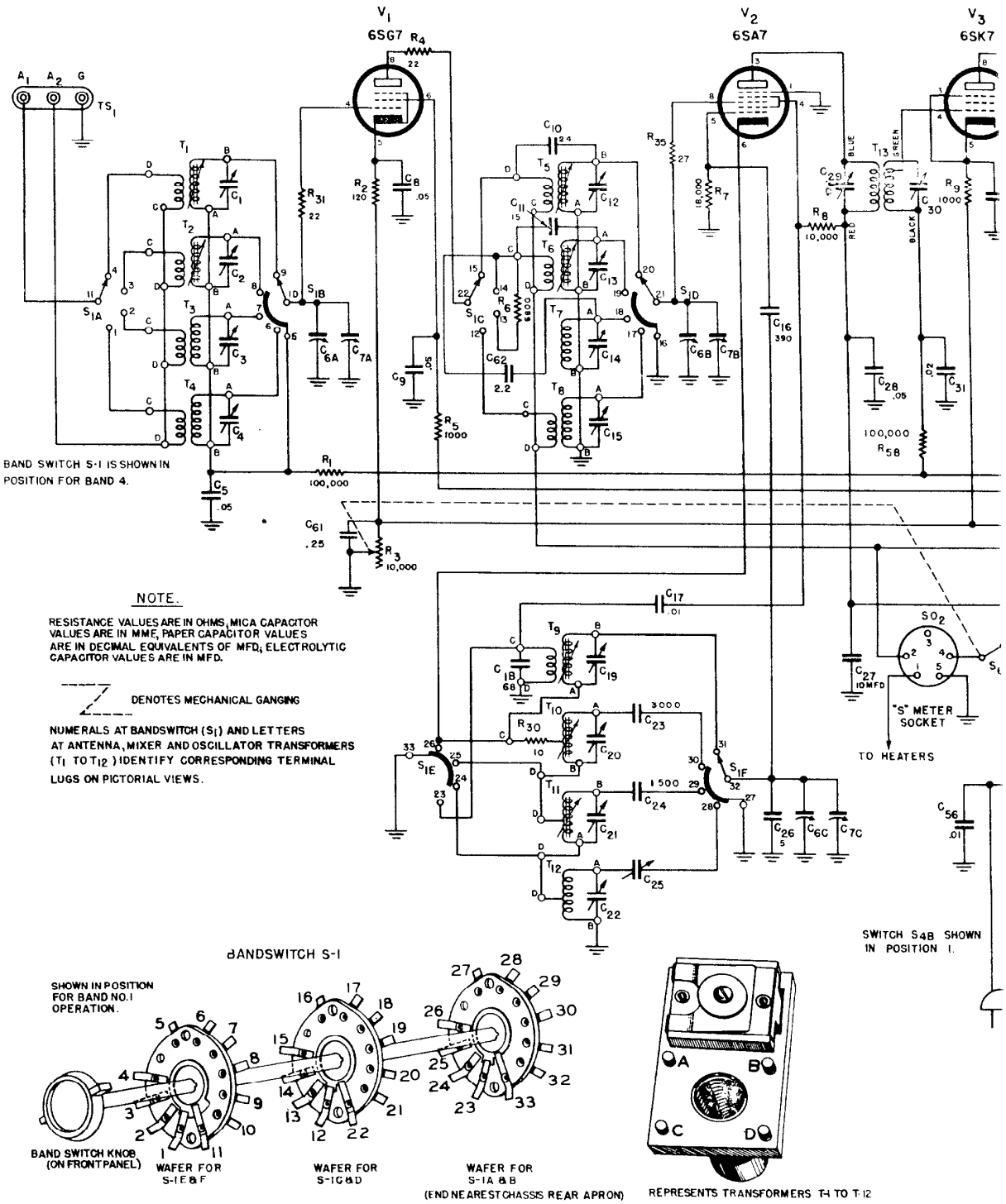
92B312

Fig. 5. Tube socket voltage chart

SERVICE PARTS LIST

Ref. No.	Description	Manufacturer's Part Number
	CONDENSERS	
C-1,2,12, 13,19	Trimmer, adjustable, part of transformers T-1,2,5,6 and 9	44B149
C-3,4,14,15, 20,21,25	Trimmer, adjustable, part of transformers T-3,4,7,8,10, 11 and 12	44A147
C-5	.05 mfd. 200 V., tubular	46A091
C-6,7	Tuning capacitor, 3 sections ganged	48C138
C-8,32,35, 59,60	.05 mfd. 200 V., tubular	46AU503J
C-9,28,52	.05 mfd. 400 V., tubular	46AW503J
C-10	24 mmf. 500 V., ceramic	47X21UK240M
C-11	15 mmf. 500 V., ceramic	47X21UK150M
C-16	390 mmf. 500 V., mica	47X20A391K
C-17,53	.01 mfd. 400 V., tubular	46AW103J
C-18	68 mmf. 500 V., ceramic	47X25UK680K
C-22	Trimmer, adjustable	44A191
C-23	3,000 mmf. 500 V., mica	47X30C302K
C-24	1500 mmf. 500 V., mica	47X30C152J
C-26	3 mmf. temperature compensator for osc. stage	44A158
C-27,50,51	30-10-10 mfd. 450 V., electrolytic	45A062
C-31,43,58	.02 mfd. 200 V., tubular	46AU203J
C-38	2 mmf., twisted wire gimmick	
C-39,45,48	.02 mfd. 600 V., tubular	46AY203J
C-41,42,55	47 mmf. 500 V., mica	47X20A470M
C-44	270 mmf. 500 V., mica	47X20A271K
C-46	10 mfd. 25 V., electrolytic	45A121
C-47	.002 mfd. 1000 V., tubular	46A104
C-49	.1 mfd. 400 V., tubular	46AV104J
C-54	470 mmf. 500 V., mica	47X20A471J
C-56	.01 mfd. 600 V., molded paper	46AC103J
C-57	1000 mmf. 500 V., mica	47X25A102M
C-61	.25 mfd. 200 V., tubular	46AT254J
C-62	2.2 mmf. 500 V., bakelite	47A160-4
	RESISTORS	
R-1,15,58	100,000 ohms 1/2 watt, carbon	23X20X104M
R-2	120 ohms 1/2 watt, carbon	23X20X121K
R-3	10,000 ohms, SENSITIVITY Control	25A533
R-4,31	22 ohms 1/2 watt, carbon	23X20X220M
R-5,18	1000 ohms 1/2 watt, carbon	23X20X102K
R-6	6800 ohms 1 watt, carbon	23X30X682K
R-7	18,000 ohms 1/2 watt, carbon	23X20X183K
R-8	10,000 ohms 2 watts, carbon	23X40X103K
R-9	1000 ohms 1/2 watt, carbon	23X20X102M
R-10	12,000 ohms 4 watts, carbon	23X65C123K
[illegible]		
R-20	1/2 megohm, VOLUME control	25A534
R-21	150 ohms 1/2 watt, carbon	23X20X151M
R-22	270,000 ohms 1/2 watt, carbon	23X20X274K
R-23,61	470,000 ohms 1/2 watt, carbon	23X20X474M
R-24	680 ohms 1 watt, carbon	23X30X681K
R-25	15,000 ohms 1 watt, carbon	23X30X153M
R-26	12,000 ohms 2 watts, carbon	23X40X123K
R-27	10,000 ohms 4 watts, carbon	23X65CE103K
R-28	15,000 ohms 2 watts, carbon	23X40X153M
R-30	10 ohms 1/2 watt, carbon	23X10X100M
R-32	1500 ohms 10 watts, WW	24BG152E
R-33	15 megohms 1/4 watt, carbon	23X10X156M
R-34	10,000 ohms 1/2 watt, carbon	23X20X103M
R-35	27 ohms 1/4 watt, carbon	23X10X270K
R-60	330,000 ohms 1/2 watt, carbon	23X20X334K
R-62	1 megohm 1/2 watt, carbon	23X20X105M
R-63	6.8 ohms 1 watt, carbon	23X30X068K
	TRANSFORMERS AND COILS	
T-1	Transformer, antenna stage, band 4	51B783
*T-2	Transformer, antenna stage, band 3	51B782
T-3	Transformer, antenna stage, band 2	51B781
T-4	Transformer, antenna stage, band 1	51B780
[illegible]		
T-6	Transformer, mixer stage, band 3	51B786
T-7	Transformer, mixer stage, band 2	51B785
T-8	Transformer, mixer stage, band 1	51B784
T-9	Transformer, oscillator stage, band 4	51B791
T-10	Transformer, oscillator stage, band 3	51B913
T-11	Transformer, oscillator stage, band 2	51B789
T-12	Transformer, oscillator stage, band 1	51B912
T-13	Transformer, 1st IF	50C185
T-14	Transformer, 2nd IF	50C186
T-15	Transformer, detector stage	50C192
T-16	Transformer, audio output	55B093
T-17	Transformer, BFO	54B033-2
T-18	Transformer, power	52C140
*T-18	Transformer, power (universal)	52C139
	SWITCHES	
	Bandswitch assy, ant. and mixer	62B039
S-1	Bandswitch ass'y, oscillator	62B044
S-2,3,5,7	Switch, toggle, S.P.S.T., STANDBY-RECEIVE, A.V.C., A.N.L., and CW-AM	60A138
S-4	Switch, PWR-TONE control	66A225
S-6	Switch, part of SENSITIVITY control R-3	
	PLUGS AND SOCKETS	
J-1	Jack, headset	36A002
PL-1	Line cord	87B1573
PL-2	AC shorting plug	35A003
SO-1	Socket, POWER (DC operation)	6A035
SO-2	Socket, "S" meter connection (5 prong)	6A186
	Socket, octal (tube)	6A035
	Socket, dial light, general coverage dial	86B070
	Socket, dial light, bandspread dial	86B049
	TUBES, RECTIFIERS AND LAMPS	
V-1	Type 6SG7, antenna	90X6SG7
V-2	Type 6SA7, mixer	90X6SA7
V-3,4	Type 6SK7, 1st and 2nd i-f amplifiers	90X6SK7
V-5	Type 6SQ7, detector, audio amplifier	90X6SQ7
V-6	Type 6F6G, audio power amplifier	90X6F6G
V-7	Type 6H6, gas gate and noise limiter	90X6H6
V-8	Type 6J5, BFO	90X6J5
V-9	Type 5Y3GT, rectifier	[illegible]
	MISCELLANEOUS	
TS-1	Terminal strip, antenna	88A032
	Lock, line cord	76A299
	Shaft, bandswitch and index plate	74B172
	Collar, bandswitch	77A043
	Bracket, dial drive mtg.	67B503
	Dial shaft, bandspread	74A169
	Drive shaft, main tuning	74A171
	Drive shaft, bandspread	74A170
	Washer, spring (Bandswitch, bandspread dial, and main tuning drive shafts)	4A043
	Spring, retainer (Bandspread, and main tuning drive shaft)	75A062
	Flywheel, bandspread tuning	71A178
	Pulley, bandspread dial	28A012
	Dial cord	38A001
	Spring, dial cord	75A012
	Dial, bandspread	83B254
	Dial, general coverage	83D240
	Escutcheon, bandspread dial	7B017
	Escutcheon, general coverage dial	7C033
	Glass, general coverage dial	22B199
[illegible]		
	Baffle, speaker	63C223
	Grill, speaker	7C016
	Knob, PITCH CONTROL	15A058
	Knob, SENSITIVITY, VOLUME and TONE	15A049
	Knob, TUNING and BANDSPREAD	15A047
	Knob, BAND SELECTOR	15B053
	Foot, rubber	16A007

* Used on universal model S-40AU only.


V1
6SG7
V2
6SA7
V3
6SK7
BAND SWITCH S-1 IS SHOWN IN POSITION FOR BAND 4.
NOTE.
RESISTANCE VALUES ARE IN OHMS, MICA CAPACITOR VALUES ARE IN MMF, PAPER CAPACITOR VALUES ARE IN DECIMAL EQUIVALENTS OF MFD; ELECTROLYTIC CAPACITOR VALUES ARE IN MFD.
DENOTES MECHANICAL GANGING
NUMERALS AT BANDSWITCH (S1) AND LETTERS AT ANTENNA, MIXER AND OSCILLATOR TRANSFORMERS (T1 TO T12) IDENTIFY CORRESPONDING TERMINAL LUGS ON PICTORIAL VIEWS.
"S" METER SOCKET
TO HEATERS
SWITCH S4B SHOWN IN POSITION 1.
BANDSWITCH S-1
SHOWN IN POSITION FOR BAND NO.1 OPERATION.
BAND SWITCH KNOB (ON FRONT PANEL)
WAFER FOR S-1E & F
WAFER FOR S-1C & D
WAFER FOR S-1A & B (END NEAREST CHASSIS REAR APRON)
REPRESENTS TRANSFORMERS T1 TO T12

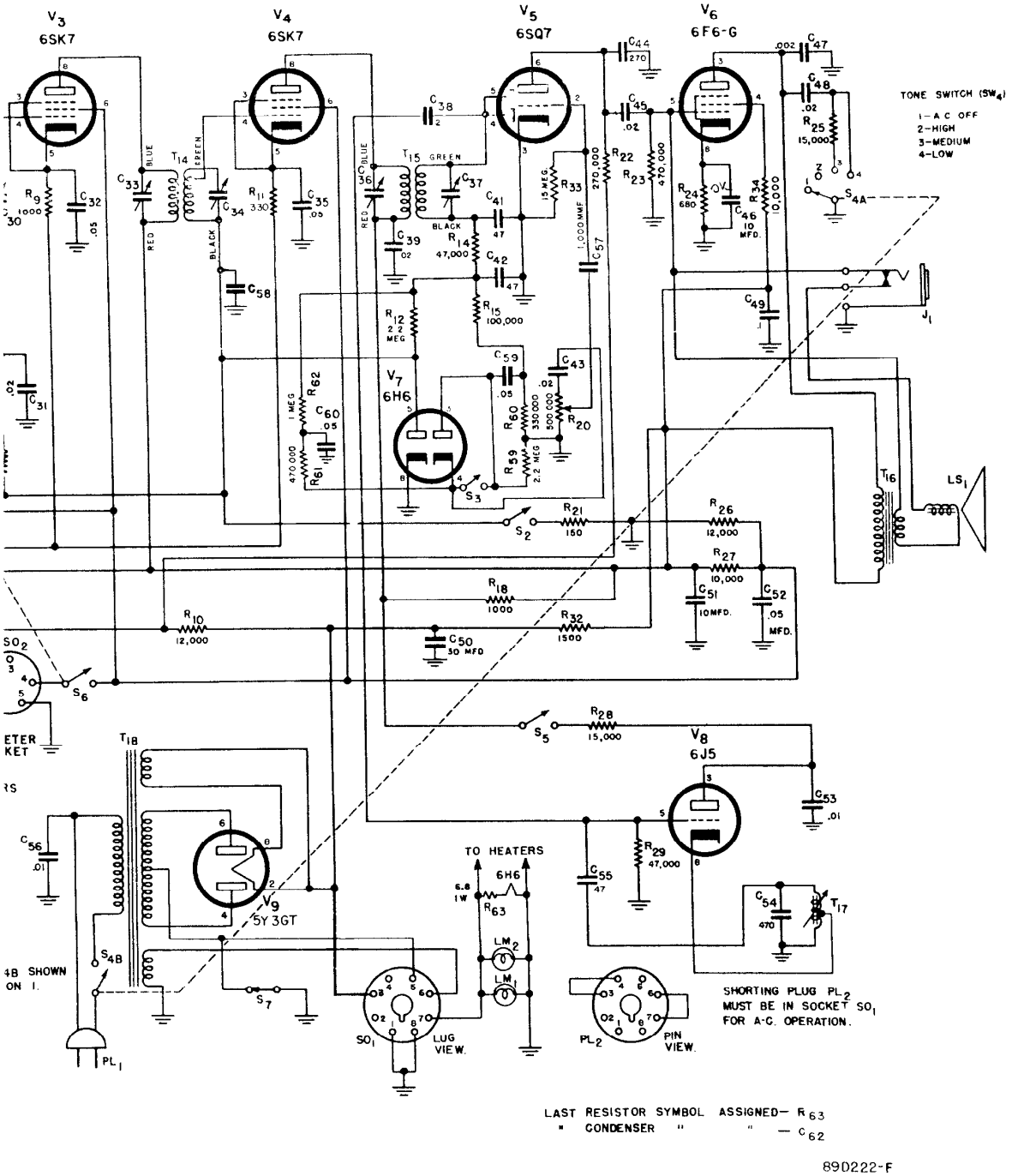


Fig. 6. Schematic diagram.