

The FISK
RADIOLA
MODEL 53G

•

Four Valve, Two Band, D.C. Operated
Superheterodyne, Mantel Receiver

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TECHNICAL INFORMATION
AND SERVICE DATA

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Amalgamated  **Wireless**
Australasia) Ltd

THE FISK RADIOLA, MODEL 53G

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Superheterodyne, Mantel Receiver

TECHNICAL INFORMATION

Electrical Specifications

TUNING FREQUENCY RANGES.	R.F. ALIGNMENT FREQUENCIES.	
Medium Wave "a"	1500-550 K.C. Medium Wave	600 K.C. 1400 K.C.
Short Wave "b"	16-50 M. Short Wave	18 M.
Intermediate Frequency		460 K.C.
Power Supply Rating		200-260 Volts, D.C.
Power Consumption		90 watts

CONTROLS

1—Tone	2—Volume	3—Tuning	4—Range
	5—Sensitivity (2 position switch at rear)		

Loudspeaker	6½ inch.....	Type 6E6 (Moulded Cab.) Type 6E7 (Wooden Cab.)
Loudspeaker Transformer		T.T.105
Loudspeaker Field Coil Resistance		1000 ohms
Dial Lamps		3.2 volts, .35 amps.

VALVE COMPLEMENT.

(1) 6A8G	Detector-Oscillator	(3) 6G8G I.F. Amp., 2nd Det., A.V.C. & A.F. Amp,	
(2) 6U7G	I.F. Amplifier	(4) 43	Output Pentode

Alignment Procedure

Alignment should only be necessary when adjustments have been altered from the factory setting or when repairs have been made to the tuned circuits. Climatic conditions should not seriously affect the receiver.

It is important to apply a definite procedure as tabulated below and to use adequate and reliable test equipment. Instruments ideally suited to the requirements are the A.W.A. Junior Signal Generator, Type 2R3911 or the A.W.A. Modulated Oscillator, Type C1070. An output meter is necessary in conjunction with both these instruments.

Alignment of the R.F. stages at the high frequency end of each band is by air trimmers of the plunger type. The construction of an air trimmer necessitates the use of a special adjusting tool. Such a tool, Part No. 5371, may be obtained from the Service Department of the company. It will be found advantageous to rotate the air trimmer plunger when adjusting. By doing this accuracy is more easily attained.

The I.F. Transformers, aerial and oscillator coils

(600 K.C.) are adjusted by magnetite cores within the windings. A non-metallic screwdriver should be used for adjusting. A tool specially designed for the purpose is also obtainable from the company. The part number of this tool is No. 5372.

If the A.W.A. Type C1070 test oscillator is used, see that a 250,000 ohms resistor is connected between the output terminals and, for short wave alignment, a 400 ohms non-inductive resistor in series with the "hot" output lead.

Connect the ground connection of the test instrument to the receiver chassis.

Perform alignment in the proper order starting with No. 1 and following all operations across. then No. 2, etc. Adjustment locations are shown in figs. 1 and 3. Keep the Volume Control set in the maximum clockwise position and the Sensitivity Switch at Distant (D), and regulate the output of the test instrument so that a minimum signal is introduced to the receiver to obtain an observable output indication. This will avoid A.V.C. action and overloading.

Alignment Order	Test Inst. Connection to Receiver	Test Inst. Setting	Receiver Dial Setting	Circuit to Adjust	Adjustment Symbol	Adjust to Obtain
1	*6A8G Grid Cap	460 K.C.	550 K.C.	3rd I.F. Trans.	L13	Max. (peak)
2	*6A8G Grid Cap	460 K.C.	550 K.C.	2nd I.F. Trans.	L12	Max. (peak)
3	*6A8G Grid Cap	460 K.C.	550 K.C.	2nd I.F. Trans.	L11	Max. (peak)
4	*6A8G Grid Cap	460 K.C.	550 K.C.	1st I.F. Trans.	L10	Max. (peak)
5	*6A8G Grid Cap	460 K.C.	550 K.C.	1st I.F. Trans.	L9	Max. (peak)

Repeat the above adjustments before proceeding.

6	Aerial Term.	535 K.C.	†	Oscillator	L6, L.F. Osc.	Max. (peak)
7	Aerial Term.	600 K.C.	**	—	—	Max. (peak)
8	Aerial Term.	600 K.C.	600 K.C.	Aerial	L2, L.F. Aer.	Max. (peak)
9	Aerial Term.	1400 K.C.	1400 K.C.	Oscillator	C14	Max. (peak)
10	Aerial Term.	1400 K.C.	1400 K.C.	Aerial	C4	Max. (peak)

Repeat adjustments 6, 7, 8, 9 and 10.

11	Aerial Term.	18 metres	18 metres	Oscillator	C16	Max. (peak)††
12	Aerial Term.	18 metres	18 metres‡	Aerial	C5	Max. (peak)***

* Remove grid lead clip before connecting.

† Tuning condenser plates in full mesh.

** Tune receiver to resonance. Set receiver pointer to 600 K.C. by loosening mounting screw if necessary.

†† Use minimum capacity peak if two peaks can be obtained.

‡ Rock the tuning control back and forth through the signal.

*** Use maximum capacity peak if two peaks can be obtained.

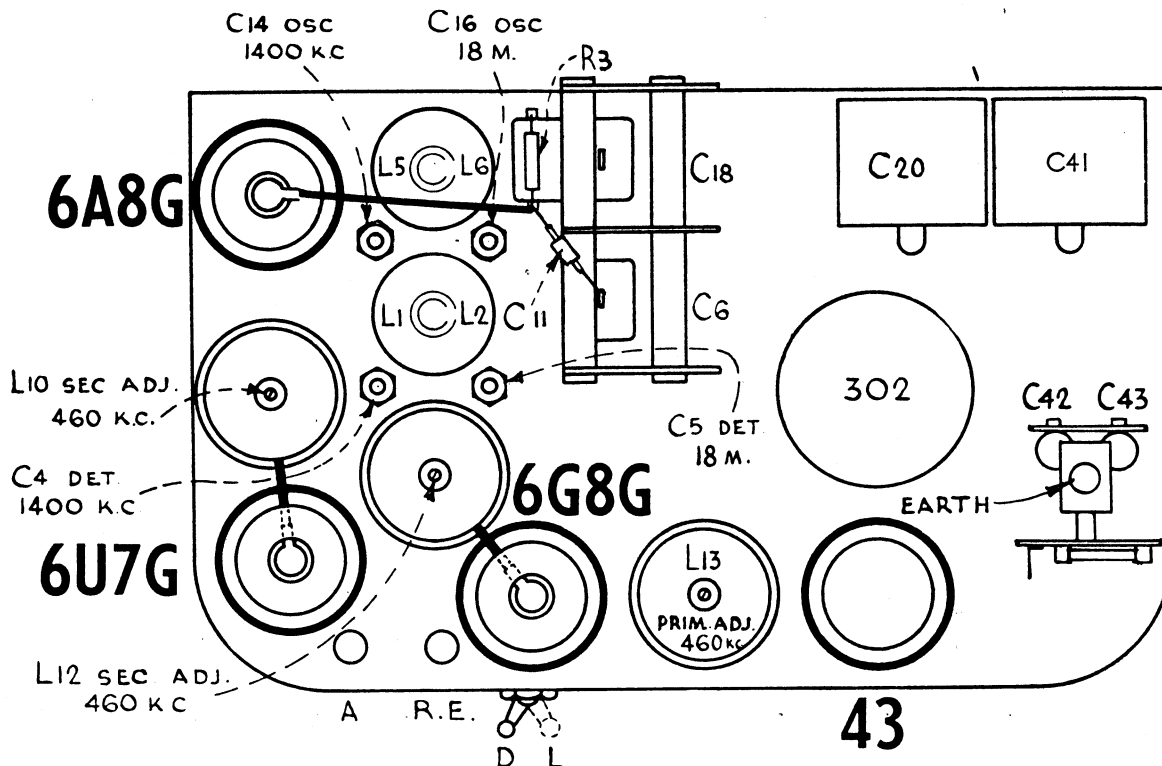


Fig. 1.—Lay-out Diagram (top view).

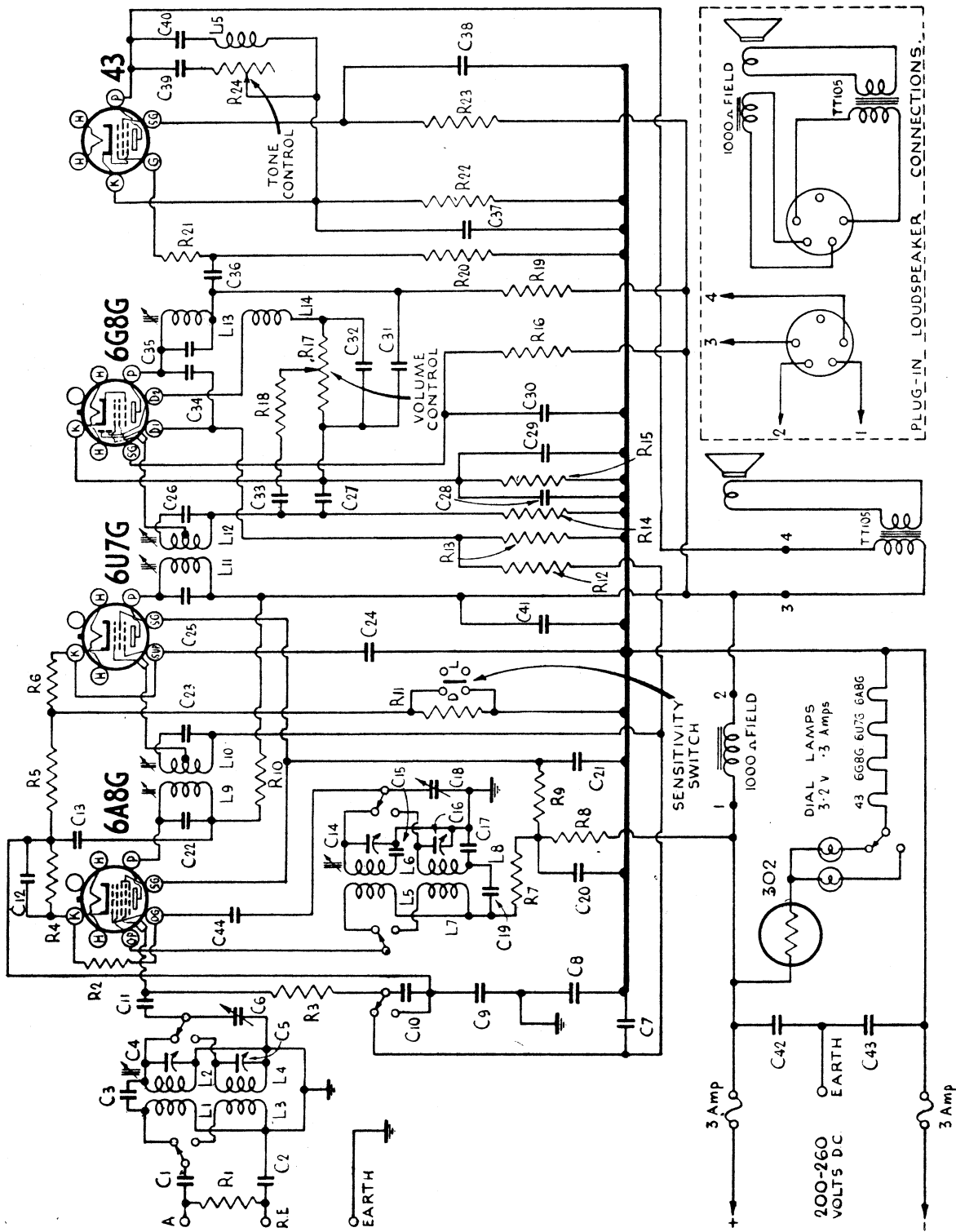


Fig. 2.—Circuit Diagram.

Some receivers have C38 connected from screen grid 43 to negative, others of later production have C38 connected between screen grid and cathode.

Code	Part	COILS	Code	Part	RESISTORS	Code	Part	CONDENSERS
L1, L2	4353	Aerial Coil, 1500-550 K.C.	R1		100,000 ohms, 1/2 watt	C8		.5 mfd. paper
L3, L4	4331	Aerial Coil, 16-50M	R2		40,000 ohms, 1/2 watt	C9		.1 mfd. paper
L5, L6	4354	Oscillator Coil, 1500-550 K.C.	R3		500,000 ohms, 1/2 watt	C10		.1 mfd. paper
L7, L8	4332	Oscillator Coil, 16-50M	R4		300 ohms, 1/2 watt	C11		350 mmfd. mica
L9, L10	5688	1st I.F. Transformer	R5		200 ohms, 1/2 watt	C12		.1 mfd. paper
L11, L12	5688	2nd I.F. Transformer	R6		400 ohms, 1/2 watt	C13		.1 mfd. paper
L13, L14	5690	3rd I.F. Transformer	R7		400 ohms, 1/2 watt	C14	4853	16-34 mmfd. Air Trimmer
L15	5079	Choke	R8		10,000 ohms, 1 watt	C15		440 mmfd. mica (padder)
			R9		20,000 ohms, 1 watt	C16	3658	2-10 mmfd. Air Trimmer
			R10		600 ohms, 1/2 watt	C17	4578	3500 mmfd. mica (padder)
			R11		2,000 ohms, 1/2 watt	C18		Tuning Condenser
			R12		1,75 megohms, 1/2 watt	C19		.05 mfd. paper
			R13		1,75 megohms, 1/2 watt	C20		5 mfd. paper
			R14		1,75 megohms, 1/2 watt	C21		.1 mfd. paper
			R15		2,000 ohms, 1/2 watt	C22		115 mmfd. mica (A)
			R16		500,000 ohms, 1 watt	C23		130 mmfd. mica (H)
			R17	5707	500,000 ohms, Vol. Control	C24		.1 mfd. paper
			R18		500,000 ohms, 1/2 watt	C25		115 mmfd. mica (A)
			R19		70,000 ohms, 1 watt	C26		130 mmfd. mica (H)
			R20		500,000 ohms, 1/2 watt	C27		110 mmfd. mica (L)
			R21		100,000 ohms, 1/2 watt	C28		25 mfd. 25V Electrolytic
			R22		500 ohms, 1 watt	C29		.02 mfd. paper
			R23		5,000 ohms, 1 watt	C30		.1 mfd. paper
			R24	4540	100,000 ohms, Tone Control	C31		700 mmfd. mica
						C32		110 mmfd. mica (L)
						C33		.01 mfd. paper
						C34		50 mmfd. mica (D)
						C35		70 mmfd. mica (N)
						C36		.01 mfd. paper
						C37		25 mfd. 25V Electrolytic
						C38		.5 mfd. paper
						C39		.035 mfd. paper
						C40		3500 mmfd. mica
						C41		5 mfd. paper
				3658	Air Trimmer, 2-10 mmfd.	C42		.1 mfd. paper
				3661	Air Trimmer, 2-20 mmfd.	C43		.1 mfd. paper
				4578	Tuning Condenser	C44		110 mmfd. mica (L)
					CONDENSERS.			
					500 mmfd. mica	C1		
					500 mmfd. mica	C2		
					4 mmfd. mica	C3		
					Air Trimmer, 2-10 mmfd.	C4		
						C5		
					Tuning Condenser	C6		
					.05 mfd. paper	C7		

Circuit Code.

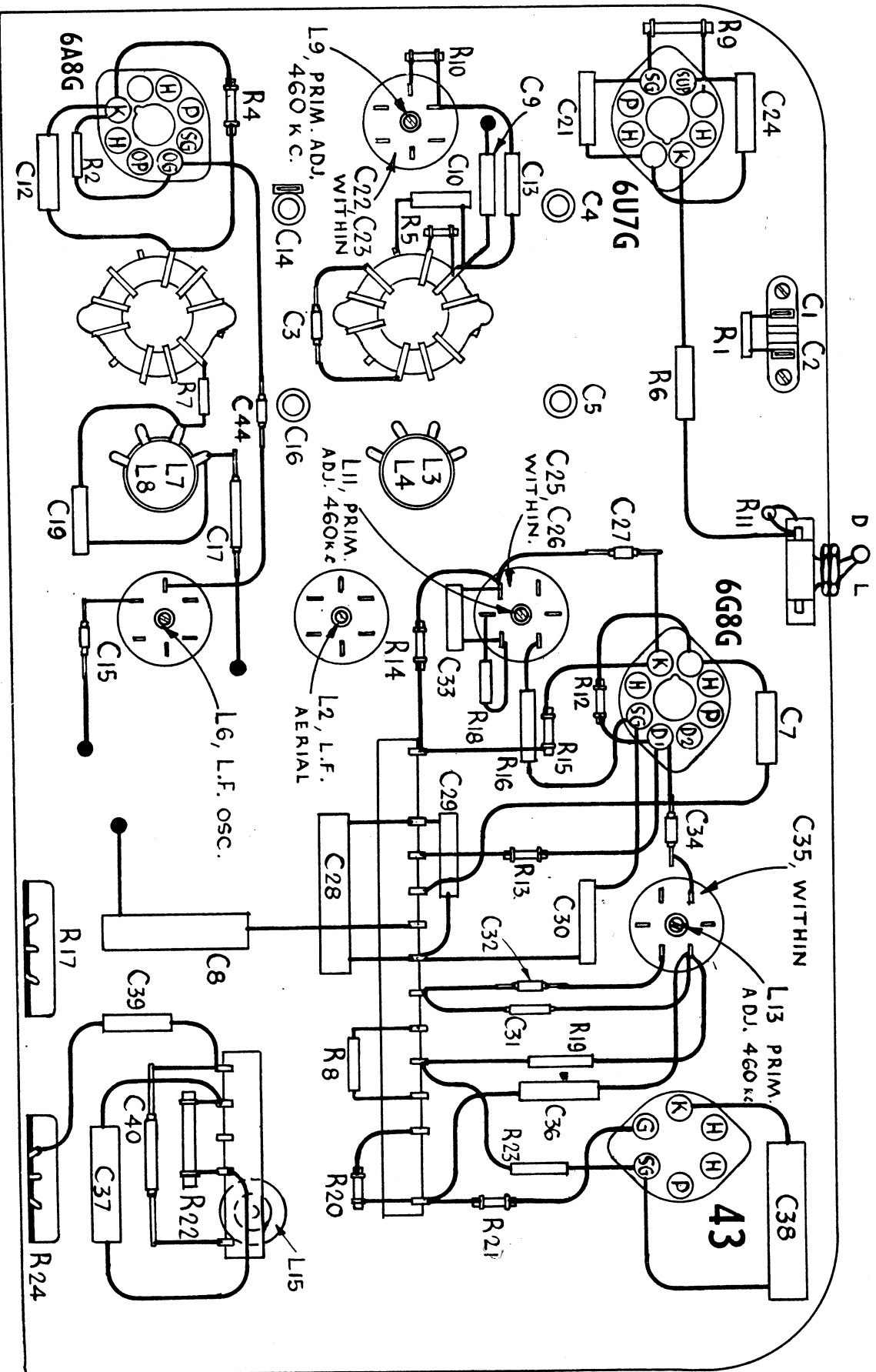


Fig. 3.—Lay-out Diagram (underneath view).

Some receivers have C38 connected from screen grid 43, to negative, others of later production have C38 connected between screen grid and cathode.

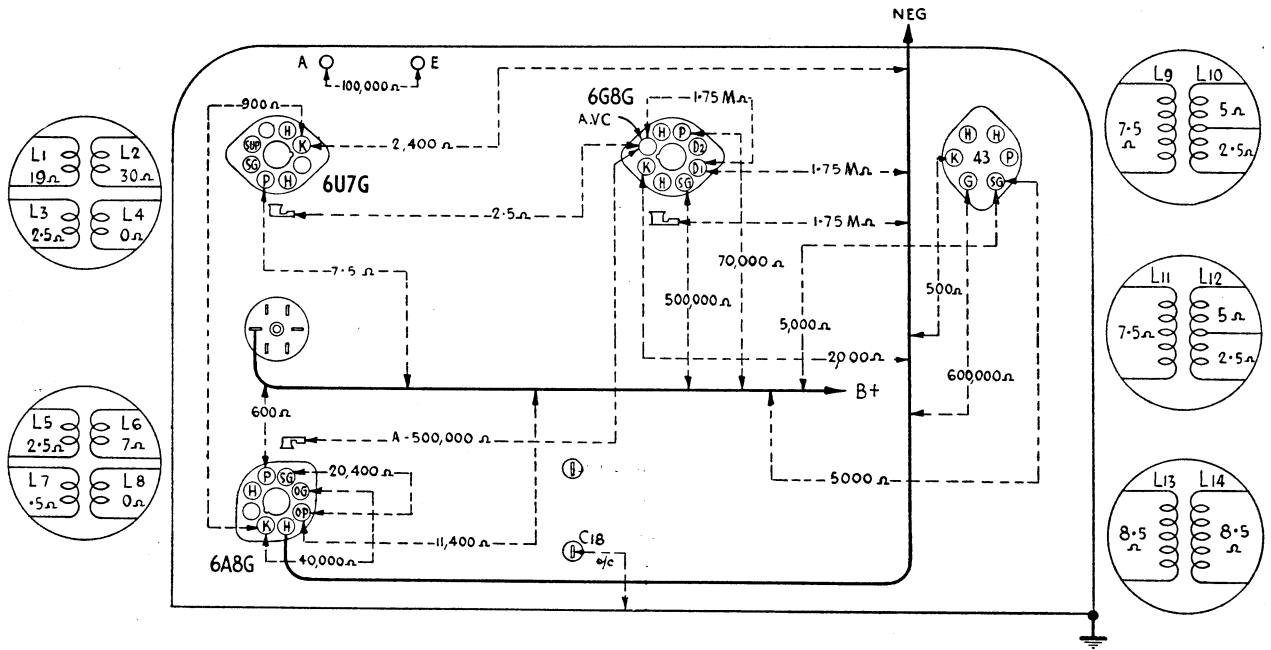


Fig. 4.—Resistance Diagram.

SOCKET VOLTAGES.

Valve	Cathode to Negative Volts	Screen Grid to Negative Volts	Plate to Negative Volts	Plate Current M.A.	Heater Volts
6A8G Detector					
M.W.	3.75	70	180	1.5	6.3
S.W.	4.25	70	180	2.5	—
Oscillator					
M.W.	—	—	155	4.0	—
S.W.	—	—	155	3.7	—
6U7G I.F. Amplifier	2.75	70	180	5.0	6.3
6G8G Reflex Amplifier	2.25	30	105*	1.0	6.3
43 Pentode	20.0	145	165	38.0	25.0

Voltage across loudspeaker field 54.0 volts.

* Cannot be measured with ordinary voltmeter.

Measured at 240 volts D.C. supply no signal input. Controls in maximum clockwise position. Sensitivity switch in distant (D) position.

