

The FISK
RADIOLA
MODEL 52G

•

Five Valve, Two Band, A.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 52G

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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 200-260V., 50-60C.	(Other voltage and frequency ratings available.)
Power Consumption	50 watts

CONTROLS

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

Loudspeaker 6½ inch	Type A.E.9 (Moulded Cab.) Type A.E.13 (Wooden Cab.)
Loudspeaker Transformer	T.T.102
Loudspeaker Field Coil Resistance	1600 ohms
Dial Lamp	6.3V., .25 Amp.

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) 6F6G Output Pentode
(5) 5Y3G Rectifier

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.

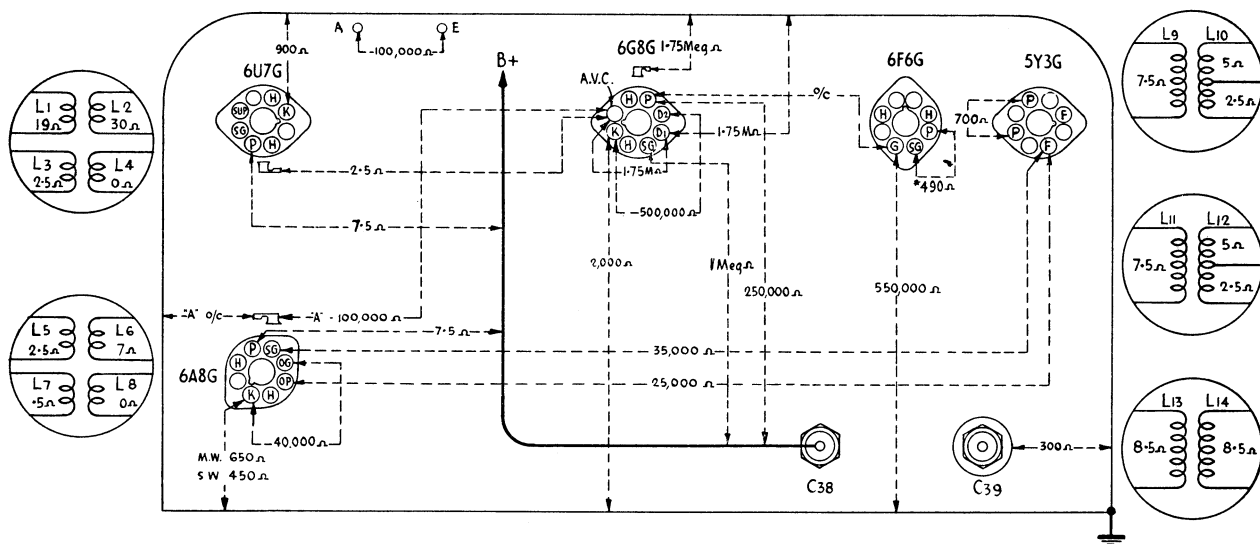


Fig. 4.—Resistance Diagram.

Resistances taken with valves removed, all controls maximum clockwise, and Sensitivity switch at Distant (D).

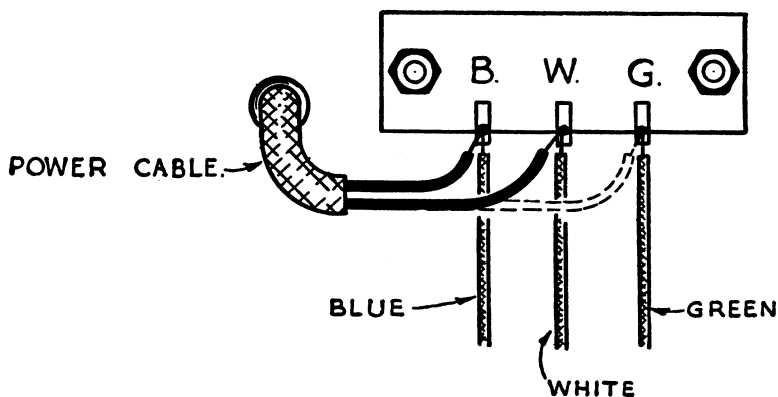


Fig. 4.—Showing power cable connection for line voltages below 230 V. (dotted lead indicates "standard" connection).

SOCKET VOLTAGES.

VALVE	Bias Voltages	Screen Grid to Chassis Volts	Plate to Chassis Volts	Plate Current M.A.	Heater-Volts
6A8G Detector	M.W. 6.5 † S.W. 5.0 †	90	250	1.0 1.5	6.3 —
Oscillator	—	—	130	5.0	—
6U7G I.F. Amplifier	5.0 †	90	250	4.5	6.3
6G8G Reflex Amplifier	1.3 †	30*	125*	0.5	6.3
6F6G Pentode	—16 †	250	230	35.0	6.3
5Y3G Rectifier	680/340 Volts, 57 M.A. Total Current 5.0				
Voltage across Loudspeaker Field	90 Volts				

* Cannot be measured with ordinary voltmeter.

† Control Grid to chassis. Cannot be measured with ordinary voltmeter.

‡ Cathode to chassis.

Measured at 240 volts A.C. supply. No Signal. Volume Control at maximum, and Sensitivity Switch at Distant (D).

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	C12	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	C14	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.

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

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

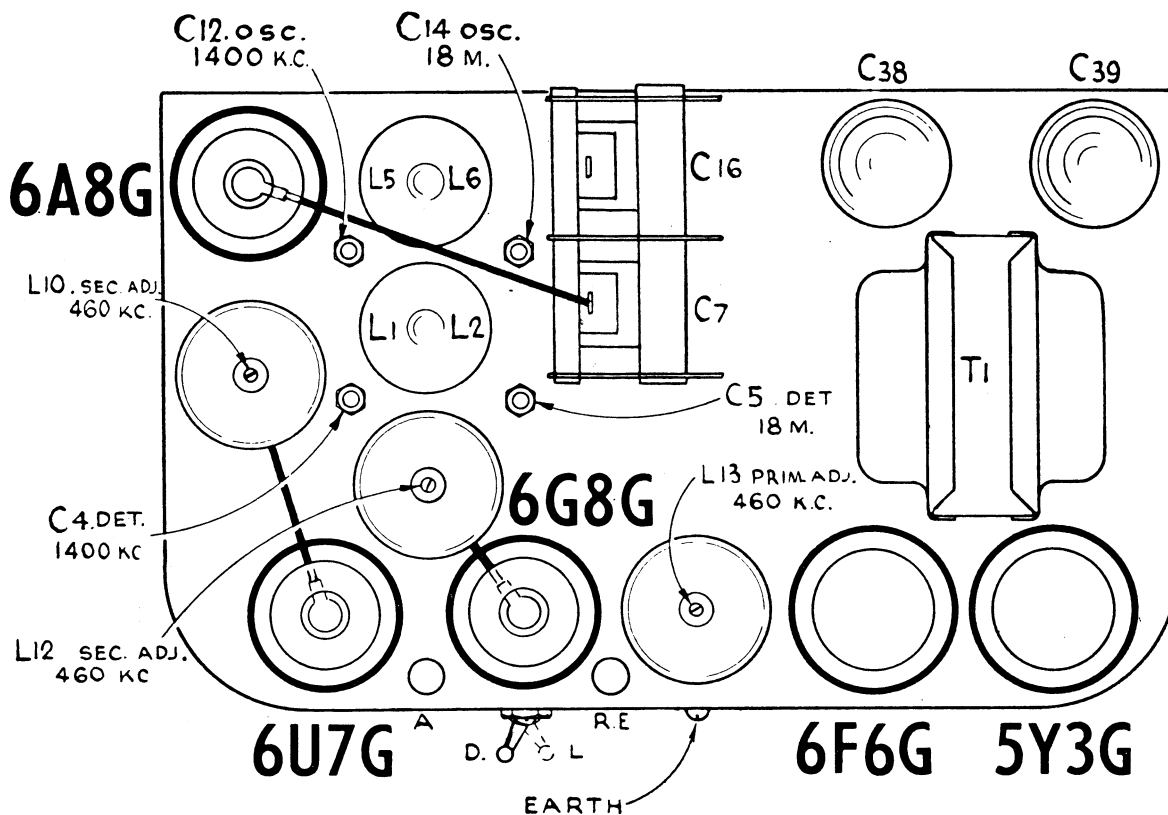


Fig. 1.—Lay-out Diagram (top view).

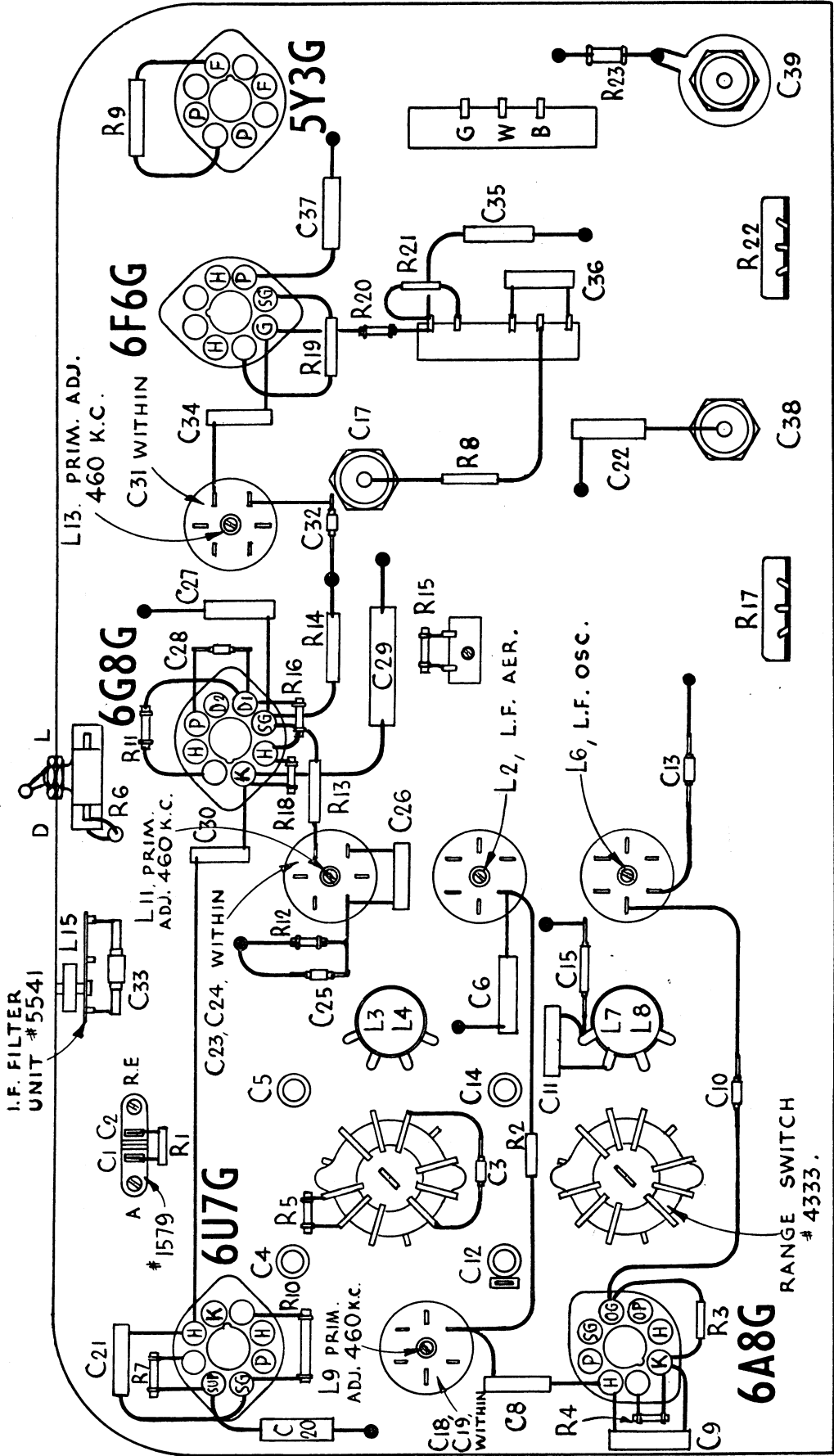


Fig. 3.—Lay-out Diagram (underneath view).

Code	Part	COILS	Code	Part	RESISTORS	Code	Part	CONDENSERS
L1, L2	4353	Aerial Coil, 1500-550 KC.	R1		100,000 ohms, $\frac{1}{2}$ watt	C1		500 mmfd. mica
L3, L4	4331	Aerial Coil, 16-50 metres	R2		100,000 ohms, $\frac{1}{2}$ watt	C2		500 mmfd. mica
L5, L6	4354	Oscillator coil 1500-550 K.C.	R3		40,000 ohms, $\frac{1}{2}$ watt	C3		4 mmfd. mica
L7, L8	4332	Oscillator coil 16-50 mtrs.	R4		450 ohms, $\frac{1}{2}$ watt	C4	3658	2-10 mmfd. air trimmer
L9, L10	5688	1st I.F. Transformer	R5		200 ohms, $\frac{1}{2}$ watt	C5	3661	2-20 mmfd. air trimmer
L11, L12	5688	2nd I.F. Transformer	R6		2,000 ohms, $\frac{1}{2}$ watt	C6	4326	.05 mfd. paper
L13, L14	5690	3rd I.F. Transformer	R7		900 ohms, $\frac{1}{2}$ watt	C7		Tuning Condenser
L15, C33	5441	I.F. Filter	R8		10,000 ohms, 1 watt	C8		.05 mfd. paper
			R9		15,000 ohms, 2 watt	C9		.1 mfd. paper
			R10		20,000 ohms, 1 watt	C10		.110 mmfd. mica (L)
		TRANSFORMERS	R11		1.75 megohms, $\frac{1}{2}$ watt	C11		.05 mfd. paper
			R12		1 megohm, 1 watt	C12	4853	16-34 mmfd. air trimmer
T1	5684	Power transformer 50-60C	R13		1.75 megohms, $\frac{1}{2}$ watt	C13		440 mmfd. mica (padder)
T1	5686	Power transformer 40C	R14		250,000 ohms, 1 watt	C14	3658	2-10 mmfd. air trimmer
T2	TT102	Loudspeaker Transformer	R15		500,000 ohms, $\frac{1}{2}$ watt	C15		3500 mmfd. mica (padder)
			R16		1.75 megohms, $\frac{1}{2}$ watt	C16	4326	Tuning Condenser
			R17	4286	500,000 ohms, vol. control	C17		8 mfd. 450V electrolytic
			R18		2,000 ohms, $\frac{1}{2}$ watt	C18		115 mmfd. mica (A)
			R19		250,000 ohms, 1 watt	C19		130 mmfd. mica (A)
			R20		500,000 ohms, $\frac{1}{2}$ watt	C20		.1 mfd. paper
			R21		50,000 ohms, $\frac{1}{2}$ watt	C21		.1 mfd. paper
			R22	4284	100,000 ohms, Tone Control	C22		.1 mfd. paper
			R23		300 ohms, 3 watt	C23		115 mmfd. mica (A)
						C24		130 mmfd. mica (H)
						C25		110 mmfd. mica (L)
						C26		.01 mfd. paper
						C27		.1 mfd. paper
						C28		50 mmfd. mica (D)
						C29		25 mfd. 25V electrolytic
						C30		.02 mfd. paper
						C31		70 mmfd. mica (N)
						C32		110 mmfd. mica (L)
						C33		115 mmfd. mica (A)
						C34		.01 mfd. paper
						C35		.05 mfd. paper
						C36		.035 mfd. paper
						C37		.005 mfd. paper
						C38		8 mfd. 450V Electrolytic
						C39		8 mfd. 500V Electrolytic

Circuit Code.

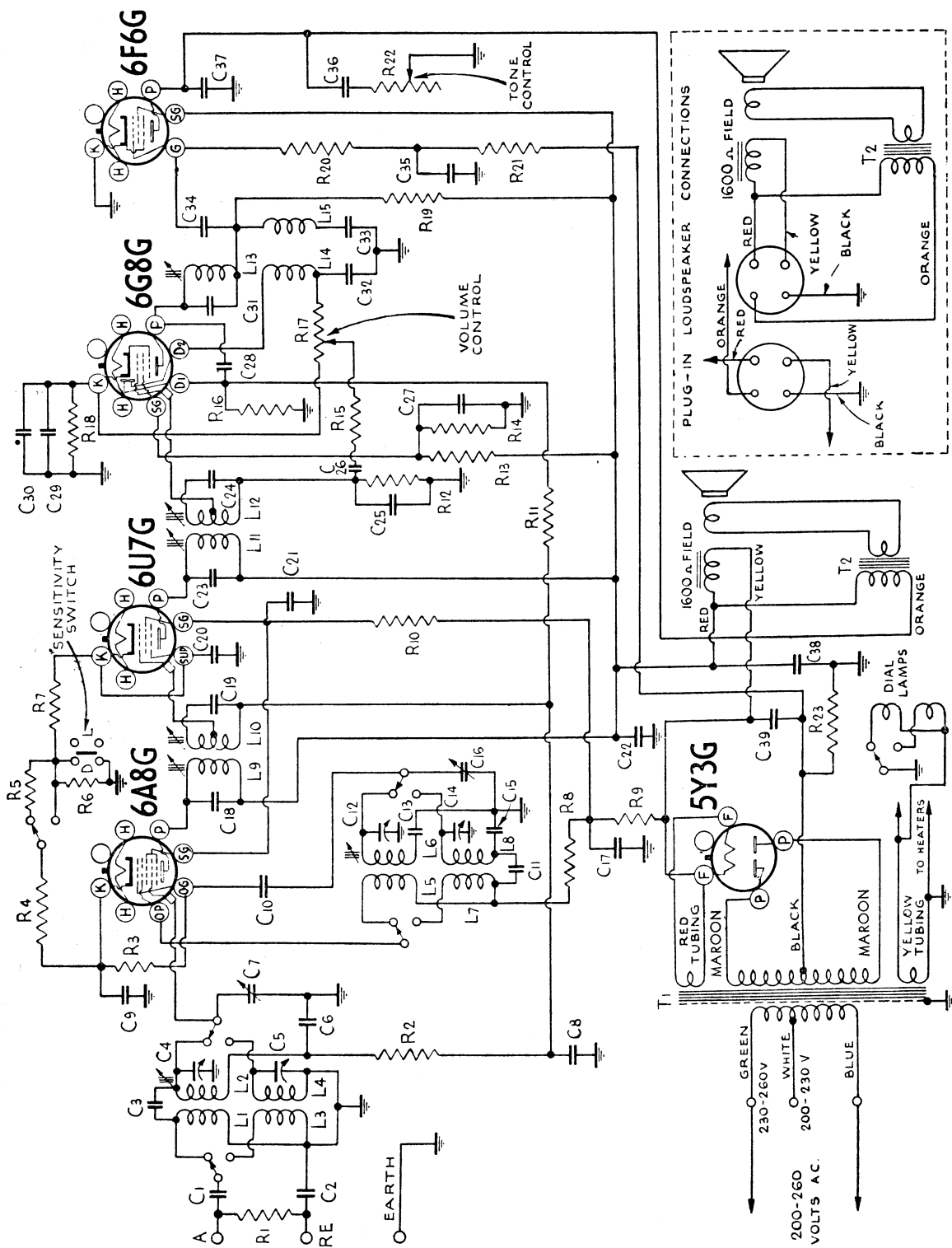


Fig. 2.—Circuit Diagram.

