The FISK

RADIOLA

MODEL 172

•

Five Valve, Two Band, A.C. Operated

Superheterodyne

•

TECHNICAL INFORMATION

AND SERVICE DATA

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Amalgamated Wireless Australasia Ltd

THE FISK RADIOLA, MODEL 172

Five Valve, Two Band, A.C. Operated, Superheterodyne

TECHNICAL INFORMATION

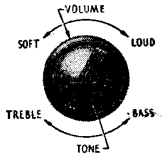
Electrical Specifications

Tuning Ranges (a) ..... 1500-550 K.C. R.F. Alignment Frequencies ... 600 K.C., 1400 K.C.
(b) ..... 16-50 M. 1500 K.C., 18 M.

Intermediate Frequency ..... 460 K.C.

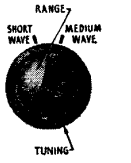
Power Supply Rating ..... 200-260V., 50-60C. Power Consumption ..... 60 Watts

CONTROLS.



VOLUME – TONE CONTROL

SENSITIVITY CONTROL



TUNING – RANGE SWITCH CONTROL

Loudspeaker ..... 8 inch ..... Type AJ4

Loudspeaker Transformer T.T.2

Loudspeaker Field Resistance ..... 1580 ohms

Dial Lamps ..... 6.3 volts, .25 amps.

VALVE COMPLEMENT.

(1) 6K8G ..... Frequency Converter (3) 6G8G .. I.F. Amp., Det., A.V.C. & A.F. Amp.
(2) 6U7G ..... I.F. Amplifier (4) 6F6G ..... Output Pentode
(5) 5Y3G ..... Rectifier
6U5 ..... Visual Tuning Indicator

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 and oscillator coil (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.

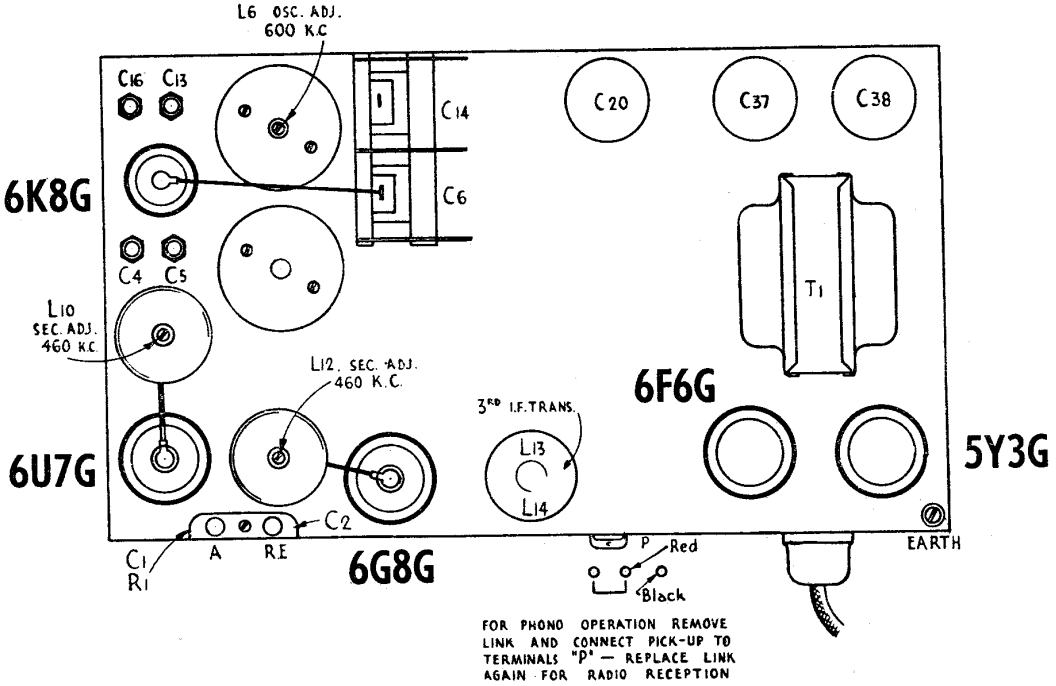


Fig. 1.—Lay-out Diagram (top view).

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 and Sensitivity Controls set in the maximum clockwise position 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	*6K8G Grid Cap	460 K.C.	550 K.C.	3rd I.F. Trans.	L13	Max. (peak)
2	*6K8G Grid Cap	460 K.C.	550 K.C.	2nd I.F. Trans.	L12	Max. (peak)
3	*6K8G Grid Cap	460 K.C.	550 K.C.	2nd I.F. Trans.	L11	Max. (peak)
4	*6K8G Grid Cap	460 K.C.	550 K.C.	1st I.F. Trans.	L10	Max. (peak)
5	*6K8G 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.	1500 K.C.	1500 K.C.	Oscillator	C16	Max. (peak)
9	Aerial Term.	1400 K.C.	1400 K.C.	Aerial	C4	Max. (peak)
		Repeat adjustments 6, 7, 8 and 9 before proceeding.				
10	Aerial Term.	18 metres	18 metres	Oscillator	C13	Max. (peak)††
11	Aerial Term.	18 metres	18 metres‡	Aerial	C5	Max. (peak)***

* With grid clip connected and a .001 mfd. condenser in series with the "hot" output lead of the test instrument.

† 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.

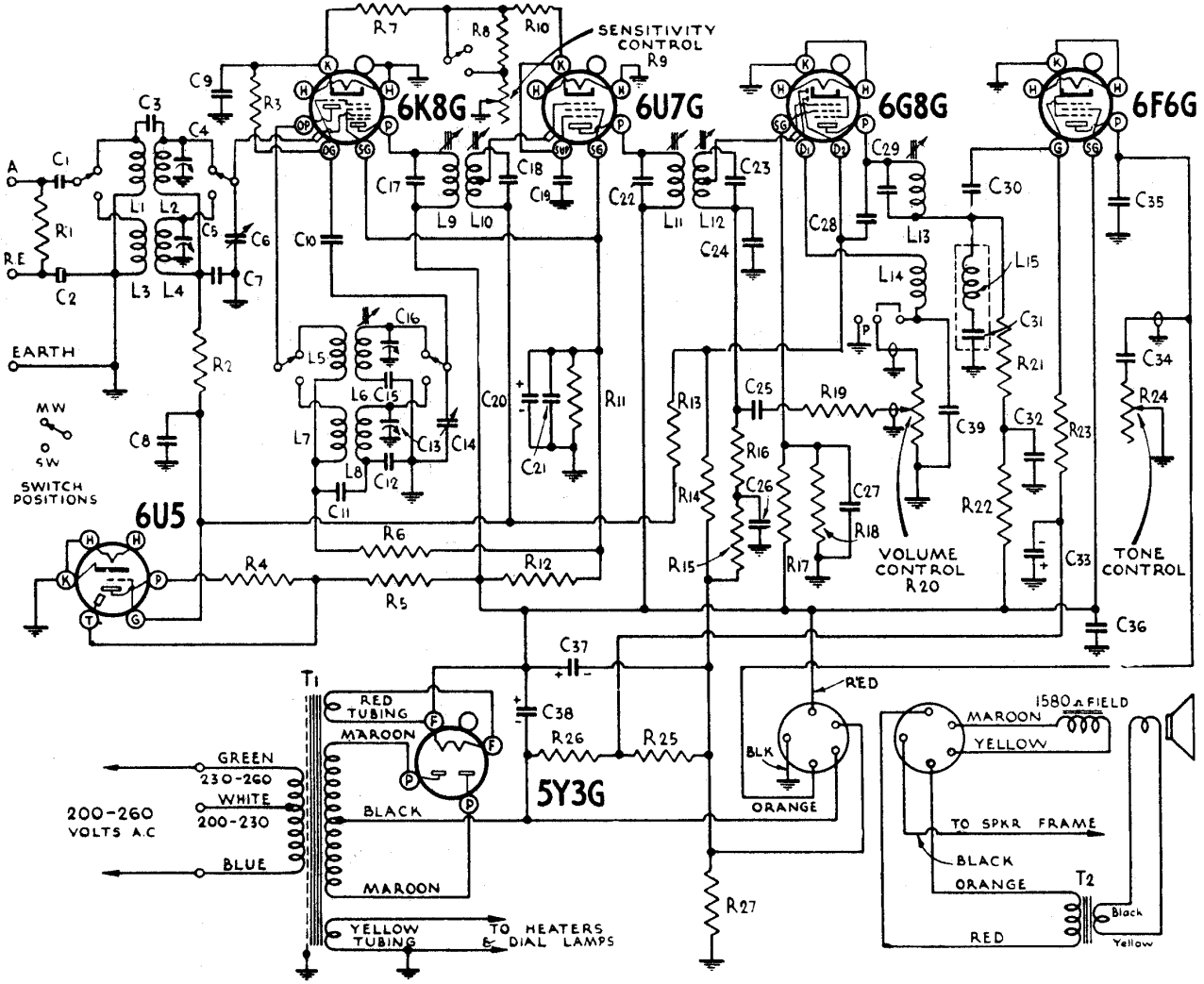


Fig. 2.—Circuit Diagram.

Code	Part	COILS
L1, L2	5755	Aerial Coil, 1500-550KC
L3, L4	5755	Aerial Coil, 16-50M
L5, L6	5757	Osc. Coil, 1500-550KC
L7, L8	5757	Osc. Coil, 16-50M
L9, L10	5688	1st I.F. Transformer
L11, L12	5688	2nd I.F. Transformer
L13, L14	5759	3rd I.F. Transformer
L15, C31	5441	Filter Unit
		TRANSFORMERS
T1	5684C	Power Transformer, 50-60C
T1	5686C	Power Transformer, 40C
T2	T.T.2	Loudspeaker Transformer

CODE	Part	RESISTORS
R1		100,000 ohms, ⅛ watt
R2		100,000 ohms, ⅛ watt
R3		50,000 ohms, ⅛ watt
R4		1 megohm, 1 watt
R5		20,000 ohms, 1 watt
R6		600 ohms, ⅛ watt
R7		200 ohms, ⅛ watt
R8		100 ohms, ⅛ watt
R9	5761	3,000 ohms, Sens. Control
R10		200 ohms, ⅛ watt
R11		20,000 ohms, 1 watt
R12		11,000 ohms, 3 watt
R13		1.75 megohms, ⅛ watt
R14		2.3 megohms, ⅛ watt
R15		300,000 ohms, ⅛ watt
R16		2.3 megohms, ⅛ watt
R17		1 megohm, 1 watt
R18		100,000 ohms, 1 watt
R19		500,000 ohms, ⅛ watt
R20	5622	500,000 ohms, Vol. Control
R21		150,000 ohms, 1 watt
R22		20,000 ohms, 1 watt
R23		500,000 ohms, ⅛ watt
R24	5623	100,000 ohms, Tone Control
R25		20,000 ohms, 1 watt
R26		100,000 ohms, 1 watt
R27		20 ohms, 3 watt

Code	Part	CONDENSERS
C1		500 mmfd. Mica
C2		500 mmfd. Mica
C3		4 mmfd. Mica
C4	3661	2-20 mmfd. Air Trimmer
C5	3661	2-20 mmfd. Air Trimmer
C6	5740	Tuning Condenser
C7		.05 mfd. Paper
C8		.05 mfd. Paper
C9		.05 mfd. Paper
C10		70 mmfd. Mica (N)
C11		.05 mfd. Paper
C12		3500 mmfd. Mica (Padder)
C13	3658	2-10 mmfd. Air Trimmer
C14	5740	Tuning Condenser
C15		440 mmfd. Mica (Padder)
C16	4853	16-34 mmfd. Air Trimmer
C17		115 mmfd. Mica (A)
C18		130 mmfd. Mica (H)
C19		.05 mfd. Paper
C20		16 mfd. 500V Electrolytic
C21		.1 mfd. Paper
C22		115 mmfd. Mica (A)
C23		130 mmfd. Mica (H)
C24		110 mmfd. Mica (L)
C25		.01 mfd. Paper
C26		.1 mfd. Paper
C27		.1 mfd. Paper
C28		50 mmfd. Mica (D)
C29		70 mmfd. Mica (N)
C30		.02 mfd. Paper
C31		115 mmfd. Mica (A)
C32		.5 mfd. Paper
C33		25 mfd. 25V Electrolytic
C34		.035 mfd. Paper
C35		.0025 mfd. Paper
C36		.1 mfd. Paper
C37		16 mfd. 500V Electrolytic
C38		16 mfd. 500V Electrolytic
C39		110 mmfd. Mica (L)

Circuit Code.

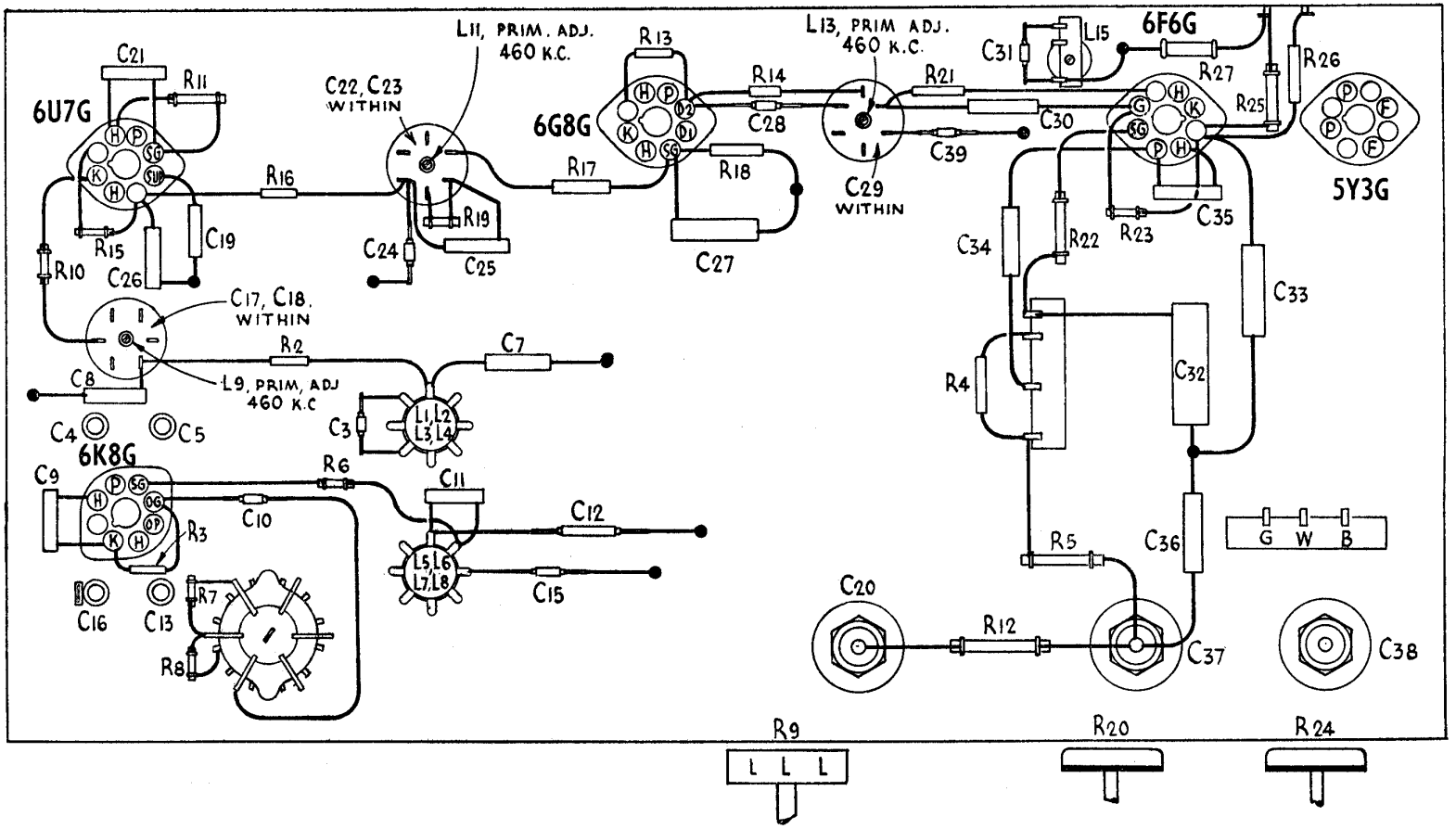


Fig. 3.—Lay-out Diagram (underneath view).

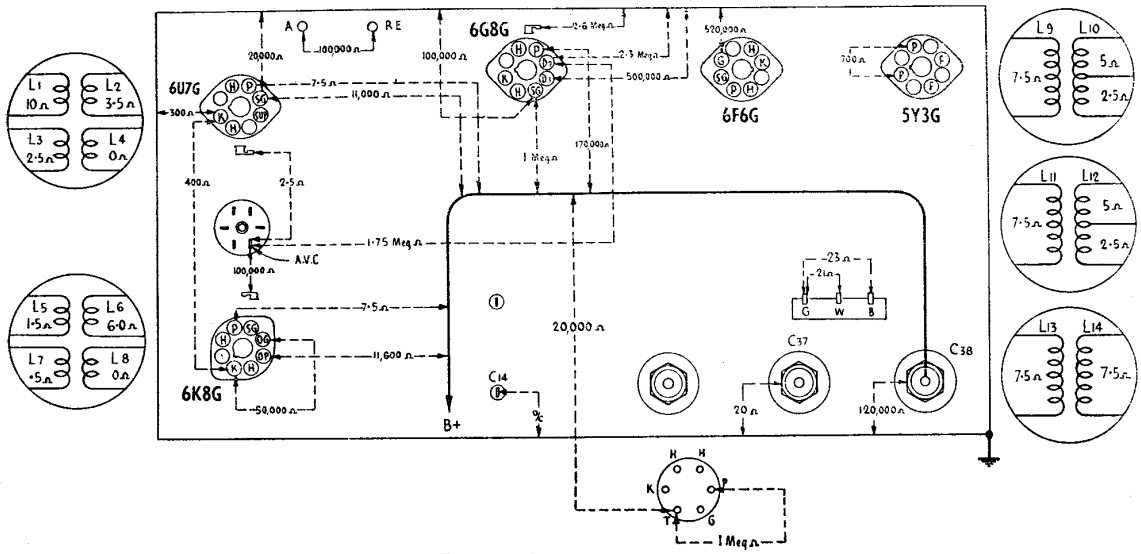


Fig. 4.—Resistance Diagram.

Resistances taken with all controls maximum clockwise.

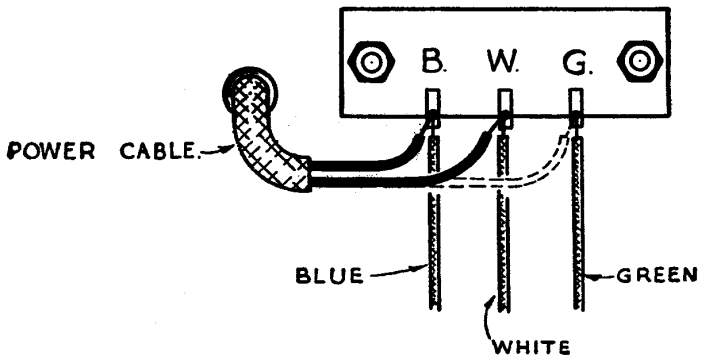


Fig. 5.—Showing Power Cable Connections for Line Voltages below 230 V. (dotted lead indicates "standard" connection).

SOCKET VOLTAGES.

VALVE	Bias Voltages	Screen Grid to Chassis Volts	Plate to Chassis Volts	Plate Current M.A.	Heater Volts
6K8G Detector M.W.	—1.2‡ 2.6†	100	250	1.0	6.3
S.W.	—1.2‡ 1.2†	100	250	0.9	—
Oscillator	—	—	100	2.5	—
6U7G I.F. Amplifier					
M.W.	—1.2‡ 2.6†	100	250	5.0	6.3
S.W.	—1.2‡ 1.4†	100	250	6.0	—
6G8G Reflex Amplifier	— 1.2	16*	165*	0.47	6.3
6F6G Pentode	—17.0	250	230	33.0	6.3
5Y3G Rectifier	720/360 Volts, 65 m.a. total current.				5.0

Voltage across loudspeaker field — 100 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 input. *Volume* and *Sensitivity* controls at maximum.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