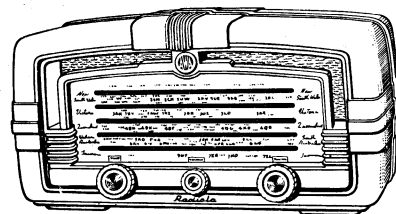


TECHNICAL INFORMATION  
AND  
SERVICE DATA

**AWA** **RADIOLA**  
Model 449-MA

FOUR VALVE, BROADCAST,  
A.C. OPERATED SUPERHETERODYNE.

ISSUED BY:  
AMALGAMATED WIRELESS (AUSTRALASIA) LTD.



**ELECTRICAL SPECIFICATIONS**

Frequency Range ..... 540-1600 Kc/s  
(555-187.5 Metres)

Intermediate Frequency ..... 455 Kc/s

Power Supply Rating ..... 200-260 volts  
50-60 C.P.S.

(Models are produced with other voltage and frequency ratings)

Power Consumption ..... 35 watts

**Loudspeaker:**

5 inch permanent magnet — Code No. AC63  
Transformer — XA2  
V.C. Impedance — 3 ohms at 400 C.P.S.

Undistorted Power Output ..... 1.5 watts

**Valve Complement:**

- (1) 6BE6 Converter
- (2) 6AU6 I.F. Amp.
- (3) 6BV7 Det., A.V.C., High Gain Output
- (4) 6X4 Rectifier

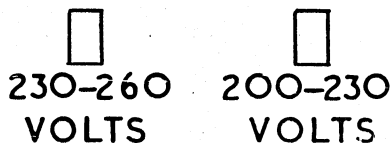
**Chassis Removal.**

(1) Remove the control knobs by pulling them straight off their spindles.

(2) Remove two recessed nuts from the top of the cabinet back, two screws from underneath the cabinet back and withdraw it.

(3) The chassis is held to the cabinet front by two screws situated under it. Removal of these enables the chassis to be withdrawn from the cabinet.

**RED DOT INDICATES COMMON CONNECTION FOR ALL VOLTAGES**



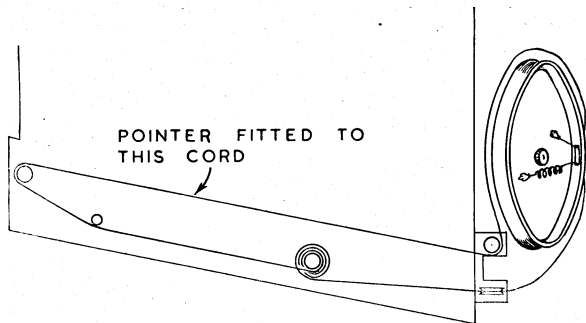
**Connection to Power Supply.**

The receiver should not be connected to any circuit supplying other than alternating current from 200-260 volts and at the frequency stated on the label inside the cabinet.

The power supply connections are shown in the accompanying diagram.

**Tuning Drive Cord Replacement.**

The accompanying diagram shows the route of the cord and the method of attachment.



## D.C. RESISTANCE OF WINDINGS

Winding	D.C. Resistance in ohms
Aerial Coil:	
Primary (L2) .....	3
Secondary (L3) .....	2
Oscillator Coil (L4) .....	5
I.F. Filter (L1) .....	17.5*
I.F. Transformer Windings .....	15
Power Transformer (T2)	
Primary .....	50
Secondary .....	300
Loudspeaker Input Transformer (T1)	
Primary .....	525 or 430
Secondary .....	†

† Less than 1 ohm.

\* In some receivers this reading may be as high as 60 ohms.

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations and it should not be assumed that a component is faulty if a slightly different reading is obtained.

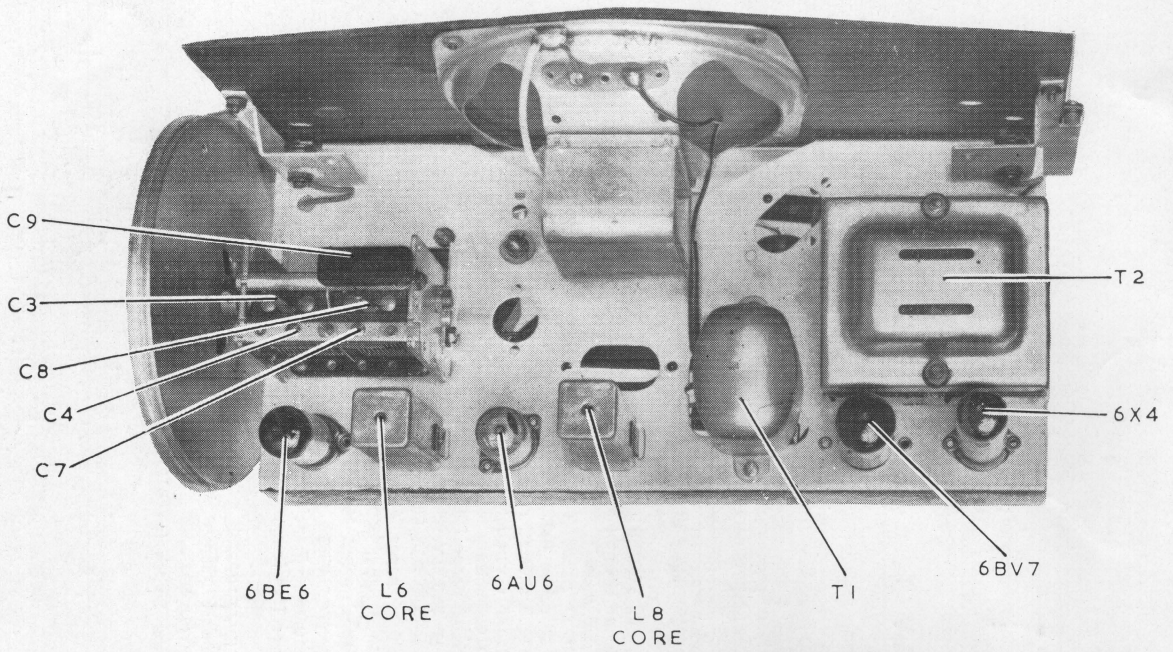
## SOCKET VOLTAGES

VALVES	Cathode to Chassis Volts:	Screen Grid to Chassis Volts:	Anode to Chassis Volts:	Anode Current mA:	Heater Volts
6BE6 Converter .....	1.8	90	170	2.3	6.3
6AU6 I.F. Amp. ....	—	90	170	5	6.3
6BV7 Det., A.V.C., Output ....	—	170	210	28	6.3
6X4 Rectifier .....	210	—	190/190 A.C. R.M.S.	—	6.3

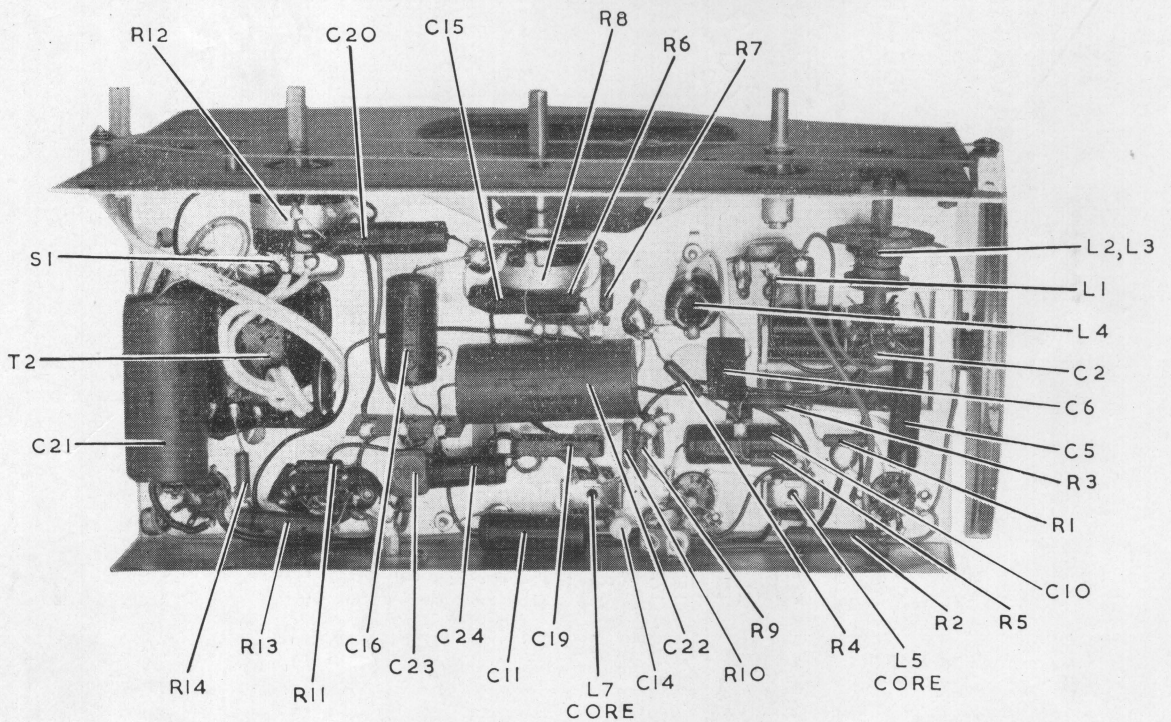
Volts across Back-bias resistor R14, 2.3V.

Total H.T. Current = 48 mA.

Measured at 240 volts A.C. supply. No signal input. Volume Control maximum clockwise. Voltmeter 1,000 ohms per volt; measurements taken on highest scale giving accurate readable deflection.



CHASSIS TOP VIEW MODEL 449-MA



CHASSIS UNDERNEATH VIEW MODEL 449-MA

# CIRCUIT CODE — RADIOLA 449-MA

Code No.	Description	Part No.	Code No.	Description	Part No.
<b>INDUCTORS</b>					
L1	I.F. Filter (including C1)	9382	C5	0.05 $\mu$ F paper 200V working	
L2, L3	Aerial Coil 540-1600 Kc/s	30768	C6	440 $\mu$ F padder $\pm$ 2 $\frac{1}{2}$ %	
L4	Oscillator Coil 540-1600 Kc/s	15949	C7	2-20 $\mu$ F trimmer (on gang)	
L5, L6	1st I.F. Transformer	27351	C8	12-445 $\mu$ F tuning	18679
L7, L8	2nd I.F. Transformer	27351	C9	9 $\mu$ F mica	
<b>RESISTORS</b>					
R1	100 ohms		C10	0.035 $\mu$ F paper 600V working	
R2	10,000 ohms	$\frac{1}{2}$ watt	C11	0.05 $\mu$ F paper 400V working	
R3	15,000 ohms	1 "	C12	100 $\mu$ F silvered mica	
R4	4,700 ohms	$\frac{1}{2}$ "	C13	100 $\mu$ F silvered mica	
R5	1.0 megohm	$\frac{1}{2}$ "	C14	10 $\mu$ F ceramic	
R6	1.0 megohm	$\frac{1}{2}$ "	C15	0.025 $\mu$ F paper 400V working	
R7	10,000 ohms	$\frac{1}{2}$ "	C16	0.1 $\mu$ F paper 400V working	
R8	0.5 megohm Volume Control (Tapped at 0.1 megohm)	26890	C17	100 $\mu$ F silvered mica	
R9	10.0 megohms	$\frac{1}{2}$ watt	C18	100 $\mu$ F silvered mica	
R10	1.0 megohm	$\frac{1}{2}$ "	C19	200 $\mu$ F mica	
R11	4,700 ohms	$\frac{1}{2}$ "	C20	0.05 $\mu$ F paper 200V working	
R12	1.0 megohm Tone Control (including S1)	26444	C21	24 $\mu$ F 350 P.V. Electrolytic	
R13	2,000 ohms	1 watt	C22	24 $\mu$ F 350 P.V. Electrolytic	
R14	47 ohms	$\frac{1}{2}$ "	C23	0.005 $\mu$ F paper, 600V working	
R15	180 ohms	$\frac{1}{2}$ "	C24	0.01 $\mu$ F paper 600V working	
<b>CAPACITORS</b>					
C1	50 $\mu$ F silvered mica		C25	0.005 $\mu$ F paper 600V working	
C2	6.8 $\mu$ F ceramic		<b>TRANSFORMERS</b>		
C3	12-445 $\mu$ F tuning		T1	Loudspeaker Transformer	XA2
C4	2-20 $\mu$ F trimmer (on gang)	18679	T2	Power Transformer, 50-60 C.P.S. 40 C.P.S.	25831 25833
<b>LOUDSPEAKER</b>					
5 inch Permanent Magnet					
<b>SWITCHES</b>					
Power Switch (on R12)					

# ALIGNMENT PROCEDURE

## Manufacturer's Setting of Adjustments.

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Re-alignment should be necessary only when components in tuned circuits are repaired or replaced, or when it is found that the seals over the adjusting screws have been broken.

It is especially important that the adjustments should not be altered unless in association with the correct testing instruments listed below.

Under no circumstances should the plates of the ganged tuning capacitor be bent, as the unit is accurately aligned during manufacture and cannot be re-adjusted unless by skilled operators using special equipment.

For all alignment operations, connect the "low" side of the signal generator to the receiver chassis, and keep the generator output as low as possible to avoid A.V.C. action. Also, keep the volume control in the maximum clockwise position.

## Testing Instruments.

- (1) A.W.A. Junior Signal Generator, type 2R3911, or
- (2) A.W.A. Modulated Oscillator, type J6726.  
If the modulated oscillator is used, connect a 0.25 megohm non-inductive resistor across the output terminals.
- (3) A.W.A. Output Meter, type 2M8832.

## ALIGNMENT TABLE

Alignment Order	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver Dial to:	Adjust for Maximum Peak Output:
1	Aerial Section of Gang (Drive end)	455 Kc/s	540 Kc/s	L8 Core
2	Aerial Section of Gang (Drive end)	455 Kc/s	540 Kc/s	L7 Core
3	Aerial Section of Gang (Drive end)	455 Kc/s	540 Kc/s	L6 Core
4	Aerial Section of Gang (Drive end)	455 Kc/s	540 Kc/s	L5 Core
Repeat the above adjustments until the maximum output is obtained.				
5	Aerial Lead	600 Kc/s	600 Kc/s	L.F. Osc. Core Adj. (L4)*
6	Aerial Lead	1,500 Kc/s	1,500 Kc/s	H.F. Osc. Adj. (C7)
7	Aerial Lead	1,500 Kc/s	1,500 Kc/s	H.F. Aer. Adj. (C4)
Repeat adjustments 5, 6 and 7.				

\* Rock the tuning control back and forth through the signal.

