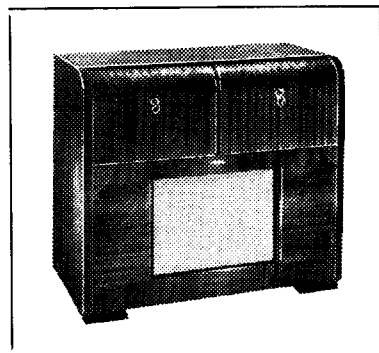


# TECHNICAL INFORMATION AND SERVICE DATA

## A.W.A. Radiogram Model 544-GA

FIVE VALVE, TWO BAND,  
A.C. OPERATED SUPERHETERODYNE.

ISSUED BY  
AMALGAMATED WIRELESS (A/SIA) LTD.



### ELECTRICAL SPECIFICATIONS

#### Frequency Ranges:

Medium Wave ..... 540-1,600 Kc/s  
(555-187.5 Metres)

Short Wave ..... 6-18 Mc/s  
(50-16 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 ..... 45 watts

Dial Lamps ..... 6.3 volts, 0.25 Amp. M.E.S.

#### Valve Complement:

- |         |                                  |
|---------|----------------------------------|
| 1. 6BE6 | Converter                        |
| 2. 6BA6 | I.F. Amplifier                   |
| 3. 6AV6 | Detector, A.F. Amplifier, A.V.C. |
| 4. 6BV7 | Output                           |
| 5. 6X4  | Rectifier                        |

#### Loudspeaker:

12 inch Permanent Magnet

Code No. — AU79

Transformer — TU202

V.C. Impedance — 6.5 ohms at 400 C.P.S.

or

12 inch Electro Magnet

Code No. — AS33

Transformer — TU202

V.C. Impedance — 6.5 ohms at 400 C.P.S.

Field — 1,000 ohms

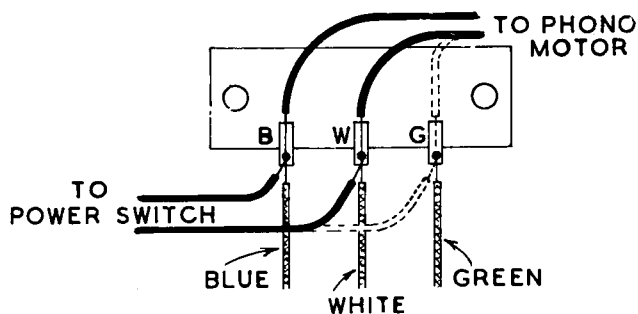
Undistorted Power Output .... 4 watts

#### Drive Cord Replacement.

Follow the diagram which is affixed to the back of the dial frame assembly. This shows the route of the cord and the method of attachment.

#### 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 within the cabinet. The power supply connections are shown in the accompanying diagram.



#### Chassis Removal.

First remove the knobs by pulling them straight off their spindles.

Then remove the cabinet back by removing wood screws. From the rear of the cabinet remove two retaining springs and bars from the rear ends of each moving runner.

Disconnect the loudspeaker cable, pick-up cable, phono-motor plug from the socket on the rear of the chassis and the cabinet pilot lamp.

From the front of the cabinet slide out and remove the receiver compartment drawer.

The chassis is held in the drawer by four screws. Removal of these enables the chassis to be withdrawn.

When replacing the receiver drawer be sure to replace the retaining springs and bars in the moving runner.

To remove the Record Player, remove the Record Player drawer as above. Then remove the screw from the centre of the wooden back of the drawer and the player will be free to lift out.

## D.C. RESISTANCE OF WINDINGS

Winding	D.C. Resistance in ohms
Aerial Coil (M.W.)	
Primary (L1) .....	15
Secondary (L2) .....	4
Aerial Coil (S.W.)	
Primary (L3) .....	3
Secondary (L4) .....	*
Oscillator Coil (M.W.) (L6) .....	6
Oscillator Coil (S.W.)	
Primary (L7) .....	*
Secondary (L8) .....	*
I.F. Filter (L5) .....	17.5†
I.F. Transformer Windings .....	10
Power Transformer (T2)	
Primary .....	25
Secondary .....	300
Loudspeaker Input Transformer (T1)	
Secondary .....	345
Primary .....	*

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.

\* Less than 1 ohm.

† On some receivers this reading may be as high as 60 ohms.

## SOCKET VOLTAGES

VALVES	Cathode to Chassis Volts	Screen Grid to Chassis Volts	Anode to Chassis Volts	Anode Current mA	Heater Volts
6BE6 Converter .....	—	70	260	2.7	6.3
6BA6 I.F. Amp. ....	1.6	70	260	4	6.3
6AV6 Det., A.F. Amp., A.V.C. ....	—	—	80*	0.6	6.3
6BV7 Output .....	—	260	250	37	6.3
6X4 Rectifier .....	260	—	290/290 A.C. RMS	—	6.3

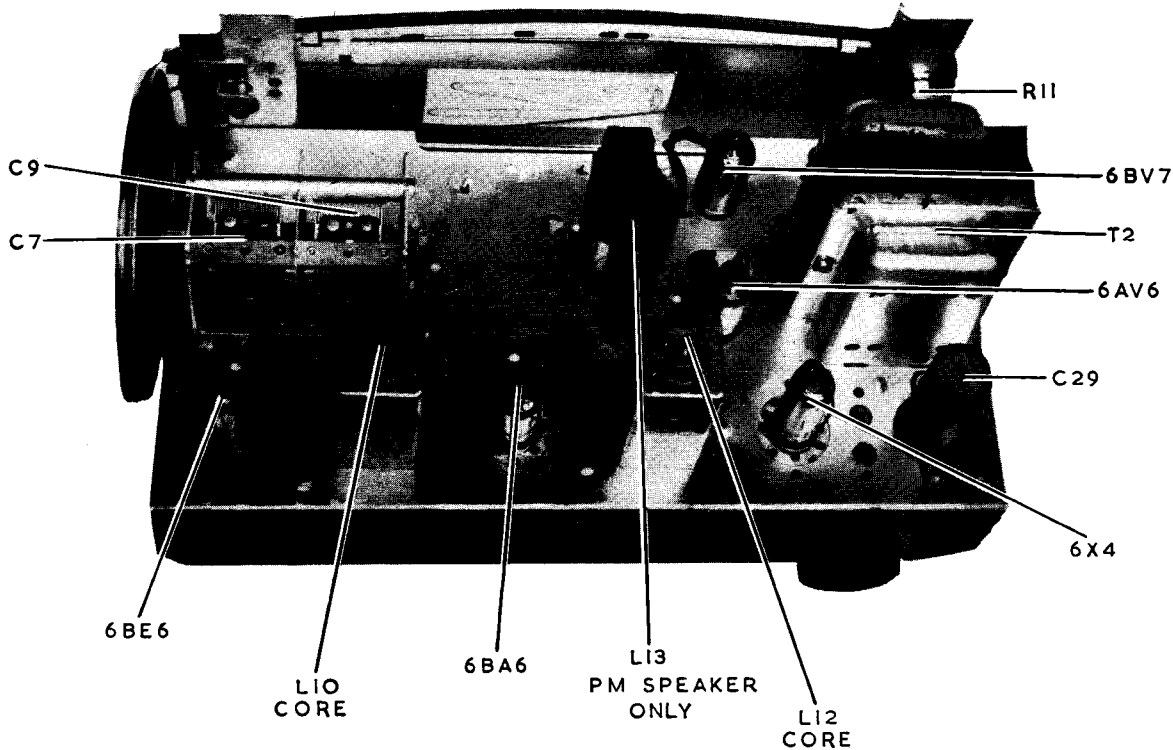
Total H.T Current:—60 mA.

Volts across L13:—60 volts D.C.

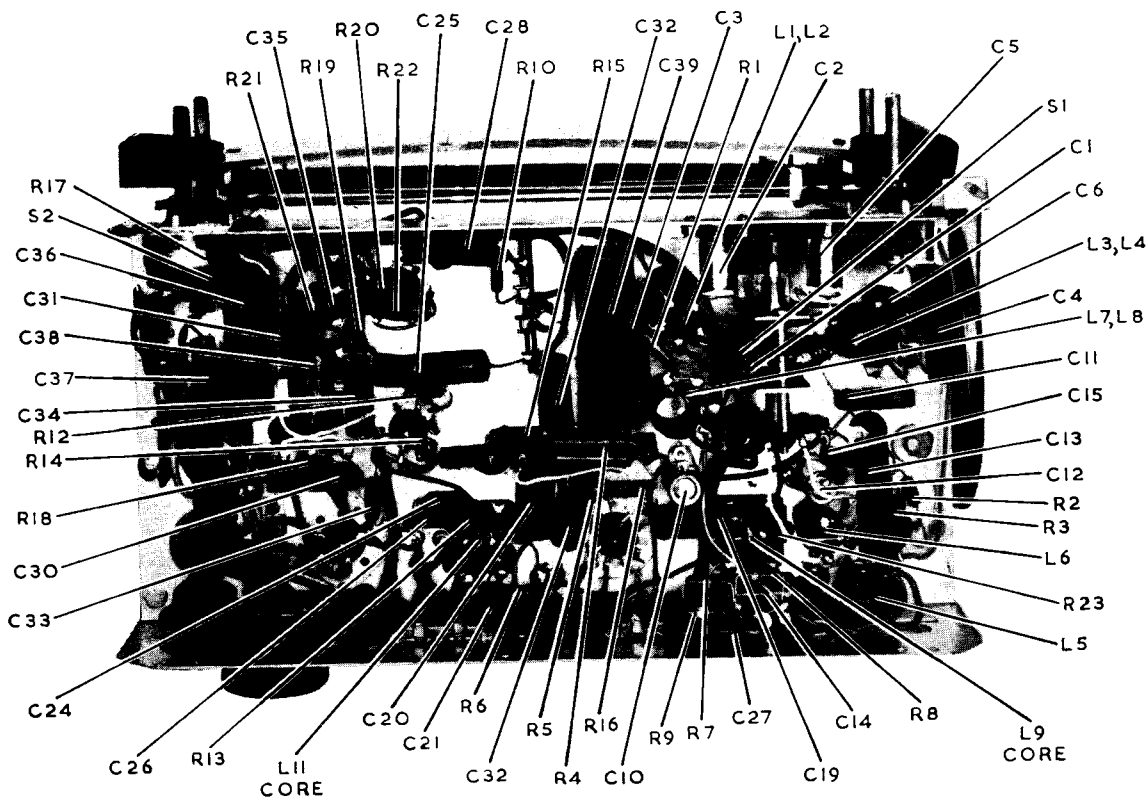
Measured at 240 volts A.C. supply. No signal input. Volume Control maximum clockwise.

Voltmeter 1,000 ohms per volt; measurements taken on highest scale giving accurate readable deflection.

\* This reading may vary depending on the voltmeter used.



CHASSIS TOP VIEW MODEL 544-GA



CHASSIS UNDERNEATH VIEW MODEL 544-GA

# CIRCUIT CODE RADIOLA 544-GA

Code No.	Description	Part No.	Code No.	Description	Part No.
<b>INDUCTORS</b>					
L1, L2	Aerial Coil 540-1,600 Kc/s	15454	R17	1.0 megohm Tone Control (including S2)	26444
L3, L4	Aerial Coil 6-18 Mc/s	30710	R18	0.1 megohm $\frac{1}{2}$ watt	
L5	I.F. Filter (including C8)	9382	R19	1.0 megohm $\frac{1}{2}$ "	
L6	Oscillator Coil 540-1,600 Kc/s	15949	R20	0.1 megohm $\frac{1}{2}$ "	
L7, L8	Oscillator Coil 6-18 Mc/s	28229	R21	0.22 megohm $\frac{1}{2}$ "	
L9, L10	1st I.F. Transformer	26673	R22	4,700 ohms $\frac{1}{2}$ "	
L11, L12	2nd I.F. Transformer	25197	R23	0.1 megohm $\frac{1}{2}$ "	
L13	Filter Choke (P.M. Speaker)	TU17	<b>CAPACITORS</b>		
L13	E.M. Speaker Field 1,000 ohms		C1	4 $\mu\mu\text{F}$ mica	19659
<b>RESISTORS</b>					
R1	0.1 megohm $\frac{1}{2}$ watt		C2	2-20 $\mu\mu\text{F}$ air trimmer	
R2	100 ohms $\frac{1}{2}$ "		C3	0.05 $\mu\text{F}$ paper 200V working	
R3	22,000 ohms $\frac{1}{2}$ "		C4	4,000 $\mu\mu\text{F}$ padder $\pm 2\frac{1}{2}\%$	
R4	34,000 ohms 2 "		C5	2-20 $\mu\mu\text{F}$ air trimmer	19659
R5	330 ohms $\frac{1}{2}$ "		C6	9 $\mu\mu\text{F}$ mica	
R6	2.5 megohms $\frac{1}{2}$ "		C7	12-430 $\mu\mu\text{F}$ tuning	18224
R7	0.47 megohm $\frac{1}{2}$ "		C8	50 $\mu\mu\text{F}$ silvered mica	
R8	0.22 megohm $\frac{1}{2}$ "		C9	12-430 $\mu\mu\text{F}$ tuning	18224
R9	0.22 megohm $\frac{1}{2}$ "		C10	2-20 $\mu\mu\text{F}$ air trimmer	19659
R10	22,000 ohms $\frac{1}{2}$ "		C11	9 $\mu\mu\text{F}$ mica	
R11	0.5 megohm Volume Control (Tapped at 40,000 ohms) $\frac{1}{2}$ watt	27145	C12	2-20 $\mu\mu\text{F}$ air trimmer	19659
R12	10 megohms $\frac{1}{2}$ "		C13	440 $\mu\mu\text{F}$ padder $\pm 2\frac{1}{2}\%$	
R13	47,000 ohms $\frac{1}{2}$ "		C14	0.1 $\mu\text{F}$ paper 400V working	
R14	50 ohms $\frac{1}{2}$ "		C15	50 $\mu\mu\text{F}$ mica	
R15	0.22 megohm 1 "		C16	0.05 $\mu\text{F}$ paper 400V working	
R16	47,000 ohms 1 "		C17	100 $\mu\mu\text{F}$ silvered mica	
			C18	100 $\mu\mu\text{F}$ silvered mica	
			C19	0.02 $\mu\text{F}$ paper 600V working	
			C20	0.1 $\mu\text{F}$ paper 200V working	
			C21	9 $\mu\mu\text{F}$ mica	
<b>TRANSFORMERS</b>					
T1	Loudspeaker Transformer	TU20	T1	Loudspeaker Transformer	TU20
T2	Power Transformer 50-60 C.P.S.	25825B	T2	Power Transformer 50-60 C.P.S.	25825B
				40 C.P.S.	25805B
<b>LOUDSPEAKER</b>					
	12 inch Permanent Magnet, or	AU79		12 inch Permanent Magnet, or	AU79
	12 inch Electro Magnet	AS33		12 inch Electro Magnet	AS33
<b>SWITCHES</b>					
S1	Phono-Range Switch	26447	S1	Phono-Range Switch	26447
S2	Power Switch (On R17)		S2	Power Switch (On R17)	

# 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, and for short wave alignment, an additional 400 ohms non-inductive resistor in series with the "high" output lead of the instrument.
- (3) A.W.A. Output Meter, Type 2M8832.

NOTE:—On the short wave band, the oscillator is working on the low side of the signal frequency; therefore, the image will now be heard if the receiver is tuned to a higher frequency than the signal. For example, if the set is tuned to receive a 16 Mc/s signal, the image will be heard at 16.91 Mc/s instead of the usual 15.09 Mc/s.

## ALIGNMENT TABLE

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	L12 Core
2	Aerial Section of Gang (Drive end)	455 Kc/s	540 Kc/s	L11 Core
3	Aerial Section of Gang (Drive end)	455 Kc/s	540 Kc/s	L10 Core
4	Aerial Section of Gang (Drive end)	455 Kc/s	540 Kc/s	L9 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. (L6)*
6	Aerial Lead	1,500 Kc/s	1,500 Kc/s	H.F. Osc. Adj. (C12)
7	Aerial Lead	1,500 Kc/s	1,500 Kc/s	H.F. Aer. Adj. (C2)
Repeat adjustments 5, 6 and 7.				
8	Aerial Lead	16 Mc/s	16 Mc/s	H.F. Osc. Adj. (C10)†
9	Aerial Lead	16 Mc/s	16 Mc/s	H.F. Aer. Adj. (C5)

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

† Use maximum capacity peak if two can be obtained. Check to determine that the trimmer has been adjusted to correct peak by tuning the receiver to approximately 16.91 Mc/s where a weaker signal should be obtained.

