

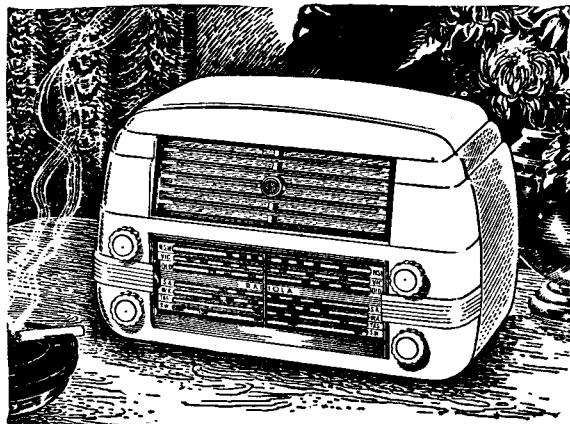
TECHNICAL INFORMATION AND SERVICE DATA

AWA RADIOLA

Model 534-MB

FIVE VALVE, TWO-BAND DRY-CELL
BATTERY OPERATED SUPERHETERODYNE

ISSUED BY
AMALGAMATED WIRELESS (A/SIA) LIMITED



ELECTRICAL SPECIFICATIONS

Frequency Ranges:
Medium Wave: 540-1600 Kc/s (555-187.5 M)
Short Wave: 6-18 Mc/s (50-16 M)

Intermediate Frequency: 455 Kc/s

Battery Complement:

- (a) 1.5-volt Dry Cell "A" Battery
- (b) 2 45-volt "B" Batteries
- (c) 1 3-volt cycle lamp Battery

Battery Consumption:

- (a) "A" Battery, 0.3 amp.
- (b) "B" Batteries
"Battery Saving" 10 mA
"Battery Normal" 15 mA

Dial Lamps: 2.5 volt, 0.2 amp. M.E.S.

Fuse: $\frac{1}{8}$ amp.

Valve Complement:

1. 1T4 R.F. Amplifier
2. 1R5 Converter
3. 1T4 I.F. Amplifier
4. 1S5 Detector, A.F. Amplifier, A.V.C.
5. 3V4 Output

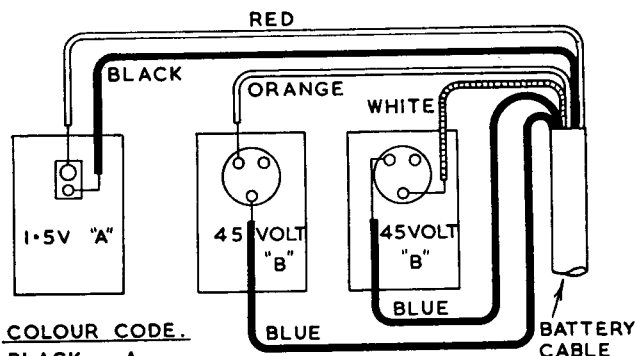
Loudspeaker (Permanent Magnet):

9" x 6" — code number BF7

Transformer: XA20

V.C. Impedance 3 ohms at 400 C.P.S.

Undistorted Power Output: 200 milliwatts



COLOUR CODE.	
BLACK	A-
RED	A+
WHITE	B-
ORANGE	B+
BLUE	LINK

GENERAL DESCRIPTION

The model 534-MB is a mantel model designed for dry-cell battery operation. Battery connections are shown in the accompanying diagram.

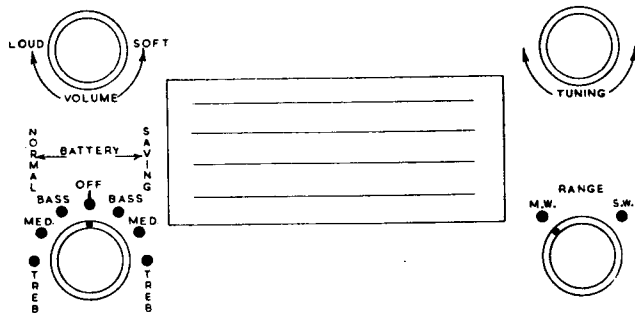
Features of design include: Tropic-proof construction, automatic volume control, magnetite cores in I.F. transformers and broadcast oscillator coil, air-dielectric trimming capacitors, straight-line edge-lighted plastic dial scale.

Chassis Removal.

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

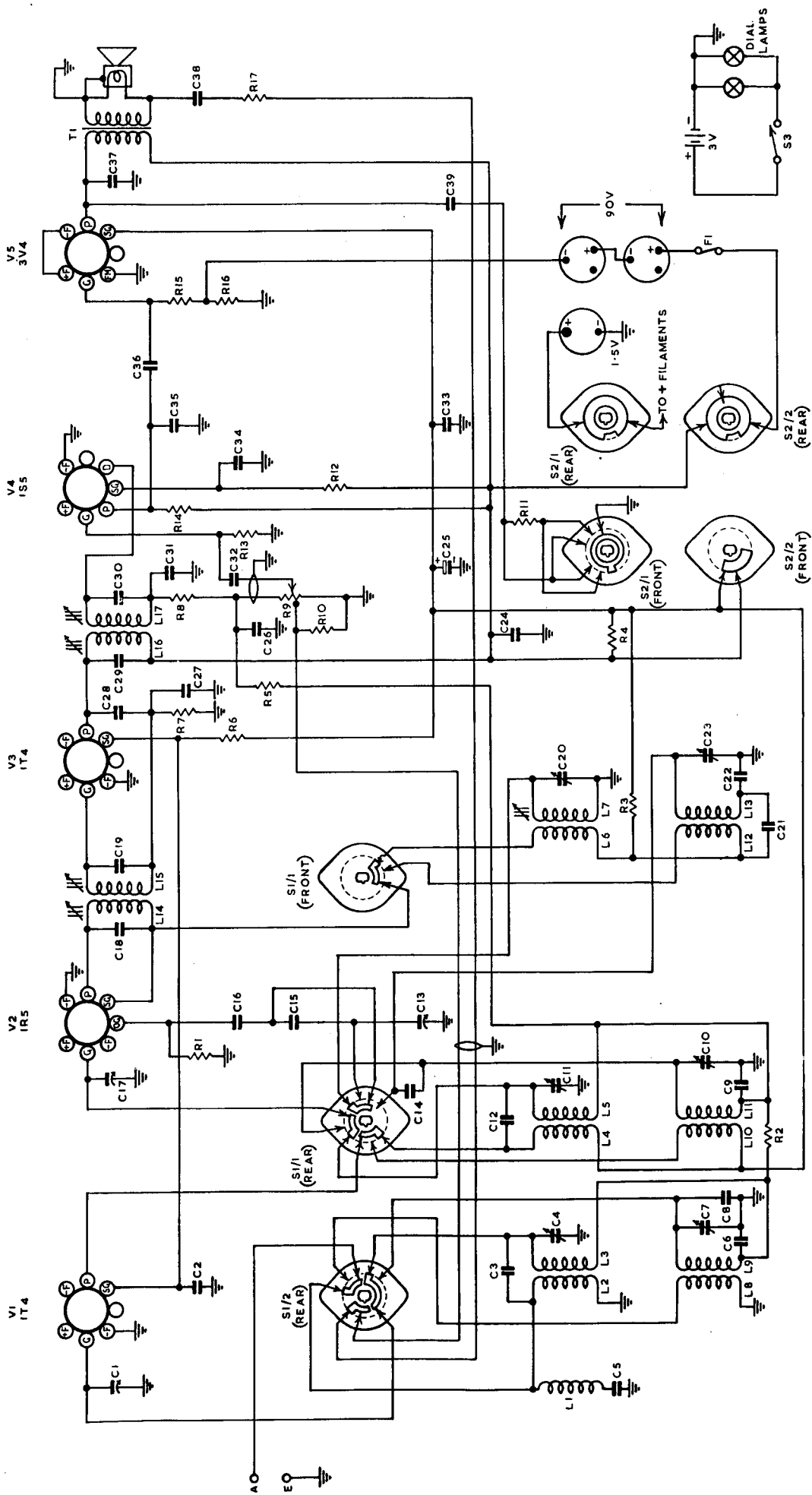
Then remove the cabinet back. It is fastened to the cabinet body by four screws. The chassis is held in the cabinet by four screws through the base of the cabinet. Removal of these enables the chassis to be withdrawn from the cabinet.

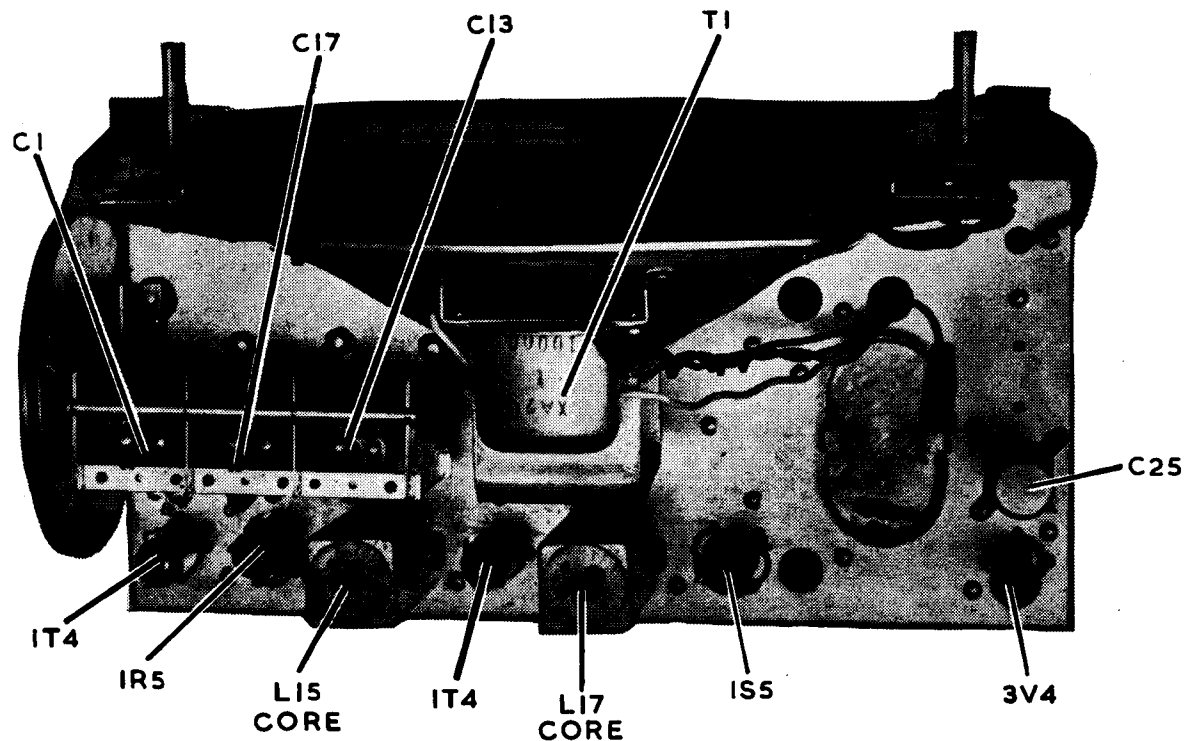
When replacing the cabinet back make sure that the battery cable passes through the hole provided in the cabinet back.



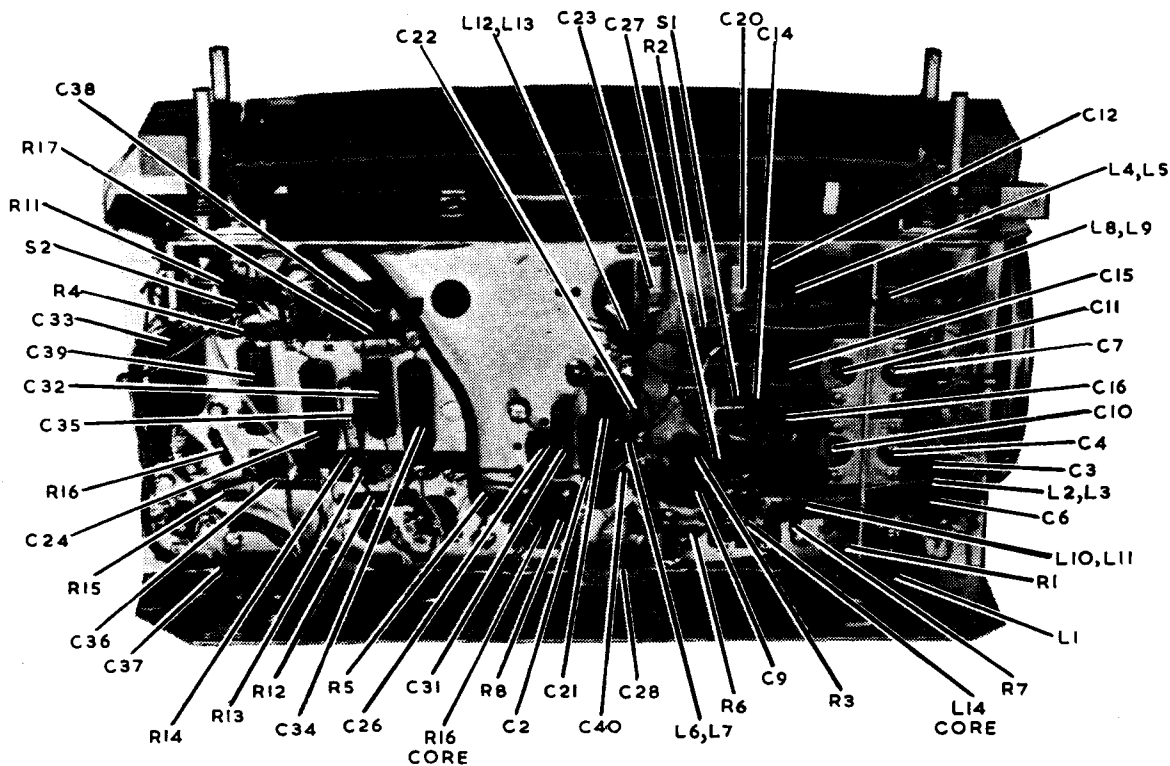
Drive Cord Replacement.

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.





CHASSIS TOP VIEW MODEL 534-MB



CHASSIS UNDERNEATH VIEW MODEL 534-MB

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.

ALIGNMENT TABLE

Order	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver Dial to:	Adjust for Maximum Peak Output
1	R.F. Section of Gang (centre portion)	455 Kc/s	540 Kc/s	L17 Core
2	R.F. Section of Gang (centre portion)	455 Kc/s	540 Kc/s	L16 Core
3	R.F. Section of Gang (centre portion)	455 Kc/s	540 Kc/s	L15 Core
4	R.F. Section of Gang (centre portion)	455 Kc/s	540 Kc/s	L14 Core
Repeat the above adjustments until the maximum output is obtained				
5	Aerial Terminal	600 Kc/s	600 Kc/s	Osc. Core Adj. (L7)*
6	Aerial Terminal	1500 Kc/s	1500 Kc/s	Osc. Adj. (C20)
7	Aerial Terminal	1500 Kc/s	1500 Kc/s	R.F. Adj. (C11)
8	Aerial Terminal	1500 Kc/s	1500 Kc/s	Aer. Adj. (C4)
Repeat adjustments 5, 6, 7 and 8.				
9	Aerial Terminal	16 Mc/s	16 Mc/s	Osc. Adj. (C23)†
10	Aerial Terminal	16 Mc/s	16 Mc/s	R.F. Adj. (C10)‡
11	Aerial Terminal	16 Mc/s	16 Mc/s	Aer. Adj. (C7)‡

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

† Use minimum capacity peak if two can be obtained. Check to determine that C23 has been adjusted to correct peak by tuning the receiver to approximately 15.09 Mc/s where a weaker signal should be received.

‡ Use maximum capacity peak if two can be obtained.

CIRCUIT CODE. RADIOLA 534-MB

Code No.	Description.	Part No.	Code No.	Description.	Part No.
INDUCTORS					
L1	I.F. Filter (including C5)	9382	C11	1-12 $\mu\mu\text{F}$ air trimmer	16347
L2, L3	Aerial Coil	15454	C12	4 $\mu\mu\text{F}$ mica	
L4, L5	R.F. Coil	23891	C13	12-430 $\mu\mu\text{F}$ tuning	18321
L6, L7	Oscillator Coil	9206A	C14	Neutralising	
L8, L9	Aerial Coil	15456	C15	490 $\mu\mu\text{F}$ padder $\pm 2\frac{1}{2}\%$	
L10, L11	R.F. Coil	26060	C16	70 $\mu\mu\text{F}$ mica	18321
L12, L13	Oscillator Coil	15922A	C17	12-430 $\mu\mu\text{F}$ tuning	
L14, L15	1st I.F. Transformer	22700	C18	70 $\mu\mu\text{F}$ silvered mica	
L16, L17	2nd I.F. Transformer	22703	C19	70 $\mu\mu\text{F}$ silvered mica	
RESISTORS.					
R1	0.1 megohm	$\frac{1}{2}$ watt	C20	2-20 $\mu\mu\text{F}$ air trimmer	19659
R2	0.1 megohm	$\frac{1}{2}$ "	C21	0.05 μF paper 200V working	
R3	10,000 ohms	$\frac{1}{2}$ "	C22	4000 $\mu\mu\text{F}$ padder $\pm 2\frac{1}{2}\%$	
R4	10,000 ohms	$\frac{1}{2}$ "	C23	1-12 $\mu\mu\text{F}$ air trimmer	16347
R5	2.5 megohms	$\frac{1}{2}$ "	C24	0.1 μF paper 200V working	
R6	50,000 ohms	$\frac{1}{2}$ "	C25	20 μF 200 P.V. Electrolytic	
R7	2.5 megohms	$\frac{1}{2}$ "	C26	100 $\mu\mu\text{F}$ mica	
R8	20,000 ohms	$\frac{1}{2}$ "	C27	0.02 μF paper 600V working	
R9	0.5 megohm Volume Control (Tapped 40,000 ohms)	$\frac{1}{2}$ "	C28	9 $\mu\mu\text{F}$ silvered mica	
R10	1,000 ohms	$\frac{1}{2}$ watt	C29	70 $\mu\mu\text{F}$ silvered mica	
R11	10,000 ohms	$\frac{1}{2}$ "	C30	70 $\mu\mu\text{F}$ silvered mica	
R12	3.2 megohms	$\frac{1}{2}$ "	C31	100 $\mu\mu\text{F}$ mica	
R13	10 megohms	$\frac{1}{2}$ "	C32	0.01 μF paper 600V working	
R14	0.63 megohm	$\frac{1}{2}$ "	C33	0.4 μF paper 200V working	
R15	0.5 megohm	$\frac{1}{2}$ "	C34	0.1 μF paper 200V working	
R16	300 ohms	$\frac{1}{2}$ "	C35	200 $\mu\mu\text{F}$ mica	
R17	10,000 ohms	$\frac{1}{2}$ "	C36	0.01 μF paper 600V working	
CAPACITORS.					
C1	12-430 $\mu\mu\text{F}$ tuning	18321	C37	0.005 μF paper 600V working	
C2	0.1 μF paper 200V working		C38	0.05 μF paper 200V working	
C3	4 $\mu\mu\text{F}$ mica		C39	0.035 μF paper 400V working	
C4	2-20 $\mu\mu\text{F}$ air trimmer	27165	TRANSFORMER.		
C5	50 $\mu\mu\text{F}$ silvered mica		Loudspeaker Transformer		
C6	0.05 μF paper 200V working		T1		
C7	2-20 $\mu\mu\text{F}$ air trimmer	27165	Loudspeaker Transformer		
C8	9 $\mu\mu\text{F}$ mica		LOUDSPEAKER.		
C9	0.05 μF paper 200V working		9" x 6"		
C10	2-20 $\mu\mu\text{F}$ air trimmer	27165	SWITCHES.		
			S1	Range Switch	27054
			S2	Battery/Tone Switch	27073
			S3	Dial Lamp Switch	26658
			FUSE.		
			F1	375 mA cartridge	

D.C. RESISTANCE OF WINDINGS

Windings	D.C. Resistance in Ohms
Aerial Coil (M.W.)	
Primary (L2)	18
Secondary (L3)	6
Aerial Coil (S.W.)	
Primary (L8)	3
Secondary (L9)	*
R.F. Coil (M.W.)	
Primary (L4)	80
Secondary (L5)	4
R.F. Coil (S.W.)	
Primary (L10)	*
Secondary (L11)	*
Oscillator Coil (M.W.)	
Primary (L6)	2
Secondary (L7)	*
Oscillator Coil (S.W.)	
Primary (L12)	*
Secondary (L13)	*
I.F. Transformer Windings	10
I.F. Filter (L1)	17.5 †
Loudspeaker Input Transformer (T1)	
Primary	540 or 650
Secondary	*

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.

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

* Less than 1 ohm.

SOCKET VOLTAGES

Valves	Bias Volts		Screen Grid to Chassis Volts		Anode to Chassis Volts		Anode Current mA		Filament Volts	
	*	†	*	†	*	†	*	†	*	†
1T4 R.F. Amp.	0	0	30	25	85	50	1.1	0.5	1.4	1.4
1R5 Converter	0	0	50	30	50	30	1.1	0.4	1.4	1.4
1T4 I.F. Amp.	0	0	30	25	85	87	1.2	0.6	1.4	1.4
1S5 A.F. Amp., Det., A.V.C.	0	0	10 ‡	10 ‡	10 ‡	10 ‡	0.1	0.1	1.4	1.4
3V4 Output	-4.5	-3.0	85	50	80	85	8.0	4.6	1.4	1.4

* "Battery Normal" position of Battery — Tone Switch.

† "Battery Saving" position of Battery — Tone Switch.

‡ These readings may vary depending on the resistance of the voltmeter used.

Readings taken with no signal input and Volume Control maximum clockwise.

Voltmeter 1000 ohms per volt, measurements taken on highest scale giving accurate readable deflection.