

# TECHNICAL INFORMATION

AND

SERVICE DATA

# RADIOLETTE

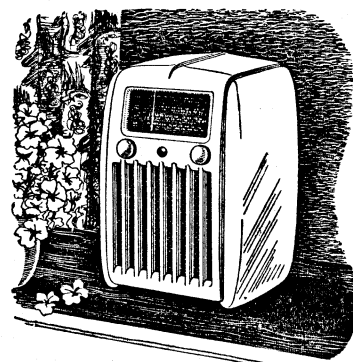
## MODEL 520-M

FOUR VALVE, BROADCAST,

A.C. OPERATED SUPERHETERODYNE

ISSUED BY

AMALGAMATED WIRELESS (A/SIA) LTD.



### ELECTRICAL SPECIFICATIONS.

FREQUENCY RANGE .....	540-1600 Kc/s (555-187.5M)
INTERMEDIATE FREQUENCY .....	455 Kc/s
POWER SUPPLY RATING .....	200-260 volts, 50-60 C.P.S. (Instruments available for other voltage and frequency ratings)
POWER CONSUMPTION .....	35 watts
DIAL LAMP .....	6.3 volts, 0.25 amp. M.E.S.

#### VALVE COMPLEMENT:

- |             |                                      |
|-------------|--------------------------------------|
| (1) 6A8G    | Converter                            |
| (2) 6G8G    | I.F. Amplifier, 2nd Det., and A.V.C. |
| (3) 6V6GT/G | Output                               |
| (4) 5Y3GT   | Rectifier                            |

UNDISTORTED POWER OUTPUT: 1 watt

LOUDSPEAKER (Permanent Magnet):  
5 inch—Code No. AC36  
Transformer—XA2

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

CONTROLS: Volume/Power—Left-hand knob  
Tuning—Right-hand knob

### MECHANICAL SPECIFICATIONS.

	Height	Width	Depth
Cabinet Dimensions (ins.) .....	10 $\frac{3}{4}$	7 $\frac{1}{2}$	5 $\frac{3}{4}$
Chassis Base Dimensions (ins.) .....	9 $\frac{1}{4}$	2 $\frac{1}{2}$	4 $\frac{1}{4}$
Carton Dimensions (ins.) .....	11 $\frac{1}{2}$	7 $\frac{3}{4}$	7 $\frac{3}{4}$
Weight (nett lbs.) .....	13		
Cabinet Colours .....	Ivory, Walnut and Burgundy		

### GENERAL DESCRIPTION.

The Radiolette 520-M is a compact mantel receiver housed in an attractively designed two-piece plastic cabinet. The back is so designed to enable the receiver to be carried with ease. The cabinet is produced in three colours—Ivory,

Walnut and Burgundy.

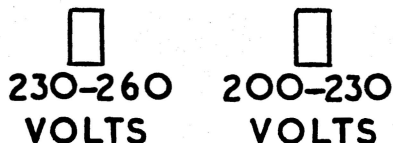
Features of this receiver include: Tropic-proof construction, automatic volume control, magnetite cores in I.F. transformers and oscillator coil, "Capacity to Mains" aerial.

### 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.

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



### SOCKET VOLTAGES.

Valves	Cathode to Chassis Volts	Screen Grid to Chassis Volts	Anode to Chassis Volts	Anode Current mA	Bias Volts	Heater Volts
6A8G Converter .....	0	100	210	3.5	-3	6.3
Oscillator .....	—	—	170	4.0	—	—
6G8G Det., I.F. Amp. ....	0	100	100	4.0	-3	6.3
6V6GT/G Output .....	0	100	200	14.0	-5	6.3
5Y3GT Rectifier .....	210		190 A.C.			5.0

Total H.T. Current—35 mA.

Measured at 240 volts A.C. supply. No signal input.

Volume Control maximum clockwise. Voltmeter 1000 ohms per volt; measurements taken on highest scale giving accurate readable deflection.

### D.C. RESISTANCE OF WINDINGS. ↗

Winding	D.C. Resistance in ohms
Aerial Coil:	
Primary (L2)	30
Secondary (L3)	4
Oscillator Coil:	
Primary (L4)	1.5
Secondary (L5)	6
I.F. Filter (L1)	17.5†
I.F. Transformer Windings	10
Loudspeaker Input Transformer (T1):	
Primary	
Secondary	525 or 430
Power Transformer (T2):	*
Primary	60
Secondary	350

\*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.

### MECHANICAL REPLACEMENT PARTS.

Item	Part No.	Item	Part No.
Cabinet, body .....	23232	N.S.W. ....	23368
back .....	24202	Vic./Tas. ....	23370
Cable, power .....	15940	Qld. ....	23372
Clip, grid .....	7459	S.A./W.A. ....	23374
Dial, clip .....	24221	Knob .....	23266
Dial, plate assembly .....	24217	Screen, valve .....	24211
Dial, pointer assembly .....	24222	Socket, valve .....	4704
Dial, scale: Standard .....	23366	Terminal, spring .....	5458

# ALIGNMENT PROCEDURE.

## Manufacturer's Setting of Adjustments.

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Realignment 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 readjusted unless by skilled operators using specialised 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.

Order	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver to:	Adjust for maximum peak output
1*	6A8G †	455 Kc/s	540 Kc/s	L9 Core
2	6A8G †	455 Kc/s	540 Kc/s	L8 Core
3	6A8G †	455 Kc/s	540 Kc/s	L7 Core
4	6A8G †	455 Kc/s	540 Kc/s	L6 Core
Repeat the above adjustments until the maximum output is obtained.				
5	Aerial Terminal	600 Kc/s	600 Kc/s	L.F. Osc. Core Adj. (L5) ‡
6	Aerial Terminal	1500 Kc/s	1500 Kc/s	H.F. Osc. Adj. (C7)
7	Aerial Terminal	1500 Kc/s	1500 Kc/s	H.F. Aer. Adj. (C3)

Repeat adjustments 5, 6 and 7.

\*Before I.F. alignment is carried out, the capacity lead connected to the plate of the 6G8G must be bent up to minimise the coupling to the 1st I.F. Upon completion of I.F. alignment, move the capacity lead down again as far as possible without causing oscillation. At this point, no further adjustment of the I.F.'s must be made.

†With grid clip connected. An 0.001 uF capacitor should be connected in series with the "high" side of the test instrument.

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

## CHASSIS REMOVAL.

- (1) Remove the control knobs by pulling them straight off their spindles.
- (2) Unscrew four screws on the back of the cabinet and remove the cabinet back.
- (3) The chassis is held in the cabinet by two screws. Removal of these enables the chassis to be withdrawn from the cabinet.

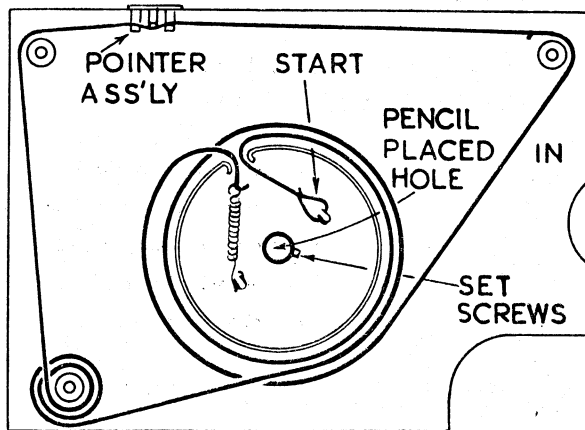
## TUNING DRIVE CORD REPLACEMENT.

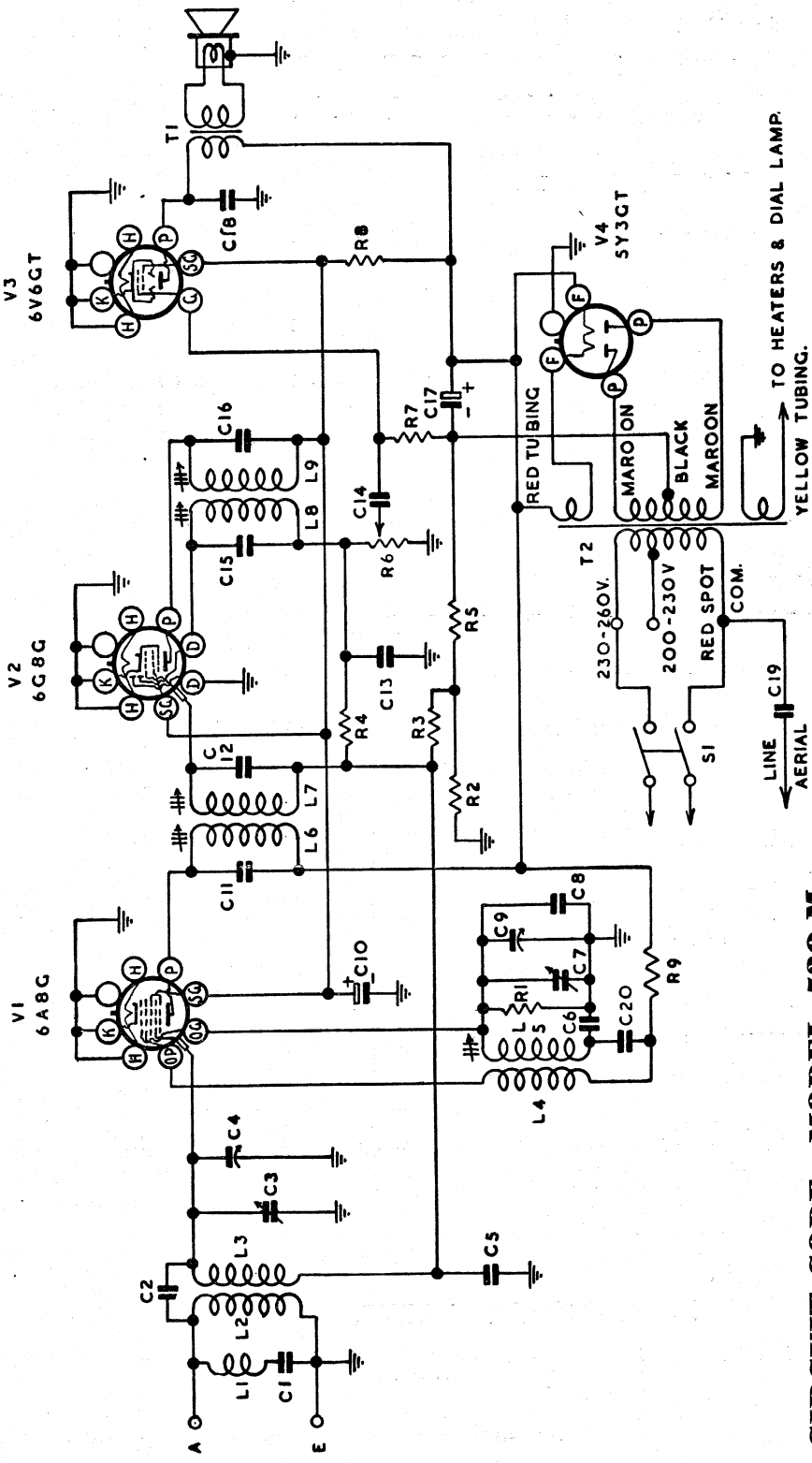
- (1) Remove the dial backing from the front plate.
- (2) Loosen the set-screws holding the drive drum to the gang spindle.
- (3) Remove the front plate by unscrewing two screws from the front of the plate.

Before the drive cord can be replaced, it is necessary to fasten to the drive drum some object similar to the drive spindle. A pencil will be found quite satisfactory.

Now replace the drive cord as shown in the accompanying diagram.

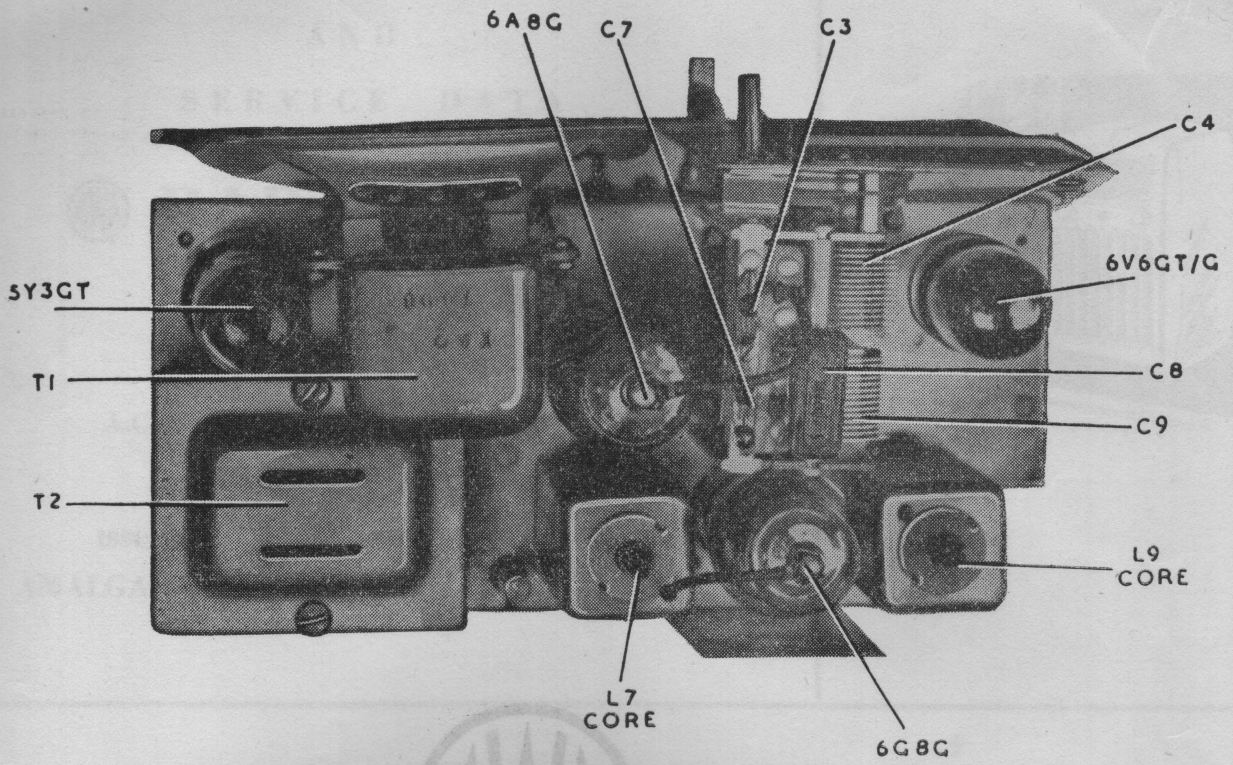
To replace the front plate and drive drum, loosen the set-screws in the drum, and, using the pencil as a guide, push the front plate and drum into position. Now retighten the set-screws and replace the front plate screws.



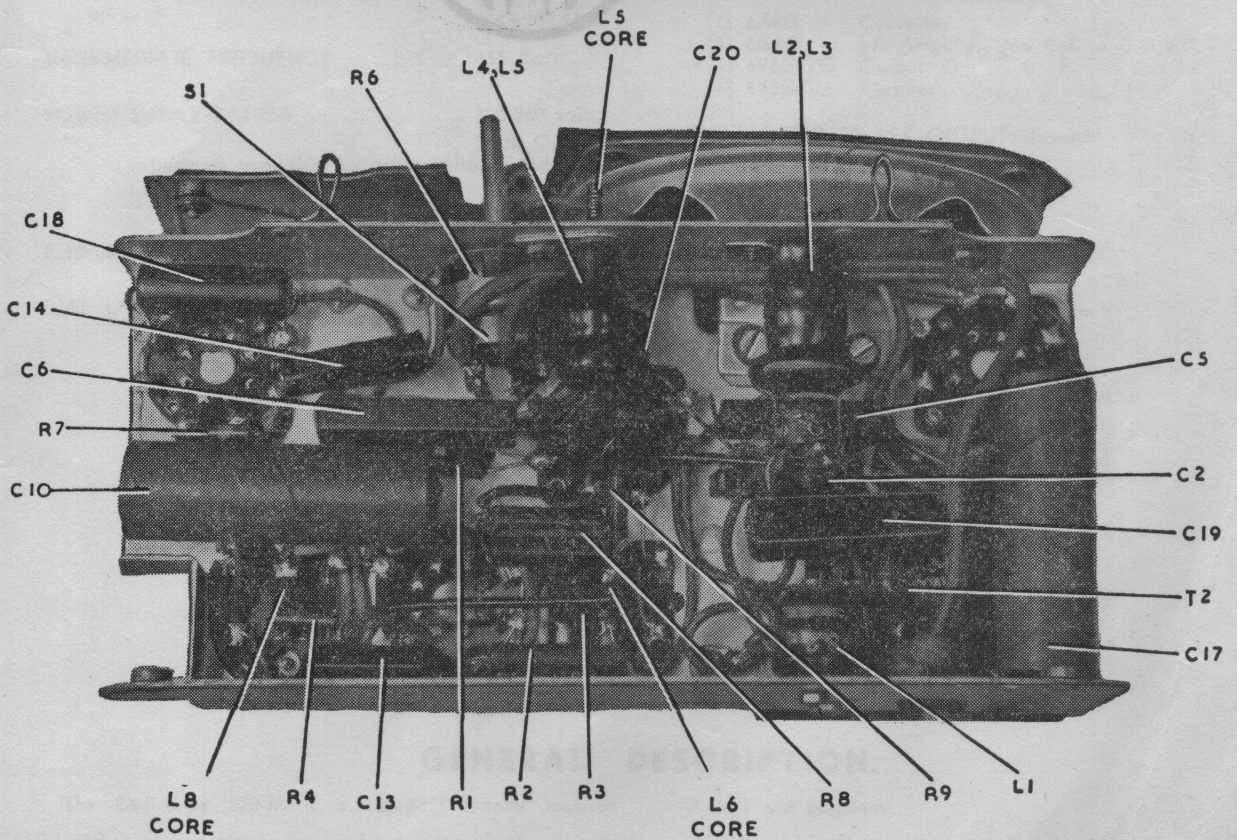


## CIRCUIT CODE—MODEL 520-M

Code No.	Description	Part No.	Code No.	Description	Part No.
L1	I.F. Filter (including C1)	9382	C16	70 uF Mica	XA2
L2, L3	Aerial Coil, 1600-540 Kc/s	7647A	C17	24 uF 350 P.V. Electrolytic	17871B
L4, L5	Oscillator Coil, 1600-540 Kc/s	7638A	C18	0.02 uF Paper, 600 v. working	17873B
L6, L7	1st I.F. Transformer	17645	C19	500X uuF (2000 v. test)	
L8, L9	2nd I.F. Transformer	17646	C20	0.05 uF Paper, 400 v. working	
R1	50,000 ohms, ½ watt		<b>TRANSFORMERS</b>		
R2	100 ohms, 1 watt		T1	Loudspeaker Transformer	
R3	1 megohm, ½ watt		T2	Power Transformer, 50-60 C.P.S.	
R4	2.5 megohms, ½ watt		T2	Power Transformer, 40-60 C.P.S.	
R5	66.6 ohms, 1 watt		<b>SWITCHES</b>		
R6	0.5 megohm—Volume Control (with switch)	24225	S1	Power Switch (on R6)	
R7	0.5 megohm, ½ watt		<b>LOUDSPEAKER</b>		
R8	10,000 ohms, ½ watt		5 inch Permanent Magnet AC36		
R9	10,000 ohms, ½ watt				
C1	50 uF Silvered Mica		<b>TO HEATERS &amp; DIAL LAMP.</b>		
C2	4 uF Mica		<b>YELLOW TUBING.</b>		
C3	5-20 uuF Trimmer (on gang)	18620	<b>RED TUBING</b>		
C4	12-430 uuF Tuning		<b>MAROON</b>		
C5	0.05 uF Paper, 200 v. working		<b>BLACK</b>		
C6	420 uuF Mica, ± 2½% Padder		<b>MAROON</b>		
C7	5-20 uuF Trimmer (on gang)		<b>COM.</b>		
C8	12-430 uuF Tuning	18620	<b>LINE AERIAL</b>		
C9	24 uF 350 P.V. Electrolytic		<b>←</b>		
C10	70 uuF Mica		<b>→</b>		
C11	70 uuF Mica		<b>RED SPOT</b>		
C12	200 uuF Mica		<b>200-230V</b>		
C13	200 uuF Mica		<b>230-260V.</b>		
C14	0.025 uF Paper, 400 v. working		<b>COM.</b>		
C15	70 uuF Mica		<b>←</b>		



CHASSIS, Top View, 520-M



CHASSIS, Bottom View 520-M