

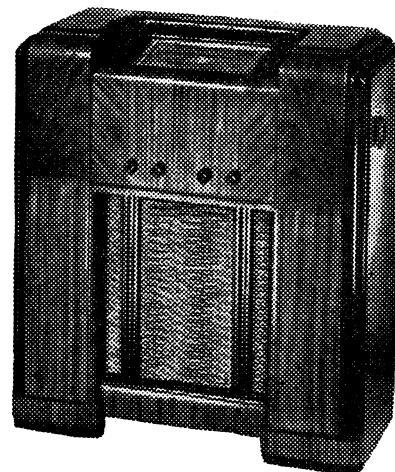
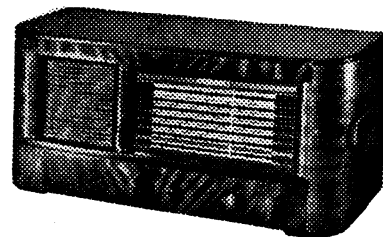
TECHNICAL INFORMATION  
AND  
SERVICE DATA



**RADIO LA**  
MODELS 607-T & 705-C

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

ISSUED BY  
AMALGAMATED WIRELESS (A/SIA.) LTD.



**ELECTRICAL SPECIFICATIONS.**

FREQUENCY RANGE ..... Medium Wave 1600-550 Kc.  
(187.5-545M)  
Short Wave 22-7 Mc. (13.6-43M)

INTERMEDIATE FREQUENCY 455 Kc.

POWER SUPPLY RATING ..... 200-260 volts, 50-60 C.P.S.  
(Models are produced with other voltage and frequency ratings)

POWER CONSUMPTION .... 60 watts

DIAL LAMP (2) ..... 6.3 volts, 0.25 amp. M.E.S.

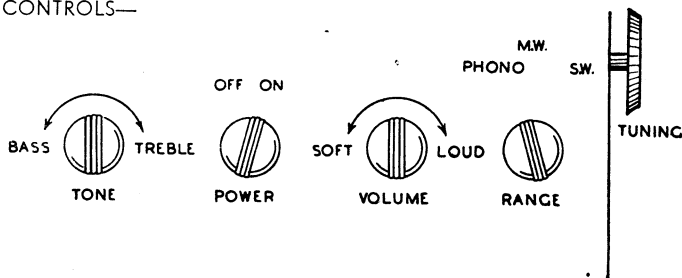
VALVE COMPLEMENT—  
(1) 6J8G Converter (3) 6B6G Det., A.V.C. and A.F. Amp.  
(2) 6U7G I.F. Amplifier (4) 6V6GT/G Output  
(5) 5Y3GT/G Rectifier

LOUDSPEAKER—  
Model 607-T: 7 inch—Code No. AW4  
Transformer—XA1  
V.C. Impedance—3 ohms at 400 C.P.S.  
Field—1,500 ohms

Model 705-C: 12 inch—Code No. AS13  
Transformer—TX20  
V.C. Impedance—2.2 ohms at 400 C.P.S.  
Field—1,500 ohms

UNDISTORTED POWER OUTPUT ..... 4.5 watts

CONTROLS—



**MECHANICAL SPECIFICATIONS.**

	Height	Width	Depth
Cabinet Dimensions (inches)—			
607-T	11	24	10½
705-C	33½	30½	13
Chassis Base Dimensions			
	3	15	6½
Overall Chassis Height (inches)			8

	Height	Width	Depth
Weight (nett lbs.)—			
607-T			34
705-C			74
Carton Dimensions (inches)—			
607-T	12½	25	12
705-C	35½	32	14½
Cabinet Finish	Walnut Veneer		

## GENERAL DESCRIPTION.

The models 607-T and 705-C are table and console models, respectively, and employ the same chassis.

Features of design include: Tropic-proof construction, power switch on chassis, phono-range switch, automatic volume control, continuously variable tone control, straight-

line, edge-lighted dial with metropolitan stations printed in  $\frac{1}{8}$ -inch high characters, magnetite cores in I.F. transformers and broadcast oscillator coil, air-dielectric trimming capacitors, broadcast tuning range extended to 1,600 kc. to permit reception of proposed stations above 1,500 kc.

## ALIGNMENT PROCEDURE.

### Manufacturer's Setting of Adjustments.

The receiver is tested by the manufacturers 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 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, and, for short-wave alignment, an additional 400 ohms non-inductive resistor in series with the "high" output lead of the instrument.

- (3) Output Meter.

The instrument recommended should have an output impedance of 5,000 ohms and a range of 5-3,000 milliwatts. The meter should be connected across the primary of the loudspeaker transformer with the voice-coil of the loudspeaker open-circuit.

If the output meter used is one which does not impress a load on the anode circuit of the output valve, it will not be necessary to open-circuit the voice-coil.

## ALIGNMENT TABLE.

Order	Connect "high" side of Generator to:	Tune Generator to:	Set Receiver Drive Drum Scale to:	Adjust for Maximum peak output:
1	6J8G Grid*	455 Kc.	0	L13 Core
2	6J8G Grid*	455 Kc.	0	L12 Core
3	6J8G Grid*	455 Kc.	0	L11 Core
4	6J8G Grid*	455 Kc.	0	L10 Core
Repeat the above adjustments until the maximum output is obtained				
5	Aerial Term	600 Kc.	18	L.F. Osc. Core Adj. (L7)†
6	Aerial Term	1500 Kc.	154	H.F. Osc. Adj. (C5)
7	Aerial Term	1500 Kc.	154	H.F. Aer. Adj. (C2)
Repeat Adjustments 5, 6 and 7				
8	Aerial Term	20 Mc.	157	H.F. Osc. Adj. (C6)‡
9	Aerial Term	20 Mc.	157	H.F. Aer. Adj. (C3)§

\* With grid clip connected. A 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.

‡ Use minimum capacity peak if two can be obtained. Check to determine that C6 has been adjusted to correct peak by tuning the receiver to approximately 19.09 Mc., where a weaker signal should be received.

§ Use maximum capacity peak if two can be obtained.



### Loudspeaker Service.

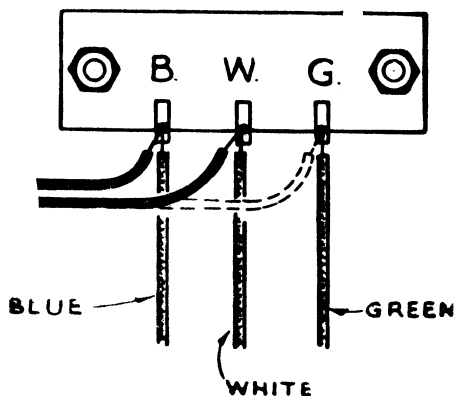
It is inadvisable to attempt loudspeaker repairs other than adjustment of the voice coil and replacement of the transformer. The fitting of a new cone or the replacement of a field winding should be done only by Service Departments suitably equipped to do the work.

To centre the voice coil first remove the dust cover. To do this, use a very sharp razor blade and cut the centre out of the dust cover, cutting just inside the edge of the voice coil former, which can be felt with the finger. Do not attempt to tear the cover from the cone. Loosen the suspension screws, insert three narrow paper "feelers" in the gap and re-tighten the suspension screws. The "feelers" should be approximately 3/16 inch wide and 0.006 inch thick.

After adjusting, test the loudspeaker, and, if satisfactory, fasten a replacement dust cover, part number 7677, in place with latex rubber cement.

### Connection to Power Supply.

The receiver should not be connected to any circuit supplying other than alternating current from 200 to 260 volts and at the frequency stated on the label within the cabinet. The power supply connection panel is shown in the accompanying diagram, and for 230 to 260-volt operation the input leads from the power switch (S2) should be connected to tags B and G. For operation on voltages below 230 connection should be made to tags B and W.



### "Service Window."

A "Service Window" is provided in the base of the table model cabinet. The "Window" is normally covered with a perforated grille fastened by four knurled nuts. With the grille removed, it is possible to perform most servicing operations without removing the chassis from the cabinet.

### Chassis Removal and Replacement.

- (1) Remove the control knobs. The knobs on the front of the cabinet are each held by a set screw. To remove the Tuning Control knob at the side of the cabinet, proceed as follows:—

Table Model: The knob pulls straight off.

Console Model: Loosen the screws in the spindle coupling and part the spindle.

- (2) Disconnect the pointer from the dial drive cord, by unscrewing the thumb nut, and disconnect the cable from the loudspeaker. Also, disconnect the yellow and black dial lamp leads from the chassis.
- (3) Four bolts hold the chassis in the cabinet. Remove these and withdraw the chassis.

On replacing the chassis in the cabinet, care must be taken to connect the dial pointer to the dial drive cord correctly, as follows:—

- (1) Turn the Tuning Control fully anti-clockwise.
- (2) Bring the dial pointer to a position opposite a setting mark on the dial scale, below, and approximately 1/16 inch to the left of 2CR.
- (3) Connect the pointer to the top drive cord and tighten the thumb-screw.

### SOCKET VOLTAGES AND CURRENTS

Valve	Cathode to Chassis Volts	Control Grid to Chassis Volts	Screen Grid to Chassis Volts	Plate to Chassis Volts	Plate Current mA	Heater Volts
6J8G Converter, M.W. ....	0	-3*	75	250	1.0	6.3
S.W. ....	3	0	75	250	1.2	6.3
Oscillator .....	—	—	—	115	5.0	—
6U7G I.F. Amplifier .....	0	-3*	75	250	6.0	6.3
6B6G Detector .....	0	0	—	100*	0.5	6.3
6V6GT/G Output .....	13	0	250	230	45	6.3
5Y3GT/G Rectifier .....				350 AC		5.0

Total H.T. Current — 70 mA.

\* These readings may vary, depending on the resistance of the voltmeter used.

Voltages and currents 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.

## D.C. RESISTANCE OF WINDINGS.

Winding	D.C. Resistance in ohms
Aerial Coil (M.W.)—	
Primary (L2)	10.5
Secondary (L3)	3.5
Aerial Coil (S.W.)—	
Primary (L4)	2
Secondary (L5)	*
Oscillator Coil (M.W.)—	
Primary (L6)	1
Secondary (L7)	6
Oscillator Coil (S.W.)—	
Primary	*
Secondary	*
I.F. Transformer Windings	7.5
I.F. Filter (L1)	17.5†
Power Transformer (T1)—	
Primary	16
Secondary	500
Loudspeaker Input Transformer (T2)—	
XA1 Primary	500
XA1 Secondary	*
TX20 Primary	420
TX20 Secondary	*

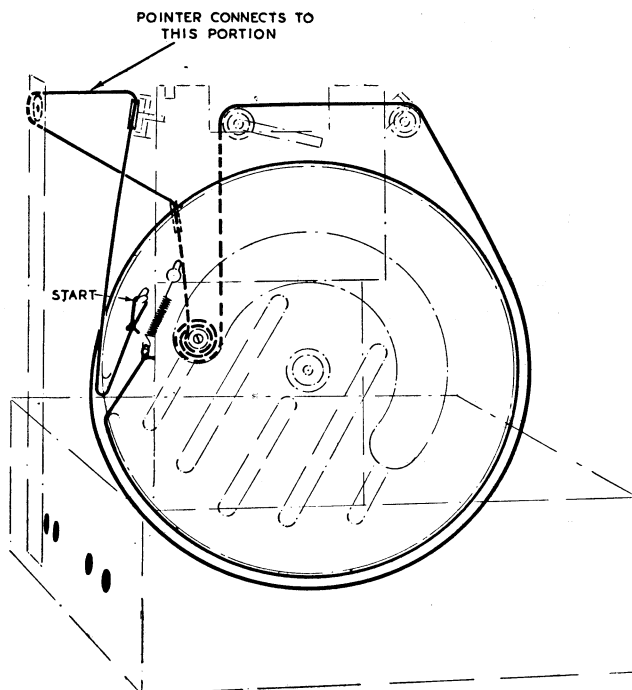
The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations, and it should not be assumed that a component is faulty if a slightly different reading is obtained.

\* Less than 1 ohm.

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

### Tuning Drive Cord Replacement.

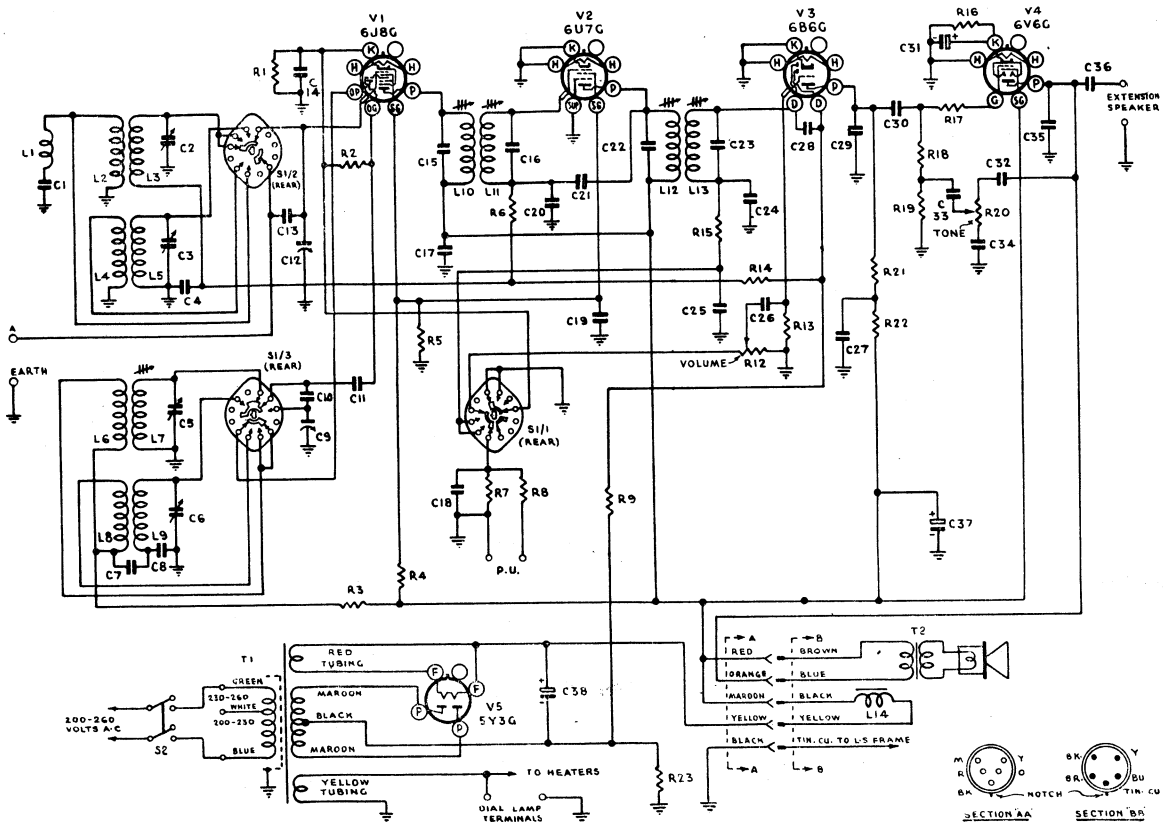
The accompanying diagram shows the route of the cord and the method of attachment. Whilst fitting the cord, keep it taut and adjust the length so that the tension spring measures approximately 2 inches long when fitted. The spring should be sheathed to prevent it from rattling against the drum.



# MECHANICAL REPLACEMENT PARTS.

Item	Part No.	Item	Part No.
Cabinet, console .....	C68	Dust cover, loudspeaker .....	7677
Cabinet, table .....	C73	Mount plate assembly, tuning drive ..	19011
Cable, loudspeaker—		Pulleys, brass .....	1730
Console Model .....	6465	Screen, I.F. Transformer .....	3351
Table Model .....	17822	cap .....	8372
Cable, pick-up .....	19036	Screen, valve .....	8147
Cable, power .....	209	cap .....	8148
Cable, Volume Control .....	7328	register .....	4733
Chassis end .....	8411	Socket, valve .....	4704
Clip, grid .....	7459	Socket, valve, cushion .....	7326
Cone Assembly, loudspeaker—		Spindle, tuning drive .....	19012
Type AW4 .....	9356	Spring, drive tension .....	6641
Type ASI3 .....	7071	Strip, tag, 1-way .....	7628
Dial frame assembly .....	19622	3-way .....	4251
Dial Scale .....	19032	7-way .....	9879
Drum, drive .....	9090		

## CIRCUIT DIAGRAM



## CIRCUIT CODE

Circuit Code No.	Description	Stock Code or Part No.	Circuit Code No.	Description	Stock Code or Part No.	Circuit Code No.	Description	Stock Code or Part No.
<b>INDUCTORS.</b>			C20	0.01 uF paper, 600 V. working	228, 301	R7	50,000 ohms, $\frac{1}{2}$ watt	600, 315
L1	I.F. filter choke (including C1)	9382	C21	4 uuF mica	224, 233	R8	20,000 ohms, $\frac{1}{2}$ watt	600, 307
L2, L3	Aerial coil, 550-1600 Kc.	7974	C22	70 uuF silvered mica	226, 460	R9	2.5 megohms, $\frac{1}{2}$ watt	600, 349
L4, L5	Aerial coil, 7-22 Mc.	9569	C23	70 uuF silvered mica	226, 460	R10	Not used	
L6, L7	Oscillator coil, 550-1600 Kc.	9206	C24	110 uuF mica	13211†	R11	Not used	
L8, L9	Oscillator coil, 7-22 Mc.	9205	C25	110 uuF mica	13211†	R12	0.5 megohm volume control	7263
L10, L11	1st I.F. transformer 8286-Z, 8282*		C26	0.01 uF paper, 600 V. working	228, 301	R13	10 megohms, 1 watt	600, 561 or 600, 761
L12, L13	2nd I.F. transformer 8287-Z, 8281*		C27	0.5 uF paper, 400 V. working	228, 135	R14	1.6 megohms, $\frac{1}{2}$ watt	600, 345
L14	Loudspeaker field coil, 1500 ohms		C28	50 uuF mica	224, 255	R15	50,000 ohms, $\frac{1}{2}$ watt	600, 315
<b>CAPACITORS.</b>			C29	200 uuF mica	224, 267	R16	250 ohms, 3 watts W.W.	602, 369
C1	50 uuF silvered mica	226, 155	C30	0.02 uF paper, 600 V. working	228, 307	R17	50,000 ohms, $\frac{1}{2}$ watt	600, 315
C2	2-20 uuF air trimmer	3661	C31	25 uF, 40 P.V. electrolytic	ET10769	R18	0.4 megohms, $\frac{1}{2}$ watt	600, 333
C3	6-24 uuF air trimmer	5435A	C32	0.05 uF paper, 400 V. working	228, 115	R19	0.1 megohm, $\frac{1}{2}$ watt	600, 321
C4	0.05 uF paper, 400 V. working	228, 115	C33	1500 uuF mica	13213†	R20	0.1 megohm tone control	19621
C5	11-29 uuF air trimmer	3411B	C34	0.005 uF paper, 600 V. working	228, 295	R21	0.25 megohm, 1 watt	600, 529 or 600, 729
C6	2-10 uuF air trimmer	3658	C35	0.0025 uF paper, 600 V. working	228, 289	R22	20,000 ohms, 1 watt	600, 507 or 600, 707
C7	0.05 uF paper, 400 V. working	228, 115	C36	0.5 uF paper, 400 V. working	228, 115	R23	40 ohms, 3 watts	602 353
C8	4000 uuF mica $\pm$ 2½% (padder)	13213†	C37	16 uF, 525 P.V. electrolytic	ET10783	<b>TRANSFORMERS.</b>		
C9	12-430 uuF variable tuning (ganged)	19010	C38	8 uF, 525 P.V. electrolytic	EE1015	T1	Power transformer, 50-60 C.P.S.	11344A
C10	490 uuF mica $\pm$ 2½% (padder)	13212†	<b>RESISTORS.</b>				Power transformer, 40 C.P.S.	11346A
C11	70 uuF mica	13211†	R1	320 ohms, $\frac{1}{2}$ watt	600, 271	T2	Loudspeaker transformer (table model)	XAI
C12	12-430 uuF variable tuning (ganged)	19010	R2	50,000 ohms, $\frac{1}{2}$ watt	600, 315		Loudspeaker transformer (console model)	TX20
C13	4 uuF mica	224, 233	R3	25,000 ohms, 1 watt	600, 509 or 600, 709	<b>SWITCHES.</b>		
C14	0.1 uF paper, 400 V. working	228, 121	R4	25,000 ohms, 2 watts	600, 515 or 600, 715	S1	Phono-range, 3 wafer, rotary	9804
C15	70 uuF silvered mica	226, 460		(2 x 50,000 ohms, 1 watt in parallel)			wafer 1	9804/1
C16	70 uuF silvered mica	226, 460	R5	20,000 ohms, 1 watt	600, 507 or 600, 707		wafer 2	9804/2
C17	0.1 uF paper, 400 V. working	228, 121	R6	0.1 megohm, $\frac{1}{2}$ watt	600, 521 or 600, 721		wafer 3	9804/3
C18	0.01 uF paper, 600 V. working	228, 301					(NOTE: Wafers numbered from front of chassis)	
C19	0.1 uF paper, 400 V. working	228, 121				S2	Power switch, D.P.S.T., rotary	20007

\* Part number of winding only.

† Capacitance and tolerance (if shown) to be quoted.

