

SECTION "A-A"
(MALE)

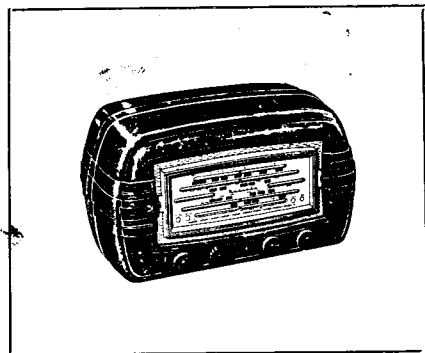
TECHNICAL INFORMATION AND SERVICE DATA

AWA RADIOLA

Model 433-MC

FOUR VALVE, BROADCAST, BATTERY/VIBRATOR
OPERATED SUPERHETERODYNE

ISSUED BY
AMALGAMATED WIRELESS (A/SIA) LTD.



ELECTRICAL SPECIFICATIONS

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

Intermediate Frequency 455 Kc/s

Battery Complement Cable with Tips — Cable with Plugs

1—1.5 volt Dry Cell	} 19182	} 19801
"A" Battery		
2—45 volts "B" Battery		
1—3V Cycle Lamp Battery for Dial Lamps		

Vibrator Power Unit Operation:

Unit No. 27212: 1—4 volt accumulator
Unit No. 27213: 1—6 volt accumulator

Battery Consumption

Battery Operation:
"A" Battery 0.25 Amp
"B" Battery 14 mA

Vibrator Operation:
4 volt 0.8 Amp
6 volt 0.7 Amp.

Dial Lamps: 2.5V, 0.2 Amp. M.E.S.

Fuses:
Battery Operation: $\frac{1}{4}$ — $\frac{3}{8}$ Amp.
Vibrator Operation: 3 Amp.

Valve Complement:

- (1) 1R5 Converter
- (2) 1T4 I.F. Amplifier
- (3) 1S5 Detector, A.F. Amplifier, A.V.C.
- (4) 3V4 Output

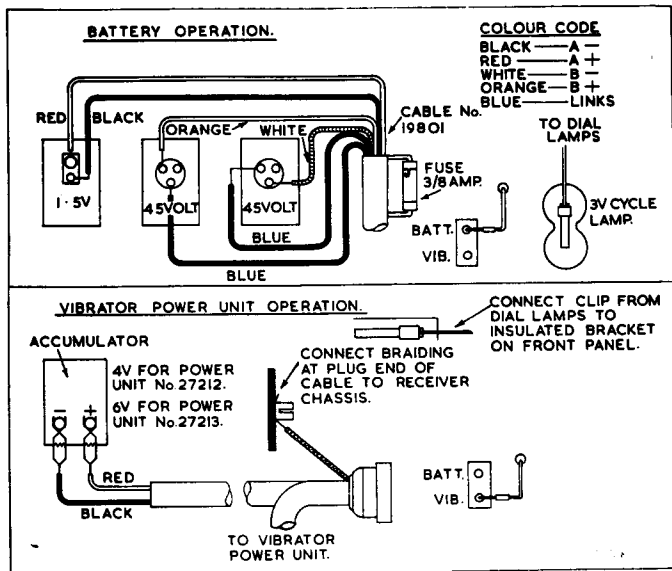
Vibrator Cartridge:

4 volt A.W.A. Oak Type V6804
6 volt A.W.A. Oak Type V5211

Loudspeaker (Permanent Magnet)

6½ inch — Code No. AG26
Transformer — XA20
V.C. Impedance, 3 ohms at 400 C.P.S.

Undistorted Power Output: 200 milliwatts.



GENERAL DESCRIPTION

The model 433-MC is a mantel model designed for either battery or vibrator operation. Battery and vibrator connections are shown in the accompanying diagram.

Features of design include: Tropic-proof construction, automatic volume control, magnetite cores in I.F. transformers and oscillator coil, straight-line dial scale with Press to Tune dial illumination.

Chassis Removal.

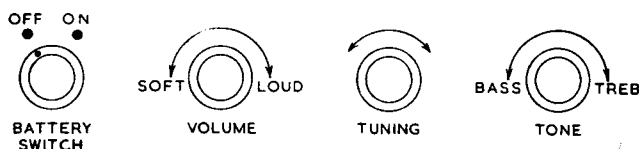
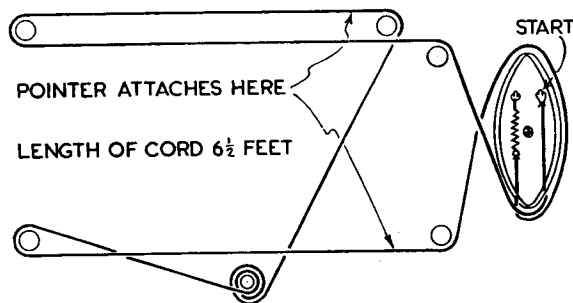
First remove the control knobs by pulling them straight off their spindles.

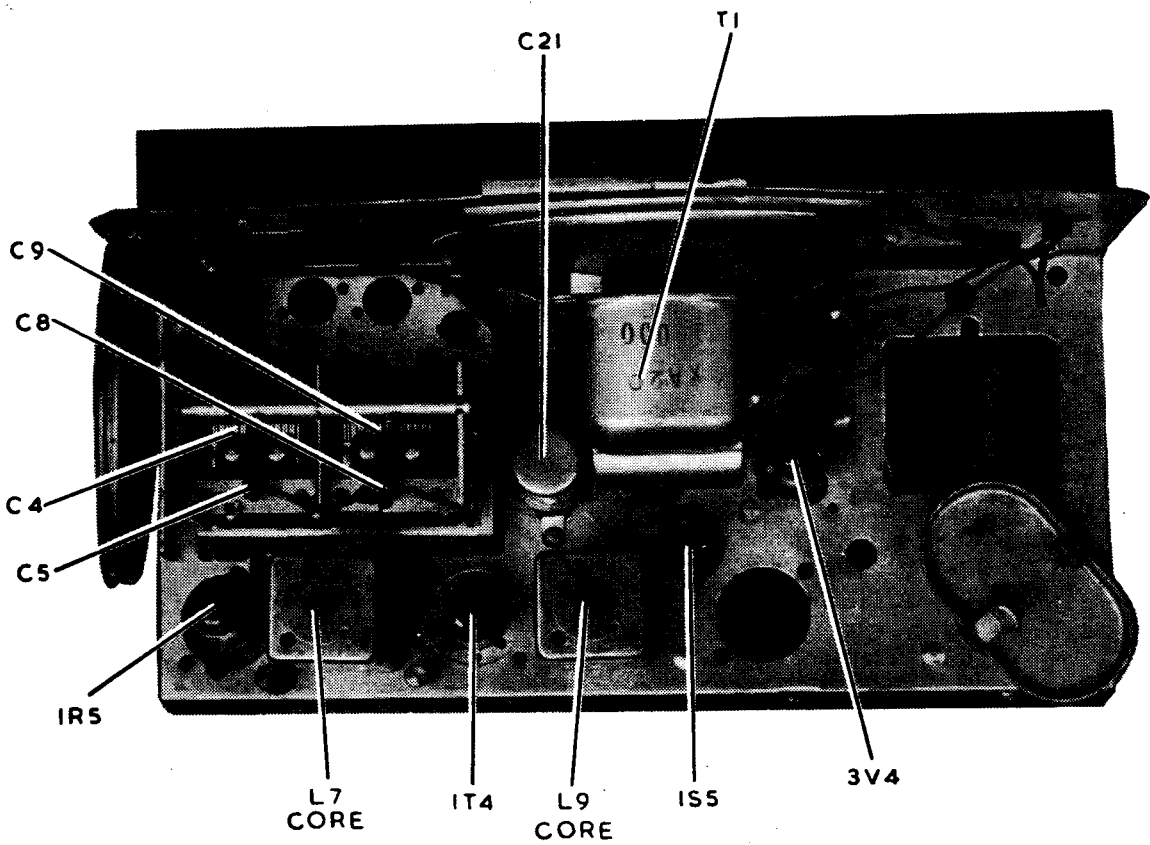
Remove two recessed nuts from the top of the cabinet back, two screws from underneath the cabinet back and withdraw it.

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.

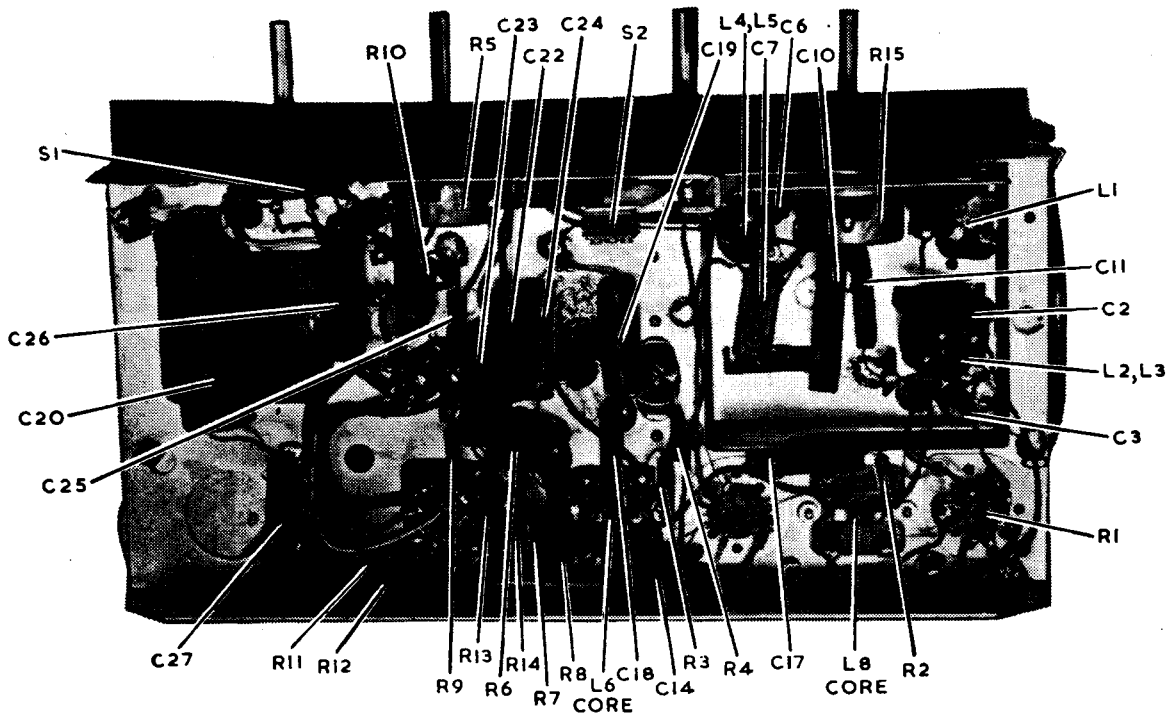
Drive Cord Replacement.

The accompanying diagram shows the route of the cord and the method of attachment. The dial-fret assembly must be removed before a new cord can be fitted.





CHASSIS TOP VIEW MODEL 433-MC



CHASSIS UNDERNEATH VIEW MODEL 433-MC

CIRCUIT CODE — RADIOOLA 433-MC

Code No.	Description.	Part No.	Code No.	Description.	Part No.
INDUCTORS.					
L1	I.F. Filter (Including C1)	9382	C9	12-430 μ F tuning	26646
L2, L3	Aerial Coil 540-1600 Kc/s	15454	C10	470 μ F padder \pm 2 1/2%	
L4, L5	Oscillator Coil 540-1600 Kc/s	7638A	C11	70 μ F mica	
L6, L7	1st I.F. Transformer	22700	C12	70 μ F silvered mica	
L8, L9	2nd I.F. Transformer	22703	C13	70 μ F silvered mica	
			C14	4 μ F mica	
			C15	70 μ F silvered mica	
			C16	70 μ F silvered mica	
R1	0.1 megohm $\frac{1}{2}$ watt		C17	0.01 μ F paper 600V working	
R2	0.1 megohm $\frac{1}{2}$ "		C18	200 μ F mica	
R3	1.6 megohm $\frac{1}{2}$ "		C19	0.1 μ F paper 200V working	
R4	10,000 ohms $\frac{1}{2}$ "		C20	400 μ F 12 P.V. electrolytic	
R5	0.5 megohm volume control	26442	C21	20 μ F 200 P.V. electrolytic	
R6	10 megohms $\frac{1}{2}$ watt		C22	0.025 μ F paper 400V working	
R7	0.63 megohm $\frac{1}{2}$ "		C23	0.01 μ F paper 600V working	
R8	3.2 megohms 1 "		C24	0.05 μ F paper 200V working	
R9	1.0 megohms $\frac{1}{2}$ "		C25	100 μ F mica	
R10	200 ohms $\frac{1}{2}$ "		C26	0.02 μ F paper 600V working	
R11	56 ohms 1 "		C27	0.0025 μ F paper 600V working	
R12	56 ohms 1 "			TRANSFORMER.	
R13	320 ohms $\frac{1}{2}$ "			Loudspeaker Transformer	XA20
R14	320 ohms $\frac{1}{2}$ "				
R15	0.1 megohm tone control	26440	T1	Loudspeaker Transformer	
CAPACITORS.					
C1	50 μ F silvered mica			LOUDSPEAKER.	
C2	4 μ F mica			6 inch permanent magnet	AG26
C3	0.05 μ F paper 200V working			SWITCH.	
C4	12-430 μ F tuning	26646	S1	Battery Switch	26859
C5	3-25 μ F trimmer (on gang)		S2	Dial Lamp Switch	20153
C6	0.05 μ F paper 200V working			DIAL LAMP BATTERY.	
C7	9 μ F mica		B1	3V Cycle Lamp Battery	
C8	3-25 μ F trimmer (on gang)			DIAL LAMPS.	
				2.5V, 0.2 Amp. M.E.S.	P1, P2

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 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	Aerial Section of Gang (Drive end)	455 Kc/s	540 Kc/s	L9 Core
2	Aerial Section of Gang (Drive end)	455 Kc/s	540 Kc/s	L8 Core
3	Aerial Section of Gang (Drive end)	455 Kc/s	540 Kc/s	L7 Core
4	Aerial Section of Gang (Drive end)	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. (C8)
7	Aerial Terminal	1500 Kc/s	1500 Kc/s	H.F. Aer. Adj. (C5)
Repeat adjustments 5, 6, and 7.				

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

SOCKET VOLTAGES

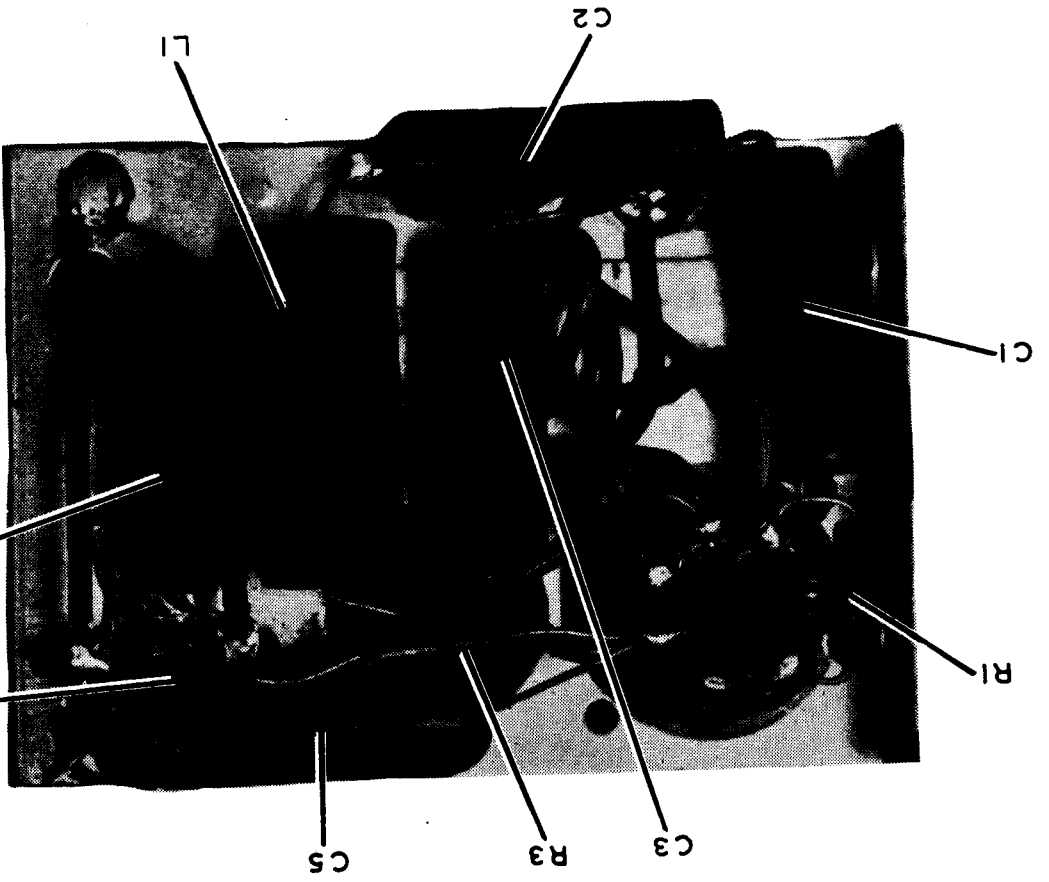
Valves	Bias Volts		Screen Grid to Chassis Volts		Anode to Chassis Volts		Anode Current mA		Filament Volts
	B	V	B	V	B	V	B	V	
1R5 Converter	0	0	50	50	50	50	0.6	0.5	1.3 - 1.4
1T4 I.F. Amp.	0	0	50	50	85	85	1.9	1.8	1.3 - 1.4
1S5 Det., A.F. Amp., A.V.C.	0	0	15	15	20	20	0.09	0.09	1.3 - 1.4
3V4 Output	-4.5	-2.5*	85	85	80	80	7.5	9	1.3 - 1.4

Total H.T. Current - 15 mA.

* Volts across back - bias resistor R2 in Vibrator Unit.

Volume Control maximum clockwise. No signal input. Voltmeter 1000 ohms per volt; measurements taken on highest scale giving accurate readable deflection.

VIBRATOR POWER UNIT BOTLON VIEW



VIBRATOR POWER UNIT TOP VIEW

