

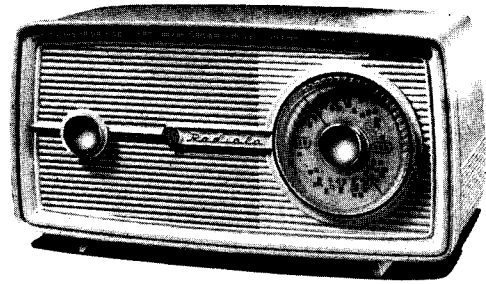
TECHNICAL INFORMATION
AND
SERVICE DATA

AWA **RADIOLA**

MODEL 495-MA

FOUR VALVE, BROADCAST, A.C. OPERATED
SUPERHETERODYNE

Issued by:
AMALGAMATED WIRELESS (AUSTRALASIA) LTD.



ELECTRICAL SPECIFICATIONS

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

Intermediate Frequency 455 Kc/s.

Power Supply Rating 200-260 volts A.C.
50 C.P.S.

Power Consumption 35 watts

Undistorted Power Output 1.5 watts

Loudspeaker: 4" Permanent Magnet

Transformer No. 21472A

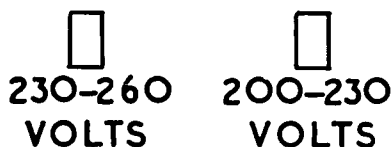
V.C. Impedance — 15 OHMS at 400 C.P.S.

Connection to Power Supply:

The receiver should not be connected to any circuit supplying other than 200-260 volts A.C. at a frequency of 50 C.P.S.

The connections on the power transformer are shown below.

RED DOT INDICATES COMMON CONNECTION FOR ALL VOLTAGES



Valve Complement

6BE6 Converter

6AU6 I.F. Amplifier

6BV7 Detector, A.V.C. High Gain Output

6X4 Rectifier

CHASSIS REMOVAL:

The chassis together with the fret is removed by removing the two screws at the back of the cabinet. This allows complete accessibility to the top and bottom of the chassis and to the pilot lamp.

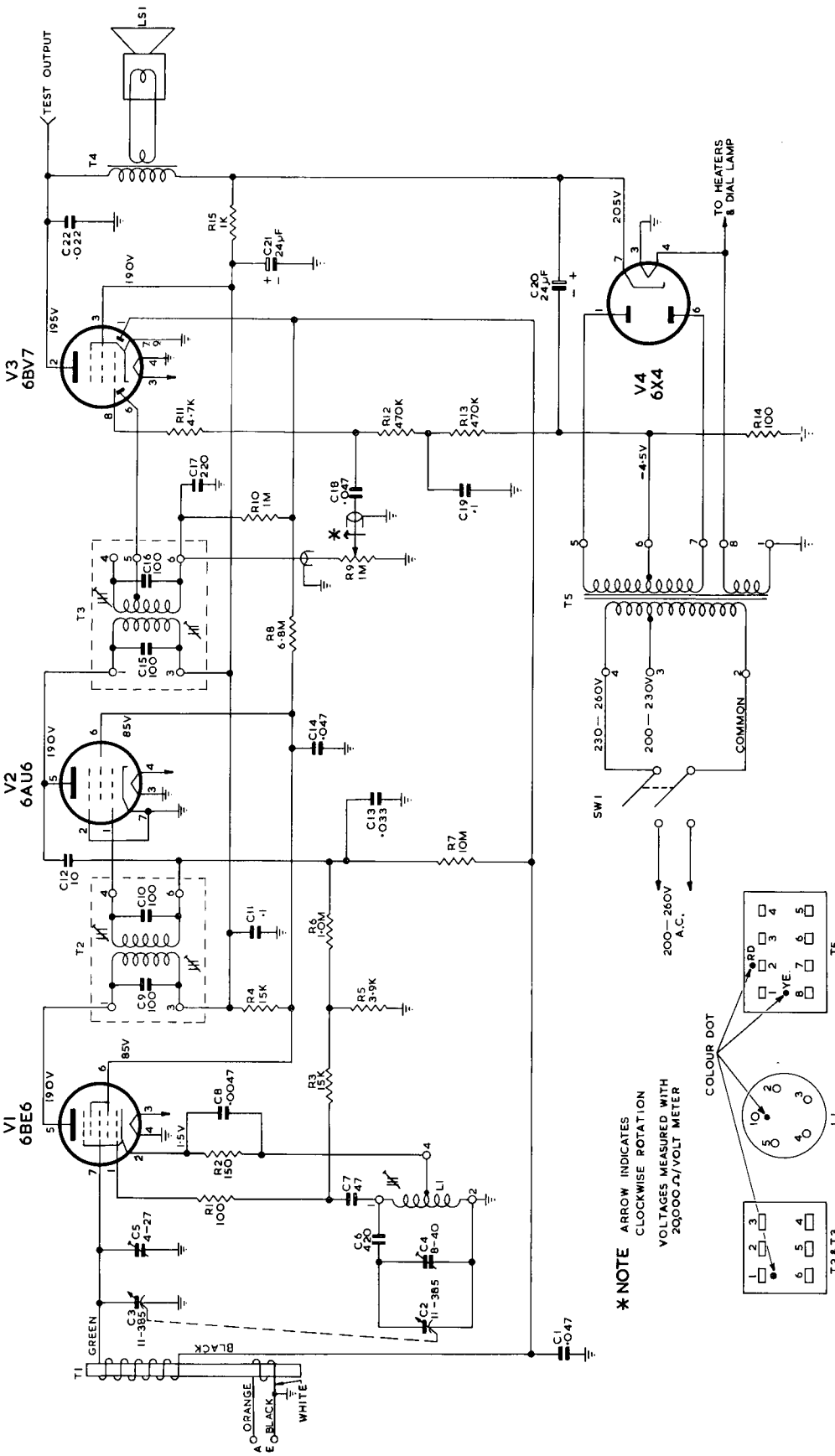
Should it ever be necessary to remove the front fret, first remove the tuning and volume control knobs. These are only push on fits; however in the case of the tuning control, forcing the knob past its free travel with a twisting action is necessary to overcome friction between the knob and the gang spindle.

Remove the dial scale.

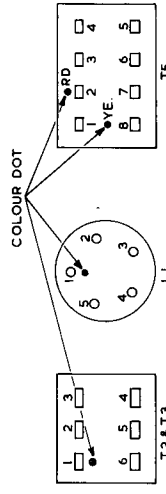
The fret is held to the chassis by three screws, one under the volume Control spindle and two in vertical line with the gang spindle.

NOTE: On removing the dial scale, two other screws are accessible through the fret. These hold the gang onto its mounting bracket and may be loosened off for centering the gang spindle with relation to the fret.

Reassembly is the reverse of the above. After replacing the tuning control the pointer should be lined up on the State Monograms on either side of the dial scale. Check the calibration on some known stations and correct for any tracking error by forcing the knob past its free travel in the appropriate direction.



* NOTE
 ARROW INDICATES
 CLOCKWISE ROTATION
 VOLTAGES MEASURED WITH
 20000 Ω/VOLT METER



BASE CONNECTIONS
 VIEWED FROM EXTERNAL WIRING SIDE

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 can only be re-adjusted by skilled operators using special equipment.

For all alignment operations, keep the generator output as low as possible to avoid A.V.C. action and set the volume control in the maximum clockwise position.

Testing Instruments:

- (1) A.W.A. Junior Signal Generator, type 2R7003; or
- (2) A.W.A. Modulated Oscillator, series J6726.

If the modulator oscillator is used, connect a 22 megohms non-inductive resistor across the output terminals.

- (3) A.W.A. Output Meter, type 2M8832.

ALIGNMENT TABLE

Alignment Order	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver to:	Adjust for Maximum Peak Output:
1	Aerial Section of Gang	455 Kc/s.	Gang fully closed	Cores in T2 and T3
Repeat adjustment until maximum output is obtained.				
2	Inductively Coupled to Rod Aerial*	600 Kc/s.	600 Kc/s.	L.F. Osc. Core Adj. (L1)†
3	Inductively Coupled to Rod Aerial*	1500 Kc/s	1500 Kc/s	H.F. Osc. Adj. (C4)
4	Inductively Coupled to Rod Aerial*	1500 Kc/s	1500 Kc/s	H.F. Aerial Adj. (C5)

* A coil comprising 3 turns of 16 gauge D.C.C. wire and about 12 inches in diameter should be connected between the output terminals of the test instrument, placed concentric with the rod aerial and distant not less than 1 foot from it.

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

SOCKET VOLTAGES

Valves	Cathode to Chassis Volts	Screen Grid to Chassis Volts	Anode to Chassis Volts	Anode Current mA	Heater Volts
6BE6 Converter	1.5	85	190	2.3	6.3
6AU6 I.F. Amp.	—	85	190	5	6.3
6BV7 Det., A.V.C., Output	—	190	195	28	6.3
6X4 Rectifier	205	—	190/190 A.C. R.M.S.	—	6.3

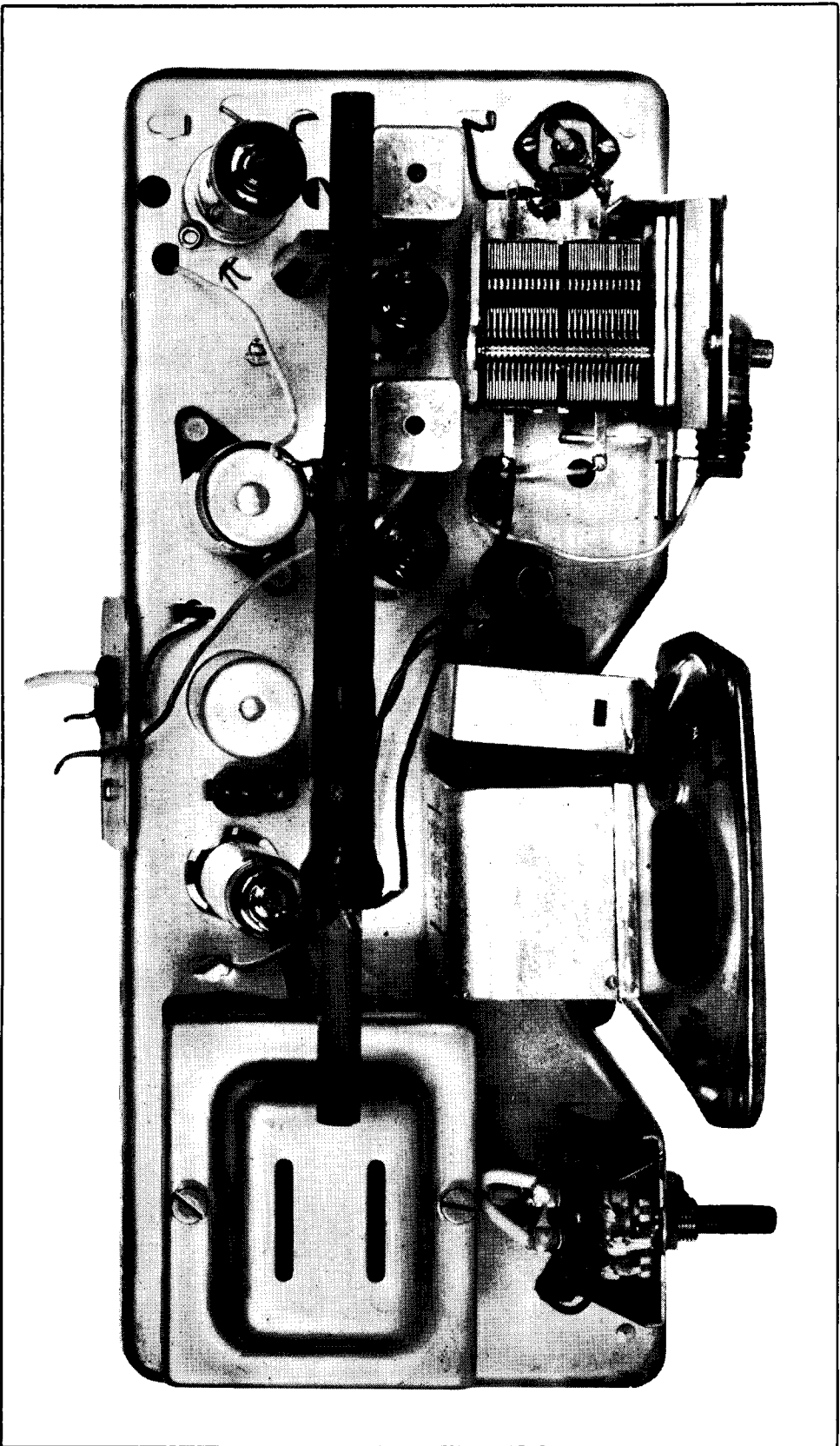
Volts across Back-bias resistor R14 = -4.5V.

Total H.T. Current = 42 mA.

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

Volume Control maximum clockwise. Voltmeter 20,000 ohms per volt; measurements taken on highest scale giving accurate readable deflection.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18



A B C D E F G H I J K

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

A B C D E F G H I J K

FIG.2

D. C. RESISTANCE OF WINDINGS

WINDING	D.C. RESISTANCE IN OHMS
Ferrite Aerial Assembly (T1):	
Primary	*
Secondary	1.5
Oscillator Coil L1	3.7
I.F. Transformer Windings T2, T3 ..	18
Output Transformer T4:	
Primary	390
Secondary	1.7
Power Transformer T5:	
Primary	53
H.T. Secondary	280
L.T. Secondary	*

* Less than 1 OHM.

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.

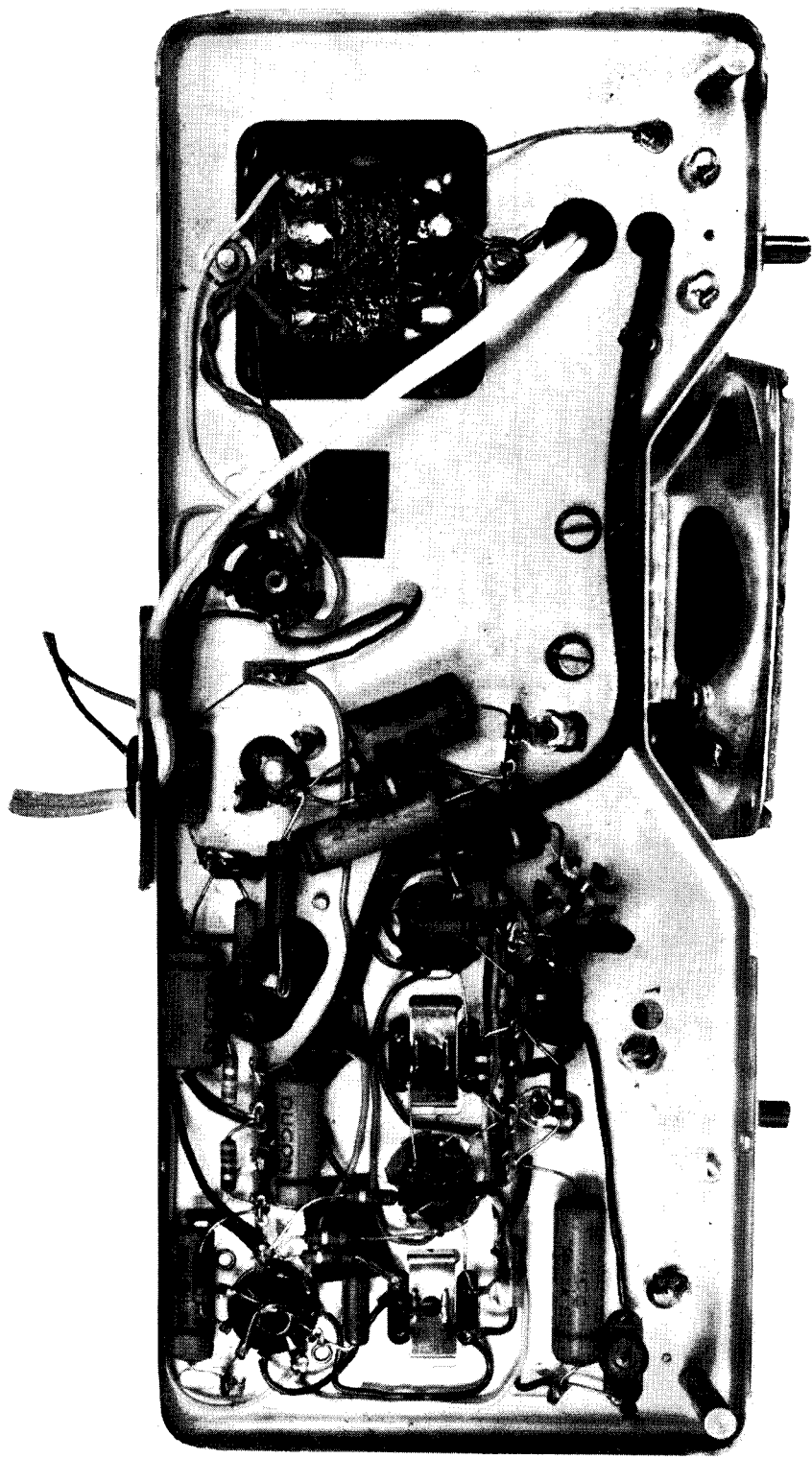
MECHANICAL REPLACEMENT PARTS

ITEM	PART No.
CABINET FITTING:	
Cabinet Body	28150
DIAL SCALE:	
N.S.W.	32281
VIC.	32282
Q'LAND.	32283
S.A.	32284
W.A.	32285
TAS.	32286
Fret Assembly	36421
Knob Assembly, Tuning	35944
Knob Assembly, Volume	36422
CHASSIS ASSEMBLY:	
Clamp, Cable	17651
Clip, I.F. Mounting	27780
Holder, Pilot Lamp	32804
Screw, Osc. Coil Mounting	34147
Support, Rod Aerial	36403

When ordering parts always quote Part Numbers and in the case of coloured parts such as cabinets, knobs, etc., the colour plus the Part Number.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

A B C D E F G H J K



A B C D E F G H J K

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

FIG. 1

CIRCUIT CODE — RADIO LA MODEL 495 — MA

Code No.	Description	Part No.	Fig. No.	Location	Code No.	Description	Part No.	Fig. No.	Location
RESISTORS									
R1	100 ohms ± 10% ½ watt		1	F7	C14	0.047 μF ± 20% 400V. working paper		1	E8
R2	150 ohms ± 10% ½ watt		1	F8	C15	100 pF ± 5% silvered mica (in 2nd I.F.)		1	F3
R3	15 K ohms ± 10% ½ watt		1	G6	C16	100 pF ± 5% silvered mica (in 2nd I.F.)		1	E3
R4	15 K ohms ± 10% ½ watt		1	E9	C17	220 pF ± 10% silvered mica		1	E3
R5	3.9 K ohms ± 10% ½ watt		1	F5	C18	0.047 μF ± 20% 200V. working paper		1	D5
R6	1 Megohm ± 10% ½ watt		1	G5	C19	0.1 μF ± 20% 200V. working paper		1	C6
R7	10 Megohms ± 10% ½ watt		1	E4	C20	24 μF 350 P.V. Electrolytic		1	D7
R8	6.8 Megohms ± 10% ½ watt		1	D3	C21	24 μF 350 P.V. Electrolytic		1	D9
R9	1 Megohm Volume Control	36417	2	C16	C22	0.022 μF ± 20% 600V. working paper		1	C9
R10	1 Megohm ± 10% ½ watt		1	D3	TRANSFORMERS				
R11	4.7 K ohms ± 20% ½ watt		1	C3	T1	Ferrite Rod Aerial	36946A	2	F9
R12	470 K ohms ± 10% ½ watt		1	C4	T2	1st I.F. Transformer	27351	2	F6
R13	470 K ohms ± 10% ½ watt		1	C5	T3	2nd I.F. Transformer	27353	2	F2
R14	100 ohms ± 10% ½ watt		1	C7	T4	Audio Output Transformer	21472A	2	D9
R15	1 K ohms ± 20% 1 watt		1	D8	T5	Power Transformer	25831	2	G16
CAPACITORS									
C1	0.047 μF ± 20% 200V. working paper		1	C3	L1	Oscillator Coil 540-1600 Kc/s.	32406	2	D8
C2	11-385 pF tuning (Osc.)	21209	2	C4	VALVES				
C3	11-385 pF tuning (Aerial)	21209	2	D4	V1	6BE6		1	F7
C4	8-40 pF spiral trimmer (Osc.)	231185	2	C2	V2	6AU6		1	F4
C5	4-27 pF trimmer (Aerial)	33304	2	C2	V3	6BV7		1	D3
C6	420 pF ± 2½% padder		1	G6	V4	6X4		1	D12
C7	47 pF ± 10% silvered mica		1	G7	LOUDSPEAKER				
C8	0.0047 μF ± 20% 600V. working paper		1	F8	LS1	4" Permanent Magnet (Incl. T4)	21182	2	C12
C9	100 pF ± 5% silvered mica (in 1st I.F.)		1	F6	MISCELLANEOUS				
C10	100 pF ± 5% silvered mica (in 1st I.F.)		1	E6	SW1	Power ON/OFF (on R9)		2	C16
C11	0.1 μF ± 20% 400V. working paper		1	E10					
C12	10 pF ± 10% N750 tubular		1	G3					
C13	0.033 μF ± 20% 600V. working paper		1	G3					