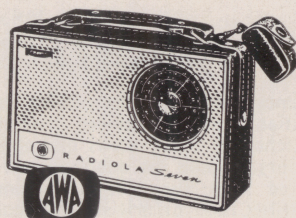


# TECHNICAL INFORMATION AND SERVICE DATA

MANUFACTURERS



SUPERVISED SERVICE



## SEVEN TRANSISTOR PORTABLE

### Model B30

ISSUED BY  
AMALGAMATED WIRELESS (AUSTRALASIA) LTD.

Model B30 is a seven transistor, battery operated superheterodyne portable receiver designed for the reception of the Medium Wave Band.

Features of design include:—

Ferrite rod aerial; high gain i.f. transformers; autodyne converter; high sensitivity  $2\frac{3}{4}$  inch speaker; printed circuit giving compact size; leather covered plastic case with convenient carrying handle; provision for external power supply.

## ELECTRICAL & MECHANICAL SPECIFICATIONS

Intermediate Frequency ..... 455 Kc/s.

Frequency Range ..... 525-1650 Kc/s.

Battery Complement ..... 9 Volt Eveready  
type 2364

Battery Consumption:

For zero audio output ..... 10 mA

For 50 mW. audio output ..... 30 mA

Loudspeaker:

Undistorted Power Output ..... 150 mW.

V.C. Impedance at 400 c/s ..... 15 ohms

$2\frac{3}{4}$ " Permanent Magnet No. 50001

Controls:

Tuning Control—Front right of cabinet

On/Off Volume Control—Upper left front of cabinet

### Transistor and Diode Complement:

AWV	2N1636	Converter
AWV	2N1634	1st I.F. Amplifier
AWV	2N1634	2nd I.F. Amplifier
AWV	2N406	Overload
AWV	2N408	Audio Driver
AWV	2N408	Audio Output
AWV	2N408	Audio Output
OA90		Detector Diode

### Dimensions:

Height	$4\frac{5}{8}$ "
Width	$7\frac{3}{16}$ "
Depth	$2\frac{1}{8}$ "
Weight	2 lbs.

### Printed Board Removal

Remove the Tuning Knob secured by its centre locking screw. Open the back flap and remove the five screws securing the board to the cabinet front.

The board may now be removed from the cabinet, allowing complete servicing of both sides of the board.

The speaker may now be removed, if necessary, by removing the three clamps and screws.

Installation is the reverse of the above procedure. When replacing the tuning knob, the gang should be held fully closed, and the pointer set across the arrow heads on the dial scale before partly tightening the locking screw. Tune the receiver to a known station; if the pointer does not fall across the middle of the station indicated, turn the knob past the stop in the appropriate direction to compensate. Recheck calibration and tighten the locking screw.



## ALIGNMENT PROCEDURE

### Manufacturer's Setting of Adjustments:

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Re-alignments 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.g.c. action and set the volume control in the maximum clockwise position.

### Testing Instruments:

- (1) Signal Generator, or
- (2) Modulated Oscillator.

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

(3) The output impedance from collector to collector is 250 ohms. If an indication only is required then Output Meter, type 2M8832, switched to 5,000 ohms and connected across the output collectors, should be adequate. If other types of meters are used with the correct loading, the speaker **MUST BE DISCONNECTED**, otherwise the maximum dissipation of the transistors will be exceeded at full audio output.

- (4) I.F. Alignment Tool—Part No. 39462.

## ALIGNMENT TABLE

ORDER	CONNECT "HIGH" SIDE OF GENERATOR TO:	TUNE GENERATOR TO:	TUNE RECEIVER TO:	ADJUST FOR MAX. PEAK OUTPUT
1	Aerial section of Gang	455 Kc/s	Gang fully closed	Cores in TR5, TR4 and TR3
Repeat adjustment until maximum output is obtained				
2	Inductively coupled to Rod Aerial*	600 Kc/s	600 Kc/s	L.F. Osc. Core Adj. (TR2)†
3	Inductively coupled to Rod Aerial*	1,650 Kc/s	Gang fully open	H.F. Osc. Adj. (C6)
4	Inductively coupled to Rod Aerial*	1,500 Kc/s	1,500 Kc/s	H.F. Aerial Adj. (C1)
Repeat steps 2, 3 and 4.				

\* A coil comprising three 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 one foot from it.

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

## MECHANICAL REPLACEMENT PARTS

ITEM	PART No.	ITEM	PART No.
Boss, Spindle	63603	Gang Mounting:	
Bracket	63605	Grommet	389310
Case, Leather Covered Plastic	60245	Screw, 5BA x $\frac{1}{4}$ " Ch. Hd.	716008
Clamp, Speaker Mounting	62552	Spacer	39110
Dial Scale:		Tag, Gang Earthing	4183
N.S.W.	37973 A	Washer	463
Vic. and Tas.	37973 B	Knob, Tuning	62555
Qld.	37973 C	Knob, Volume	63602
S.A. and W.A.	37973 D	Nameplate	63607
Earclip	61558	Pouch, Earphone Carrying	63599
Earphone Assembly	39839	Retainer, Dial Scale	63606
Fret, Speaker	63608	Screw, Tuning Knob Retaining	62553/1

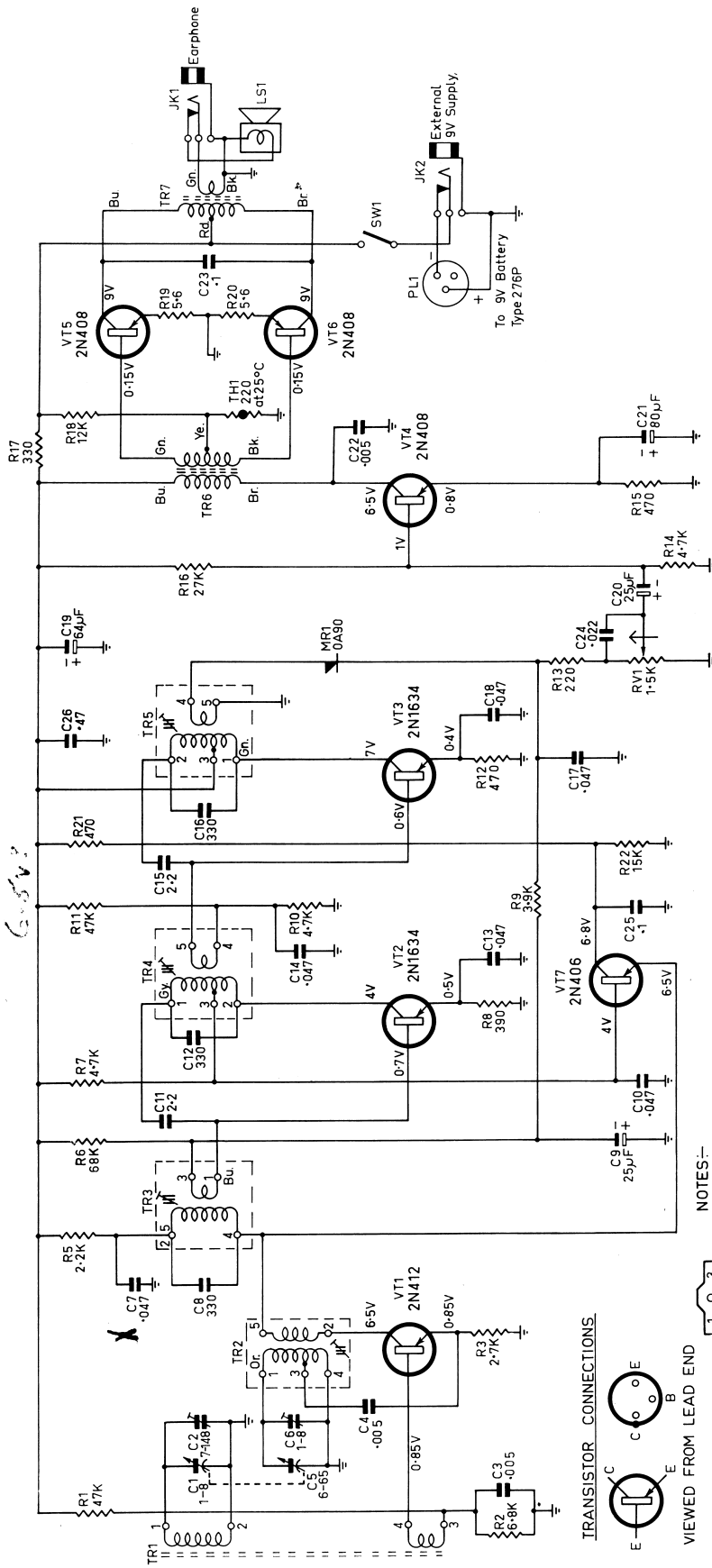
NOTE: When ordering, always quote the above Part Numbers. In the case of coloured parts, such as Knobs, etc., also quote the colour.

## D.C. RESISTANCE OF WINDINGS

Winding	D.C. Resistance in ohms	Winding	D.C. Resistance in ohms
Ferrite Rod Assembly (TR1)		Coupling Transformer (TR6)	
Primary .....	*	Primary .....	290
Secondary .....	*	Secondary .....	440
Oscillator Transformer (TR2)		Speaker Transformer (TR7)	
Primary .....	1.5	Primary .....	15
Secondary .....	*	Secondary .....	1.2
I.F. Transformers (TR3, TR4, TR5)			
Primary .....	1.5		
Secondary .....	*		

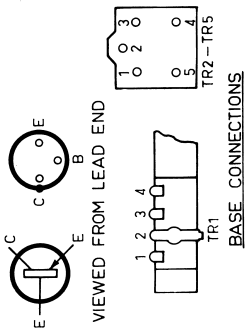
\* Less than 1 ohm.

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 slightly different reading is obtained.

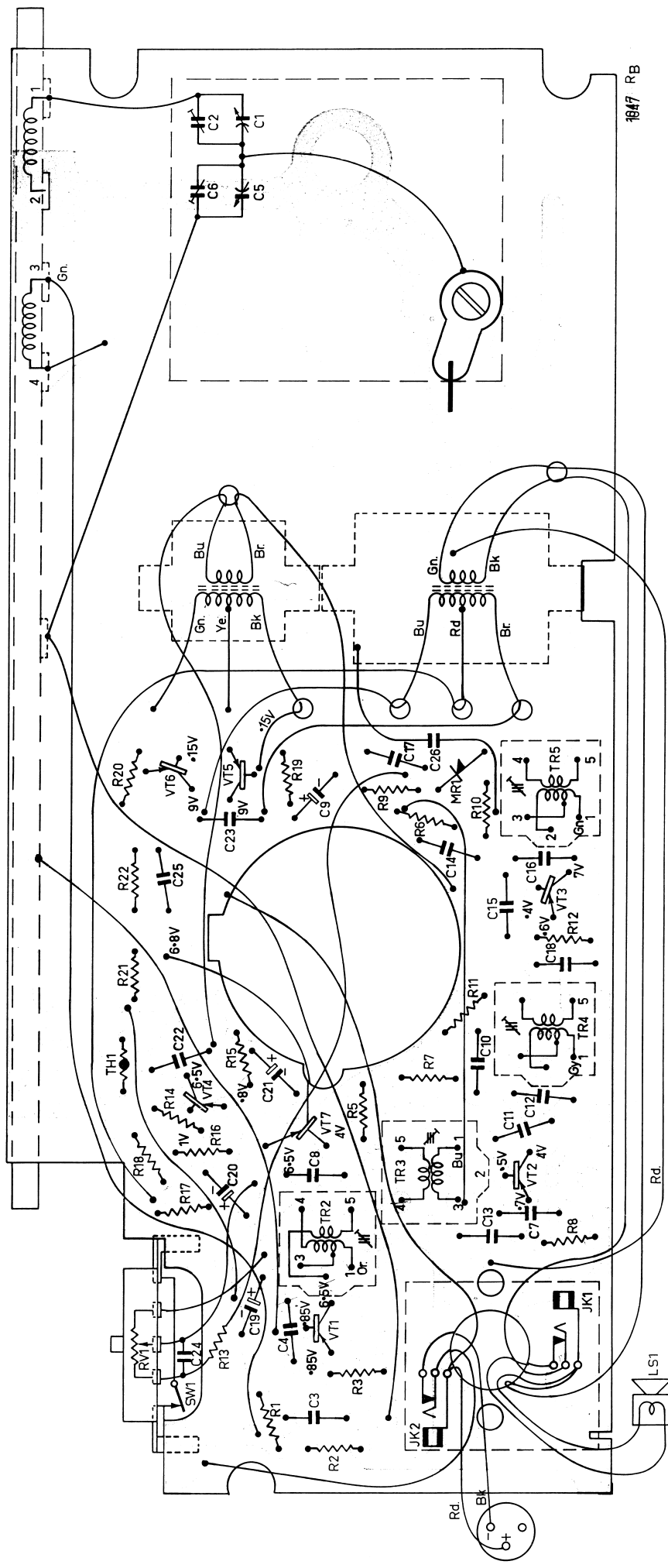


NOTES:-  
 ARROW ON POTENTIOMETER INDICATES DIRECTION OF CLOCKWISE ROTATION.  
 VOLTAGES MEASURED WITH 20,000 OHM/VOLT METER WITH NO SIGNAL INPUT.  
 • ALL VOLTAGES NEGATIVE WITH RESPECT TO PRINTED BOARD EARTH (BATTERY POSITIVE TERMINAL)

TRANSISTOR CONNECTIONS







Notes: The diagram represents the view from the wiring side of the printed board.

Blue indicates the printed wiring.

Red indicates components and leads mounted on the remote side of the board.

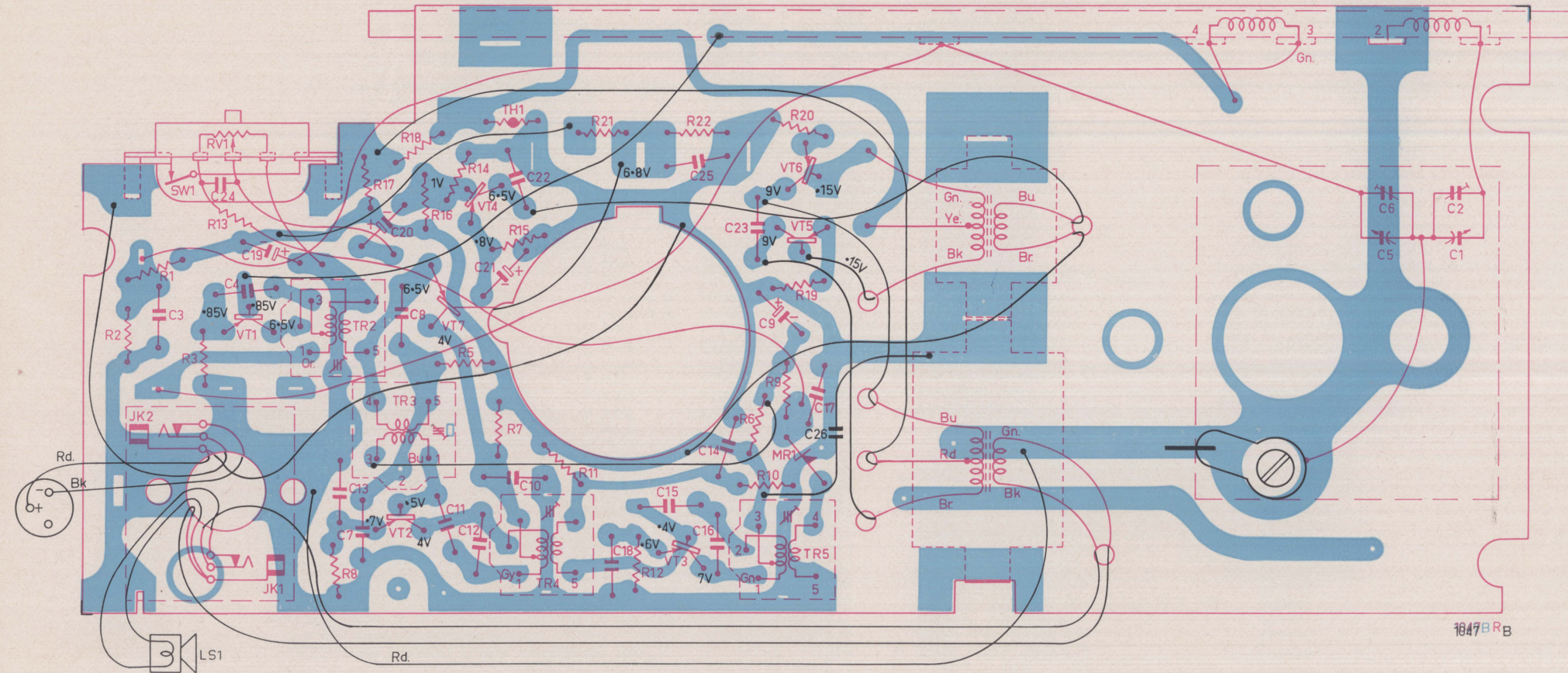
Black indicates those components and leads mounted on the wiring side or completely removed from the board.

All voltages shown are negative with respect to the board earth (positive terminal of the battery) and measured with no signal input and volume maximum clockwise using a 20,000 ohm/volt meter.

# Circuit Code. Radiola B30.

CODE No.	DESCRIPTION	PART No.	CODE No.	DESCRIPTION	PART No.
<b>RESISTORS</b>					
All Resistors $\pm 10\%$ composition type unless otherwise stated.					
R1	47K ohms	$\frac{1}{2}$ watt 614979	C13	0.047 $\mu$ f +80% —20% 25VW Hi-K disc	226823
R2	6.8K ohms	$\frac{1}{2}$ watt 611526	C14	0.047 $\mu$ f +80% —20% 25VW Hi-K disc	226823
R3	2.7K ohms	$\frac{1}{2}$ watt 609862	C15	2.2pf $\pm 10\%$ NPO disc	221494
R4	Not Used		C16	330pf $\pm 5\%$ N750 disc	223715
R5	2.2K ohms	$\frac{1}{2}$ watt 609453	C17	0.047 $\mu$ f $\pm 20\%$ 25VW Hi-K disc	226801
R6	68K ohms	$\frac{1}{2}$ watt 615509	C18	0.047 $\mu$ f +80% —20% 25VW Hi-K disc	226823
R7	4.7K ohms	$\frac{1}{2}$ watt 610938	C19	64 $\mu$ f 10VW Electrolytic	229675
R8	390 ohms	$\frac{1}{2}$ watt 606254	C20	25 $\mu$ f 3VW Electrolytic	229428
R9	3.9K ohms	$\frac{1}{2}$ watt 601565	C21	80 $\mu$ f 25VW Electrolytic	229672
R10	4.7K ohms	$\frac{1}{2}$ watt 610938	C22	.005 $\mu$ f $\pm 20\%$ 200VW AEE W99	226005
R11	47K ohms	$\frac{1}{2}$ watt 614979	C23	0.1 $\mu$ f +80% —20% 25VW Hi-K disc	227074
R12	470 ohms	$\frac{1}{2}$ watt 606588	C24	0.02 $\mu$ f $\pm 20\%$ 25VW Hi-K disc	226659
R13	220 ohms	$\frac{1}{2}$ watt 605253	C25	0.1 $\mu$ f +80% —20% 25VW Hi-K disc	227074
R14	4.7K ohms	$\frac{1}{2}$ watt 610938	C26	0.47 $\mu$ f +30% —20% 25VW Hi-K disc	227494
R15	470 ohms	$\frac{1}{2}$ watt 606588	<b>TRANSFORMERS</b>		
R16	27K ohms	$\frac{1}{2}$ watt 614152	TR1	Ferrite Rod	50670
R17	330 ohms	$\frac{1}{2}$ watt 605970	TR2	Oscillator Coil	51678
R18	12K ohms	$\frac{1}{2}$ watt 612524	TR3	1st I.F. Transformer	51672
R19	5.6 ohms $\pm 5\%$	$\frac{1}{2}$ watt W.W. 600714	TR4	2nd I.F. Transformer	51674
R20	5.6 ohms $\pm 5\%$	$\frac{1}{2}$ watt W.W. 600714	TR5	3rd I.F. Transformer	51676
R21	470 ohms	$\frac{1}{2}$ watt 606588	TR6	Coupling Transformer	51161B
R22	15K ohms	$\frac{1}{2}$ watt 612922	TR7	Speaker Transformer	51808A
RV1	1.5K ohms Log carbon Volume W/S	620014	<b>TRANSISTORS &amp; DIODE</b>		
<b>CAPACITORS</b>			VT1	A.W.V. 2N412	
C1	1—8pf trimmer (Aerial) }	21241	VT2	A.W.V. 2N1638	
C2	7—14pf tuning (Aerial) }		VT3	A.W.V. 2N1638	
C3	.005 $\mu$ f $\pm 20\%$ 200VW AEE W99	226005	VT4	A.W.V. 2N408	
C4	.005 $\mu$ f $\pm 20\%$ 200VW AEE W99	226005	VT5	A.W.V. 2N408	
C5	6—65pf tuning (Oscillator) }	Link with C1, C2	VT6	A.W.V. 2N408	
C6	1—8pf trimmer (Oscillator) }		VT7	A.W.V. 2N406	
C7	0.047 $\mu$ f +80% —20% 25VW Hi-K disc	226823	MR1	Germanium Diode OA90 or equivalent	
C8	330pf $\pm 5\%$ N750 disc	223715	<b>MISCELLANEOUS</b>		
C9	25 $\mu$ f 3VW Electrolytic	229428	LS1	2 $\frac{3}{4}$ " P.M. Speaker	50001
C10	0.047 $\mu$ f +80% —20% 25VW Hi-K disc	226823	TH1	220 ohms Thermistor	893709
C11	2.2pf $\pm 10\%$ NPO disc	221494	SW1	ON/OFF Switcn (on RV1)	
C12	330pf $\pm 5\%$ N750 disc	223715	JK1	Earphone Jack	417019
			JK2	external Power Supply Jack	417409





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# CIRCUIT AWA RADIOLA PORTABLE MODEL B30

