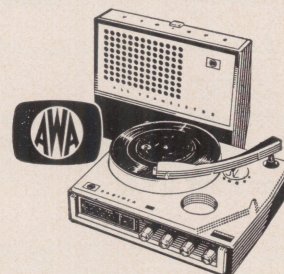


TECHNICAL INFORMATION AND SERVICE DATA



MODEL B41 A.W.A. PORTABLE RADIOGRAM

ISSUED BY AMALGAMATED WIRELESS (AUSTRALASIA) LTD.



GENERAL DESCRIPTION

Model B41 is a seven transistor, battery operated, portable radiogram designed for the reception of the Medium Wave Band and for the reproduction of 7", 10" or 12" records at all four speeds. Stereophonic records may be played without damaging the record, although both channels will be reproduced through one loudspeaker.

Features of design include:—Ferrite Rod aerial with provision for external aerial and earth connections; high gain miniature I.F. transformers; low drift oscillator; high compliance ceramic stereo cartridge.

ELECTRICAL AND MECHANICAL SPECIFICATIONS

Frequency Range 525-1625 Kc/s
Intermediate Frequency 455 Kc/s

Battery Complement:

Amplifier 9V Eveready Type 276P
Motor 9V Eveready Type 276P

Battery Consumption:

Amplifier 14 mA (Zero Signal)
Motor 50 mA
Power Output $\frac{1}{2}$ Watt
Loudspeaker 6" x 4" 50245.
V.C. Impedance 15 ohms at 400 c.p.s.

Transistor and Diode Complement:

AWV 2N1639 Converter
AWV 2N1638 1st I.F. Amplifier
AWV 2N1638 2nd I.F. Amplifier
AWV 2N408 Pre-Amplifier
AWV 2N408 Driver
AWV AS128 (2) P-P Output
AWV 1N87A Detector and A.G.C. Diode
AWV 1N87A Overload Diode

Dimensions:

Width, 11 $\frac{1}{2}$ "; Depth, 10"; Height, 5"; Weight, 12 lbs.

Controls (Front):

Tone-On/Off, Gram/Radio, Tuning, Volume.

Controls (Top):

Speed Selector.

Chassis Removal:

Remove the batteries.

Remove the front knobs by pulling them straight off their spindles.

Remove the lid and make sure the pick-up arm is secured to its rest.

Place the radiogram face down and remove three screws exposed in the bottom of the case. The case may now be lifted from the motor board assembly.

To gain access to the wiring side of the printed board, remove three Phillips Head screws situated at the bottom front of the chassis and loosen the two screws clamping the chassis to the moulded lugs. The complete assembly may now be lifted and tilted forward to reveal the printed wiring.

SPRING LOADED FOOT REPLACEMENT

To accomplish this, the whole assembly comprising foot (part No. 64846) spring and Retaining Clip (No. SCO/1868) must be replaced. It is essential that the correctly coloured springs, as shown in the accompanying diagram, are replaced in their corresponding positions. The diagram is viewed from the underside of the cabinet case.

To replace a foot, first remove the cabinet case. Mount the correct spring on the foot and push it through its mounting hole. From inside the cabinet case push the retaining clip onto the foot until its teeth engage in the groove in the foot.

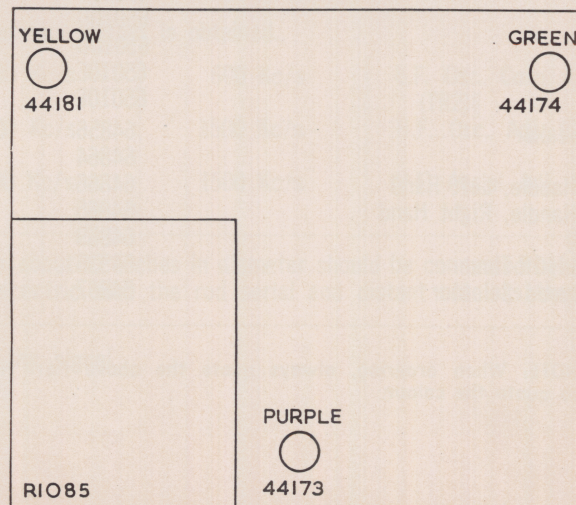
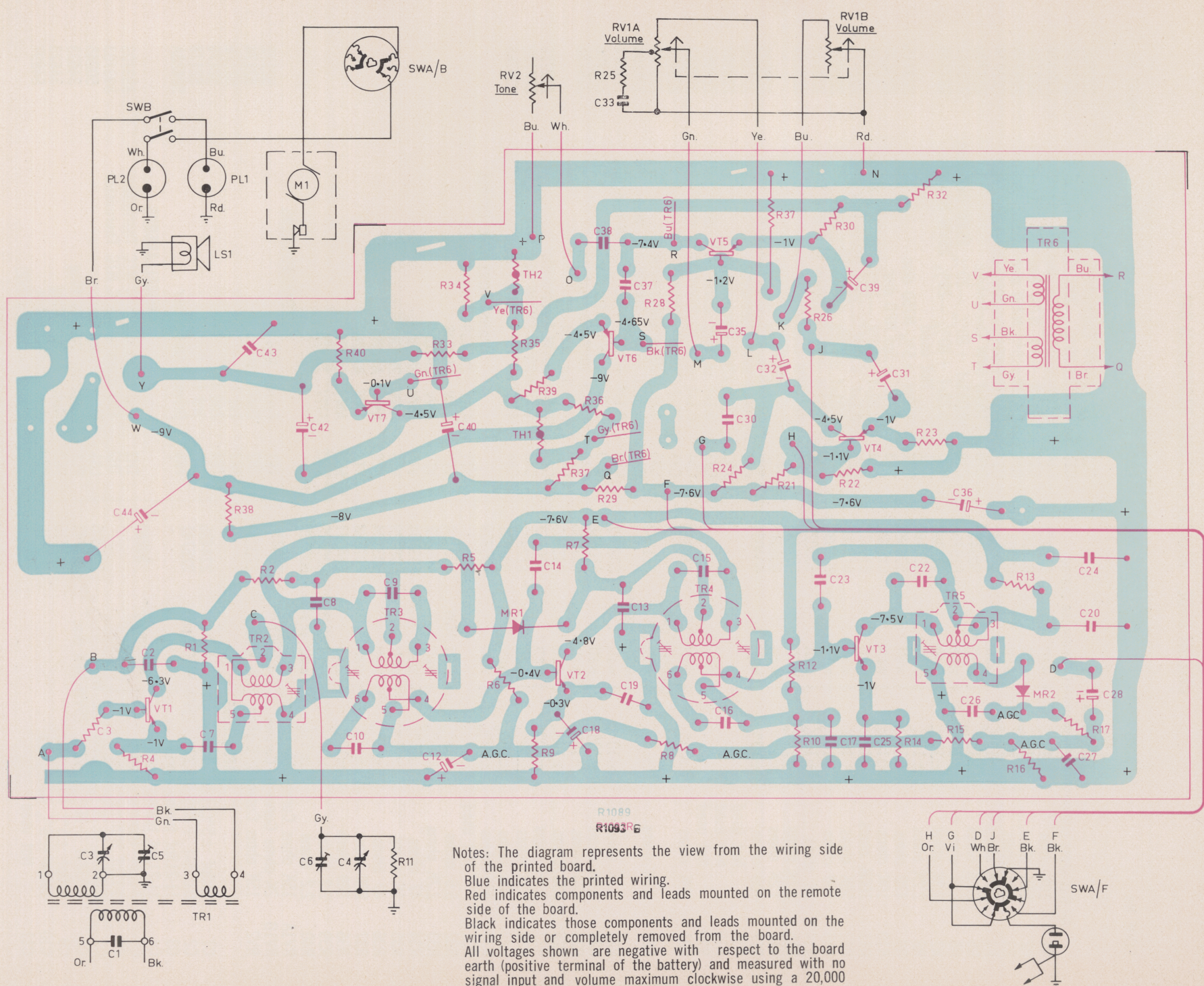


Fig. 1



D.C. RESISTANCE OF WINDINGS

Winding	D.C. Resistance in Ohms	Winding	D.C. Resistance in Ohms
Ferrite Rod Assembly (TR1):		2nd I.F. Transformer (TR4):	
Primary	1	Primary	5
Secondary	*	Secondary	5
Oscillator Coil (TR2):		3rd I.F. Transformer (TR5):	
Primary	4	Primary	3
Secondary	*	Secondary	*
1st I.F. Transformer (TR3):		Driver Transformer (TR6):	
Primary	5	Primary	250
Secondary	5	Secondary	25

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.
Aerial Support, Moulded	64887	Lid	64849
Bezel, Light	64899	Lid, Battery Storage	64845
Cable, Battery, Receiver	49279	Nameplate (AWA)	64852
Cable, Battery, Motor	49280	Pointer Assembly	64885
Case	64842	Support, Lid	64850
Catch, Button Assembly	64853	Chassis and Variable Capacitor Assembly	64871
Clip, Tone Arm, Retaining	64901	This consists of:	
Dial, Backing Assembly	64882	“C” Clip, Drive Spindle Retaining	2524
Dial Scale:		“C” Clip, Pulley Retaining	4885
N.S.W.	65010A	Cup Washer, Moulded, Chassis Mounting (3)	64888
Vic.	65010B	Drive Drum	64770
Qld.	65010C	Drive Spindle Assembly	64878
S.A.	65010D	Pulley, Dial Cord	17716
W.A.	65010E	Screws, Drive Drum	32816
Tas.	65010F	Spring, Dial Cord	1741
Fret, Speaker	64856	Gang Mounting Assembly, comprising:	
Handle	64864	Gang	39263
Hinge, Handle, Left Hand	64866	Grommet (3)	36826/2
Hinge, Handle, Right Hand	64865	Screw, 4BA x 5/16" Ch. Hd. (3)	714010
Knob (3)	64869	Spacer (3)	64911
Knob, On/Off-Tone	64916	Washer, 4BA I.T.L. (3)	921204
Knob, Speed Selector	64867	Washer, 4BA Plain (3)	13156

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

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 readjusted 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:

Signal Generator—modulated 400 c.p.s. or Modulated Oscillator.

If the modulated oscillator is used, connect a 0.22 megohm non-inductive resistor across the output terminals.

Output Meter.

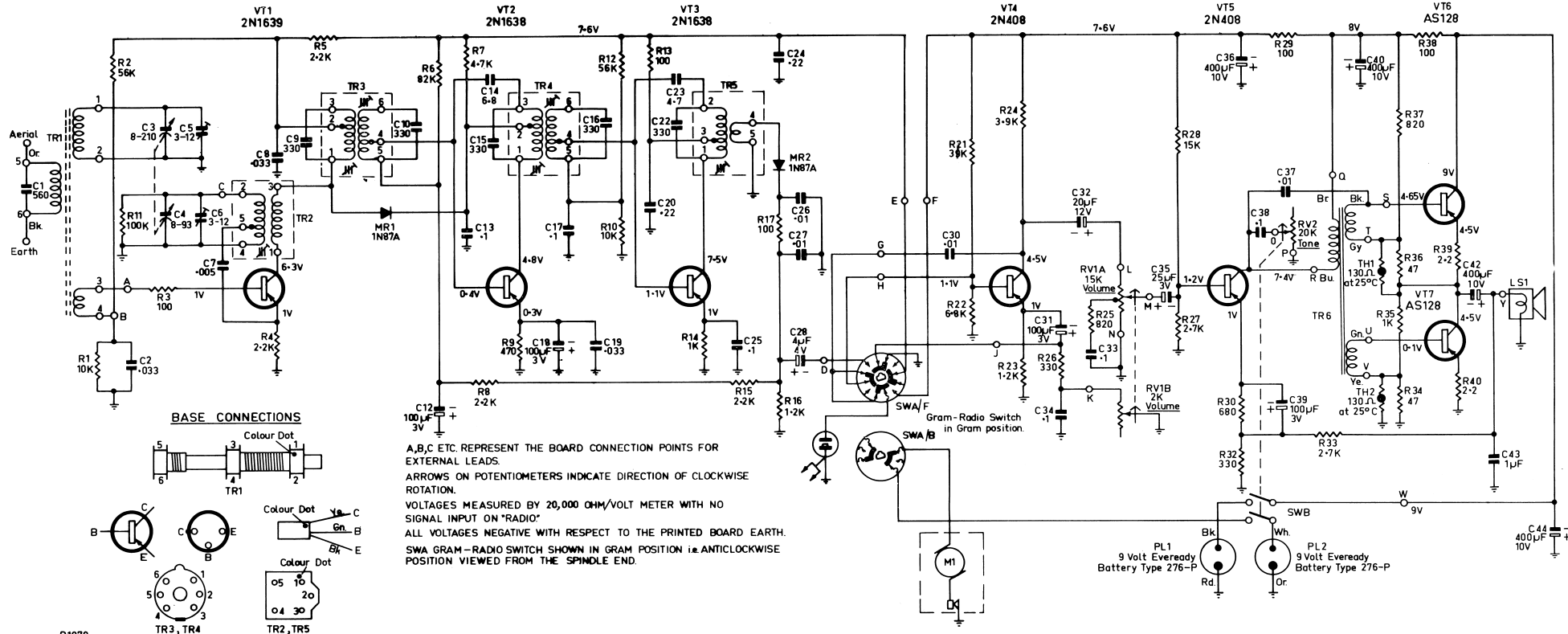
If an indication only is required then Output Meter Type TF893A, switched to 150 ohms and connected across the voice coil, should be adequate. If other types of meters are used with the correct loading, the speaker **must be disconnected**, otherwise the maximum dissipation of the transistors will be exceeded at medium output levels.

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 TR5, TR4 and TR3
Repeat adjustments 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*	1500 Kc/s	1500 Kc/s	H.F. Osc. Adj. (C6)
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 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.



A,B,C ETC. REPRESENT THE BOARD CONNECTION POINTS FOR EXTERNAL LEADS.

ARROWS ON POTENTIOMETERS INDICATE DIRECTION OF CLOCKWISE ROTATION.

VOLTAGES MEASURED BY 20,000 OHM/VOLT METER WITH NO SIGNAL INPUT ON "RADIO"

ALL VOLTAGES NEGATIVE WITH RESPECT TO THE PRINTED BOARD EARTH.

SWA GRAM-RADIO SWITCH SHOWN IN GRAM POSITION i.e. ANTICLOCKWISE POSITION VIEWED FROM THE SPINDLE END.

CIRCUIT CODE. RADIOLA PORTABLE RADIOGRAM B41

CODE No.	DESCRIPTION	PART No.	CODE No.	DESCRIPTION	PART No.
RESISTORS					
All Resistors composition type unless otherwise stated					
R1	10K ohms $\pm 10\%$ $\frac{1}{2}$ watt	612025	C12	100 μ f 3VW Electrolytic	229706
R2	56K ohms $\pm 10\%$ $\frac{1}{2}$ watt	615161	C13	0.1 μ f $\pm 80\%$ -20% 25VW Hi-K disc	227074
R3	100 ohms $\pm 10\%$ $\frac{1}{2}$ watt	604031	C14	6.8pf $\pm 10\%$ NPO disc	220380
R4	2.2K ohms $\pm 10\%$ $\frac{1}{2}$ watt	609442	C15	330pf $\pm 5\%$ N750 disc	223715
R5	2.2K ohms $\pm 10\%$ $\frac{1}{2}$ watt	609442	C16	330pf $\pm 5\%$ N750 disc	223715
R6	82K ohms $\pm 10\%$ $\frac{1}{2}$ watt	615795	C17	0.1 μ f $\pm 80\%$ -20% 25VW Hi-K disc	227074
R7	3.3K ohms $\pm 10\%$ $\frac{1}{2}$ watt	610304	C18	100 μ f 3VW Electrolytic	229706
R8	2.2K ohms $\pm 10\%$ $\frac{1}{2}$ watt	609442	C19	0.033 μ f $\pm 80\%$ -20% 25VW Hi-K disc	226741
R9	470 ohms $\pm 10\%$ $\frac{1}{2}$ watt	606588	C20	0.22 μ f $\pm 80\%$ -20% 25VW Hi-K disc	227338
R10	10K ohms $\pm 10\%$ $\frac{1}{2}$ watt	612025	C21	Not used	
R11	100K ohms $\pm 10\%$ $\frac{1}{2}$ watt	616017	C22	330pf $\pm 5\%$ N750 disc	223715
R12	56K ohms $\pm 10\%$ $\frac{1}{2}$ watt	615161	C23	4.7pf $\pm .5$ pf NPO disc	220220
R13	100 ohms $\pm 10\%$ $\frac{1}{2}$ watt	604031	C24	0.22 μ f $\pm 80\%$ -20% 25VW Hi-K disc	227338
R14	1K ohms $\pm 10\%$ $\frac{1}{2}$ watt	608025	C25	0.1 μ f $\pm 80\%$ -20% 25VW Hi-K disc	227074
R15	2.2K ohms $\pm 10\%$ $\frac{1}{2}$ watt	609442	C26	0.01 μ f $\pm 20\%$ 200VW AEE W99	228609
R16	1.2K ohms $\pm 10\%$ $\frac{1}{2}$ watt	608312	C27	0.01 μ f $\pm 20\%$ 200VW AEE W99	228609
R17	100 ohms $\pm 10\%$ $\frac{1}{2}$ watt	604031	C28	4 μ f 4VW Electrolytic	228189
R18	Not used		C29	Not used	
R19	Not used		C30	0.01 μ f $\pm 20\%$ 200VW AEE W99	228609
R20	Not used		C31	100 μ f 3VW Electrolytic	229706
R21	39K ohms $\pm 5\%$ $\frac{1}{2}$ watt cracked carbon	614698	C32	20 μ f 12VW Electrolytic	229307
R22	6.8K ohms $\pm 5\%$ $\frac{1}{2}$ watt cracked carbon	611540	C33	0.1 μ f $\pm 20\%$ 25VW Hi-K disc	227083
R23	1.2K ohms $\pm 10\%$ $\frac{1}{2}$ watt	608312	C34	0.1 μ f $\pm 20\%$ 25VW Hi-K disc	227083
R24	3.9K ohms $\pm 10\%$ $\frac{1}{2}$ watt	610556	C35	25 μ f 3VW Electrolytic	229428
R25	820 ohms $\pm 10\%$ $\frac{1}{2}$ watt	607665	C36	400 μ f 10VW Electrolytic	229786
R26	330 ohms $\pm 10\%$ $\frac{1}{2}$ watt	605959	C37	0.01 μ f $\pm 20\%$ 200VW AEE W99	228609
R27	2.7K ohms $\pm 10\%$ $\frac{1}{2}$ watt	609862	C38	0.1 μ f $\pm 80\%$ -20% 25VW Hi-K disc	227074
R28	15K ohms $\pm 10\%$ $\frac{1}{2}$ watt	612922	C39	100 μ f 3VW Electrolytic	229706
R29	100 ohms $\pm 10\%$ $\frac{1}{2}$ watt	604031	C40	400 μ f 10VW Electrolytic	229786
R30	330 ohms $\pm 10\%$ $\frac{1}{2}$ watt	605959	C41	Not used	
R31	Not used		C42	400 μ f 10VW Electrolytic	229786
R32	5.6 ohms $\pm 5\%$ $\frac{1}{2}$ watt W.W.	600714	C43	1 μ f $\pm 20\%$ 200VW AEE W48	227732
R33	2.7K ohms $\pm 10\%$ $\frac{1}{2}$ watt	609862	C44	400 μ f 10VW Electrolytic	229786
R34	47 ohms $\pm 5\%$ $\frac{1}{2}$ watt	603104	TRANSISTORS AND DIODES		
R35	1K ohms $\pm 5\%$ $\frac{1}{2}$ watt	608029	VT1	AWV 2N1639	
R36	47 ohms $\pm 5\%$ $\frac{1}{2}$ watt	603104	VT2	AWV 2N1638	
R37	820 ohms $\pm 5\%$ $\frac{1}{2}$ watt	607668	VT3	AWV 2N1638	
R38	100 ohms $\pm 10\%$ $\frac{1}{2}$ watt	604031	VT4	AWV 2N408	
R39	2.2 ohms $\pm 5\%$ $\frac{1}{2}$ watt W.W.	600429	VT5	AWV 2N408	
R40	2.2 ohms $\pm 5\%$ $\frac{1}{2}$ watt W.W.	600429	VT6	AWV AS128	
RV1A	15K ohms Curve S16, Carbon	Volume 620221	VT7	AWV AS128	
RV1B	2K ohms Curve A, Carbon		MR1	AWV 1N87A	
RV2	15K ohms Curve C, Carbon Tone W/S	620240	MR2	AWV 1N87A	
CAPACITORS			TRANSFORMERS		
C1	560pf $\pm 5\%$ 125VW polystyrene	224485	TR1	Ferrite Rod	52172
C2	0.033 μ f $\pm 80\%$ -20% 25VW Hi-K disc	226741	TR2	Oscillator	52174
C3	11-213pf tuning Aerial	Assembly 39263	TR3	1st I.F.	52176
C4	11-213pf tuning Osc.		TR4	2nd I.F.	52176
C5	3-12pf trimmer Aerial		TR5	3rd I.F.	52178
C6	3-12pf trimmer Osc.		TR6	Driver Transformer	52428A
C7	0.005 μ f $\pm 20\%$ 200VW AEE W99	226005	MISCELLANEOUS		
C8	0.033 μ f $\pm 80\%$ -20% 25VW Hi-K disc	226741	TH1	130 ohms at 25°C NTC Thermistor	893703
C9	330pf $\pm 5\%$ N750 disc	223715	TH2	130 ohms at 25°C NTC Thermistor	893703
C10	330pf $\pm 5\%$ N750 disc	223715	LS1	6" x 4" Speaker	50245
C11	Not used		PL1	Amplifier Battery Plug	34623
			PL2	Motor Battery Plug	34623
			SWA	Gram-Radio Switch	64897
			SWB	On-Off Switch (on RV2)	