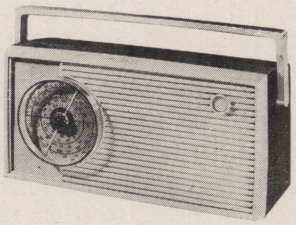
MANUFACTURERS AWA SUPERVISED SERVICE

A.W.A. RADIOLA
SEVEN TRANSISTOR PORTABLE
MODEL B48



ISSUED BY AMALGAMATED WIRELESS (AUSTRALASIA) LTD.

GENERAL DESCRIPTION

The model B48 is a seven transistor, Battery operated superheterodyne portable receiver designed for reception of the Medium Wave Broadcasting Band.

ELECTRICAL AND MECHANICAL SPECIFICATIONS

Frequency Range ..... 525-1,770 Kc/s.

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

Battery Complement ..... 9V Eveready Type 2512.

Battery Consumption:

For Zero audio output	12 mA
For 50 mW audio output	45 mA
For full audio output	110 mA

Loudspeaker:

5″ x 3″ 50145

V.C. Impedance:

80 ohms (centre tapped) at 400 c.p.s.

Undistorted Power Output ..... 400 mW

Controls:

Tuning Control	Front left-hand
ON/OFF Volume Control	Above tuning control

Dimensions:

Height	4¾″
Width	8¾″
Depth	3½″
Weight (with battery)	2¾ lbs.

Transistor and Diode Complement:

A.W.V. 2N1639	Converter
A.W.V. 2N1638	1st I.F. Amplifier
A.W.V. 2N406	Overload
A.W.V. 2N1638	2nd I.F. Amplifier
A.W.V. 2N408	Driver
A.W.V. 2N217S	Output
A.W.V. 2N217S	Output
A.W.V. 1N87A	Detector
A.W.V. AS2	Compensating Diode

Chassis Removal:

Remove the tuning knob locking screw and tuning knob. Loosen off completely the retaining screws and remove the cabinet back and battery.

Loosen the two screws securing the ferrite rod support brackets.

Remove the four retaining screws from the printed board.

The complete board assembly may now be tilted forward to gain access to the wiring side.

Re-assembly is the reverse of the above procedure.

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 only be necessary when components in tuned circuits are repaired or replaced or when it is found the seals over the adjusting screws have been broken. It is especially important that the adjustment should not be altered unless the correct testing instruments, listed below, are used.

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:

Signal Generator—modulated 400 C.P.S. or

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

Output measurements must be made with either the speaker connected or with two 40 ohm resistors connected in series across the output collectors when the speaker is removed. If an indication only is required, Output Meter type 2M8832, switched to 5,000 ohms and connected across the collectors should be adequate. For a true reading of power output, an a.c. meter, with neither probe earthed, connected similarly will measure 1.4 volts for 50 mW (the effective load being 40 ohms).

I.F. Alignment Tool Part No. 39462.

A. GENERAL.

ALIGNMENT TABLE

ORDER	CONNECT GENERATOR TO:	TUNE GENERATOR TO:	TUNE RECEIVER TO:	ADJUST FOR MAX. PEAK OUTPUT
1	Aerial Section of Gang	455 Kc/s	L.F. Limit	Cores in TR3, TR4 and TR5*
Repeat adjustments until maximum output is obtained.				
2	Inductively Coupled to Rod Aerial †	600 Kc/s	600 Kc/s	Core in TR2φ
3	Inductively Coupled to Rod Aerial †	1,770 Kc/s	H.F. Limit	Osc. Trimmer (C4)
4	Inductively Coupled to Rod Aerial †	1,500 Kc/s	1,500 Kc/s	Aerial Trimmer (C2)

* TR5 must be peaked with core close to the printed board.

† A coil comprising three 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 one foot from it.

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

D.C. RESISTANCE OF WINDINGS

WINDING	D.C. RESISTANCE IN OHMS
Ferrite Rod Assembly (TR1):	*
Oscillator Transformer (TR2):	
Primary 3-5	1.2
Secondary 1-4	*
Ist I.F. Transformer (TR3):	
Primary	1.5
Secondary	*
2nd I.F. Transformer (TR4):	
Primary	1.5
Secondary	*
3rd I.F. Transformer (TR5):	
Primary	1.5
Secondary	*
Driver Transformer (TR6):	
Primary	540
Secondary	540

* Less than 1 ohm.

The above readings were taken on components from 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

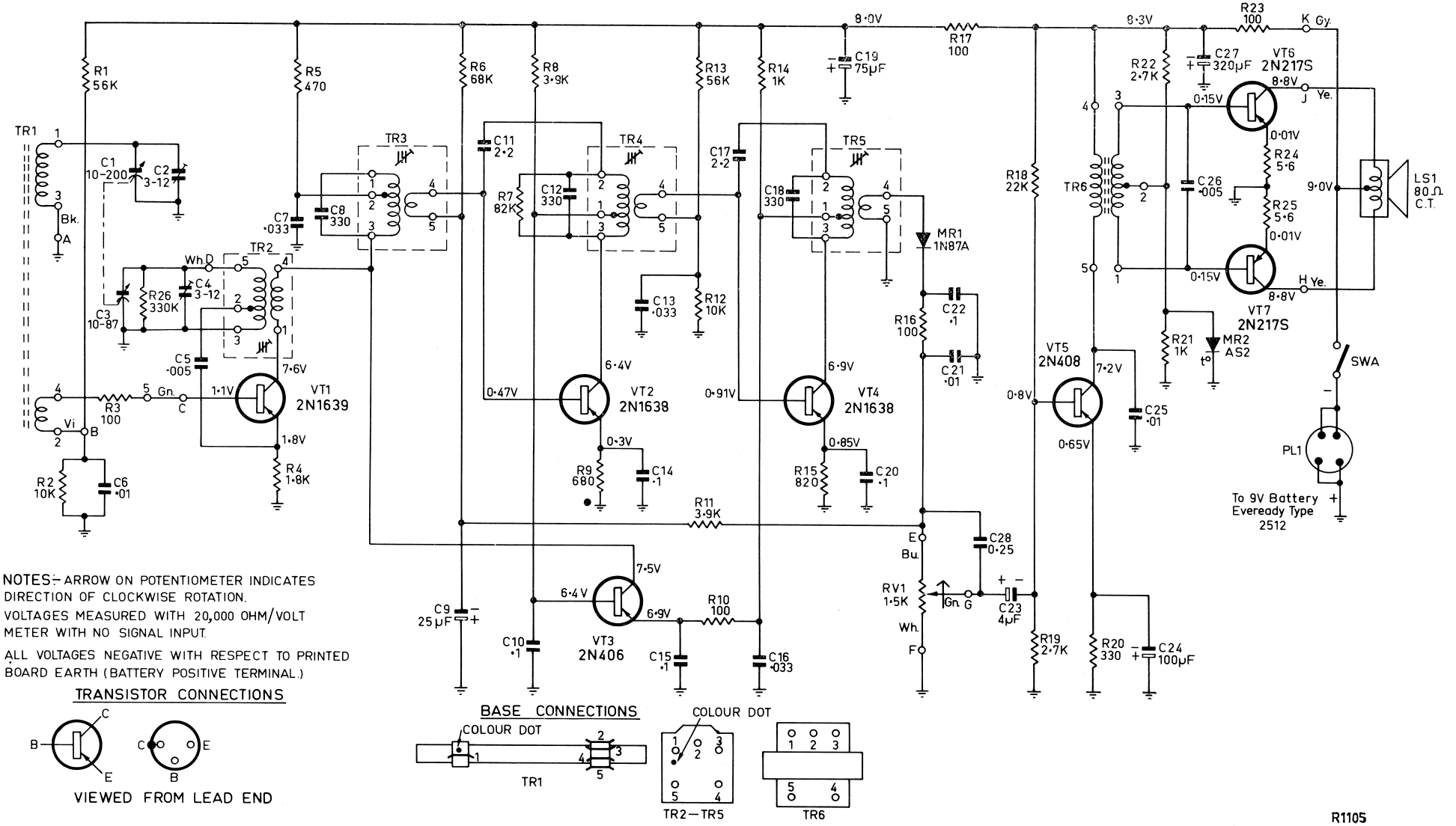
ITEM	PART No.
Boss, Tuning Spindle	66429
Cabinet Assembly	66406
Circlip, Handle Retaining	2524
Dial Scale	66402
Front Assembly	66400
Gang Mounting:	
Gang	39266
Grommet (3)	36826/2
Lug, Earthing	439085
Screw, 4BA x 5/16" Ch. Hd. (3)	714010
Spacer (3)	35923
Washer, 4BA I.T.L. (3)	921204
Washer, 4BA Plain (3)	13156
Handle	66419
Knob, Tuning	66414
Knob, Volume	66409
Nameplate, "A.W.A."	66403
Screw, Cabinet Retaining	66412
Screw, Tuning Knob Mounting	64982
Spacer, Speaker Mounting	64888
Support, Bracket, Aerial, Left-hand	66404
Support, Bracket Aerial, Right-hand	66405
Support, Ferrite Rod Aerial (2)	66498

NOTE: When ordering spares, always quote the above Part Numbers, and in the case of coloured parts such as knobs, etc., also quote colour.

CIRCUIT CODE

CODE No.	DESCRIPTION	PART No.
	RESISTORS	
	All Resistors composition type unless otherwise stated	
R1	56K ohms ±10% ½ watt	615161
R2	10K ohms ±10% ½ watt	612025
R3	100 ohms ±10% ½ watt (on TR1)	604031
R4	1.8K ohms ±10% ½ watt	609077
R5	470 ohms ±10% ½ watt	606588
R6	68K ohms ±10% ½ watt	615494
R7	82K ohms ±10% ½ watt	615795
R8	3.9K ohms ±10% ½ watt	610556
R9	680 ohms ±10% ½ watt	607281
R10	100 ohms ±10% ½ watt	604031
R11	3.9K ohms ±10% ½ watt	610556
R12	10K ohms ±10% ½ watt	612025
R13	56K ohms ±10% ½ watt	615161
R14	1K ohms ±10% ½ watt	608025
R15	820 ohms ±10% ½ watt	607665
R16	100 ohms ±10% ½ watt	604031
R17	100 ohms ±10% ½ watt	604031
R18	22K ohms ±10% ½ watt	613653
R19	2.7K ohms ±10% ½ watt	609862
R20	330 ohms ±10% ½ watt	605959
R21	1K ohms ±10% ½ watt	608025
R22	2.7K ohms ±10% ½ watt	609862
R23	100 ohms ±10% ½ watt	604031
R24	5.6 ohms ±10% ½ watt	600724
R25	5.6 ohms ±10% ½ watt	600724
R26	330K ohms ±10% ½ watt	617108
RV1	I.5K ohms curve, Volume W/S	620014
	CAPACITORS	
C1	10—200pf tuning, Aerial	
C2	3—12pf trimmer, Aerial	
C3	10—87pf tuning, Oscillator	Ass'y 39266
C4	3—12pf trimmer, Oscillator	
C5	0.005μf ±20% 200VW AEE W99	226005
C6	0.01μf ±20% 200VW AEE W99	228609
C7	0.033μf +80%—20% 25VW Hi-K disc	226741
C8	330pf ±5% N750 disc	223726
C9	25μf 3VW Electrolytic	229428
C10	0.1μf +80%—20% 25VW Hi-K disc	227074
C11	2.2pf ±20% NPO disc	221494

CODE No.	DESCRIPTION	PART No.
	CAPACITORS (Con't)	
C12	330pf ±5% N750 disc	223726
C13	0.033μf +80%—20% 25VW Hi-K disc	226744
C14	0.1μf +80%—20% 25VW Hi-K disc	227074
C15	0.1μf +80%—20% 25VW Hi-K disc	227074
C16	0.033μf +80%—20% 25VW Hi-K disc	226741
C17	2.2pf ±20% NPO disc	221494
C18	330pf ±5% N750 disc	223726
C19	75μf 10VW Electrolytic	229675
C20	0.1μf +80%—20% 25VW Hi-K disc	227074
C21	0.01μf ±20% 200VW AEE W99	228609
C22	0.1μf +80%—20% 25VW Hi-K disc	227074
C23	4μf 10VW Electrolytic	228189
C24	100μf 3VW Electrolytic	229706
C25	0.01μf ±20% 200VW AEE W99	228609
C26	0.005μf±20% 200VW AEE W99	226005
C27	320μf 10VW Electrolytic	229776
C28	0.25μf ±20% 200VW AEE W48	229007
	TRANSFORMERS	
TR1	Ferrite Rod Ass'y (incl. R3)	53226
TR2	Oscillator Transformer	51636
TR3	1st I.F. Transformer	51272
TR4	2nd I.F. Transformer	51268
TR5	3rd I.F. Transformer	51270
TR6	Driver Transformer	51145A
	TRANSISTORS AND DIODES	
VT1	AWV 2N1639	
VT2	AWV 2N1638	
VT3	AWV 2N406	
VT4	AWV 2N1638	
VT5	AWV 2N408	
VT6	AWV 2N217S	
VT7	AWV 2N217S	
MR1	AWV 1N87A	
MR2	AWV AS2	
	MISCELLANEOUS	
LS1	5″ x 3″ Speaker	50145
PL1	Battery Plug CF 691-6-16	
SWA	On/Off Switch (on RV1)	



NOTES:– ARROW ON POTENTIOMETER INDICATES DIRECTION OF CLOCKWISE ROTATION.

VOLTAGES MEASURED WITH 20,000 OHM/VOLT METER WITH NO SIGNAL INPUT.

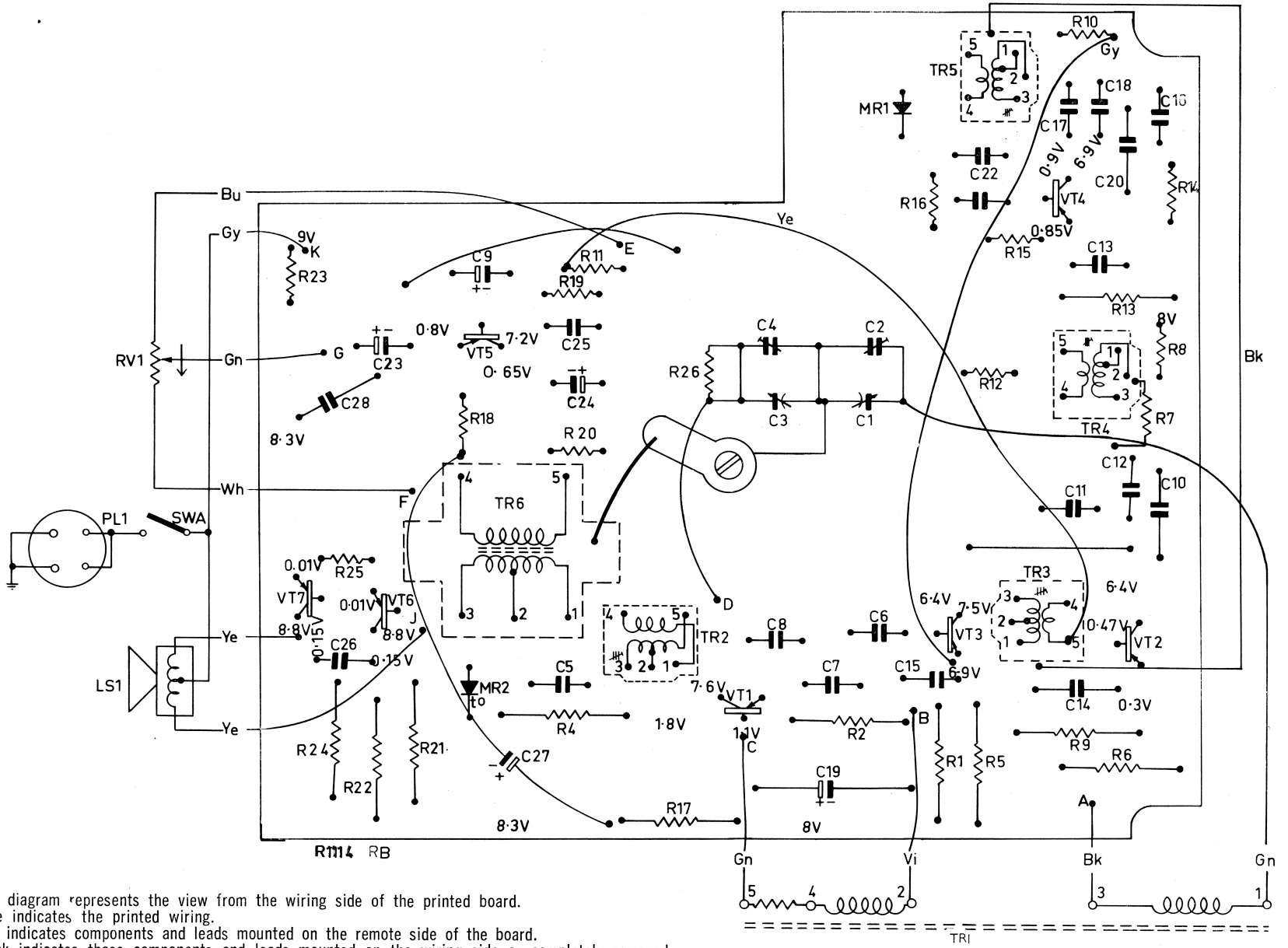
ALL VOLTAGES NEGATIVE WITH RESPECT TO PRINTED BOARD EARTH (BATTERY POSITIVE TERMINAL.)

TRANSISTOR CONNECTIONS

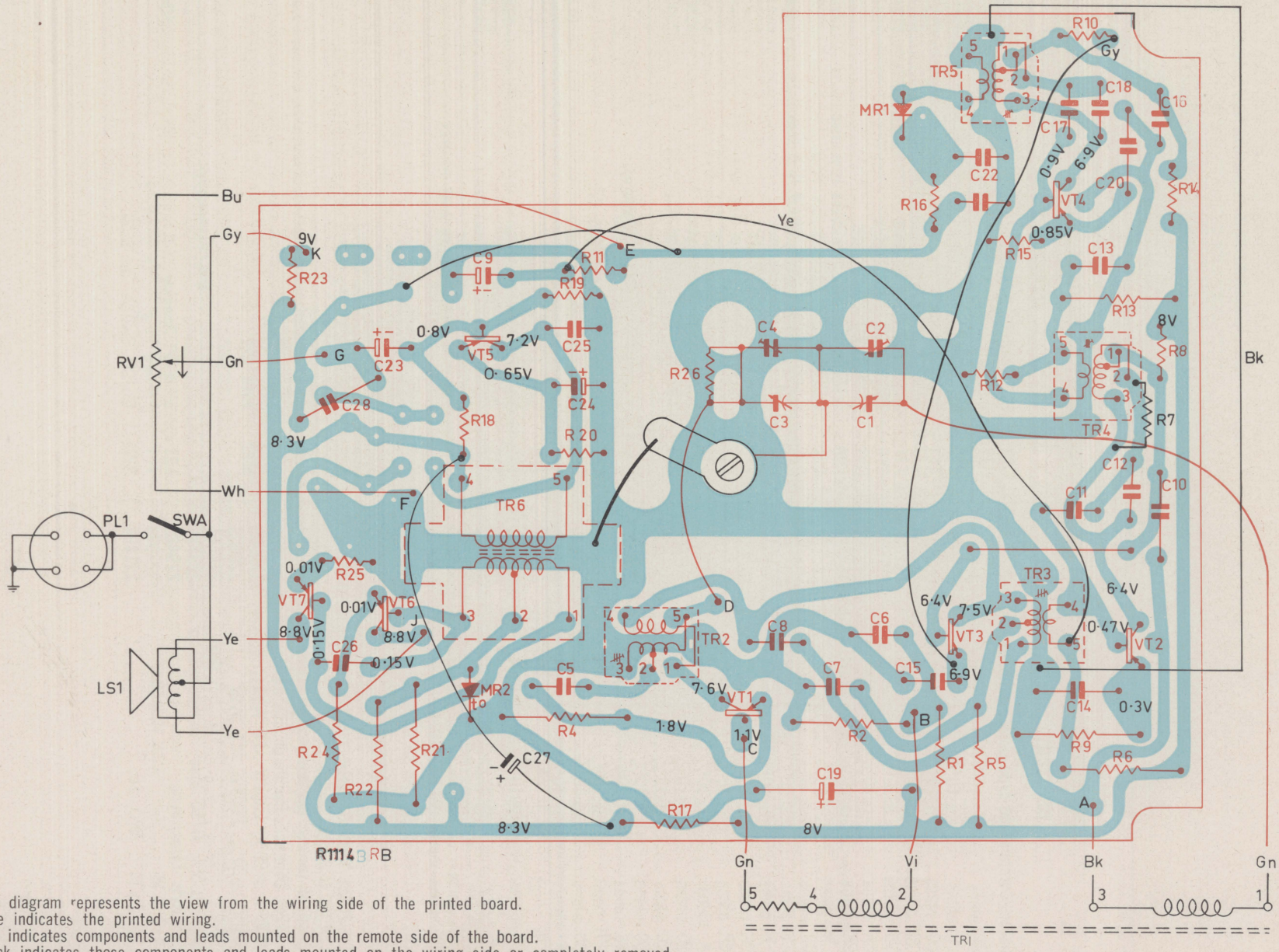
VIEWED FROM LEAD END

BASE CONNECTIONS

R1105



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.



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