

## A.W.A. RADIOLA EIGHT TRANSISTOR

### Model B42

### GENERAL DESCRIPTION

The B42 is an eight transistor, battery operated superheterodyne portable receiver.

Features of design include: extended frequency range to receive station 2UV "University of the Air"; ferrite rod aerial, provision for the connection of car radio aerial or external aerial; provision for Battery Saver connection; high gain i.f. transformers; high sensitivity.

### ELECTRICAL AND MECHANICAL SPECIFICATIONS

Frequency Range ..... 525-1,770 Kc/s  
 Intermediate Frequency ..... 455 Kc/s  
 Battery Complement ..... 9 volt battery type 2512  
 Battery Consumption:  
 For zero audio output ..... 14 mA  
 For 50 mW audio output ..... 35 mA  
 For full audio output ..... 110 mA

#### Transistor Complement:

AWW 2N1636 or 2N1639 ..... Converter  
 AWW 2N406 ..... Overload  
 AWW 2N1634 or 2N1638 ..... 1st I.F. Amplifier  
 AWW 2N1634 or 2N1638 ..... 2nd I.F. Amplifier  
 AWW 2N406 ..... 1st Audio  
 AWW 2N408 ..... Driver  
 AWW 2N217S ..... Output  
 AWW 2N217S ..... Output

#### Loudspeaker:

Permanent Magnet No. 50090.  
 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—right-hand side.

A diode (1N87A, or equivalent) is also used as Audio Detector and A.G.C.

#### Dimensions:

Height ..... 5 $\frac{3}{8}$ "  
 Width ..... 9 $\frac{3}{8}$ "  
 Depth ..... 2 $\frac{3}{8}$ "  
 Weight (with battery) ..... 4 lbs.

### ALIGNMENT PROCEDURE

#### Manufacturer's Setting of Adjustments:

The Receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Realignments 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 meg ohms non-inductive resistor across the output terminals.

(3) No output transformer is used in this receiver since the speaker has a centre tapped 80 ohm voice coil and is connected directly to the collectors on the output transistors. For output measurement, if an indication only is required, Output Meter type 2M8832, switched to 5000 ohms and connected across the output collectors, should be adequate. For correct reading of power output an A.C. meter, with neither probe earthed, connected across the output collectors will measure the voltage across the 80 ohms load. The normal alignment level of 50mW occurs when 1.4 volts is indicated on the A.C. voltmeter.

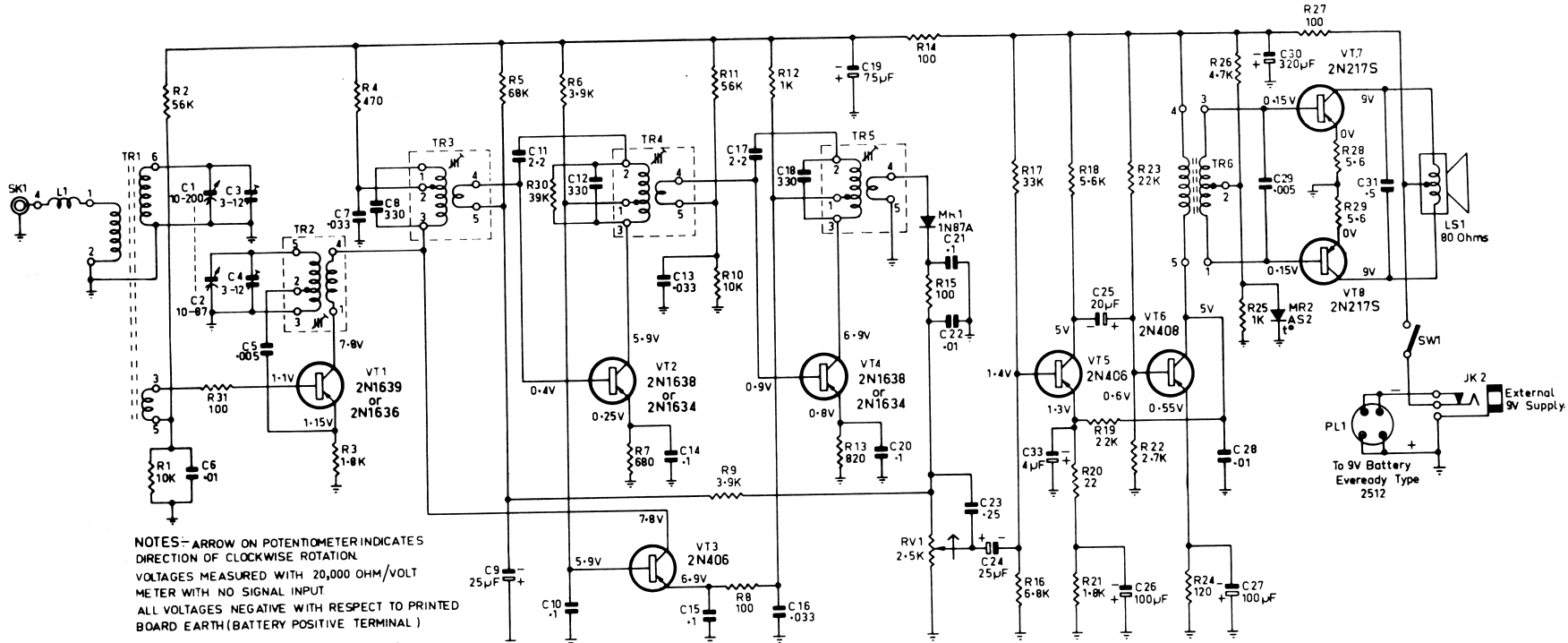
- (4) I.F. Alignment Tool—Part No. 39462.

### 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*	1,770 Kc/s	Gang fully open	H.F. Osc. Adj. (C4)
4	Inductively coupled to Rod Aerial*	1,500 Kc/s	1,500 Kc/s	H.F. Aerial Adj. (C3)
Repeat steps 2, 3 and 4				

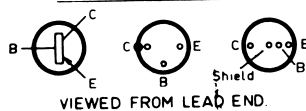
\* A coil comprising three turns of 16 gauge D.C.C. wire and about 12 inches in diameter should be connected between the output terminals of the test instrument, placed concentric with the rod aerial and distant not less than one foot from it.

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



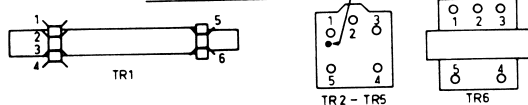
NOTES - ARROW ON POTENTIOMETER INDICATES DIRECTION OF CLOCKWISE ROTATION.  
 VOLTAGES MEASURED WITH 20,000 OHM/VOLT METER WITH NO SIGNAL INPUT.  
 ALL VOLTAGES NEGATIVE WITH RESPECT TO PRINTED BOARD EARTH (BATTERY POSITIVE TERMINAL)

**TRANSISTOR CONNECTIONS**



R1071

**BASE CONNECTIONS**



R24 should be a 330 ohm  $\pm 10\%$  1/4 watt resistor 605959.  
 C23 should be connected from wiper arm of RV1 to earth.