

In later production a complete changeover was made to Philips concentric air trimmers. This necessitated a change in chassis layout and Fig. 3 is incorporated to facilitate location of pertinent components for the alignment procedure with either layout. N.B.: The circuit and code at present show the initial arrangement of mixed trimmers.

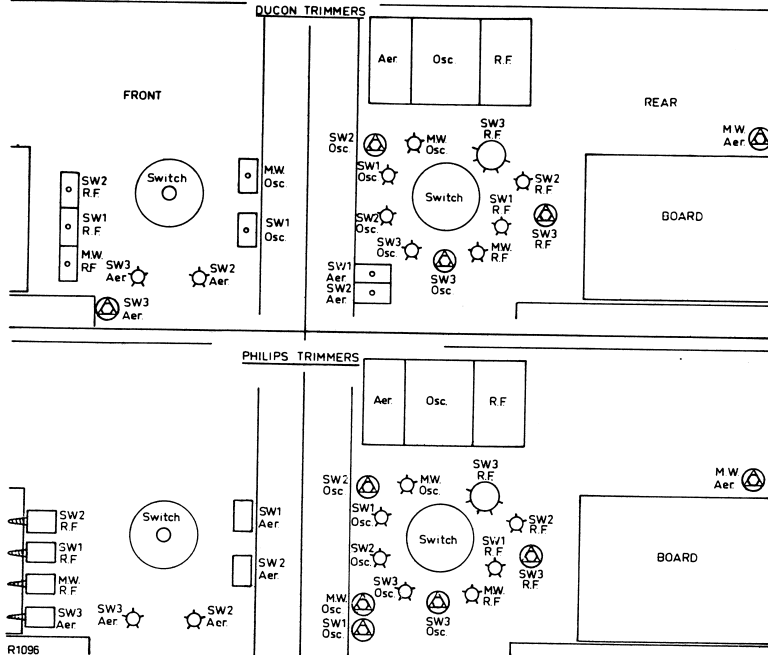


Fig. 3

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.g.c. action and set the volume control in the maximum 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.

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 of 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 probes earthed, connected across the output collectors will measure the voltage across the 80 ohms load. The normal alignment level of 50 mW occurs when 2 volts is indicated on the A.C. Voltmeter.

ALIGNMENT TABLE

ORDER:	Connect "High" Side of Generator to:	Tune Generator to:	Tune Receiver to:	Adjust for Maximum Peak Output:
Turn the wave switch to medium wave.				
1	R.F. Section of gang	455 Kc/s	Gang fully closed	Cores in TR4, TR5, TR6 and TR7
Repeat adjustment until maximum output is obtained.				
2	Inductively coupled to rod aerial.*	1620 Kc/s	Gang fully open	Osc. Trimmer (C78)
Connect a 2.2K ohms resistor between pins 2 and 3 of TR21.				
3	Inductively coupled to rod aerial.*	1500 Kc/s	1500 Kc/s	Aer. Trimmer (C58)
4	Inductively coupled to rod aerial.*	600 Kc/s	600 Kc/s	Osc. Core Adj. (TR31)§
Repeat 2, 3 and 4. Remove the 2.2K ohms resistor				
5	Inductively coupled to rod aerial.*	1500 Kc/s	1500 Kc/s	R.F. Trimmer (C64)
6	Inductively coupled to rod aerial.*	600 Kc/s	600 Kc/s	R.F. Core Adj. (TR21)
Repeat 5 and 6.				
Turn the wave change switch to SW1.				
7	Dummy aerial.	4.25 Mc/s	Gang fully open	Osc. Trimmer (C76)
Connect a 2.2K ohms resistor between pins 3 and 5 of TR22.				
8	Dummy aerial.	4.0 Mc/s	4.0 Mc/s	Aer. Trimmer (C57)
9	Dummy aerial.	1.8 Mc/s	1.8 Mc/s	Osc. Core Adj. (TR32)§
Repeat 7, 8 and 9. Remove the 2.2K ohms resistor.				
10	Dummy aerial.	4.0 Mc/s	4.0 Mc/s	R.F. Trimmer (C65)
11	Dummy aerial.	1.8 Mc/s	1.8 Mc/s	R.F. Core Adj. (TR22)
Repeat 10 and 11.				
Turn the wave change switch to SW2.†				
12	Dummy aerial.	10.5 Mc/s	Gang fully open	Osc. Trimmer (C73)
13	Dummy aerial.	4.0 Mc/s	Gang fully closed	Osc. Core Adj. (TR33)
14	Dummy aerial.	9.0 Mc/s	9.0 Mc/s	Aer. Trimmer (C56)
15	Dummy aerial.	5.0 Mc/s	5.0 Mc/s	Aer. Core Adj. (TR13)†
16	Dummy aerial.	9.0 Mc/s	9.0 Mc/s	R.F. Trimmer (C66)
17	Dummy aerial.	5.0 Mc/s	5.0 Mc/s	R.F. Core Adj. (TR23)
Repeat 12, 13, 14, 15, 16 and 17.				
Turn the wave change switch to SW3.‡				
18	Dummy aerial.	30.0 Mc/s	Gang fully open	Osc. Trimmer (C70)
19	Dummy aerial.	10.0 Mc/s	Gang fully closed	Osc. Core Adj. (TR34)
Repeat 18 and 19.				
20	Dummy aerial.	25.0 Mc/s	25.0 Mc/s	Aer. Trimmer (C54)
21	Dummy aerial.	13.0 Mc/s	13.0 Mc/s	Aer. Core Adj. (TR14)**
22	Dummy aerial.	25.0 Mc/s	25.0 Mc/s	R.F. Trimmer (C67)
23	Dummy aerial.	13.0 Mc/s	13.0 Mc/s	R.F. Core Adj. (TR24)
Repeat 20, 21, 22 and 23.				

* 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.

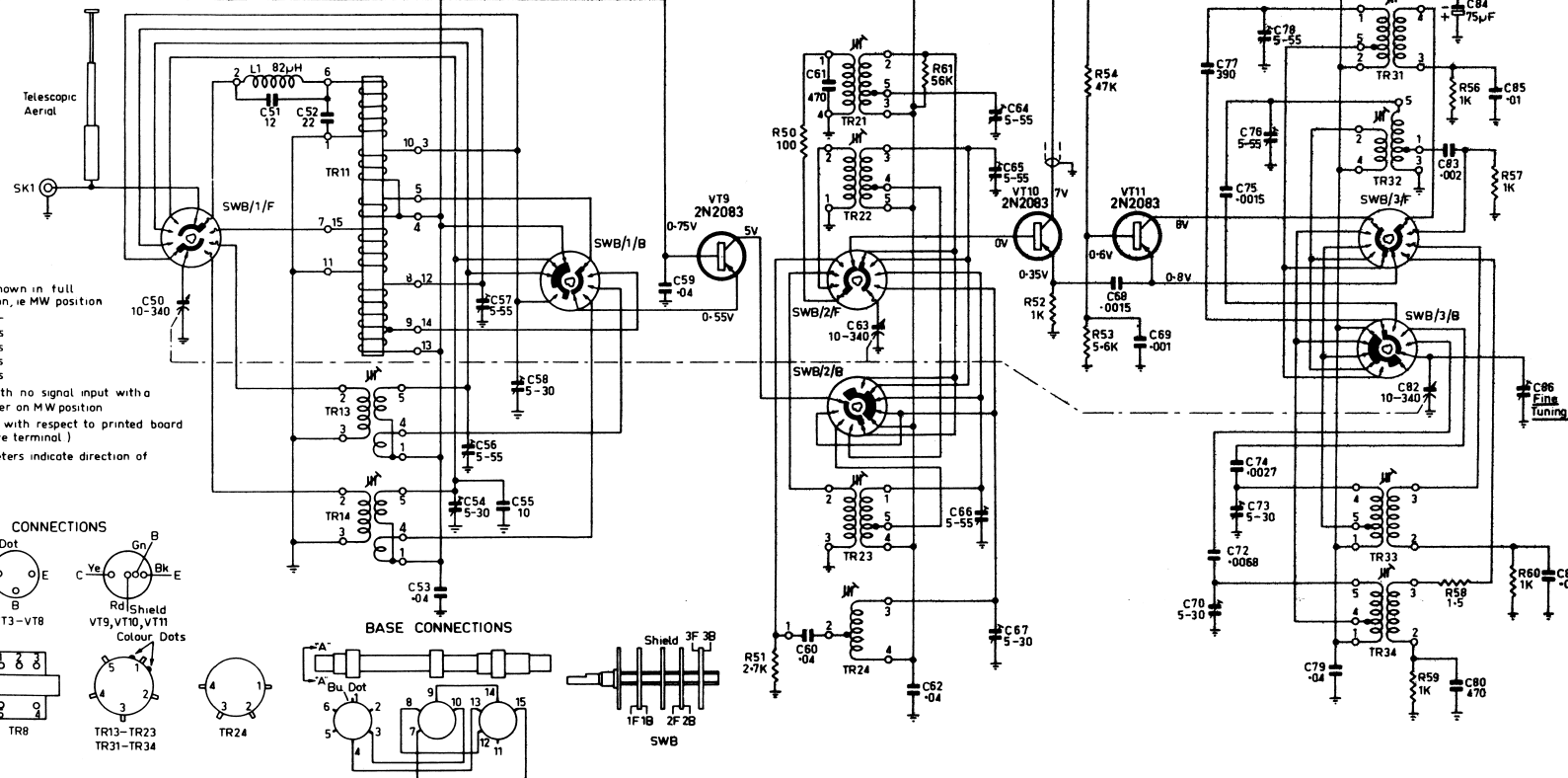
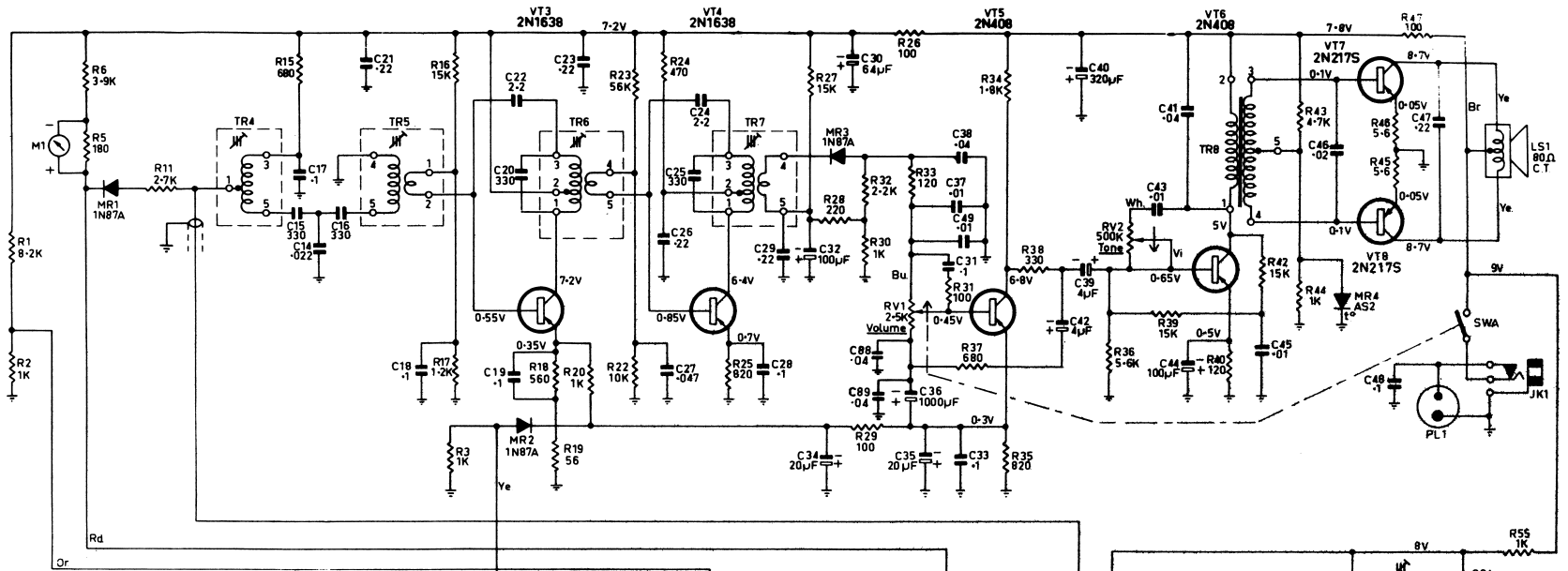
§ Rock the tuning control back and forth through the signal.

† TR13 will resonate in 2 positions. The correct position is with the core nearly protruding from the coil.

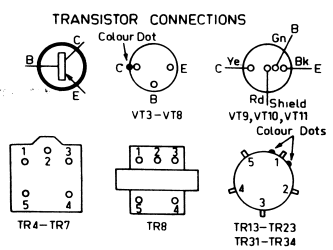
‡ If any difficulty is experienced in alignment of the aerial coils on SW2 and SW3, the procedure using r.f. damping as for SW1 must be adopted.

** TR14 will resonate in two positions. The correct position is with the core well into the coil.

If necessary, TR24 is to be adjusted by compressing or expanding the turns on the coil. Its adjustment should first be checked by placing a piece of brass, then a piece of high frequency ferrite into the former. If it needs brass the turns should be opened and if it needs the iron the turns should be compressed.



NOTES
 SWB Band Switch shown in full anti clockwise position, i.e. MW position
 Bands are as below -
 MW 525 - 1620 Kc/s
 SW1 1.6 - 4.25 Mc/s
 SW2 4.0 - 10.5 Mc/s
 SW3 10.0 - 30.0 Mc/s
 Voltages measured with no signal input with a 20,000 ohm/volt meter on MW position
 All voltages negative with respect to printed board earth (battery positive terminal)
 Arrows on potentiometers indicate direction of clockwise rotation



TR11 (Section "A-A" view)