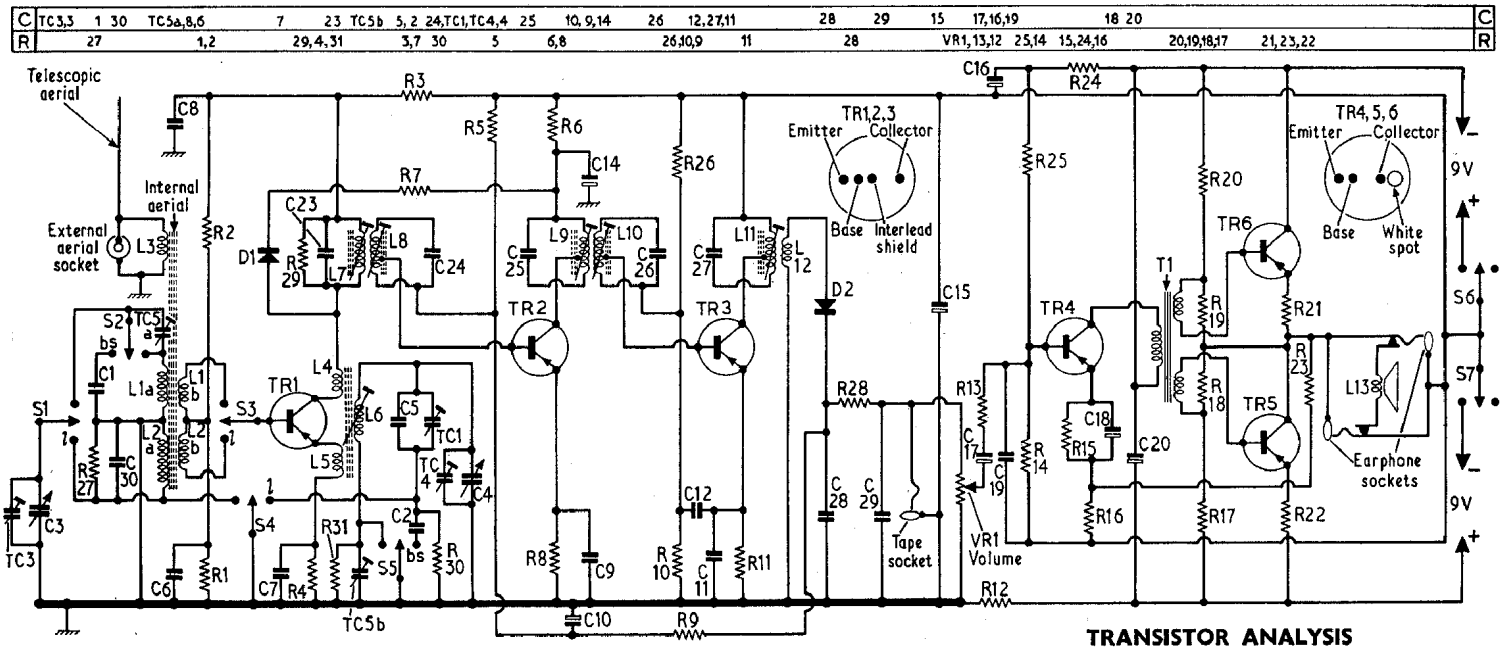
Resistors						Capacitors			Coils			Miscellaneous		
R1	6·8kΩ	B1	R20	2·7kΩ	B1	C6	0·04μF	B1	C30	130pF	A1	L11	—	B2
R2	39kΩ	B1	R21	5Ω	B1	C7	0·02μF	B1	TC1	110pF	B1	L12	—	B2
R3	100Ω	B2	R22	5Ω	B1	C8	0·04μF	B2	TC3	—	C1	L13†	—	—
R4	1kΩ	B1	R23	1·2kΩ	B1	C9	0·04μF	B2	TC4	—	C1	T1	—	B1
R5	56kΩ	B2	R24	680Ω	B2	C10	8μF	B2	TC5a	80pF	A1			
R6	2·2kΩ	B2	R25	27kΩ	B2	C11	0·02μF	B2	TC5b	80pF	A1			
R7	680Ω	B2	R26	22kΩ	B2	C12	0·02μF	B2						
R8	680Ω	B2	R27	220kΩ	A1	C14	2μF	B2						
R9	8·2kΩ	B2	R28	470Ω	B2	C15	100μF	B2						
R10	4·7kΩ	B2	R29	27kΩ	B1	C16	50μF	B2						
R11	1kΩ	B2	R30	220kΩ	B1	C17	8μF	B2						
R12	560Ω	B2	R31	220kΩ	A1	C18	100μF	B2						
R13	3·3kΩ	B2	VR1	5kΩ	C1	C19	0·02μF	B2						
R14	10kΩ	B2				C20	100μF	B2						
R15	680Ω	B2				C23	560pF	C2						
R16	10Ω	B2				C24	560pF	C2						
R17	56Ω	B1				C25	270pF	B2						
R18	2·7kΩ	B1				C26	270pF	B2						
R19	56Ω	B1				C27	250pF	B2						
						C28	0·01μF	B2						
						C29	0·01μF	B2						

† 35Ω *impedance loudspeaker.*
** *Not fitted on A58T.*



Transistor Table

Transistor		Emitter (V)	Base (V)	Collector (V)
TR1	AF117*	0·75	0·90	7·00
TR2	AF117*	0·70	0·90	4·70
TR3	AF117*	0·95	1·20	7·40
TR4	OC81D††	2·20	2·30	8·40
TR5	OC81‡	—	0·15	9·00
TR6	OC81‡	—	0·15	9·00

* *With respect to chassis.*
†† *With respect to centre of batteries.*
‡ *With respect to transistor's own emitter.*

TRANSISTOR ANALYSIS

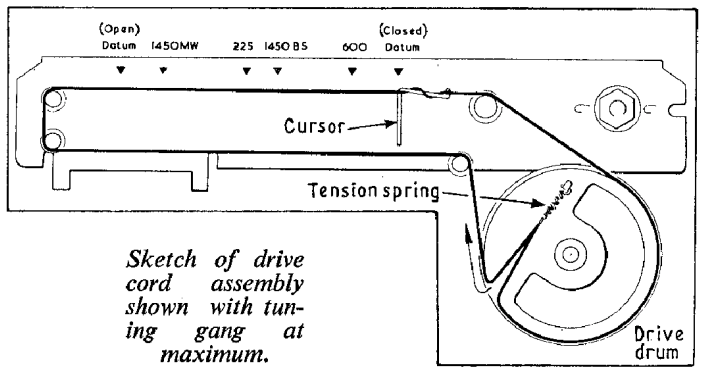
Transistor voltages quoted in the table in col. 1 were taken from data supplied by the manufacturers. All measurements were taken on a model 8 Avometer, those for **TR1, TR2** and **TR3** are with respect to chassis, for **TR4** with respect to the centre of the two batteries and those for **TR5** and **TR6** are with respect to each transistor's own emitter.

CIRCUIT ALIGNMENT

Equipment Required.—An a.m. signal generator; an audio output meter with an impedance to match 35Ω; an r.f. coupling loop and a trimming tool with blade dimensions $^{5}/_{64}$in wide × $^{1}/_{64}$in thick × $^{3}/_{4}$in long.

Connect the audio output meter in place of the loudspeaker and connect the signal generator output to the r.f. coupling loop. Turn volume control to maximum.

1.—Switch receiver to m.w. and turn gang to maximum. Feed in a 470kc/s signal and place the coupling loop in close proximity to the ferrite rod.
2.—Adjust **L11, L9, L10, L7** and **L8,** in that order, for maximum output, reducing the input level to maintain an output of 50mW.
3.—Repeat operation 2 until no further improvement can be obtained.
4.—Check that the cursor coincides with the datum marks on the tuning scale backing plate at the extreme ends of its travel.
5.—Tune to the 600kc/s calibration mark and feed in a 600kc/s signal. Adjust **L6** and **L1** (ferrite rod) for maximum output.
6.—Tune receiver to 1,450kc/s calibration mark and feed in a 1,450kc/s signal.
9.—Switch receiver to l.w., tune to 225kc/s calibration mark and feed in a 225kc/s signal.
10.—Adjust **TC1** for maximum output, then slide **L2** along the ferrite rod, also for maximum output.
11.—Seal the position of **L2** on the ferrite rod.
12.—Switch receiver to bandspread and tune to the bandspread 1,450kc/s calibration mark.
13.—Feed in a 1,450kc/s signal and adjust **TC5b** and **TC5a,** in that order, for maximum output.



Sketch of drive cord assembly shown with tuning gang at maximum.

DEFIANT - A55, A58

DEFIANT
A5, A51, A55

Resistors (A55)

R1	56kΩ	B1
R2	10kΩ	B1
R3	390Ω	B1
R4	3·9kΩ	B1
R5	68kΩ	B2
R6	1kΩ	B2
R7	680Ω	B2
R8	6·8kΩ	B2
R9	22kΩ	B2
R10	4·7kΩ	B2
R11	8·2kΩ	B2
R12	3·3kΩ	B2
R13	1kΩ	B3
R14	470Ω	B3
R15	—	†
R16	27kΩ	A2
R17	330Ω	A3
R18	150Ω	B2
R19	10kΩ	A2
R20	10Ω	A3
R21	330Ω	A2
R22	2·2kΩ	A1
R23	75Ω	A1
R24	2·2kΩ	A1
R25	75Ω	A2
R26	680Ω	A1
R27	—	†
R28	220kΩ	B1
P29*	1kΩ	B1
VR1	—	B3

Resistors (A5 & A51)

R1	33kΩ	—
R2	8·2kΩ	—
R3	390Ω	—
R4	3·3kΩ	—
R5	56kΩ	—
R6	1kΩ	—
R7	680Ω	—
R8	3·3kΩ	—
R9	15kΩ	—
R10	3·3kΩ	—
R11	8·2kΩ	—
R12	2·2kΩ	—
R13	1kΩ	—
R14	470Ω	—
R15	5·6Ω	—
R16	27kΩ	—
R17	330Ω	—
R18	150Ω	—
R19	8·2kΩ	—
R20	10Ω	—
R21	330Ω	—
R22	2·2kΩ	—
R23	100Ω	—
R24	2·2kΩ	—
R25	100Ω	—
R26	680Ω	—
R27	5·6Ω	—
VR1	—	—

Capacitors

C1	0·04μF	B1
C2	—	B1
C3	300pF§	B1
C4	100pF	B1
C5	0·04μF	B1
C6	400pF	B1
C7	0·01μF[1]	B1
C8	8·2pF	B1
C9	—	B1
C10	400pF	B1
C11	0·04pF	B2
C12	0·04μF	B2
C13	8μF	B2
C14	10pF[2]	B2
C15	400pF	B2
C16	400pF	B2
C17	0·04μF	B2
C18	22pF[3]	B2
C19	250μF	A2
C20	250pF	B3
C21	0·04μF	B3
C22	0·02μF	B2
C23	0·02μF	B3
C24	8μF	A3
C25	100μF	A2
C26	100μF	A1
C27	8·2pF	B1
C28	75pF	B1
C29*	10pF	B1
C30*	50μF	—
C31*	3,000pF	A3
TC2	—	B2
TC9	—	B2

Coils and Transformers

L1	—	C1
L2	—	A1
L3	—	B1
L4	—	B1
L5	—	B1
L6	—	B2
L7	—	B2
L8	—	B2
L9	—	B2
L10	—	B3
L11	—	B3
L12	25Ω	C2
T1	—	A2

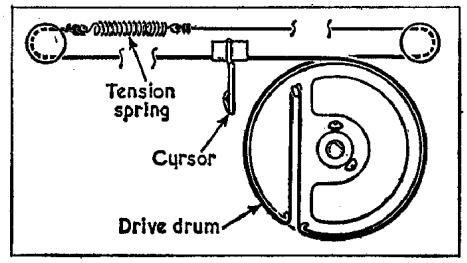
Miscellaneous

X1	OA79	B2
X2	OA70	B2
S1-S6	—	B1
S7, S8	—	B3

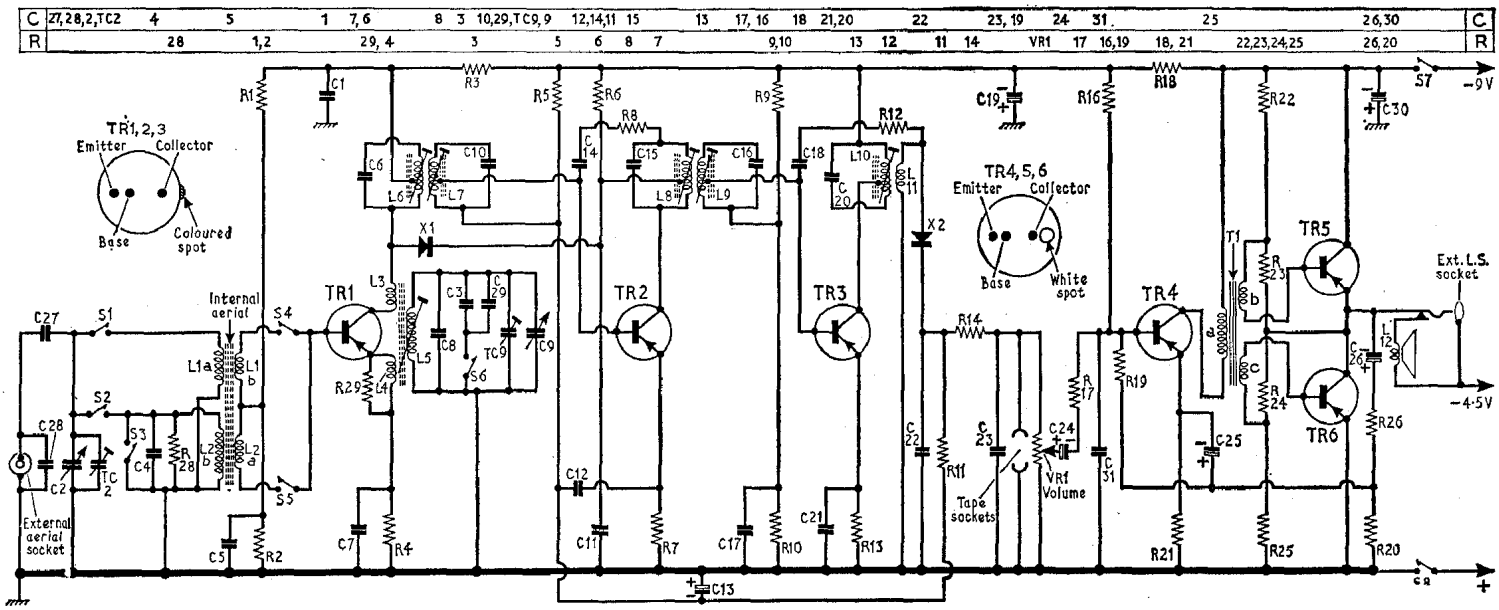
† *No component in A55.*
§ *350pF in some receivers.*
* *Not fitted in some receivers.*
[1] *0·02μF in A5 and A51.*
[2] *13pF in A5 and A51*
[3] *25pF in A5 and A51*

Transistor Table

Transistor	Emitter (V)	Base (V)	Collector (V)
TR1 OC44 ..	1·0	0·9	6·8
TR2 OC45 ..	0·6	0·7	5·7
TR3 OC45 ..	1·5	1·3	7·3
TR4 OC81D	1·0	1·1	9·0
TR5 OC81 ..	4·5	4·8	9·0
TR6 OC81 ..	—	0·2	4·5



Scale drive cord assembly illustrated with the tuning gang at maximum capacitance



Circuit diagram of Defiant A55 (later version). Models A5 and A51 are basically similar but the tape sockets and **R28** *are omitted. Also in the A5 and A51 two additional resistors of 5·6Ω* **(R15** *and* **R27)** *are connected in the emitters of* **TR5** *and* **TR6**

CIRCUIT ALIGNMENT

Equipment Required.—An a.m. signal generator; an audio output meter; an **0.1μF** isolating capacitor; a length of insulated wire for use as an r.f. coupling loop and a narrow-bladed-type trimming tool.

1.—Switch receiver to l.w. and fully mesh the tuning gang. Set the volume control at maximum output. Connect the audio output meter across the loudspeaker.
2.—Connect the signal generator via the 0.1μF isolating capacitor to the base of **TR1.** Feed in a 470kc/s 30 per cent modulated signal at a level of 70μV and adjust **L6/L7, L8/L9** and **L10** in that order for maximum output reducing the signal input as the circuits come into line.
3.—Connect the signal generator output leads to the coupling loop and loosely couple the loop to the ferrite rod aerial. Switch receiver to m.w. and tune to 500m. Feed in a 600kc/s signal, adjust **L5** then **L1** for maximum output.
4.—Tune receiver to 207m and feed in a 1,450kc/s signal. Adjust **TC9** and **TC2** for maximum output.
5.—Repeat operations 3 and 4 until there is no further improvement.
6.—Switch receiver to l.w. and tune to 1,429m. Feed in a 210kc/s signal and adjust **L2** while slightly rocking the tuning control for maximum output.