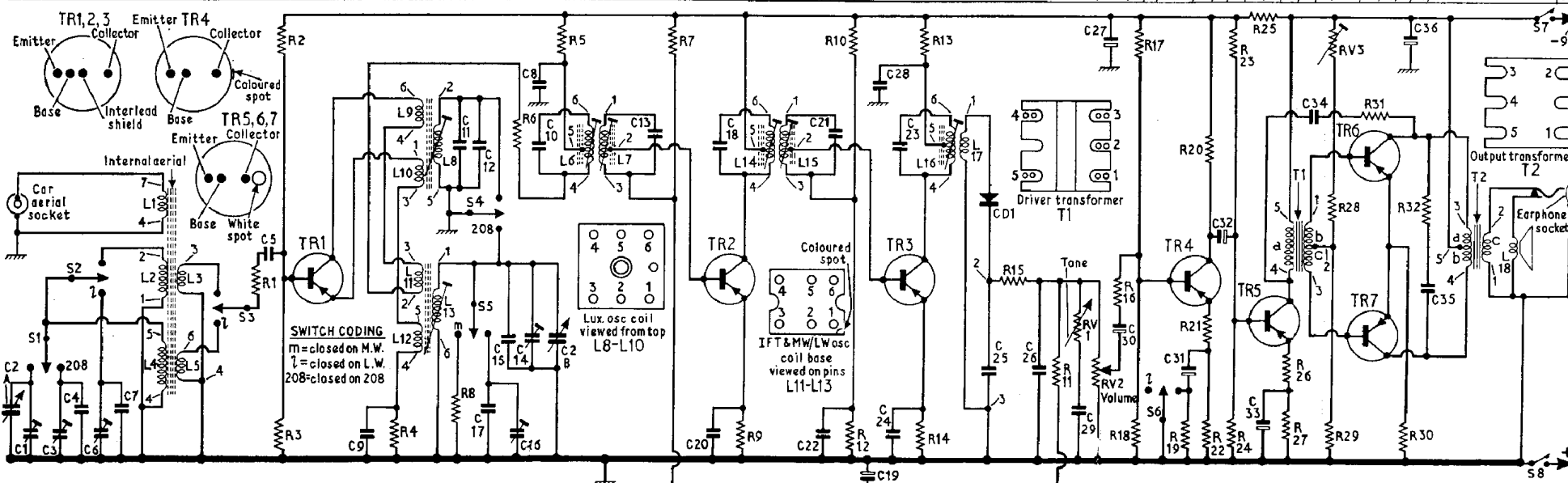


C 2A,1,3 4 6 7 5 9 11 12,17,15,16,14,8,10,2B 13 20,18 2,2,21 19,28,24,2,3 25 26 29 27,30 31 32 33 34 36,35 C
R 1 2,3 4 8 6 5 7 9 10,12 13,14 15 11 RV1,RV2,16,17,18 19,20,21,22,23,24,25,26,27,RV3,28,29,31,30,32 R



Resistors
R1 47kΩ
R2 33kΩ
R3 6.8kΩ
R4 1.5kΩ
R5 330Ω
R6 330Ω
R7 120kΩ
R8 150kΩ
R9 680Ω
R10 22kΩ
R11 18kΩ
R12 4.7kΩ
R13 330Ω
R14 1kΩ
R15 560Ω
R16 1.5kΩ
R17 82kΩ
R18 15kΩ
R19 680Ω
R20 5.6kΩ
R21 68Ω
R22 1kΩ
R23 39kΩ
R24 8.2kΩ
R25 470Ω
R26 56Ω
R27 270Ω
R28 3.9kΩ
R29 150Ω
R30 3.3kΩ
R31 10kΩ
R32 150Ω
R33 5kΩ
RV1 10kΩ
RV2 5kΩ
RV3 5kΩ

Capacitors
C1 30pF
C2A 343pF
C2B 177pF
C3 25pF
C4 18pF
C5 0.01μF
C6 30pF
C7 82pF
C8 0.1μF
C9 0.022μF
C10 200pF
C11 47pF
C12 270pF
C13 200pF
C14 30pF
C15 10pF
C16 30pF
C17 310pF
C18 200pF
C19 8μF
C20 0.1μF
C21 200pF
C22 0.1μF
C23 200pF
C24 0.1μF
C25 0.01μF
C26 0.01μF
C27 100μF
C28 0.1μF
C29 0.47μF
C30 8μF
C31 120μF
C32 8μF
C33 100μF
C34, C35 0.1μF
C36 160μF

Coils*
L1 2.5Ω
L2, L3 —
L4 11.0
L5 1.4
L6, L7 8.5
L8 1.5
L9 —
L10 —
L11, L12 —
L13 3.3
L14, L15 8.5
L16 8.8
L17 1.5
L18 15.0

Miscellaneous
CD1 OA90
S1-S6 —
S7, S8 —

Transformers*
T1 { a 100.0
 b 45.0
 c 45.0
T2 { a 2.5
 b 2.5
 c 1.1

*** Approximate
d.c. resistance
in ohms.
† Loudspeaker.**

Transistor Table

Transistor	Emitter (V)	Base (V)	Collector (V)
TR1 AF117	0.95	1.1	6.65
TR2 AF117	0.6	0.85	7.15
TR3 AF117	0.9	1.2	7.0
TR4 OC71	0.75	0.8	2.7
TR5 OC819	1.05	1.1	8.65
TR6 OC81	0.02	0.16	9.0
TR7 OC81	0.02	0.16	9.0

CIRCUIT ALIGNMENT

Alignment can be carried out with the chassis left in its case, but the back cover should be removed.

During alignment the signal input level should be adjusted to maintain a receiver output of 50mW (20mW if the loudspeaker is left in circuit). If an output meter is connected with the loudspeaker still in circuit, care should be taken to ensure that the power output from the receiver does not rise to a level sufficiently high to damage the output transistors (70mW). For r.f. alignment under conditions of interference, the receiver may be temporarily desensitised by connecting an 8.2kΩ resistor between the junction of R7 and R11 and chassis.

Equipment Required.—An a.m. signal generator modulated 30 per cent at 400c/s; an audio output meter with a 0-100mW range and an impedance to match 15Ω; one 10pF capacitor and one 0.1μF capacitor, and a non-metallic trimming tool.

- 1.—Switch receiver to m.w. and tune to about 300m. Connect to signal generator via a 0.1μF capacitor to the junction of R1 and S3 and switch on for about 15 minutes before alignment is commenced. Connect the audio output meter in place of the loudspeaker. A convenient method is to connect the meter via the earphone socket using the correct type of plug.
- 2.—Turn the volume control to maximum and feed in a 470kc/s 30 per cent modulated signal. Adjust the cores of L16, L15, L14, L7 and L6 in that order once only for maximum audio output. Note: the outer tuning peak is the correct one for these adjustments.

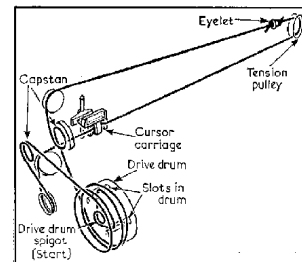
- 3.—Fully mesh the tuning gang and check that the cursor lines up with the datum mark at the l.f. end of the tuning scale. Connect the signal generator via a 10pF capacitor to the car aerial socket.
- 4.—Tune receiver to 500m. Feed in a 600kc/s signal and adjust the core of L13 for maximum output.
- 5.—Tune receiver to 200m. Feed in a 1,500 kc/s signal and adjust C14 for maximum output.
- 6.—Repeat operations 4 and 5 and check calibration at both points.
- 7.—Switch receiver to l.w. and tune to 1,400m. Feed in a 214kc/s signal and adjust C16 for maximum output.
- 8.—Switch receiver to "208" and feed in a 1,439kc/s signal, modulated 80 per cent at 5kc/s, at a level of 1mV. Adjust the core of L8 for *minimum* output. As the core is screwed through the correct tuning point, the output will rise on either side of minimum. Finally check the tuning against the broadcast signal from "Radio Luxembourg".
- 9.—Switch receiver to m.w. and tune to 500m. Feed in a 600kc/s signal and adjust L2 for maximum output.
- 10.—Tune receiver to 200m. Feed in a 1,500kc/s signal and adjust C1 for maximum output.
- 11.—Repeat operations 9 and 10 for optimum gain at both points.
- 12.—Switch receiver to l.w. and tune to 1,400m. Feed in a 214kc/s signal and adjust C6 for maximum output.
- 13.—Switch receiver to "208". Feed in a 1,439kc/s signal and adjust C3 for maximum output.

Ferrite Rod Aerial Coils.

The ferrite rod aerial coils are unlikely to require adjustment but, if necessary, L2 may be adjusted for maximum output, as required in operation 9, by sliding the former along the ferrite rod. L.w. coil L4 should not be moved.

If the ferrite aerial rod is replaced, the coils should be set as follows with the receiver in its cabinet.

- 1.—Ensure that the original sleeving is retained between the formers and the rod, and set the m.w. coil former $\frac{1}{8}$ in from its end of the rod and the l.w. former 1 in from the other end of the rod.
- 2.—Switch receiver to l.w. and tune to 1,700m. Feed in a 176kc/s modulated signal at the car aerial socket and adjust L4 for maximum output.
- 3.—Tune receiver to 1,200m. Feed in a 250kc/s signal and adjust C6 for maximum output.
- 4.—Carry out alignment of the m.w. coil L2 as given previously in operations 9 and 10. Finally seal the coil formers with wax.



BUSH - TR130