

# ULTRA - 6100

## Resistors

R1	56kΩ	A1
R2	10kΩ	A1
R3	3.9kΩ	B3
R4	68kΩ	A2
R5	8.2kΩ	A2
R6	560Ω	A2
R7	1.2kΩ	A3
R8	18kΩ	A3
R9	4.7kΩ	A3
R10	680Ω	A4
R11	3.9kΩ	A4
R12	39kΩ	A3
R13	10kΩ	A3
R14	680Ω	A3
R15	560Ω	B3
R16	10Ω	B3
R17	2.2kΩ	B3
R18	68Ω	B4
R19	2.2kΩ	B4
R20	68Ω	B3
R21	1.8kΩ	B3
R22	5.6Ω	B4
R23	5.6Ω	B4
R24	560Ω	A4
R25	5kΩ	B1

## Capacitors

C1	1,300pF	A1
C2	0.04μF	A1
C3	250pF	A2
C4	5,000pF	B3
C5	150pF	A2
C6	200pF	B2
C7	10μF	A2
C8	56pF	A3
C9	0.04μF	A2
C10	250pF	A3
C11	0.047μF	A3
C12	0.5μF	A4
C13	250pF	A4
C14	18pF	A3
C15	0.047μF	A4
C16	10μF	B2
C17	40μF <sup>a</sup>	B4
C18	32μF <sup>a</sup>	B3
C19	40μF <sup>a</sup>	B4
C20	4pF <sup>a</sup>	A1
C21	6pF <sup>a</sup>	B1
C22	200pF	A1
C23	7pF	A2
C24	200pF	B1
C25	7pF	B2

## Coils and Transformers\*

L1	—	B1
L2	1.5	A1
L3	—	A1
L4	—	B2
L5	—	B2
L6	4.5	B2
L7	7.0	A1
L8	—	A2
L9	7.0	A3
L10	—	A3
L11	7.0	A4
L12	—	A4
L13	80.0	—
T1	{ a 160.0 } b 40.0 } c 40.0 }	B3

## Miscellaneous

D1	OA70	A4
S1, S2	—	A2
S3	—	B1

\*Approximate d.c. resistance in ohms.

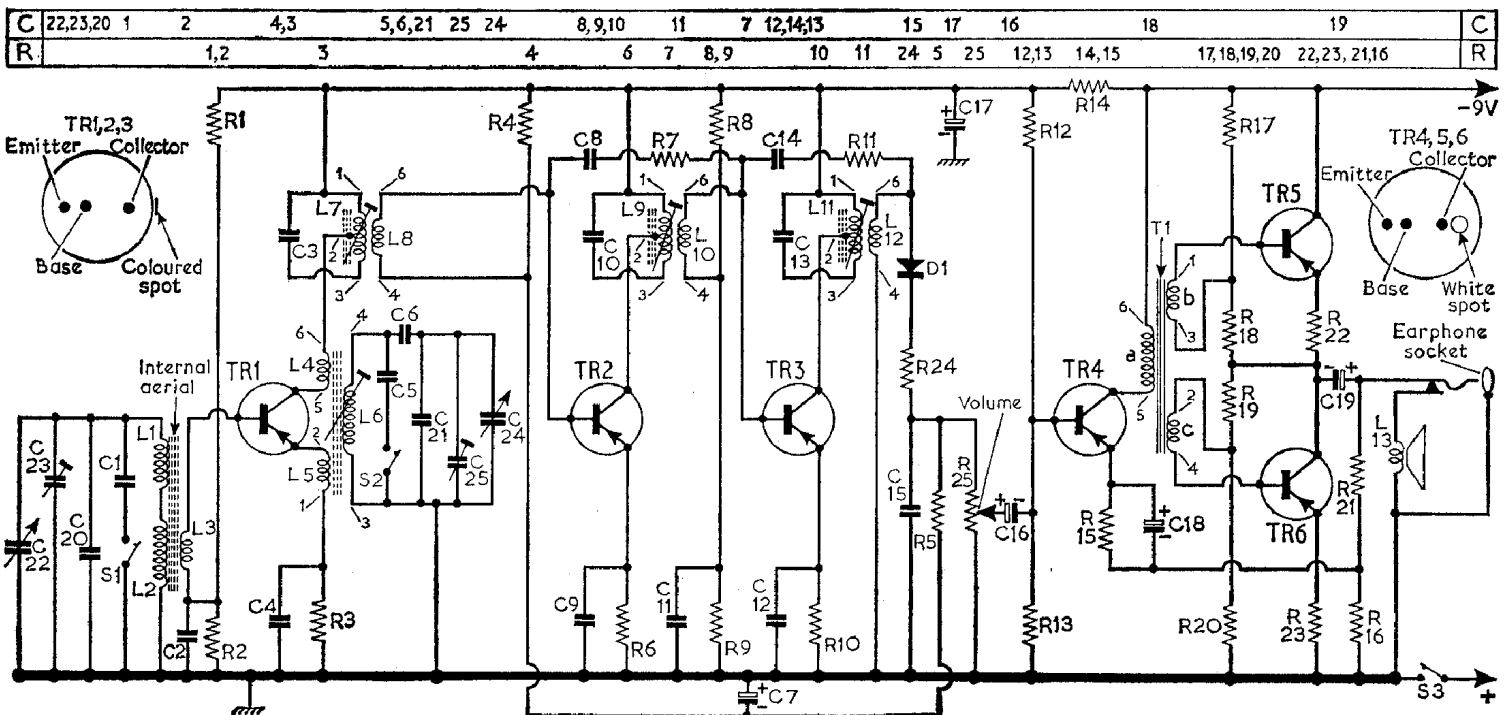
<sup>1</sup>20μF in some receivers.

<sup>2</sup>30μF or 64μF in some receivers.

<sup>3</sup>Omitted in TR88.

## Transistor Table

Transistor	Emitter (V)	Base (V)	Collector (V)
TR1	OC44M	0.9	0.9
TR2	OC45M	0.6	0.6
TR3	OC45M	0.9	1.1
TR4	OC81D	1.0	1.1
TR5	OC81	4.4	4.5
TR6	OC81	—	0.1



## CIRCUIT ALIGNMENT

**Equipment Required.**—An a.m. signal generator; a 0-1V a.c. voltmeter; an r.f. coupling coil and a 0.1μF capacitor.

- 1.—Connect the a.c. voltmeter across the loudspeaker and connect the signal generator via the 0.1μF capacitor to the junction C22, C23 and L1. Connect the earthing leads to battery positive in preference to the common "chassis" line, to avoid the possibility of short-circuiting the supply voltage.  
(During alignment the output voltage across the loudspeaker should not be allowed to exceed 0.5V.)
- 2.—Turn the tuning knob fully anti-clockwise, turn the volume control to maximum. Feed in a 471kc/s signal and adjust the cores of L7, L9 and L11 for maximum output, repeating several times.

- 3.—Remove the signal generator and capacitor from L1 and connect the generator across the r.f. coupling coil. Place the coil about 3in away from the ferrite rod.
- 4.—Tune receiver to 500m. Feed in a 600kc/s signal and adjust L6 and L1 for maximum output.
- 5.—Tune receiver to 200m. Feed in a 1,500kc/s signal and adjust C25 and C23 for maximum output.
- 6.—Repeat operations 4 and 5.
- 7.—Tune receiver to 1,500m and check for reception of l.w. B.B.C. Light Programme.

**Local Oscillator Check.**—In the event of "no signal" fault conditions the operation of the oscillator may be checked by connecting a d.c. voltmeter across R3. If the oscillator is functioning a slight drop in the meter reading should be observed when the tuning gang oscillator section (C24) is short-circuited.

**Battery.**—9v Ever Ready PP3 or equivalent.