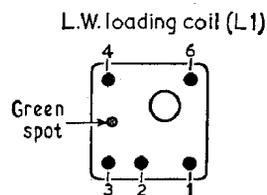
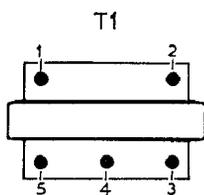
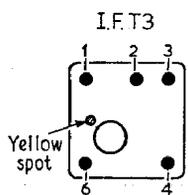
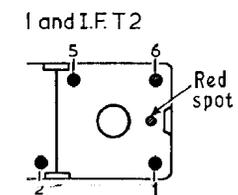
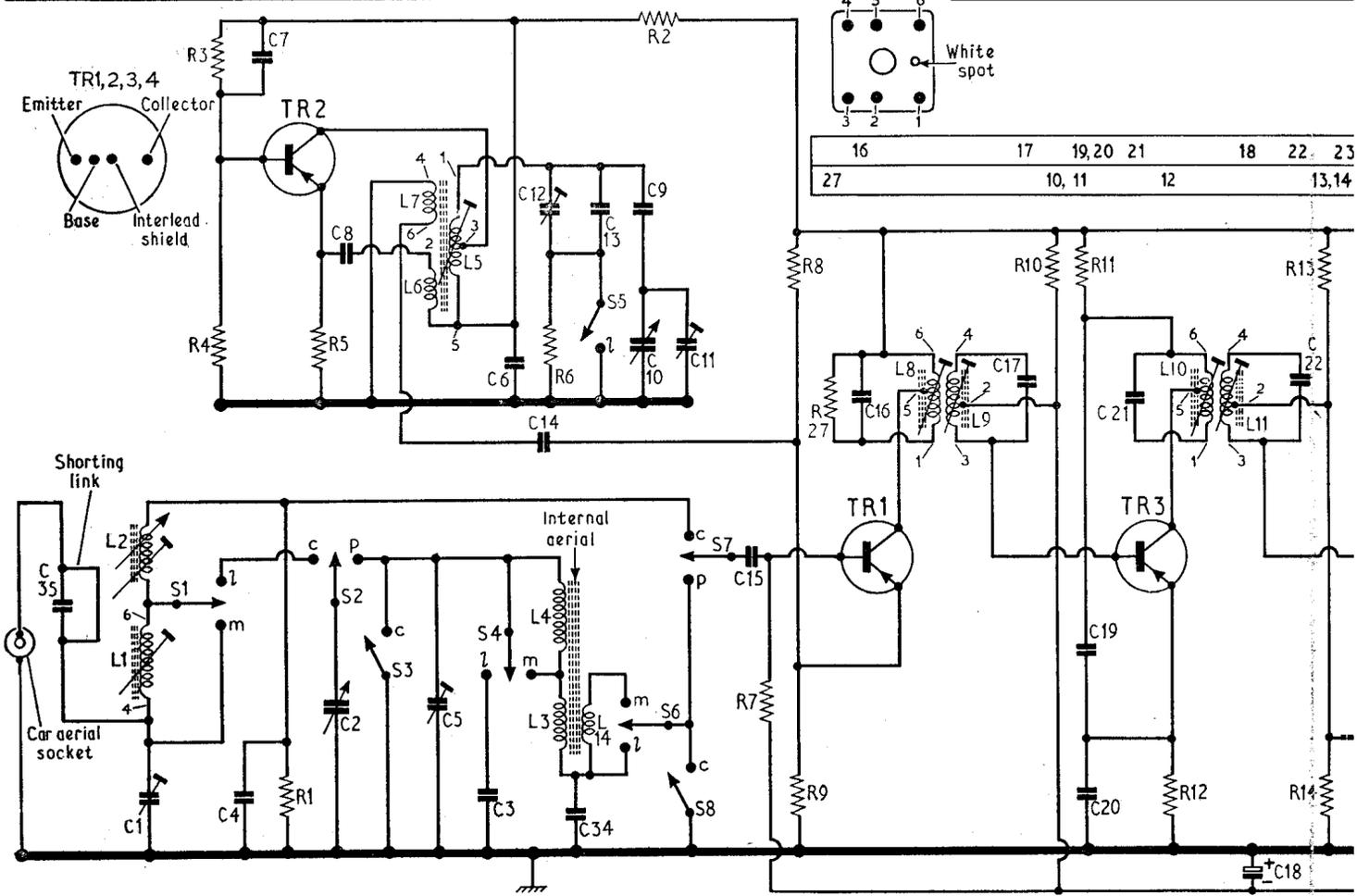


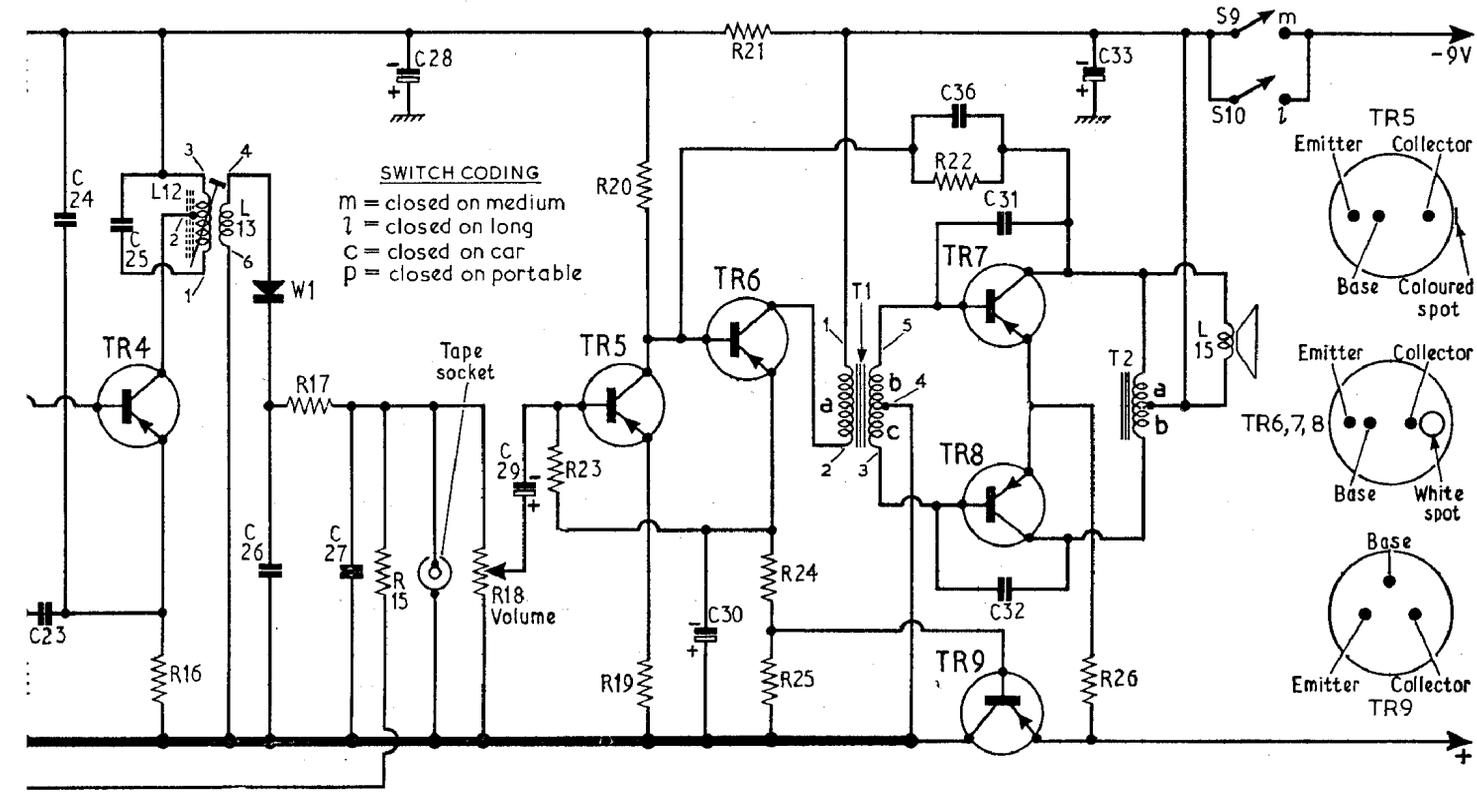
C	35	1	4, 7	2, 8	5	3	6	14,12,34,13	9,10	11	15
R		3,4	1	5			6		2		7, 8,9

ULTRA - 6116

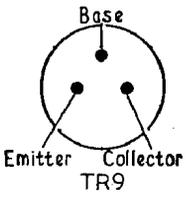
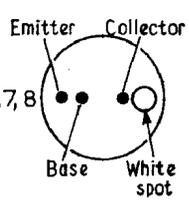
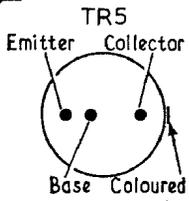


Pin connections viewed from copper side of printed boards

23,24	25	26	27	28	29	30	36	31,32	33	C
14	16	17	15	18	23	19,20	21,24,25	22	26	R



SWITCH CODING
 m = closed on medium
 l = closed on long
 c = closed on car
 p = closed on portable



Transistor Table

Transistor	Emitter (V)	Base (V)
TR1	AF117	0.75†
TR2	AF117	1.01
TR3	AF117	0.8
TR4	AF117	0.96
TR5*	OC71	0.8
TR6*	OC81D	1.34
TR7, TR8*	OC81	—
TR9	AC169	0.13

* TR5 may be AC155, TR6 AC113. TR7 and TR8 AC154.
† Oscillator stopped.

Resistors

R1	56kΩ	A3
R2	1.2kΩ	D2
R3	3.9kΩ	D2
R4	1.2kΩ	D2
R5	1kΩ	C2
R6	120kΩ	C2
R7	4.7kΩ	B2
R8	22kΩ	C2
R9	680Ω	C2
R10	56kΩ	B2
R11	470Ω	C3
R12	680Ω	C3
R13	22kΩ	B3
R14	4.7kΩ	C3
R15	8.2kΩ	B3
R16	1kΩ	C3
R17	470Ω	B4
R18	5kΩ	B1
R19	820Ω	D2
R20	6.8kΩ	D3
R21	180Ω	D2
R22	390kΩ	D3
R23	18kΩ	D3
R24	470Ω	D3
R25	12Ω	D3
R26	4.7Ω	D3
R27 ¹	47kΩ	C2

Capacitors

C1	140pF	B2
C2	393pF	B2
C3	100pF	C2
C4	2,000pF	C2
C5	40pF	C1

C6	0.02μF	D2
C7	0.02μF	D2
C8	0.01μF	D2
C9	315pF	C2
C10	393pF	B2
C11	40pF	C2
C12	80pF	C2
C13	275pF	C2
C14	0.02μF	D2
C15	5,000pF	B2
C16	500pF	C2
C17	500pF	C2
C18	65pF	B3
C19	0.02μF	B3
C20	0.02μF	C3
C21	500pF	C3
C22	500pF	C3
C23	5,000pF	C3
C24	0.02μF	C3
C25	375pF	C3
C26	0.01μF	C4
C27	0.02μF	B3
C28	150μF	B3
C29	20μF	D2
C30	100μF	D3
C31	0.01μF	D3
C32	0.01μF	D3
C33	100μF	D3
C34	2,000pF	C2
C35 ²	250pF	B3
C36 ²	180pF	—

Coils*

L1	12.75	A3
L2	3.5	A2
L3	2.0	D4

L4	23.0
L5	3.5
L6	—
L7	—
L8	5.5
L9	5.8
L10	5.5
L11	5.8
L12	3.5
L13	—
L14	—
L15	35.0

Transformers*

T1	{ a 160.0 } { b 35.0 } { c 35.0 }
T2	{ a 1.6 } { b 1.8 }

Miscellaneous

S1-S10	—
W1	OA90

* Approximate d.c. resistance in ohms.

¹ R27 is not fitted in some receivers or is 27kΩ in others.

² C35 and C36 are not fitted in some receivers. In others C35 is 265pF and C36 is 100pF or 170pF.

CIRCUIT ALIGNMENT

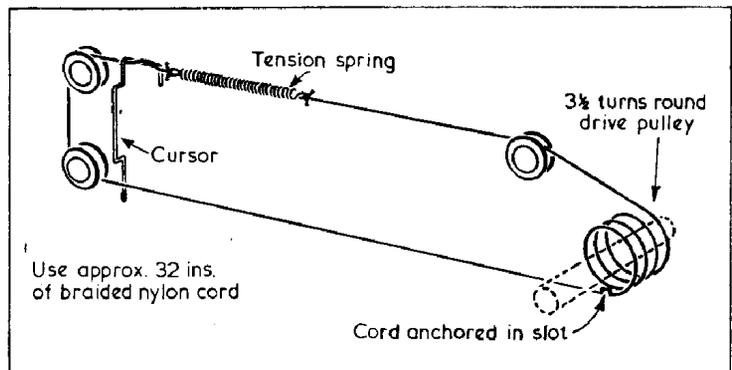
Equipment Required.—An a.m. signal generator 30 per cent modulated; an audio output meter with an impedance of 30-40Ω, or alternatively a model 8 Avometer set to its 2.5V a.c. range; two capacitors (18pF and 60pF) to be formed into a dummy aerial; a 0.1μF capacitor and a length of insulated wire for use as an r.f. coupling loop.

During alignment the signal input level should be adjusted to maintain the audio-output from the receiver at 50mW to prevent a.g.c. action.

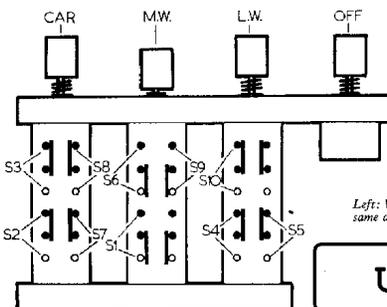
- 1.—Connect the signal generator via the 0.1μF capacitor across the tuning gang aerial section C2. Connect the audio output meter in place of the loudspeaker, or the Avometer switched to 2.5V a.c. range, in parallel with the loudspeaker. Turn the volume control
- 2.—Switch receiver to "portable" m.w. and turn the tuning gang to maximum. Feed in a 475kc/s signal and adjust L12, L11, L10, L9 and L8 in that order for maximum output.
- 3.—With the tuning gang at maximum, check that the cursor coincides with the "set zero" mark at the l.f. end of the scale aperture. Adjust if necessary by sliding the cursor along the drive cord. Connect the signal generator to the r.f. coupling loop and loosely couple the loop to the ferrite rod aerial.
- 4.—Tune receiver to the 200m mark on scale. Feed in a 1,500kc/s signal and adjust C11 and C5 for maximum output.
- 5.—Tune receiver to the 500m mark. Feed in a 600kc/s signal and adjust L5 and L3 for maximum output.
- 6.—Switch receiver to l.w. and tune to the l.w. calibration mark near 1,400m. Feed in a 220kc/s signal and adjust C12 and L4 for maximum output.
- 7.—Switch receiver to "car" m.w. and set L2 adjusting screw so that an equal amount of thread appears either side of its moulded support. Connect the signal generator to the car aerial socket via a dummy aerial comprising the 18pF capacitor in series with the signal generator output followed by the 60pF capacitor shunted across the aerial socket.

- 8.—Tune receiver to the 500m mark on scale. Feed in a 600kc/s signal and adjust C1 for maximum output.
- 9.—Tune receiver to the 200m mark. Feed in a 1,500kc/s signal and adjust L2 adjusting screw for maximum output.
- 10.—Switch receiver to "car" l.w. and tune to the l.w. mark on scale. Feed in a 220kc/s signal and adjust L1 for maximum output.

Note: When the back cover is refitted, medium and longwave aerial coils L3 and L4 will become detuned by the effect of the electrostatic screen fitted to the back cover. To counteract this effect they should be readjusted as follows: Switch receiver to "portable" m.w. and slide L3 slightly inwards along the ferrite rod, then re-check the output level with the back cover in position. Repeat until the output level returns to maximum with the back cover in position. Switch to l.w. and use the same procedure for L4.



Above: Scale drive assembly seen from the chassis top right with the tuning gang fully closed



Left: Wasteband and car switch assembly when viewed from the same angle as in the general view of the chassis opposite, with the individual switch tags keyed