

Ned. Ver. v. Historie v/d Radio



S.T.C. Chassis Type RC2

Incorporated in the following Portable Radio Receivers

K-B KR010 : R.G.D. RR210 : REGENTONE TR410

CIRCUIT ALIGNMENT

Equipment Required.—An a.m. signal generator; an audio output meter with an impedance of 25Ω; a shielded r.f. coupling coil (formed by winding 85 turns of enamelled copper wire on a 2in diameter former) and two isolating capacitors of 0.1μF and 12pF.

Calibration points marked on the scale backing plate read from right to left: "datum," 6Mc/s, 600kc/s, 1,430kc/s and 15Mc/s.

During alignment, the signal input should be progressively reduced to maintain a receiver output of 50mW.

1.—Connect the signal generator via a 0.1μF capacitor to the TR1 base winding of L3 and switch receiver to s.w. Connect the audio output meter in place of the loudspeaker. Set the tuning gang to maximum capacitance and the volume control to maximum output.

2.—Feed in a 470kc/s modulated signal and adjust the cores of L8, L7 and L6 in that order for maximum output. Repeat as necessary.

3.—Connect the signal generator across the r.f. coupling coil and loosely couple the coil to the receiver by placing it co-axially with the ferrite rod at a distance of about 5in. Check that with the tuning gang at maximum capacitance the cursor lines up with the "datum" mark at the extreme right-hand end of the tuning scale.

(Continued overleaf col. 1)

Transistor Table

Transistor	Emitter (V)	Base (V)	Collector (V)
TR1 AF115	0.9	1.0	7.6
TR2 Y159	—	—	—
TR3 AF117	1.6	1.8	5.6
TR4 OC70	—	—	4.0
TR5 OC75	1.1	1.2	5.0
TR6 OC81D	0.5	0.6	4.6
TR7 OC81	4.8	4.9	9.0
TR8 AC127	4.8	4.6	—

S.T.C. transistor radio chassis type R.C.2 is incorporated in the following portable radio receivers: K-B KR010, R.G.D. RR210 and Regentone TR410.

It is designed for reception of the long, medium and short wavebands with facilities for bandspread reception of m.w. from 195 m to 215 m. Two external sockets are provided, one for the connection of a loudspeaker of 10Ω impedance or an earphone of 25-250Ω impedance, and the other for the connection of a car aerial.

Operating power is supplied by a 9V dry battery and power consumption is 15mA quiescent; 55mA for an output of 200mW.

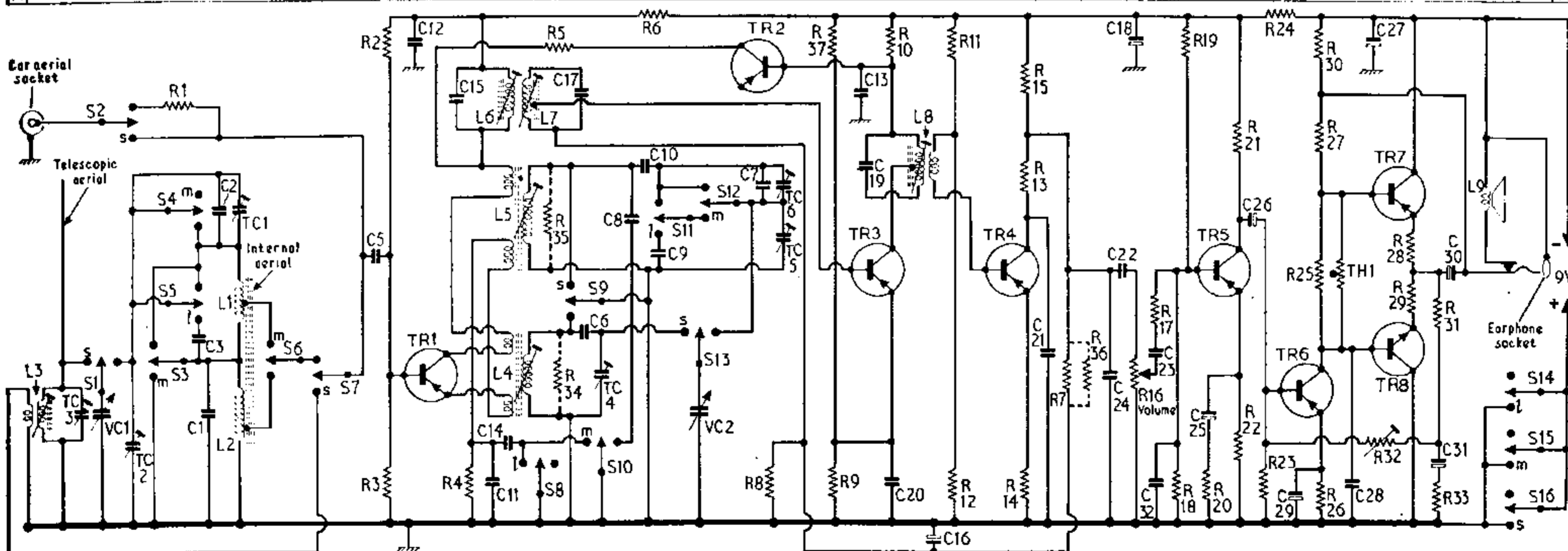
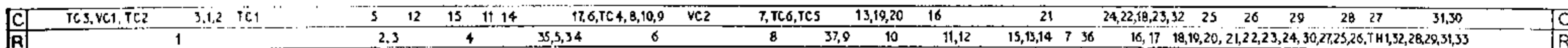
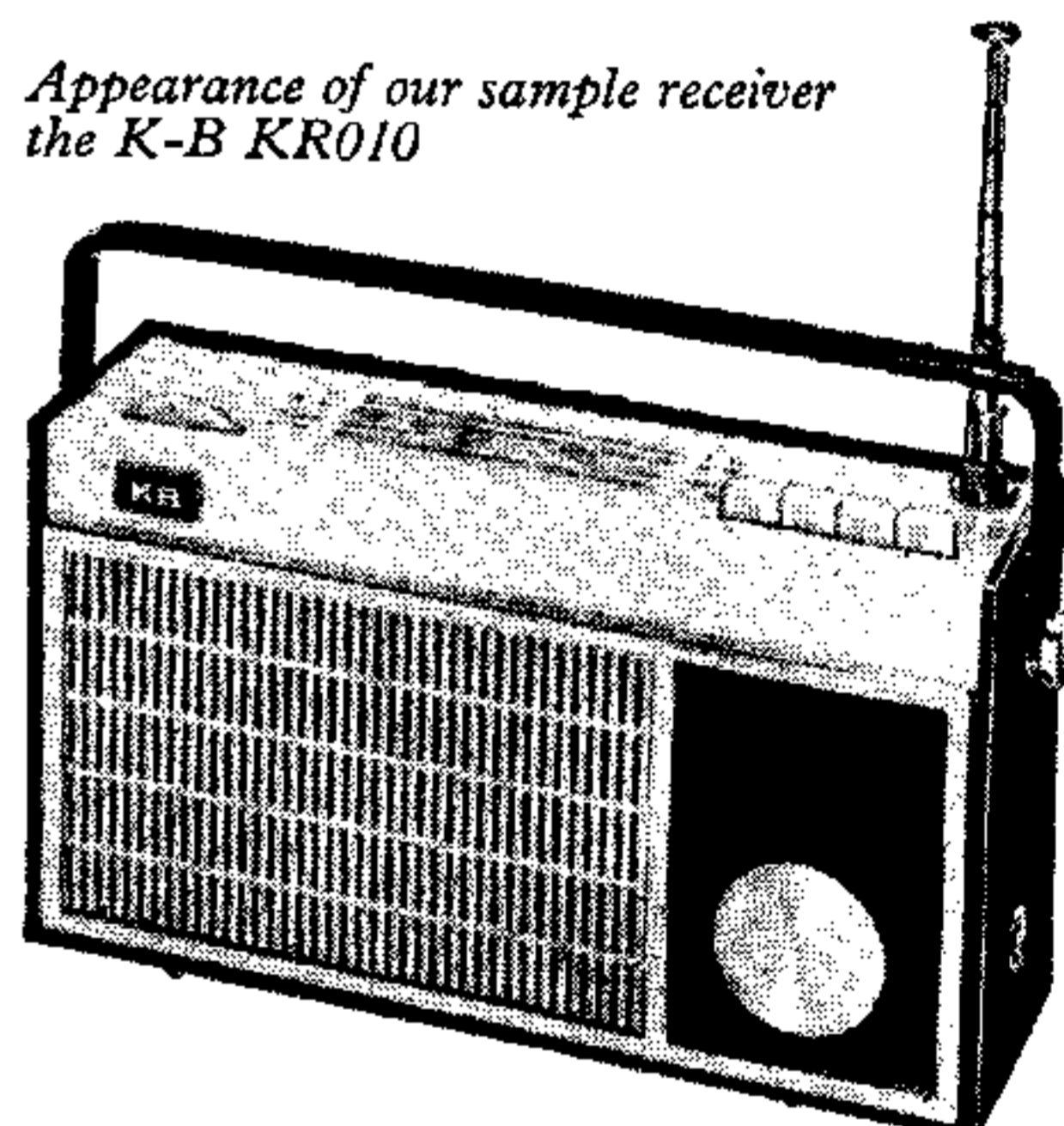
Waveband ranges are 1,071-2,000m (l.w.), 186-555m (m.w.) and 18-50m (s.w.).

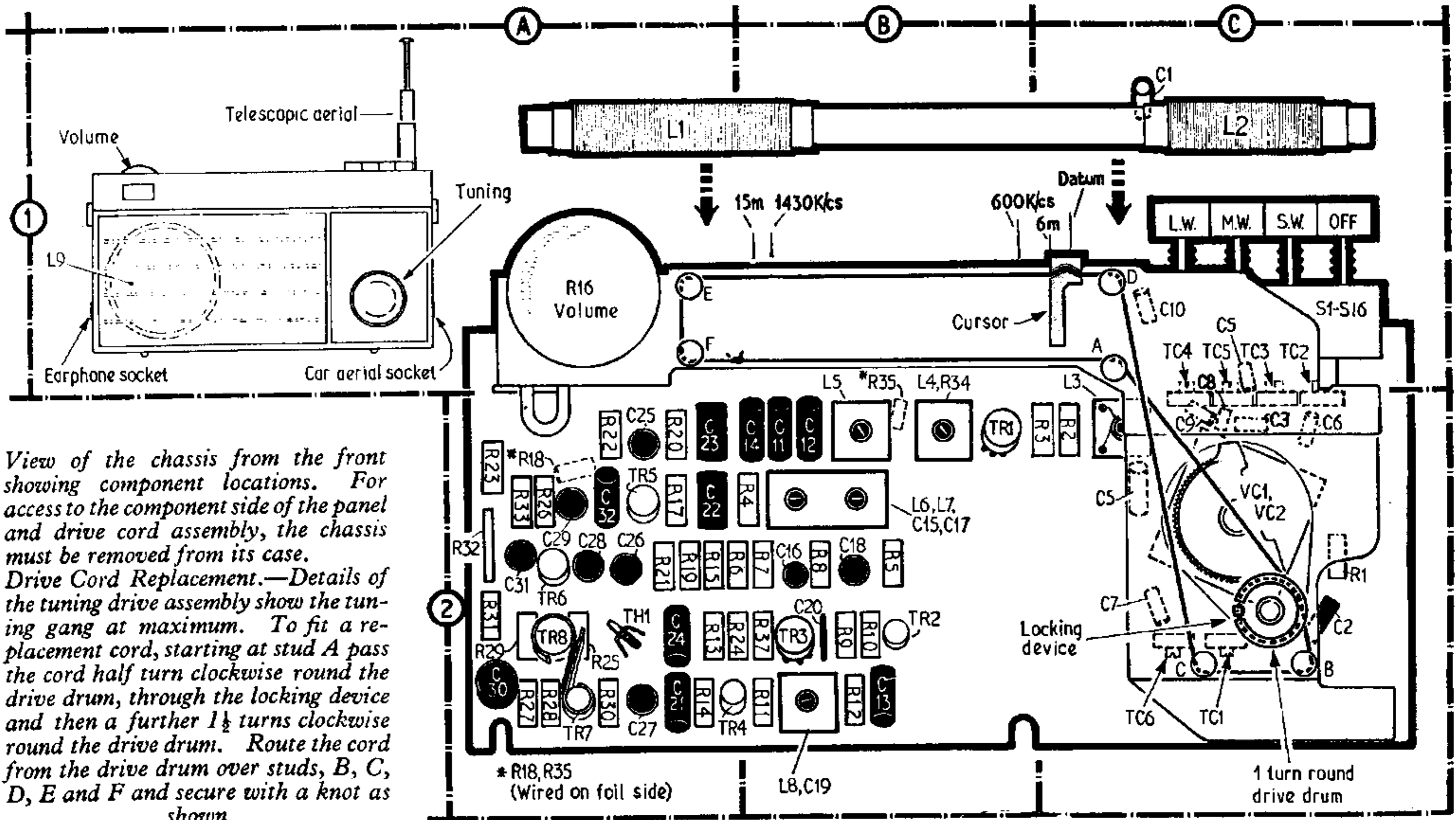
TRANSISTOR ANALYSIS

Transistor voltages quoted in the table col. 3 were taken from information supplied by the manufacturers.

Resistors			Capacitors			Coils			Miscellaneous		
R1	470Ω	A2	C1	50pF	C1	L1	—	A1	S1-S16	—	C1
R2	39kΩ	C2	C2	25pF	C2	L2	—	C1	TH1	KS56W	A2
R3	6.8kΩ	C2	C3	65pF	C2	L3	—	C1			
R4	1kΩ	B2	C5	0.047μF	C2	L4	—	B1			
R5	680Ω	B2	C6	2,500pF	C2	L5	—	B1			
R6	100Ω	A2	C7	25pF	C2	L6	—	B2			
R7	15kΩ	B2	C8	270pF	C2	L7	—	B2			
R8	12kΩ	B2	C9	60pF	C2	L8	—	B2			
R9	330Ω	B2	C10	280pF	C1	L9	—	A1			
R10	560Ω	B2	C11	2,200pF	B2						
R11	47kΩ	B2	C12	0.047μF	B2						
R12	100Ω	B2	C13	0.047μF	B2						
R13	100Ω	A2	C14	0.022μF	B2						
R14	270Ω	A2	C15	560pF	B2						
R15	18kΩ	A2	C16	16μF	B2						
R16	20kΩ	A1	C17	560pF	B2						
R17	4.7kΩ	A2	C18	160μF	B2						
R18	4.7kΩ	A2	C19	250pF	B2						
R19	22kΩ	A2	C20	0.5μF	B2						
R20	56Ω	A2	C21	4,700pF	A2						
R21	1.2kΩ	A2	C22	0.22μF	A2						
R22	470Ω	A2	C23	0.22μF	A2						
R23	1.2kΩ	A2	C24	0.01μF	A2						
R24	150Ω	A2	C25	80μF	A2						
R25	150Ω	A2									
R26	150Ω	A2									
R27	1.2kΩ	A2									
R28	2.2Ω	A2									
R29	2.2Ω	A2									
R30	390Ω	A2									
R31	3.3kΩ	A2									

Appearance of our sample receiver the K-B KR010





View of the chassis from the front showing component locations. For access to the component side of the panel and drive cord assembly, the chassis must be removed from its case.
Drive Cord Replacement.—Details of the tuning drive assembly show the tuning gang at maximum. To fit a replacement cord, starting at stud A pass the cord half turn clockwise round the drive drum, through the locking device and then a further 1½ turns clockwise round the drive drum. Route the cord from the drive drum over studs, B, C, D, E and F and secure with a knot as shown

Circuit Alignment—continued

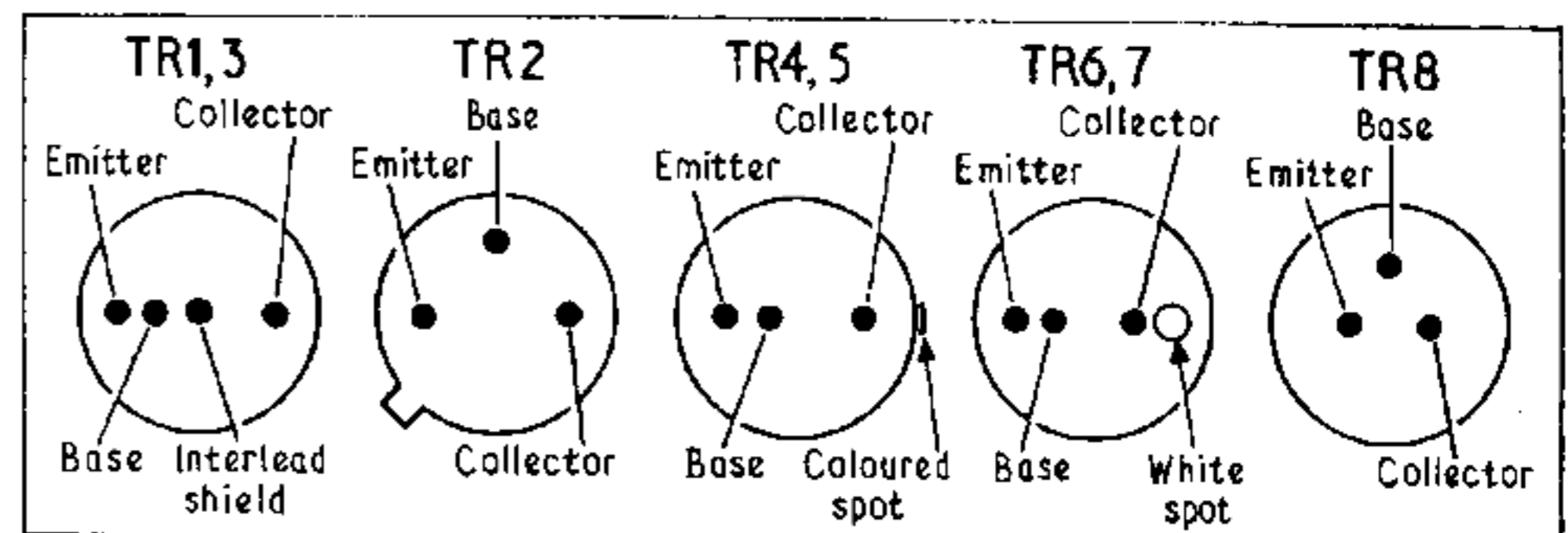
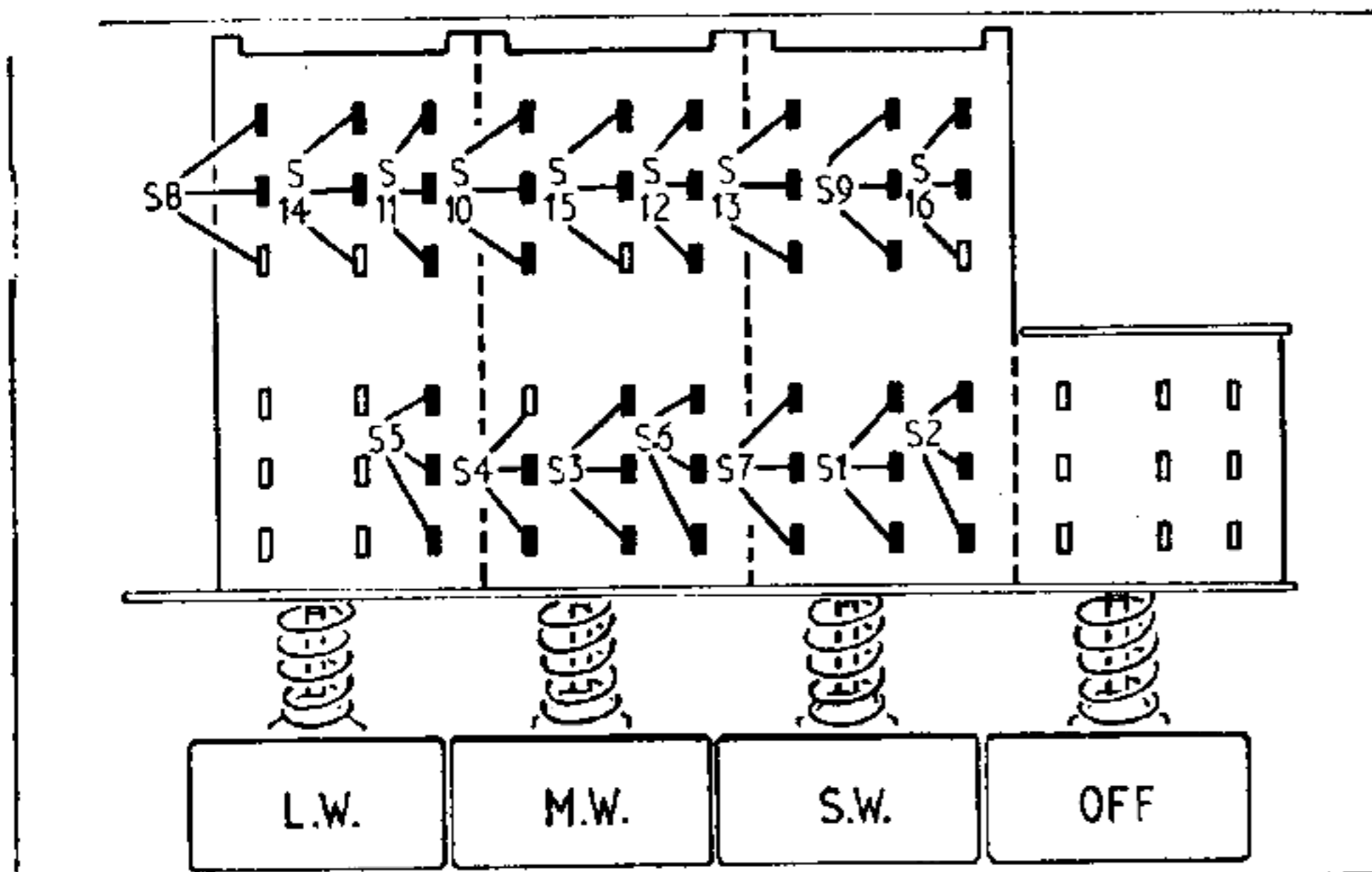
- 4.—Switch receiver to m.w. and set the cursor at the 600kc/s mark. Feed in a 600kc/s signal and adjust L5 and L1 for maximum output.
- 5.—Set the cursor at the 1,430kc/s calibration mark. Feed in a 1,430kc/s signal and adjust TC5 and TC2 for maximum output.
- 6.—Check operations 4 and 5.
- 7.—Switch receiver to bandsread (by depressing the m.w. and l.w. buttons together) and set the tuning gang to minimum capacitance. Feed in a 1,530kc/s signal and adjust TC6 and TC1 for maximum output.
- 8.—Switch receiver to l.w., feed in a 225kc/s signal and tune receiver to this signal. Adjust L2 for maximum output.
- 9.—Switch receiver to s.w. and set the cursor to the 6Mc/s calibration mark. Disconnect the lead from the telescopic aerial and connect the signal generator via a 12pF capacitor to the free end of the lead.
- 10.—Feed in 6Mc/s signal and adjust L4

- and L3 (at lower tuning position of core) for maximum output.
- 11.—Set the cursor to the 15Mc/s mark, feed in a 15Mc/s signal and adjust TC4 and TC3 for maximum output.

GENERAL NOTES

Dismantling.—To obtain access to the foil side of the printed panel, slide out the battery compartment cover after removing the coin-slotted fixing screw and remove the back cover by removing two screws from the underside of the case.
 To remove the chassis from the case, giving access to components and scale drive assembly, unsolder two earphone socket connecting leads from the panel foil side.
 Take out two 4BA screws securing the bottom corners of the printed panel, together with the back cover fixing brackets, to the moulded case.
 Fully extend the telescopic aerial.
 By inserting a screwdriver through the top left-hand access hole in the printed panel,

take out the Phillips screw and similarly by inserting a suitable box spanner through the top right-hand hole, undo the 6BA nut, both securing the chassis frame to the case front.
 Pull off the front control knob and slide the chassis downwards and out, carefully disengaging the press-buttons and volume control knob from their slots in the control panel.
 Pull off the telescopic aerial lead and unsolder the car aerial socket leads if required.
Switches.—S1-S16 are the waveband and battery on/off switches which are combined in a press-button unit shown in location reference C1. On the circuit diagram each switch is given a code letter in one position indicating that it is closed in this position when that particular button is depressed, e.g., all “m” positions are closed when the m.w. button is pressed. They are switched to the alternative position when the press-button is released. All switches are placed in the alternative position when the “off” button is depressed. The r.f. tuned circuits incorporate a bandsread facility on m.w. and this is brought into operation by depressing the m.w. and l.w. buttons together.
Battery.—9V Ever Ready PP7 or any equivalent.



Above: Transistor terminal connections
 Left: Enlarged view of the waveband switch assembly as seen from the rear of an inverted chassis