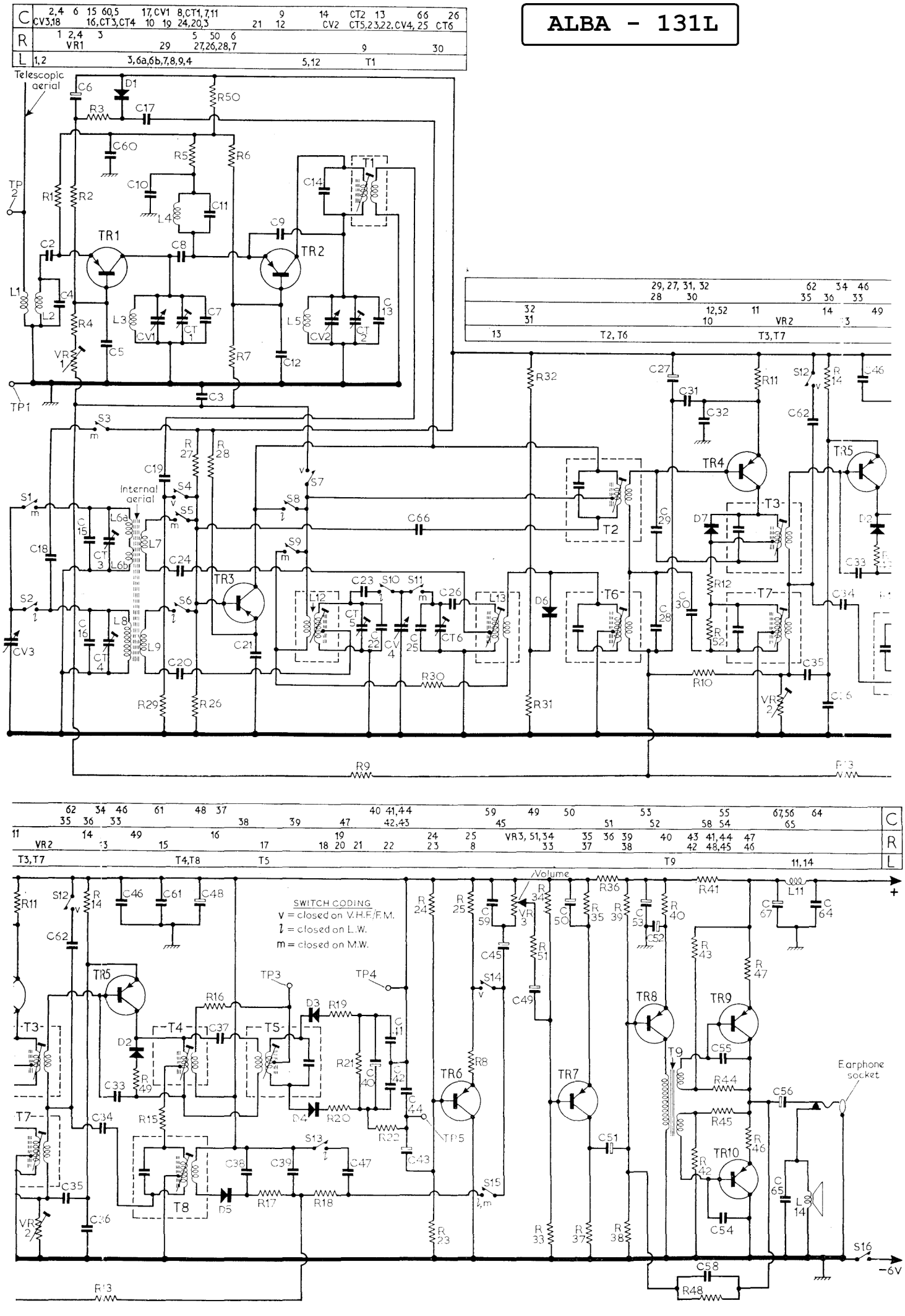
ALBA - 131L


C 2,4 6 15 60,5 17,CV1 8,CT1,7,11 9 14 CT2 13 66 26
CV3,18 16,CT3,CT4 10 19 24,20,3 21 12 CV2 CT5,23,22,CV4,25 CT6
R 1 2,4 3 5 50 6
VR1 29 27,26,28,7 9 30
L 1,2 3,6a,6b,7,8,9,4 5,12 T1
Telescopic aerial
Internal aerial
TP2
TP1
TR1
TR2
TR3
TR4
TR5
TR6
TR7
TR8
TR9
TR10
T1
T2
T3
T4
T5
T6
T7
T8
T9
L1
L2
L3
L4
L5
L6a
L6b
L7
L8
L9
L11
L12
L13
L14
CV1
CV2
CV3
CV4
VR1
VR2
VR3
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
S14
S15
S16
D1
D2
D3
D4
D5
D6
D7
SWITCH CODING
v = closed on V.H.F./F.M.
l = closed on L.W.
m = closed on M.W.
Volume
Earphone socket
+
-6V

ALBA - 131L

Transistor analysis

Transistor voltages quoted in the table overleaf were obtained from data supplied by the manufacturers. They were measured under quiescent conditions with a model 8 Avometer and are all positive with respect to battery negative.

Component values and locations

Resistors

R1	220Ω	A1
R2	2·2kΩ	A1
R3	5·6kΩ	B1
R4	33kΩ	A1
R5	1·8kΩ	A1
R6	2·2kΩ	A1
R7	5·1kΩ	A1
R8	2·2kΩ	B2
R9	82kΩ	B1
R10	10kΩ	B1
R11	680Ω	B1
R12	150Ω	B1
R13	5·6kΩ	B2
R14	1kΩ	B2
R15	220Ω	B2
R16	270Ω	B2
R17	560Ω	B2
R18	1·5kΩ	B2
R19	1kΩ	B2
R20	1kΩ	B2
R21	10kΩ	B2
R22	1kΩ	B2
R23	100kΩ	B2
R24	100kΩ	B2
R25	3·3kΩ	B2
R26	15kΩ	B1
R27	4·7kΩ	B1
R28	3·3kΩ	B1
R29	15kΩ	B1
R30	100Ω	A1
R31	2·2kΩ	B1
R32	15kΩ	B1
R33	47kΩ	A2
R34	10kΩ	A2
R35	1kΩ	A2
R36	68Ω	A2
R37	2·2kΩ	A2
R38	10kΩ	A2
R39	3·9kΩ	A2
R40	390Ω	A2
R41	56Ω	A2
R42	1kΩ	A2
R43	68Ω	A1
R44	1kΩ	A1
R45	68Ω	A1
R46	2·2Ω	B2
R47	2·2Ω	A1
R48	56kΩ	A2
R49	3·9kΩ	B2
R50	100Ω	A1
R51	1·5kΩ	A2
R52	330kΩ	B1
VR1	100kΩ	A1
VR2	100kΩ	B2
VR3	10kΩ	A2

Capacitors

C2	0·01µF	A1
C3	0·02µF	A1
C4	80pF	A1
C5	1,000pF	A1
C6	5µF	A1
C7	10pF	A1
C8	3pF	A1
C9	5pF	A1
C10	500pF	A1
C11	25pF	A1
C12	1,000pF	A1
C13	12pF	A1
C14	40pF	B1
C15	5pF	B1
C16	20pF	B1
C17	10pF	B1
C18	0·01µF	B1
C19	5,000pF	B1
C20	0·01µF	A1
C21	0·01µF	B1
C22	85pF	A1
C23	165pF	B1
C24	3,000pF	A1
C25	10pF	A1
C26	270pF	A1
C27	10µF	B1
C28	1,000pF	B1
C29	10pF	B1
C30	4pF	B1
C31	0·02µF	B1
C32	0·04µF	B1
C33	12pF	B2
C34	4pF	B2
C35	0·02µF	B2
C36	0·02µF	B1
C37	25pF	B2
C38	0·01µF	B2
C39	0·01µF	B2
C40	5µF	B2
C41	1,000pF	B2
C42	1,000pF	B2
C43	5µF	B2
C44	5,000pF	B2
C45	5µF	A2
C46	0·02µF	B2
C47	0·02µF	B2
C48	200µF	B2
C49	5µF	A2
C50	30µF	A1
C51	5µF	A2
C52	30µF	A2
C53	200µF	A2
C54	0·01µF	B2
C55	0·01µF	B2
C56	200µF	B2
C58	200pF	A2
C59	200pF	A2
C60	0·02µF	A1
C61	0·04µF	A1
C62	0·04µF	B1
C64	0·04µF	A2
C65	0·02µF	—
C66	10pF	B1
C67	200µF	B2
CT1	—	A1
CT2	—	A1
CT3	—	A1
CT4	—	A1
CT5	—	A1
CT6	—	A1
CV1	—	B1
CV2	—	B1
CV3	—	B1
CV4	—	B1

Coils and transformers

L1	—	A1
L2	—	A1
L3	—	A1
L4	—	A1
L5	—	B1
L6 a/b	—	†
L7	—	†
L8	—	†
L9	—	†
L11	—	A2
L12	—	A1
L13	—	A1
L14	8Ω	**
T1	—	B1
T2	—	B1
T3	—	B1
T4	—	B2
T5	—	B2
T6	—	B1
T7	—	B1
T8	—	B2
T9	—	A2

Miscellaneous

D2-D5	1S188	B2
D1, D6,	1S188	B1
D7	1S188	B1
S1-S15	—	B1
S16	—	A2

† *Ferrite rod aerial*
** *Loudspeaker*

Transistor table

Transistor		A.M. Emitter (V)	Base (V)	Collector (V)	F.M. Emitter (V)	Base (V)	Collector (V)
TR1	2SA440	5·3	5·0	—	4·7	4·2	—
TR2	2SA440	5·2	5·2	—	3·7	3·4	—
TR3	2SA324	4·2	4·0	0·04	3·3	3·0	0·13
TR4	2SA321	5·0	4·7	0·06	4·5	4·1	0·12
TR5	2SA321	4·6	4·1	0·17	4·0	3·6	0·24
TR6	2SB185	3·2	2·6	0	3·0	2·4	0
TR7	2SB185	4·7	4·4	1·5	4·3	4·0	1·4
TR8	2SB186	4·1	3·9	0·3	4·1	3·9	0·3
TR9	2SB22	5·98	5·8	2·9	5·98	5·8	2·9
TR10	2SB22	2·88	2·7	0	2·88	2·7	0

Circuit alignment

Equipment required. – An r.f. signal generator covering the range 100kc/s-2 Mc/s amplitude modulated 30 per cent at 400c/s; an f.m. sweep generator with the following ranges: 10·7Mc/s deviated 300kc/s at 50c/s, 87Mc/s and 104Mc/s deviated 25kc/s at 1kc/s on each range; an r.f. coupling coil; an a.f. output meter to match 8Ω terminated with a miniature jack plug; an oscilloscope (c.r.o.); a shunt diode rectifier network made up with a 2,000pF capacitor, an OA79 diode and a 33kΩ resistor (see illustration col. 3), and one each 0·01µF and 0·1µF capacitors.

During a.m. alignment attenuate input signal so that the receiver output does not exceed 50mW thereby preventing a.g.c. action masking alignment peaks.

Switch on test equipment and allow approximately 15 minutes to warm up. Pre-set volume control to maximum and connect a.f. output meter via earphone jack. All a.m. i.f. and r.f. signals are fed in via the r.f. coupling coil which should be loosely coupled to the ferrite rod aerial assembly.

1. – Switch receiver to m.w. and tune to 550m. Feed in a 470kc/s a.m. signal and adjust **T8, T7** and **T6** for maximum output. Repeat until no further improvement can be obtained.

2. – With receiver still tuned to 550m, feed in a 545kc/s a.m. signal and adjust **L13** and **L6a** (by sliding coil former along ferrite rod) for maximum output.

3. – Tune receiver to 200m and feed in a 1,500kc/s a.m. signal. Adjust **CT6** and **CT3** for maximum output.

4. – Repeat operations 2 and 3 until no further improvement can be obtained.

5. – Switch receiver l.w. and tune to 1,900m. Feed in a 158kc/s a.m. signal and adjust **L12** and **L8** (by sliding coil former along ferrite rod) for maximum output.

6. – Tune receiver to 900m and feed in a 333kc/s a.m. signal. Adjust **CT5** and **CT4** for maximum output.

7. – Repeat operations 5 and 6 until no further improvement can be obtained. Disconnect a.m. signal generator.

8. – Switch receiver to v.h.f./f.m. and tune to a signal free position in the waveband. Connect the f.m. sweep generator via a 0·01µF capacitor to **TP2** and chassis **(TP1),** and the c.r.o. via the diode network to **TP3** and chassis. Detune **T5.**

9. – Feed in a 10·7Mc/s signal deviatec 300kc/s at 50c/s. Adjust **T4, T3, T2** and **T1** for maximum amplitude, symmetrical about 10·7Mc/s (see Fig.1 Attenuate input signal so that response amplitude is just large enough to produce a recognizable pattern.

10. – Disconnect and remove diode network, then connect c.r.o. via a 0·1µF capacitor to **TP5** and chassis.

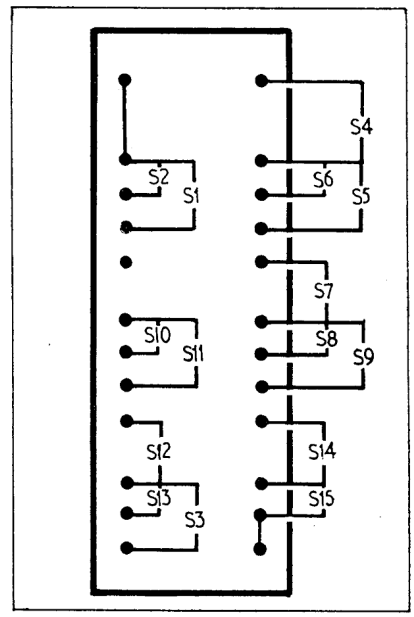
11. – Feed in a 10·7Mc/s signal 300kc/s at 50c/s. Adjust **T4** for a symmetrical 'S' curve, and **T5** to centre 10·7Mc/s marker in the straight portion of the curve (see Fig. 2).

12. – Repeat operations 9-11 for optimum response. Disconnect c.r.o.

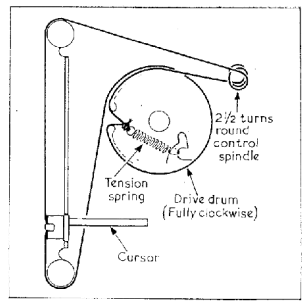
13. – Tune receiver to 87Mc/s pre-set volume control to maximum and feed in an 87Mc/s f.m. signal deviated 25kc/s at 1kc/s. Adjust **L5** and **L3** for maximum output.

14. – Tune receiver to 104Mc/s and feed in a 104Mc/s f.m. signal deviated 25kc/s at 1kc/s. Adjust **CT2** and **CT1** for maximum output.

15. – Repeat operations 13 and 14 until no further improvement can be obtained.



Waveband switches, **S1-S15.**



Sketch of the drive cord assembly.