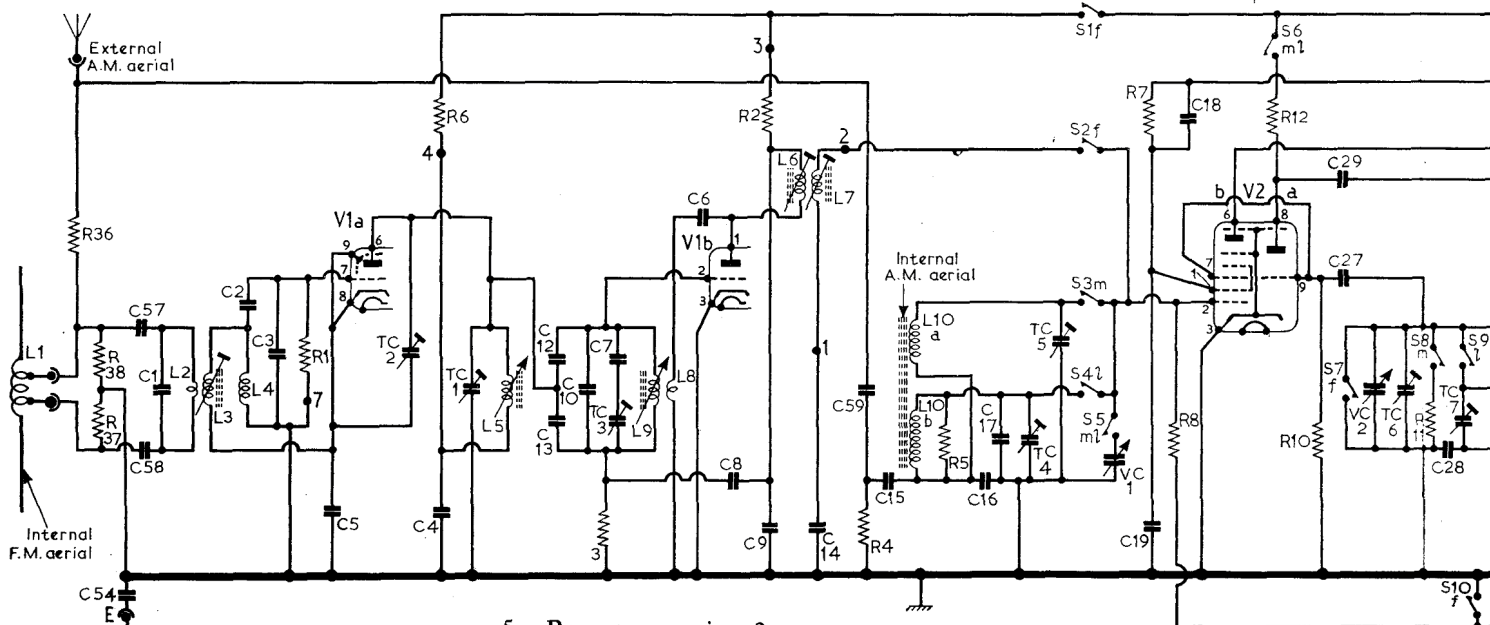


C	54,57,58,1	2	3	5	TC2	4	TC1	12,13,10, 7, TC3	6	8	9	14	59, 15	16,17, TC4, TC5	VC1	19	18	29,27, VC2, TC6, 28, TC7, 2		
R	36 38,37		1			6		3			2		4	5		7	8	12	10	11



Valve Table

Valve	Anode (V)	Screen (V)	Cathode (V)
V1b UCC85 ..*	115	—	—
V2a UCH81 ..†	75	—	—
V2b UCH81 { ..*	200	57	—
V3 UF89 ..	175	57	—
V4d UABC80 ..	176	60	—
V5 UL84 ..	60	—	—
V6 UY85 ..	225	195	13.0
	—	—	240 0

\*Receiver switched to f.m.  
†Receiver switched to a.m.

## CIRCUIT ALIGNMENT

**Equipment Required.**—An f.m. signal generator and an oscilloscope, or a combined wobulator; an accurately calibrated signal generator to provide a marker pip; an audio output meter with  $3\Omega$  impedance; a  $0.001\mu\text{F}$  capacitor and a bladed type trimming tool.

### F.M. Circuits

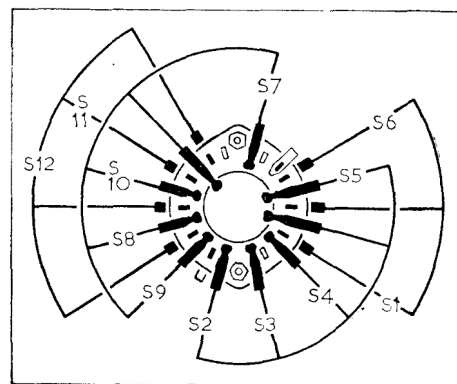
- 1.—Switch receiver to f.m. and set the volume control to minimum output. Connect the oscilloscope across **R23** and disconnect one end of **C44** (location reference F3). Connect the f.m. signal generator between **V3** pin 2 and the nearest chassis point.
- 2.—Feed in a 10.7 Mc/s signal with marker pip and adjust the cores of **L17** (B2) and **L18** (E4) for a response curve similar to that shown in fig. 1. The bandwidth should be plus or minus 150kc/s at 3dB. The correct tuning point is that which occurs with the core nearest its own end of the former.
- 3.—Re-connect **C44** and transfer the oscilloscope to the junction of **R19** and **R20**. Check that the discriminator "S" curve is symmetrically placed about the 10.7Mc/s point and that plus or minus 100kc/s is on the straight portion of the curve.
- 4.—Transfer the signal generator to **V2** pin 2. Re-connect the oscilloscope across **R23** and disconnect **C44**. Feed in a 10.7Mc/s signal with marker pip and adjust the cores of **L11** (F4) and **L12** (B2) for a response curve similar to that shown in fig. 2. The bandwidth should be plus or minus 100kc/s at 4.5dB.

- 5.—Repeat operation 3.
- 6.—Connect the signal generator via the  $0.001\mu\text{F}$  capacitor to tag 4 on the f.m. tuner unit tag panel. Connect the oscilloscope across **R23** and disconnect **C44**. Feed in a 10.7Mc/s signal with marker pip and adjust the cores of **L6** and **L7** (A2) for a response curve similar to that shown in fig. 3. The bandwidth should be plus or minus 100kc/s at 6dB.
- 7.—Repeat operation 3.
- 8.—Fully mesh the tuning gang and check that the f.m. tuner is at the extreme end of its travel, i.e. the screw top is in contact with the chassis lug.
- 9.—Connect the signal generator to the f.m. aerial sockets and feed in an 87Mc/s f.m. signal, if necessary rock the tuning control slightly to obtain an output. Adjust **TC3** (A2) for maximum output.
- 10.—Feed in a 94Mc/s signal and tune receiver to this signal. Adjust **TC1** (A1) for maximum output.
- 11.—Disconnect the h.t. supply from **V1a** anode (tag 4 on tuner unit). Feed in a 94Mc/s signal at sufficiently high level to obtain an output reading and adjust **TC2** (A1) for minimum output.
- 12.—Repeat operations 8, 9 and 10.

### A.M. Circuits

- 1.—Switch receiver to m.w. and fully mesh the tuning gang. Turn the volume control to maximum output. Connect the a.m. signal generator to **V2** pin 2. Connect the audio output meter in place of the loudspeaker.
- 2.—Feed in a 470kc/s 30 per cent modulated signal and adjust **L20** (B1), **L19** (E4) **L14** (F4) and **L13** (B1) in that order for maximum output reducing the input as necessary to maintain the output at 50mW. Repeat for optimum results.
- 3.—Check that with the tuning gang fully meshed the left-hand edge of the cursor carriage lines up with "A" datum mark on the scale slider, then tune to 500m. Connect the signal generator via a dummy aerial to the aerial socket.

- 4.—Feed in a 600kc/s signal and adjust **L15** (F4) and **L10a** (by sliding the former along the ferrite rod) for maximum output.
- 5.—Tune receiver to 200m. Feed in a 1,500kc/s signal and adjust **TC5** and **TC6** (B1) for maximum output.
- 6.—Switch receiver to l.w. and tune to 1,400m. Feed in a 214kc/s signal and adjust **TC7** (F3) for maximum output.
- 7.—Tune receiver to 1,765m, feed in a 170kc/s signal and adjust **L10b** (by sliding the former along the ferrite rod) for maximum output.
- 8.—Tune receiver to 1,071m, feed in a 280kc/s signal and adjust **TC4** (B1) for maximum output.
- 9.—Re-check operation 8 and operation 4 for correct calibration.



Details of the waveband switches (above) as they appear when the switch wafer is viewed from the same angle as in the illustration at the top of the page.

**DEFIANT**

**AF21**

**AF22**

**AF23**

# Resistors

R1	270kΩ	
R2	22kΩ	‡
R3	1MΩ	
R4	22kΩ	A2
R5	220kΩ	C2
R6	6.8kΩ	F4
R7	47kΩ	F4
R8	680kΩ	F4
R9	3.3kΩ	F4
R10	47kΩ	F4
R11	15kΩ	F4
R12	47kΩ	F4
R13	—	†
R14	27kΩ	E4
R15	680kΩ	F4
R16	2.2kΩ	E4
R17	2.2MΩ	E3
R18	33kΩ	E4
R19	120Ω	E4
R20	100kΩ	E4
R21	100kΩ	E3
R22	470kΩ	E3
R23	33kΩ	E3
R24	330kΩ	E4
R25	10MΩ	E4
R26	33kΩ	D3
R27	—	†
R28	680kΩ	E4
R29	100kΩ	E4
R30	270Ω	D4
R31	1.2kΩ	D4
R32	VA1010*	D4
R33	VA1010	D4
R34	300Ω	D4
R35	100Ω	D4
R36	1MΩ	A2
R37	1MΩ	A2
R38	1MΩ	A2

# Capacitors

C1	40pF	
C2	0.001μF	
C3	10pF	
C4	1,000pF	
C5	20pF	
C6	21pF	
C7	9pF	‡
C8	8pF	
C9	75pF	
C10	14pF	
C11	0.001μF	
C12	8.2pF	
C13	8.2pF	
C14	75pF	F4
C15	0.01μF	A2
C16	5,000pF	A2
C17	100pF	F4
C18	0.01μF	F4
C19	5,600pF	F4
C20	15pF	B2
C21	15pF	B2
C22	250pF	B1
C23	250pF	B1
C24	390pF	F3
C25	18pF	F4
C26	0.05μF	E3
C27	47pF	F4
C28	420pF	F4
C29	0.001μF	F4
C30	0.01μF	E4
C31	47pF	F4
C32	2pF	E4
C33	36pF	B2
C34	250pF	B1
C35	500pF	B1

# Coils

L1	—
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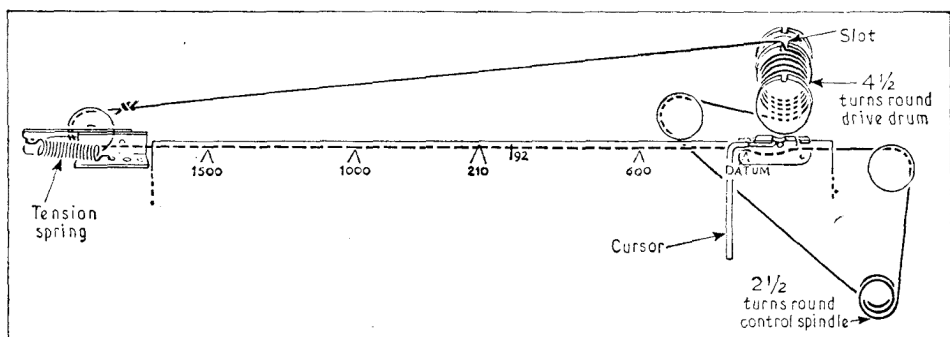
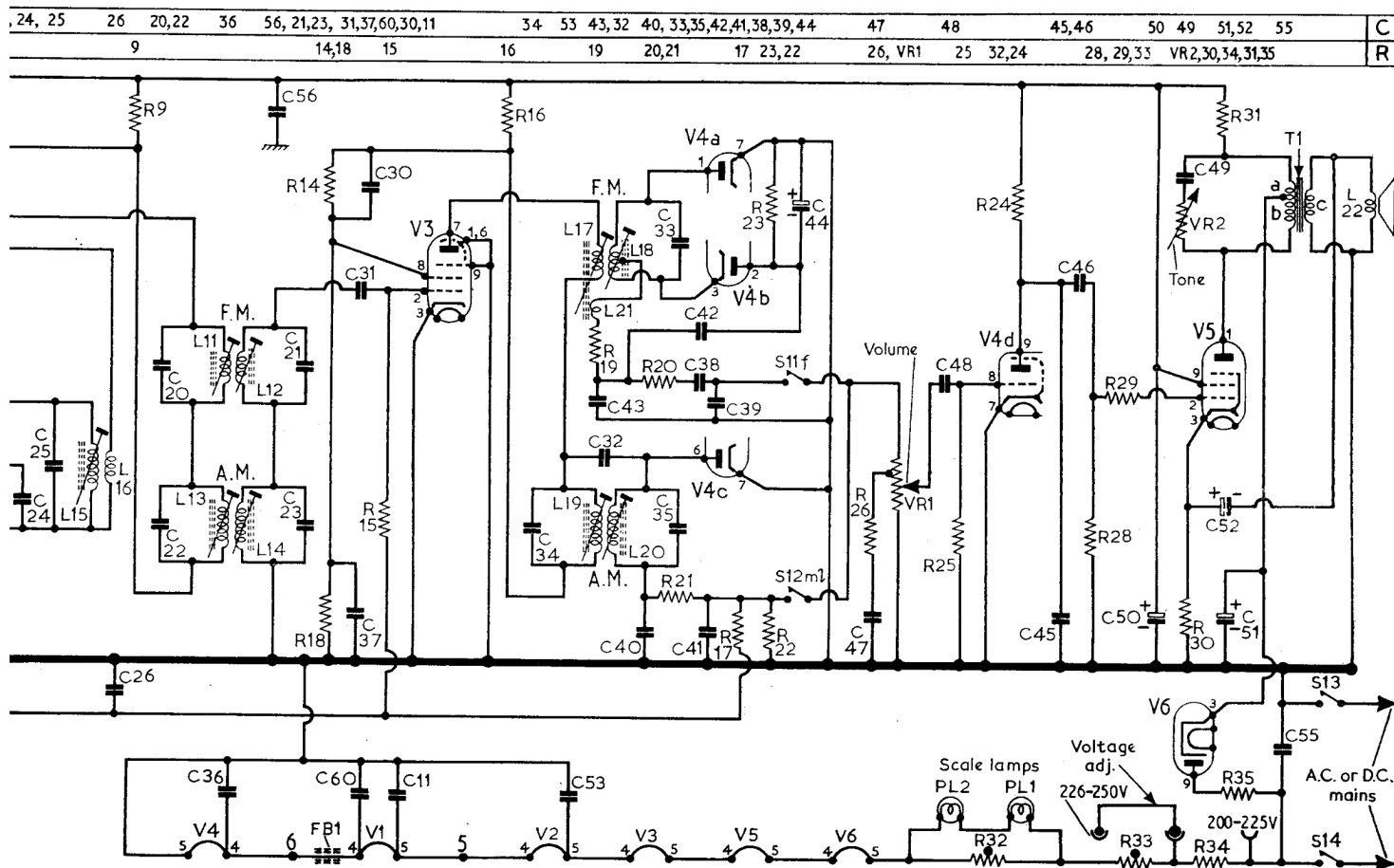
C36	0.003μF	E4
C37	5,600pF	E4
C38	0.01μF	E3
C39	560pF	E3
C40	100pF	E4
C41	47pF	E3
C42	150pF	E4
C43	150pF	E4
C44	4μF	E3
C45	300pF	E4
C46	0.01μF	E4
C47	0.01μF	D3
C48	0.01μF	E4
C49	0.05μF	E3
C50	50μF	C1
C51	50μF	C1
C52	25μF	D4
C53	0.001μF	F4
C54	0.02μF	A2
C55	0.02μF	D3
C56	0.001μF	F3
C57	470pF	A2
C58	470pF	A2
C59	4,700pF	A2
C60	0.001μF	‡
TC1	5pF	A1
TC2	9pF	A1
TC3	9pF	A2
TC4	65pF	B1
TC5	65pF	B1
TC6	65pF	B1
TC7	50pF	F3
VC1	—	A1
VC2	—	A1

L2	—	
L3	—	
L4	—	
L5	—	
L6	—	
L7	—	
L8	—	
L9	—	
L10a, L10b	—	C2
L11	—	F4
L12	—	B2
L13	—	B1
L14	—	F4
L15	—	F4
L16	—	F4
L17	—	B2
L18	—	E4
L19	—	E4
L20	—	B1
L21	—	B2
L22	—	—

# Miscellaneous

T1	{ a 9.0Ω	B1
	{ b 160.0Ω	
	{ c —	
FB1	—	‡
PL1	6.3V 0.115A	E3
PL2	—	F3
S1-S12	—	F4
S13, S14	—	D3

\*300Ω resistor (AF21 and AF22).  
 ‡100pF (AF21 and AF22).  
 †In f.m. tuner unit.  
 ‡No component.



The drive cord assembly is shown with the tuning gang at maximum

**DEFiant**  
**AF21**  
**AF22**  
**AF23**