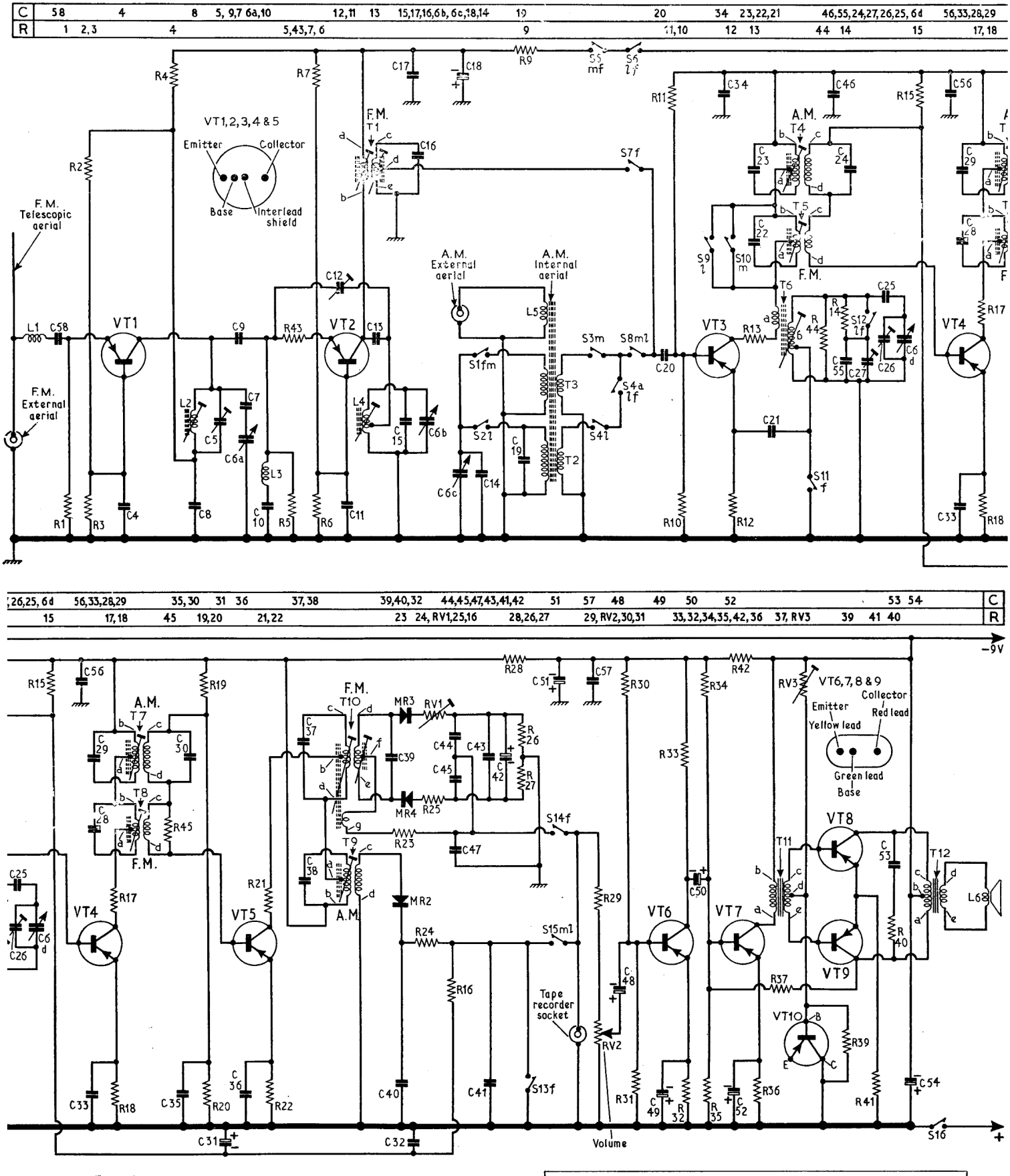


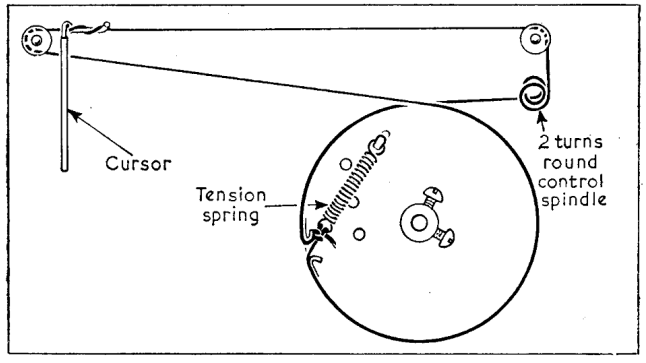
Transistor Table

Transistor	Emitter (V)	Base (V)	Collector (V)
VT1 AF114 ..	0·95	1·0	6·3
VT2 AF115 ..	1·0	1·25	6·7
VT3 AF116 ..	1·0	1·25	6·0
VT4 AF116 ..	0·5	0·65	6·0
VT5 AF116 ..	0·65	0·9	6·0
VT6 NKT255	1·6	1·5	5·6
VT7 NKT252	1·3	1·35	8·6
VT8 NKT251*	—	0·18	9·0
VT9 NKT251*	—	0·18	9·0

**Matched pair.*

PAM - TB71

Scale drive assembly drawn with the tuning gang in the fully meshed position.



CIRCUIT ALIGNMENT

Equipment Required.—An a.m./f.m. signal generator; an output wattmeter; a sweep generator; an oscilloscope; a non-metallic bladed type trimming tool for the i.f. cores; two 0.1μF capacitors and an r.f. coupling coil constructed by winding 20 turns of 20 s.w.g. enamelled copper wire on an air cored 4in diameter former, spaced to a length of 2$\frac{3}{8}$in. If a sweep generator and an oscilloscope are not available for visual alignment, an alternative meter alignment procedure is given which requires a 0-50μA meter and two matched 100kΩ resistors.

F.M. I.F. Alignment (Visual)

1.—Switch receiver to f.m. and tune to the l.f. end of the band. Turn the volume control to minimum output position (fully clockwise). Connect the oscilloscope across **MR4** and disconnect one end of **C42** (location ref. D1).

2.—Connect the sweep generator to the base of **VT5**, feed in a 10.7 Mc/s signal and adjust the primary of **T10** (D1) for peak output.

3.—Transfer the generator to the base of **VT4** and adjust the core of **T8** (C1) for peak output.

4.—Re-connect **C42**, transfer the oscilloscope to the junction of **R23** and **C47** and transfer the sweep generator to the switch side of **C20**. Feed in a 10.7 Mc/s signal and adjust **RV1** (D1) and **T10** secondary for a symmetrical "S" curve and maximum a.m. rejection.

5.—Disconnect **C42** and transfer the oscilloscope to the top of **MR4** (D1). Switch the input attenuation to −10dB and adjust **T5** for peak output. Re-adjust **T5**, **T8** and the primary of **T10** for maximum output, at the same time maintaining a symmetrical curve.

6.—Transfer the signal generator to **VT2** base (top of **R6**) and adjust **T1** primary and secondary cores for best response-shape. Re-connect **C42**.

F.M. I.F. Alignment (Meter Method)

1.—Switch receiver to f.m. and tune to the l.f. end of the band. Turn the volume control to minimum output position. Connect the two 100kΩ resistors in series across **R26, R27** and connect the 0-50μA meter between their junction and chassis.

Note: **RV1** can only be set correctly using the visual method. If misadjustment is suspected, it should be set to the mid-position.

2.—Connect the f.m. signal generator to the base of **VT5**. Feed in a 10.7Mc/s 75kc/s deviated signal to the base of **VT5** and adjust the primary of **T10** for maximum reading on the μA meter.

3.—Transfer the μA meter between the junction of 100kΩ resistors and the junction of **R23** and **T10** tertiary winding. Adjust **T10** secondary for *zero* reading on the meter (the reading should swing from one polarity to the other through zero).

PAM - TB71

Capacitors			C51	100μF[1]	D2	R42	220Ω	C2
C1	—	§	C52	64μF	C2	R43	18Ω	B1
C2	—	§	C53	0·04μF	C2	R44	150kΩ	F3
C3	—	§	C54	100μF[1]	B2	R45	390Ω	E3
C4	0·001μF	A2	C55	200pF	E3	RV1	5kΩ	D1
C5	8pF	A2	C56	0·04μF	E3	RV2	5kΩ	D2
C6	196pF	A2	C57	0·04μF	E3	RV3	15kΩ	D3
C7	82pF	F3	C58	0·001μF	A2			
C8	0·001μF	A1				***Coils***		
C9	3pF	A2	***Resistors***			L1	—	A2
C10	220pF	B2	R1	560Ω	A2	L2	—	A2
C11	0·001μF	B1	R2	10kΩ	A2	L3	—	B1
C12	8pF	A1	R3	2·7kΩ	A2	L4	—	A2
C13	68pF	A1	R4	180Ω	A1	L5	—	B1
C14	—	A2	R5	560Ω	B2	L6	—	—
C15	15pF	F3	R6	1·5kΩ	B1			
C16	68pF	A1	R7	6·8kΩ	B1	***Transformers****		
C17	0·01μF	A1	R8	—	§	T1	—	A1
C18	100μF[1]	A1	R9	470Ω	A1	T2	—	D1
C19	60pF	D1	R10	1·2kΩ	B1	T3	—	A1
C20	0·01μF	B1	R11	6·8kΩ	B1	T4	—	B1
C21	0·01μF	B1	R12	1kΩ	B1	T5	—	B1
C22	39pF	B2	R13	220Ω	B1	T6	—	B1
C23	250pF	B1	R14	150kΩ	F3	T7	—	C1
C24	0·001μF	C1	R15	56kΩ	C1	T8	—	C1
C25	260pF	B2	R16	8·2kΩ	C1	T9	—	D1
C26	—	A2	R17	220Ω	C1	T10	—	D1
C27	30pF	F3	R18	680Ω	C2	T11	Pri. 150·0 / Sec. 80·0	C2
C28	39pF	C2	R19	10kΩ	C1	T12	Pri. 1·76 / Sec. —	B2
C29	250pF	C1	R20	2·7kΩ	C2			
C30	0·001μF	C1	R21	220Ω	C1	***Miscellaneous***		
C31	8μF[2]	C1	R22	1kΩ	C2	S1-S16	—	E3
C32	0·01μF	C1	R23	100Ω	D1	MR1	—	§
C33	0·04μF	C2	R24	470Ω	C1	MR2	OA70	C1
C34	0·04μF	E3	R25	2·2kΩ	D1	MR3†	OA70	D1
C35	0·04μF	C1	R26	4·7kΩ	D1	MR4†	OA70	D1
C36	0·04μF	C2	R27	4·7kΩ	D1	VT10	NKT259	C2
C37	39pF	D2	R28	470Ω	D2			
C38	250pF	D1	R29	3·9kΩ	E3			
C39	47pF	D2	R30	120kΩ	D2			
C40	0·01μF	C2	R31	47kΩ	D2			
C41	0·04μF	C1	R32	4·7kΩ	D2			
C42	10μF	D1	R33	8·2kΩ	D2			
C43	0·01μF	D1	R34	100kΩ	C2			
C44	0·01μF	D1	R35	22kΩ	D2			
C45	0·01μF	D1	R36	680Ω	C2			
C46	0·04μF	D2	R37	560kΩ	C2			
C47	0·02μF	E3	R38	—	§			
C48	8μF[3]	D2	R39	560Ω	E3			
C49	64μF	D2	R40	150Ω	C2			
C50	8μF[3]	D2	R41	4·7Ω	C2			

**Approximate d.c. resistance in ohms.*
† *Matched pair.*
[1] *160μF in some receivers.*
[2] *5μF in some receivers.*
[3] *2μF in some receivers.*
§ *No component.*

4.—Re-connect the meter between the junction of the 100kΩ resistors and chassis. Transfer the signal generator to the base of **VT4** and adjust the core of **T8** for maximum deflection on the meter.

5.—Transfer the signal generator to the switch side of **C20** and adjust **T5** for maximum meter deflection. Re-check the tuning of **T10** primary, **T8** and **T5** for peak output. Remove the meter and 100kΩ resistors.

A.M. I.F. Alignment

1.—Switch to m.w. and turn the tuning gang to the l.f. end of the scale. Check that with the gang fully closed, the cursor is aligned with the ends of the tracks on the tuning scale. Turn the volume control to maximum output. Connect the output wattmeter with a 3 ohms dummy load in parallel, across the loudspeaker leads. If the output meter is used without a dummy load leave the speaker connected.

2.—Connect the a.m. signal generator, with a 0.1μF capacitor in each lead, across the secondary of **T3**. Feed in a 470kc/s 30% modulated signal and adjust the cores of **T4**(B1), **T7**(C1) and **T9**(D1) for maximum output, reducing the input as necessary to maintain the output level at 50mW. Repeat until no further improvement can be obtained.

R.F. ALIGNMENT

1.—Switch receiver to f.m. and tune to the 92 Mc/s mark on tuning scale. Connect the output meter as in "A.M. I.F. Alignment" operation 1. Set the volume control for maximum output. Connect the f.m. signal generator to the external f.m. aerial socket and adjust the input for slightly less than 50mW output.

2.—Feed in a 92 Mc/s 15kc/s deviated signal and adjust **L4** (A2) and **L2** (A2) for maximum output.

3.—Feed in 102 Mc/s signal and tune the receiver to this signal. Check that the calibration is correct and if necessary re-adjust **L4** and **L2** to obtain the best compromise.

4.—Switch receiver to m.w. and tune to 500m. Connect the a.m. signal generator leads to the coupling coil and place the coil about 15in from the centre of **T3** (m.w. aerial coil), coaxial with the ferrite slab.

5.—Feed in a 500kc/s signal and adjust **T6** (B1) and **T3** for maximum output.

6.—Tune receiver to 200m, feed in a 1,500kc/s signal and adjust **C26** and **C14** (A2) for maximum output.

7.—Switch to l.w. and tune to 1,400m. Feed in a 214kc/s signal and adjust **C27**(E3) and **T2** (l.w. aerial coil) for maximum output.

The ferrite slab aerial coils are sealed on the slab in production and should not require adjustment except after replacing the slab or the coils.