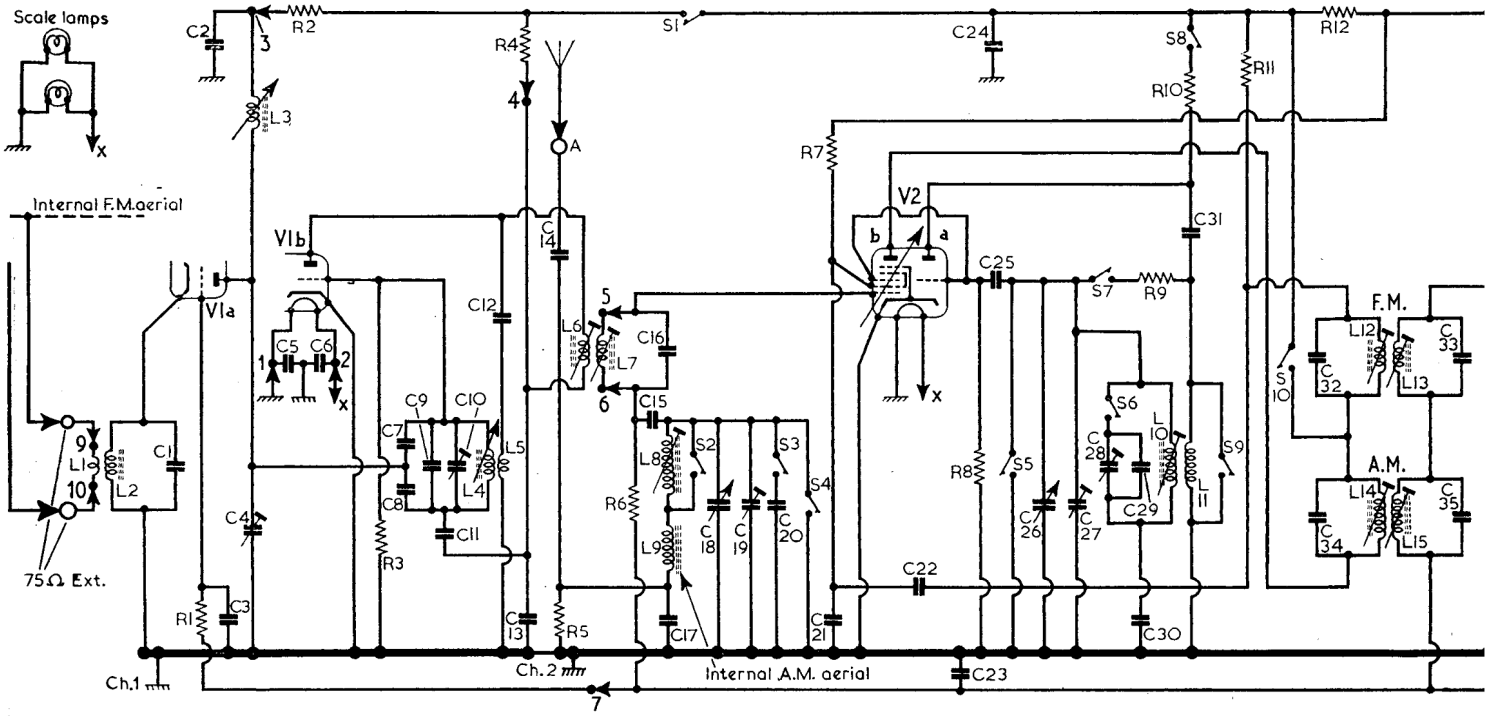
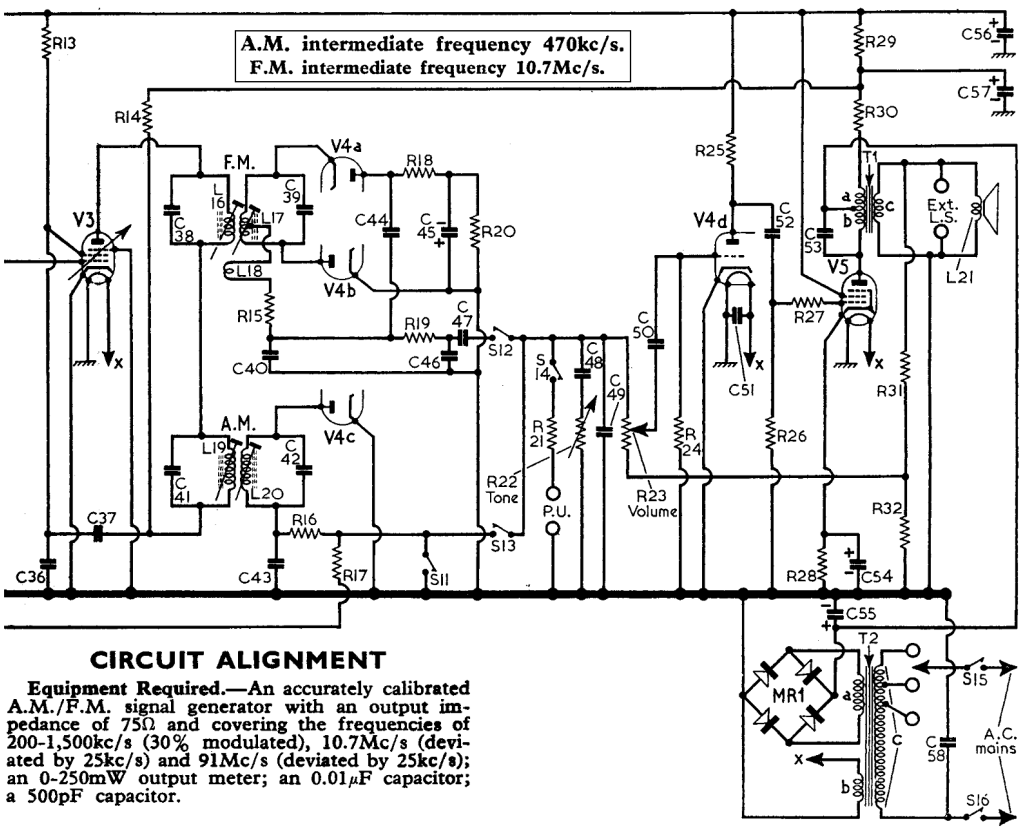
Capacitors															
C1	20pF	A1	C14	500pF	A1	C28	50pF	H2	C42	220pF	B1	C56	32μF	C1
C2	1,500pF	A1	C15	220pF	H3	C29	375pF	H2	C43	100pF	F3	C57	40μF	C1
C3	220pF	A1	C16	33pF	H3	C30	390pF	H2	C44	400pF	F3	C58	0·02μF	E3
C4	10pF	A1	C17	0·003μF	A1	C31	220pF	H3	C45	4μF	F2			
C5	0·001μF	A1	C18	528pF	G3	C32	12pF	B1	C46	500pF	G2	**Resistors**		
C6	0·001μF	A1	C19	50pF	H2	C33	15pF	B1	C47	0·02μF	H2	R1	680kΩ	A1
C7	10pF	A1	C20	165pF	H3	C34	220pF	B1	C48[2]	0·01μF	E2	R2	10kΩ	H3
C8	10pF	A1	C21	0·005μF	H3	C35	220pF	B1	C49	100pF	E2	R3	680kΩ	A1
C9[1]	18·7pF	A1	C22	0·005μF	G3	C36	0·005μF	G3	C50	0·02μF	F3	R4	15kΩ	H3
C10	10pF	A1	C23	0·1μF	G3	C37	0·005μF	G3	C51	2,500pF	F3	R5	3·3kΩ	A1
C11	10pF	A1	C24	0·005μF	H2	C38	12pF	B1	C52	0·001μF	F3	R6	2·2MΩ	H3
C12	25pF	A1	C25	100pF	H3	C39	47pF	B1	C53	0·004μF	C1	R7	47kΩ	G3
C13	85pF	A1	C26	528pF	G3	C40	400pF	F3	C54	50μF	F3	R8	47kΩ	H3
			C27	50pF	G2	C41	220pF	B1	C55	40μF	C1	R9	68kΩ	H2

[1]Two capacitors, 4·7pF + 14pF, in parallel. [2]May be 0·003μF. [3]Approximate D.C. resistan





Capacitors		Resistors	
C1	20pF	R1	680kΩ
C2	1,500pF	R2	10kΩ
C3	220pF	R3	680kΩ
C4	10pF	R4	15kΩ
C5	0·001μF	R5	3·3kΩ
C6	0·001μF	R6	2·2MΩ
C7	10pF	R7	47kΩ
C8	10pF	R8	47kΩ
C9[1]	18·7pF	R9	68kΩ
C10	10pF	R10	27kΩ
C11	10pF	R11	3·3kΩ
C12	25pF	R12	1kΩ
C13	85pF	R13	47kΩ
C14	500pF	R14	3·3kΩ
C15	220pF	R15	68Ω
C16	33pF	R16	100kΩ
C17	0·003μF	R17	2·2MΩ
C18	528pF	R18	820Ω
C19	50pF	R19	100kΩ
C20	165pF	R20	27kΩ
C21	0·005μF	R21[5]	470kΩ
C22	0·005μF	R22	250kΩ
C23	0·1μF	R23	500kΩ
C24	0·005μF	R24	6·8MΩ
C25	100pF	R25	220kΩ
C26	528pF	R26	470kΩ
C27	50pF	R27	4·7kΩ
C28	50pF	R28	150Ω
C29	375pF	R29	680Ω
C30	390pF	R30	820Ω
C31	220pF	R31	3·9kΩ
C32	12pF	R32	82Ω
C33	15pF		
C34	220pF		
C35	220pF		
C36	0·005μF		
C37	0·005μF		
C38	12pF		
C39	47pF		
C40	400pF		
C41	220pF		
C42	220pF		
C43	100pF		
C44	400pF		
C45	4μF		
C46	500pF		
C47	0·02μF		
C48[2]	0·01μF		
C49	100pF		
C50	0·02μF		
C51	2,500pF		
C52	0·001μF		
C53	0·004μF		
C54	50μF		
C55	40μF		
C56	32μF		
C57	40μF		
C58	0·02μF		

CIRCUIT ALIGNMENT

Equipment Required.—An accurately calibrated A.M./F.M. signal generator with an output impedance of 75Ω and covering the frequencies of 200-1,500kc/s (30% modulated), 10.7Mc/s (deviated by 25kc/s) and 91Mc/s (deviated by 25kc/s); an 0-250mW output meter; an 0.01μF capacitor; a 500pF capacitor.

A.M. Stages

1.—Switch receiver to M.W. and turn gang to minimum capacitance. Connect sound output meter across external speaker sockets. Connect signal generator output, via the 0.01μF capacitor in the live lead, between chassis and control grid (pin 2) of **V2b**.

2.—Feed in a modulated 470kc/s signal and adjust the cores of **L20** (location reference G3), **L19** (B1), **L15** (G3) and **L14** (B1) for maximum output, reducing the output of the signal generator as the circuits come into line to prevent A.G.C. operation.

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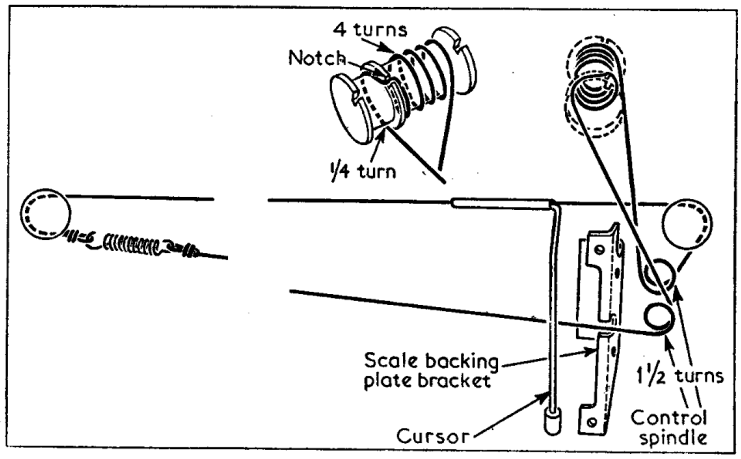


Sketch of the tuning drive system as seen from the front of an upright chassis with the gang at maximum capacitance. Inset at top centre is an elongated and enlarged view of the small gang drive drum.

3.—Feed in a 10.7Mc/s signal, deviated by ±100kc/s, and adjust the cores of **L16** (F3) and **L17** (C1) for maximum undistorted waveform as indicated on the output meter and oscilloscope. Adjust output of signal generator during these and subsequent adjustments to maintain a reading of 2.5V on Avometer.

4.—Adjust the cores of **L13** (B1), **L12** (G3), **L7** (A1) and **L6** (H3) for maximum undistorted output as indicated on the output meter and oscilloscope. Disconnect Avometer from **C43**, and disconnect oscilloscope.

5.—Transfer signal generator leads to F.M. aerial sockets. Tune receiver to 92Mc/s, feed in a 92Mc/s signal deviated by ±22.5kc/s, and adjust the cores of **L5** (A1), **L3** (A2) and **L2** (A2) for maximum output. Disconnect signal generator.

6.—Connect A.C. valve voltmeter, switched to lowest range, across **C3** (A1). With receiver tuned to 92Mc/s, adjust **C9** (A1) for minimum reading on meter. Disconnect valve voltmeter.

Switch Table and Diagram

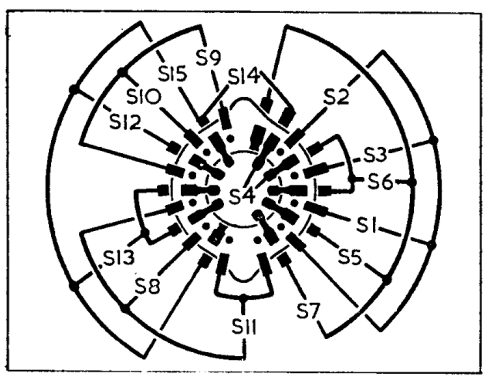


Diagram of the band/gram switch unit as viewed from the rear of an upright chassis.

Repeat adjustments to **L2** and **L3** in operation 5.

A.M. Stages

7.—Switch receiver to M.W. and turn gang to maximum. Connect output of signal generator, via an 0.1μF capacitor in the live lead, to control grid (pin 2) of **V2b** and chassis.

8.—Feed in a 470kc/s 30% modulated signal and adjust the cores of **L20** (C1), **L19** (F4), **L15** (B1) and **L14** (G4) for maximum output. Disconnect signal generator.

9.—Connect signal generator, via a 100pF capacitor in the live lead, to the A.M. aerial socket and to chassis. The alignment points in the following adjustments are indicated on the tuning scale by dots.

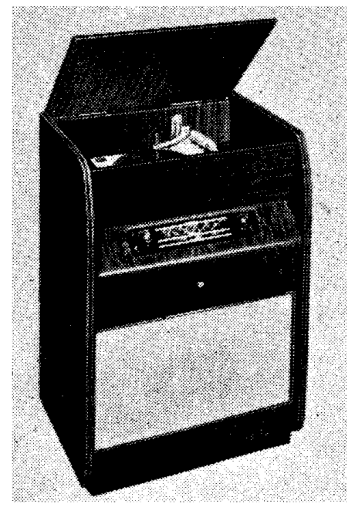
10.—Tune receiver to 500m, feed in a 600kc/s signal and adjust the cores of **L11** (H4) and **L8** (H4) for maximum output.

11.—Tune receiver to 200m, feed in a 1,500kc/s signal and adjust **C25** (H3) and **C18** (G3) for maximum output.

12.—Repeat adjustments in operations 10 and 11 until calibration is correct.

13.—Switch receiver to L.W. and tune it to 1,400m. Feed in a 214kc/s signal and adjust **C24** (G4) (if fitted) and **C19** (H3) for maximum output.

Switches	Gram.	F.M.	L.W.	M.W.
S1	C	—	—	—
S2	—	—	—	C
S3	—	—	C	—
S4	C	C	—	—
S5	—	C	—	—
S6	—	—	C	C
S7	C	—	—	—
S8	—	C	—	—
S9	—	C	—	—
S10	—	—	C	—
S11	—	—	C	C
S12	—	C	—	—
S13	—	—	C	C
S14	—	C	C	C
S15	C	—	—	—



Switches.—**S1-S15** are the band/gram switches ganged in a single rotary unit beneath the chassis. The switch contacts on this unit are identified in the diagram in column 4 where it is viewed from the rear of an inverted chassis.

The associated switch table indicates the switch operations in the four control settings, starting with the band/gram control turned fully anti-clockwise. A dash indicates open, and **C**, closed.

Drive Cord Replacement.—About 45in of nylon-braided glass yarn is required for a new tuning drive. Tie one end of the cord to the spring, and anchor the spring to a slot in the chassis just behind the top left-hand corner (viewed from front of chassis) of the scale backing plate. Turn the gang to maximum capacitance.

Run the cord clockwise round the left-hand pulley (viewed from front) across to and clockwise round the right-hand pulley and down to the tuning control spindle as indicated in the sketch of the tuning drive system at the foot of columns 5 and 6.

Run the cord on as indicated in the sketch, finally unhooking the spring from the chassis and securing the other end of the drive cord to it.

Scale Lamps.—These are two 6.5V, 0.3A lamps with large clear spherical bulbs and M.E.S. bases.