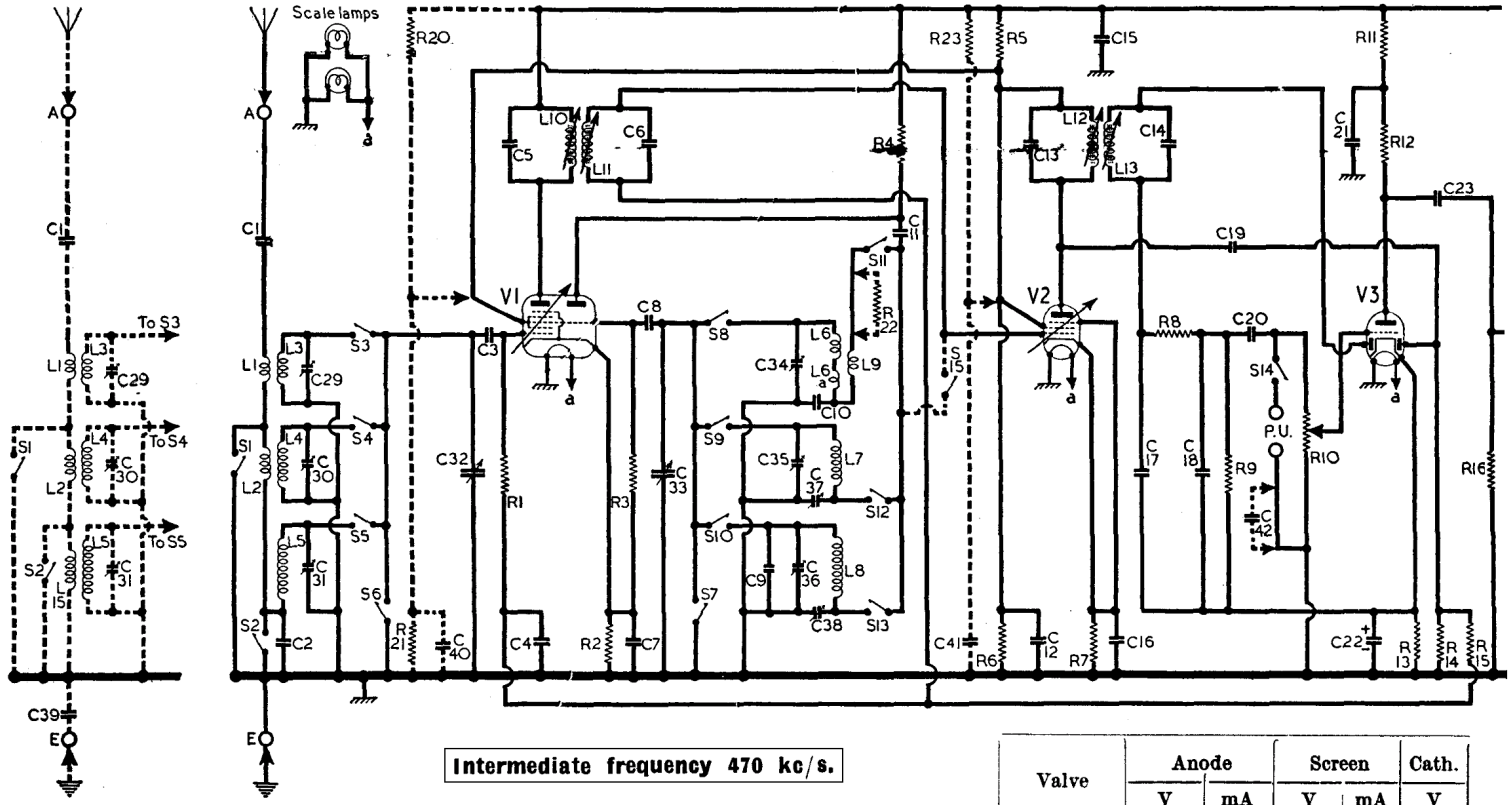
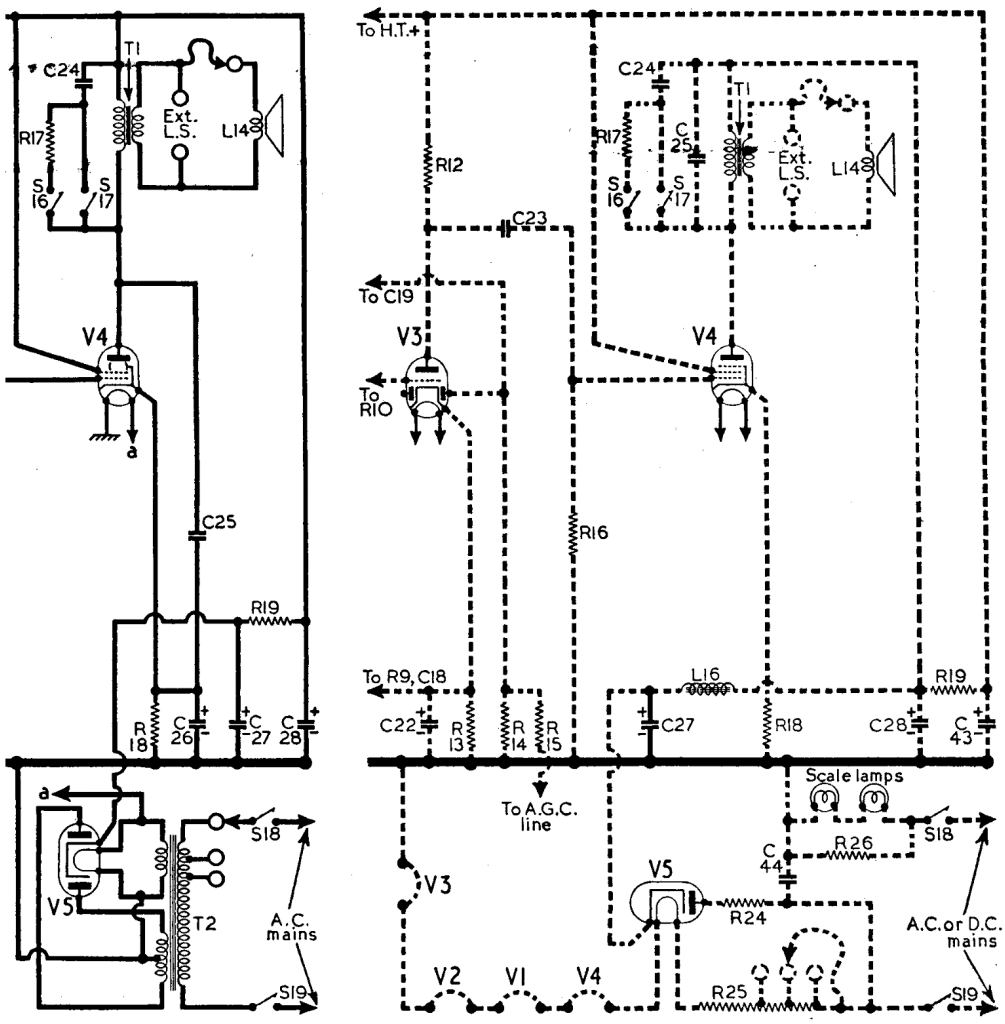


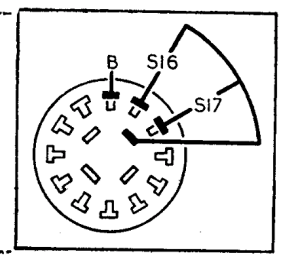
Intermediate frequency 470 kc/s.



Valve		Anode		Screen		Cath.
		V	mA	V	mA	V
		A.C. Model				
V1	7S7...	260 Oscillator 150	1·0 3·8	68	2·15	1·8
V2	7B7	68	1·1	68	1·0	2·0
V3	7C6	106	0·45	—	—	1·0
V4	7C5	250	40·0	260	6·5	13·0
V5	7Y4	270†	—	—	—	300·0
		A.C./D.C. Model				
V1	UCH42	190 Oscillator 80	2·4 3·6	85	2·5	2·0
V2	UF41	190	4·2	80	1·4	1·8
V3	UBC41	150	0·8	—	—	1·8
V4	UL41	190	35·0	190	6·4	10·0
V5	UY41	220†	—	—	—	210·0

† A.C.

The tone control switch unit, seen from the remote end of an inverted chassis.



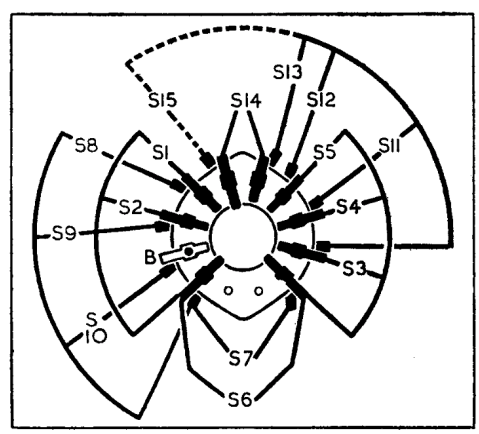


Diagram of the waveband switch unit, seen from the remote end of an inverted chassis. **S15** is omitted in the A.C. model 3811.

Switch	S.W.	M.W.	L.W.	Gram
S1	c	—	—	—
S2	c	c	—	—
S3	—	c	—	—
S4	—	c	—	—
S5	—	—	c	—
S6	—	—	—	cc
S7	c	—	—	—
S8	c	—	—	—
S9	—	c	—	—
S10	—	—	c	—
S11	c	—	—	—
S12	—	c	—	—
S13	—	—	c	—
S14	—	—	—	c
S15	—	—	—	c

associated switch table.

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Resistors	A.C. Values	A.C. Locations	A.C./D.C. Values	A.C./D.C. Locations
R1	1MΩ	F4	1MΩ	K6
R2	220Ω	F4	220Ω	K6
R3	47kΩ	F3	47kΩ	K6
R4	27kΩ	F3	27kΩ	K5
R5	22kΩ	D4	—	—
R6	56kΩ	E4	—	—
R7	300Ω	F4	300Ω	K6
R8	47kΩ	F3	47kΩ	K6
R9	560kΩ	F3	560kΩ	J5
R10	250kΩ	C2	250kΩ	C2
R11	47kΩ	E4	—	—
R12	270kΩ	E4	47kΩ	J6
R13	2·2kΩ	E4	2·2kΩ	K6
R14	1MΩ	E3	1MΩ	J6
R15	1MΩ	E3	1MΩ	J6
R16	560kΩ	E4	820kΩ	J6
R17	10kΩ	D3	10kΩ	H5
R18	270Ω	E3	200Ω	J6
R19	560Ω	D4	560Ω	J6
R20	—	—	22kΩ	K5
R21	—	—	33kΩ	K5
R22	—	—	100Ω	L5
R23	—	—	90kΩ	K6
R24	—	—	100Ω	J5
R25	—	—	*1·3kΩ	C1
R26	—	—	60Ω	H6

* Tapped at 800Ω + 250Ω + 250Ω from V5 heater.

Capacitors	A.C. Values	A.C. Locations	A.C./D.C. Values	A.C./D.C. Locations
C1	200pF	G4	200pF	L6
C2	0·01μF	G4	—	—
C3	100pF	G3	100pF	L5
C4	0·05μF	F3	0·05μF	K5
C5	100pF	A2	100pF	A2
C6	100pF	A2	100pF	A2
C7	0·1μF	F4	0·1μF	K6
C8	100pF	G3	100pF	L5
C9	47pF	G4	47pF	L5
C10	5,343pF	F3	5,343pF	K5
C11	500pF	G4	100pF	L5
C12	0·25μF	F3	—	—
C13	100pF	B2	100pF	B2
C14	100pF	B2	100pF	B2
C15	0·1μF	F3	0·25μF	J5
C16	0·1μF	F4	0·1μF	K6
C17	100pF	F4	100pF	K5
C18	100pF	F4	100pF	K6
C19	12pF	E4	12pF	K6
C20	0·005μF	F4	0·005μF	K6
C21	0·1μF	E4	—	—
C22*	25μF	E4	25μF	J6
C23	0·005μF	E4	0·005μF	J6
C24	0·05μF	D4	0·05μF	H5
C25	0·005μF	E3	0·005μF	J5
C26*	25μF	E3	—	—
C27*	32μF	C2	16μF	C2
C28*	32μF	C2	32μF	C2
C29‡	65pF	A2	65pF	A2
C30‡	65pF	A2	65pF	A2
C31‡	65pF	A2	65pF	A2
C32†	‖528pF	A2	§528pF	A2
C33†	‖528pF	A2	§528pF	A2
C34‡	65pF	A1	65pF	A1
C35‡	65pF	A1	65pF	A1
C36‡	65pF	A1	65pF	A1
C37‡	500pF	A1	500pF	A1
C38‡	200pF	A1	200pF	A1
C39	—	—	0·05μF	K6
C40	—	—	0·1μF	K5
C41	—	—	0·1μF	K6
C42	—	—	0·5μF	K5
C43*	—	—	32μF	C2
C44	—	—	0·02μF	J5

* Electrolytic. †Variable. ‡ Pre-set.
§ "Swing" value, min. to max.

OTHER COMPONENTS		Approx. Values (ohms)	Locations
	A.C. Model		
L1	Aerial coupling coils	Very low	G4
L2		1·3	G4
L3	Aerial tuning coils	Very low	G4
L4		3·2	G4
L5		12·5	G4
L6	Oscillator tuning coils	Very low	G3
L7		2·2	G3
L8		4·8	G3
L9	Osc. reaction ...	0·2	G3
L10	1st I.F. trans. Pri.	11·0	A2
L11	1st I.F. trans. Sec.	11·0	A2
L12	2nd I.F. trans. Pri.	11·0	B2
L13	2nd I.F. trans. Sec.	11·0	B2
L14	Speech coil ...	3·2	—
T1	Primary	360·0	—
	Secondary ...	0·3	
T2	Primary, total ...	38·0	
	H.T. sec., total ...	500·0	C2
	Heater sec. ...	Very low	
S1-S14	Waveband switches	—	G3
S16, S17	Tone control sw. ...	—	D3
S18, S19	Mains sw., g'd R10	—	C2
	A.C./D.C Model		
L1	Aerial coupling coils	Very low	L6
L2		1·3	L6
L3	Aerial tuning coils	Very low	L6
L4		3·2	L6
L5		12·5	L6
L6	Oscillator tuning coils	Very low	L5
L6a		Very low	L5
L7		2·2	L5
L8		4·8	L5
L9	Osc. reaction	0·2	L5
L10	1st I.F. trans Pri.	11·0	A2
L11	1st I.F. trans Sec.	11·0	A2
L12	2nd I.F. trans Pri.	11·0	B2
L13	2nd I.F. trans Sec.	11·0	B2
L14	Speech coil	3·2	—
L15	L.W. aerial coup.	50·0	L6
L16	Smoothing choke	60·0	H6
T1	Primary	360·0	—
	Secondary	0·3	
S1-S15	Waveband switches	—	L5
S16, S17	Tone control switches	—	H5
S18, S19	Mains sw., g'd R10	—	C2

CIRCUIT ALIGNMENT

All the R.F. and I.F. adjustments are accessible from the top of the chassis and complete alignment may be carried out with the chassis in the cabinet.

I.F. Stages.—Turn gang and volume control to maximum. Connect signal generator, via a 0.1 μF capacitor in each lead, to control grid (pin 6) of **V2** and chassis. Switch set to L.W., feed in a 470 kc/s (638.3 m) signal and adjust the cores of **L13** (location reference B2) and **L12** (B2) for maximum output. Transfer "live" signal generator lead to control grid (pin 6) of **V1,** and adjust the cores of **L11** (A2) and **L10** (A2) for maximum output. During these adjustments, reduce the input as the circuits come into line to avoid AGC action.

R.F. and Oscillator Stages.—With the gang at maximum capacitance, the cursor should coincide with the high wavelength ends of the tuning scales. Transfer signal generator leads to **A** and **E** sockets.

S.W.—Switch set to S.W., tune to 16.67 m on scale, feed in a 16.67 m (18 Mc/s) signal and adjust **C34, C29** for maximum output. Tune to 50 m, feed in a 50 m (6 Mc/s) signal and check calibration. If the calibration error is large, the position of the top turn of **L6** (L5) or the spacing of the turns of **L6a** (if fitted) should be adjusted, and the alignment repeated until satisfactory calibration results.

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M.W.—Switch set to M.W., tune to 200 m on scale, feed in a 200 m (1,500 kc/s) signal and adjust **C35** (A1) and **C30** (A2) for maximum output. Tune to 500 m, feed in a 500 m (600 kc/s) signal and adjust **C37** (A1) for maximum output. Repeat these adjustments until no improvement can be obtained.

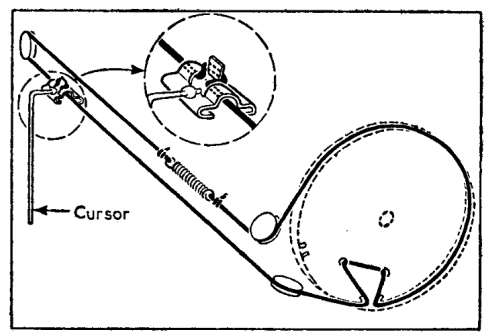
L.W.—Switch set to L.W., tune to 800 m on scale, feed in an 800 m (375 kc/s) signal and adjust **C36** (A1) and **C31** (A2) for maximum output. Tune to 1,949 m, feed in a 1,949 m (154 kc/s) signal and adjust **C38** (A1) for maximum output. Repeat these adjustments until no improvement can be obtained.

DRIVE CORD REPLACEMENT

The gang drive is direct via an epicyclic reduction device, but a cord is used for the scale drive. A new cord requires about four feet of high-grade flax fishing line, plaited and waxed.

The course followed by the cord is simple, as shown in the accompanying sketch, where the system is drawn as seen from the front right-hand corner of the chassis with the gang at maximum. The first operation is to thread the cord through the two holes in the face of the gang drum, near the gap in its rim. Then tie the tension spring to one end.

The cord can then be run as shown, tying off the other end of the cord at the free end of the spring. The cord can be drawn through the drum holes as required to bring the spring to the required position. The cursor carriage can be slipped on afterwards, the cord being slipped off one of the pulleys temporarily to allow sufficient slackness.



Three-quarter view of the drive cord system, seen from the front right-hand corner of the chassis.