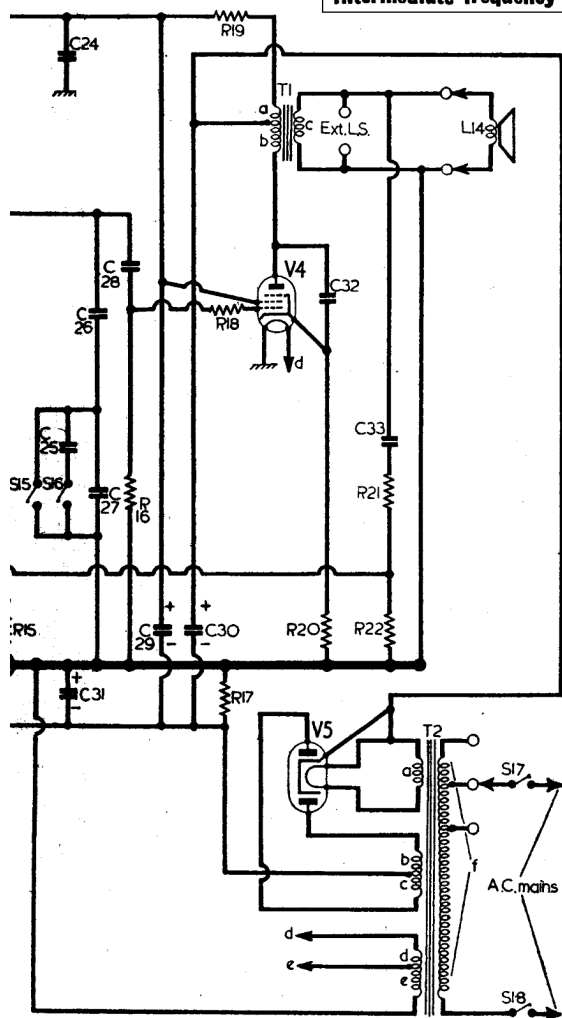


Intermediate frequency 470 kc/a.



CAPACITORS		Values	Locations
C1	Aerial series	200pF	G3
C2	Aerial coupling	0-003μF	G3
C3	L.W. aerial trim.	75pF	A1
C4	V1 C.G.	100pF	F2
C5	I.F. trans. tuning	140pF	B1
C6	I.F. trans. tuning	140pF	B1
C7	Osc. neutralizing	1pF	F3
C8	Osc. C.G.	50pF	F3
C9	M.W. osc. tracker	410pF	G3
C10	L.W. osc. tracker	190pF	G3
C11	L.W. osc. trimmer	140pF	G2
C12	S.W. osc. trimmer	10pF	G3
C13	S.W. osc. tracker	3,900pF	G3
C14	Osc. anode coup.	200pF	G3
C15	S.G. decoupling	0-1μF	F3
C16	I.F. coil tuning	140pF	E3
C17	A.G.C. decoupling	0-05μF	G2
C18	P.U. tone corrector	0-01μF	G2
C19	I.F. by-pass	50pF	E3
C20	Signal diode feed	50pF	E3
C21	A.G.C. diode feed	50pF	E3
C22	A.F. coupling	0-01μF	E2
C23	V3 anode decoupling	0-25μF	D3
C24	H.T. by-pass	0-1μF	F3
C25	Parts tone control	0-005μF	D2
C26	Parts tone control	0-01μF	D3
C27	Parts tone control	100pF	E3
C28	A.F. coupling	0-01μF	D3
C29*	H.T. smoothing	32μF	B1
C30*	H.T. smoothing	32μF	B1
C31*	Bias decoupling	50μF	B1
C32	Tone corrector	0-005μF	E3
C33	Neg. feed-back	0-25μF	E2
C34†	M.W. aerial trim.	40pF	A1
C35†	S.W. aerial trim.	40pF	A1
C36†	Aerial tuning	528pF	A1
C37†	M.W. osc. trim.	40pF	A1
C38†	Oscillator tuning	528pF	A1

* Electrolytic. † Variable. ‡ Pre-set.

Valve	Anode		Screen		Cath.
	V	mA	V	mA	
V1 ECH81	193-0	1-73	95-0	3-8	—
V2 EAF42	107-0	3-8	—	—	—
V3 EBC41	193-0	4-5	95-0	1-4	—
V4 EL84	82-0	0-53	—	—	—
V5 EZ40	222-0	35-0	193-0	3-9	5-6
	207-0*	—	—	—	235-0†

* A.C. reading. † Cathode current 54 mA.

RESISTORS		Values	Locations
R1	Aerial shunt	33kΩ	G3
R2	S.G. H.T. feed	22kΩ	F3
R3	V1 C.G.	1MΩ	F2
R4	V1 osc. C.G.	47kΩ	F3
R5	Standing bias feed	10MΩ	F3
R6	Osc. stabilizer	150kΩ	G8
R7	Osc. anode feed	27kΩ†	F3
R8	P.U. tone corrector	100kΩ	E2
R9	Volume control	220kΩ	E3
R10	Volume control	500kΩ	E2
R11	V3 C.G.	10MΩ	D2
R12	H.T. decoupling	68kΩ	D3
R13	V3 anode load	150kΩ	D3
R14	A.G.C. decoupling	1-5MΩ	E2
R15	A.G.C. diode load	1MΩ	E3
R16	V4 C.G.	680kΩ	E3
R17	Muting bias	220Ω	D3
R18	V4 C.G. stopper	100kΩ	E3
R19	H.T. smoothing	2-4kΩ*	E2
R20	V4 G.B.	150kΩ	E3
R21	Neg. feed-back	3-3kΩ	D2
R22	Neg. feed-back	180kΩ‡	D3

* Two 1-2kΩ resistors in series.
† 22kΩ in Emitron version.
‡ 240kΩ in Emitron version.
§ 220Ω in Emitron version.

OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	S.W. aerial coup. ...	—	A1
L2	Aerial tuning coils	—	A1
L3		3-8	A1
L4		21-0	A1
L5		—	G3
L6	Osc. reaction coils	1-3	G3
L7		2-0	G3
L8	Osc. tuning coils	—	G3
L9		3-3	G3
L10		7-6	G3
L11		6-8	B1
L12	I.F. trans. { Pri. Sec.	6-8	B1
L13		6-4	E3
L14	I.F. coil { a b	2-2	—
T1		2-8	—
	Speech coil	13-5	F2
	O.P.trans { a b c	420-0	F2
		0-5	F2
		0-4	F2
		290-0	F2
	Mains trans. { a b c d e f, tot.	290-0	C1
		—	C1
		—	C1
		58-0	C1
S1-S14	Waveband switches	—	G2
S15,	Tone switches ...	—	D2
S16		—	D2
S17,	Mains sw., g'd R10	—	E2
S18		—	E2

CIRCUIT ALIGNMENT

I.F. Stages.—Connect output of signal generator, via an $0.1\mu\text{F}$ capacitor in the "live" lead, to control grid (pin 6) of **V2** and chassis. Feed in a 470 kc/s (638.3m) signal and adjust the core of **L13** (location reference E3) for maximum output. Transfer "live" signal generator lead to control grid (pin 2) of **V1** (pin 6 in Emitron range of valves). Shunt **L11** with a damping unit consisting of a $5k\Omega$ resistor in series with an $0.1\mu\text{F}$ capacitor, and then, feeding in a 470 kc/s signal, adjust the core of **L12** (B1) for maximum output. Transfer damping unit from **L11** to **L12** and adjust **L11** (B1) for maximum output.

R.F. and Oscillator Stages.—No substitute tuning scale is provided on the chassis, and the following alignment adjustments should be carried out with the chassis in its cabinet. Check that with the gang at maximum capacitance, the cursor coincides with the high wavelength ends of the tuning scales. Connect the signal generator leads, via a standard dummy aerial, to **A** and **E** sockets. All the following adjustments are in location reference A1.

S.W.—Switch receiver to S.W., tune to calibration mark at 46.16m, feed in a 46.16m (6.5 Mc/s) signal and adjust the core of **L8** for maximum output. Tune receiver to 20m, feed in a 20m (15 Mc/s) signal and adjust **C35** for maximum output, while rocking the gang for optimum results. Retune receiver to 46.16m, feed in a 46.16m (6.5 Mc/s) signal and adjust the core of **L2** for maximum. Repeat the adjustments to **C35** and **L2** until no further improvement results.

M.W.—Switch receiver to M.W., tune to 214.3m calibration mark, feed in a 214.3m (1,400 kc/s) signal and adjust **C37** and **C34** for maximum output. Tune receiver to 500m, feed in a 500m (600 kc/s) signal and adjust the cores of **L9** and **L3** for maximum output.

L.W.—Switch receiver to L.W., tune to 1,765m calibration mark, feed in a 1,765m (170 kc/s) signal and adjust the cores of **L10** and **L4** for maximum output.

switches ganged in a single rotary unit beneath the chassis. This unit is indicated in the under chassis illustration, and shown in detail in the diagram below, as seen from the rear of an inverted chassis. The associated switch table gives the switch operations for the four control settings, starting from the fully anti-clockwise position of the control. A dash indicates open, and **C**, closed.

S15-S16 are the tone control switches,

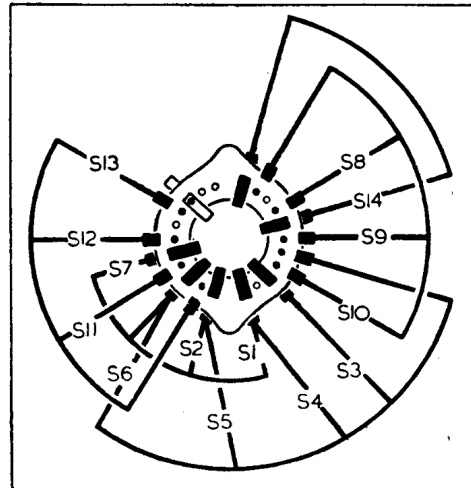
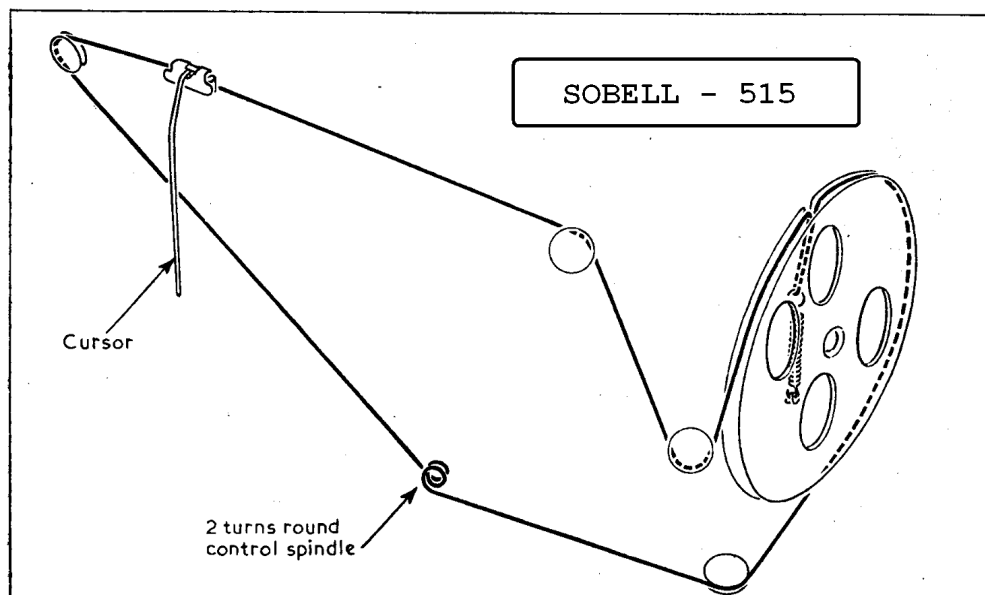


Diagram of the waveband switch unit, drawn as seen from the rear of an inverted chassis. The associated switch table is below.

Switch Table

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



Sketch of the tuning drive cord system, viewed from the front right-hand corner of an upright chassis with the gang at minimum capacitance.