

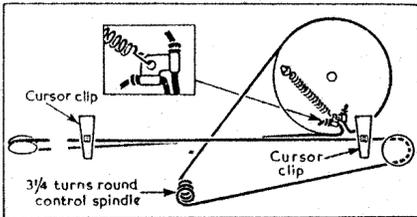
CIRCUIT ALIGNMENT

I.F. Stages.—Switch receiver to M.W. and set gang to about two thirds maximum capacitance. Connect output of signal generator, via an 0.1 μF capacitor in the "live" lead, to control grid (pin 2) of V2 and chassis. Feed in a 470 kc/s (898.3 m) signal and adjust the cores of L14 (location reference B1) and L13 (B1) for maximum output. Transfer signal generator "live" lead, together with the 0.1 μF capacitor, to control grid (pin 0) of V1 and chassis. Feeding in a 470 kc/s signal, adjust the cores of L7 (A1) and L6 (A1) for maximum output.

R.F. and Oscillator Stages.—As the tuning scale remains fixed to the cabinet when the chassis is withdrawn, reference is made in the following alignment to the substitute tuning scale fixed to the back of the tuning drive drum. This scale has the trimming and tracking points marked on it in wavelengths, and is read off against the top sloping edge of the fixed metal pointer. Check that with the gang at maximum capacitance, the pointer coincides with the datum line on the substitute scale.

Valve	Anode		Screen		Cath.
	V	mA	V	mA	
V1 UCH42	140 100 Oscillator	1.5 3.8	50	2.1	—
V2 UBF80	140	†	50	—	—
V3 UL41	130	36.0	140	7.0	7.7
V4 UY41	210*	—	—	—	195.0†

* A.C. reading. † Cathode current 55 mA.
‡ No reading quoted; cathode current 4.6 mA.



Sketch of the tuning drive cord system.

Intermediate frequency 470 ko/s.

BUSH - DAC41

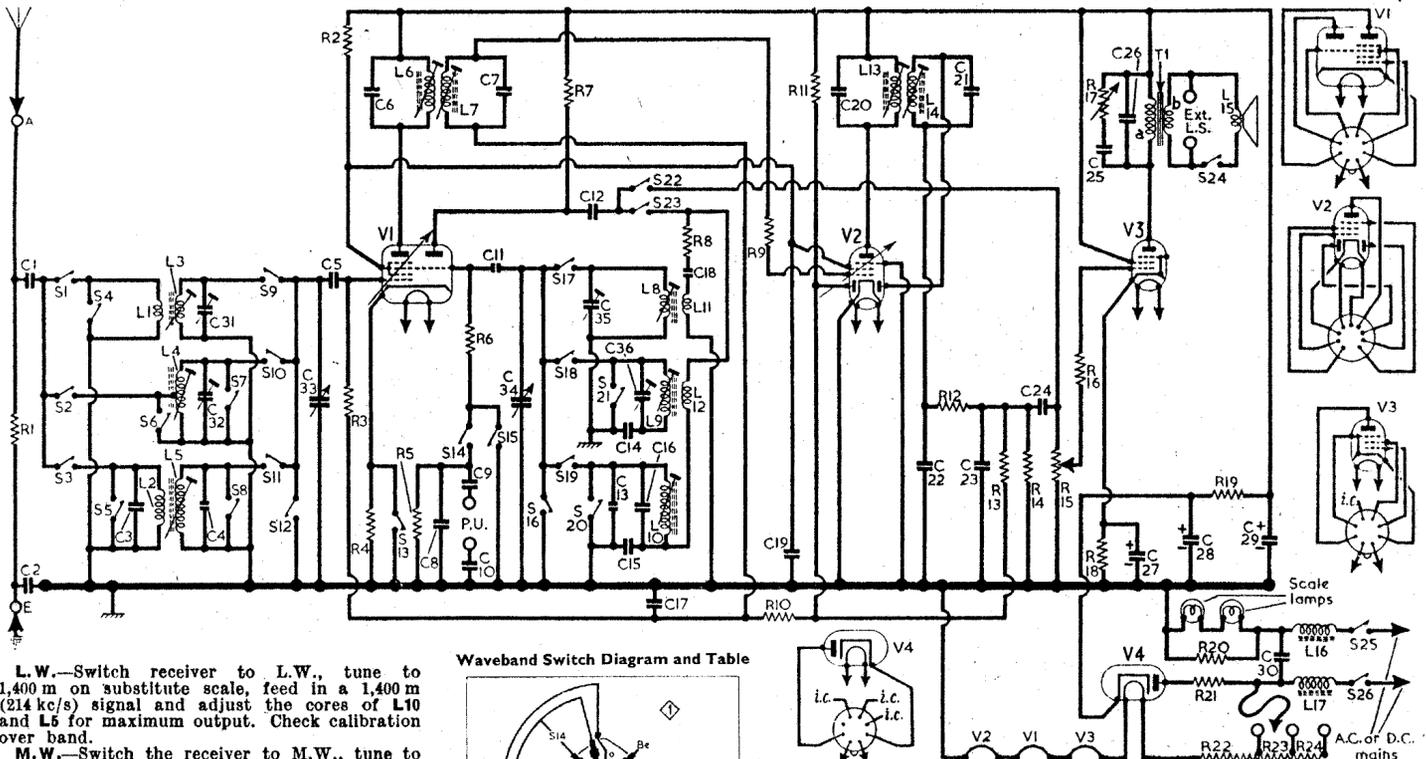
When the chassis is finally replaced in its cabinet, check that with the gang at maximum capacitance, the cursors coincide with the short vertical lines at the high wavelength ends of the tuning scales. The positions of all the R.F. and oscillator adjustments are shown in the sketch below where they are drawn as seen from the aerial input end of an upright chassis. Connect output of signal generator, via a dummy aerial, to A and E sockets.

CAPACITORS		Values	Locations
C1	Aerial and earth isolators	0.001μF	G3
C2	L.W. aerial shunt	0.01μF	G3
C3	L.W. aerial trim	600pF	G3
C4	V1 C.G.	85pF	G3
C5	V1 C.G.	100pF	G3
C6	1st I.F. trans.	110pF	A1
C7	tuning ...	110pF	A1
C8	P.U. tone correction	0.002μF	G3
C9	P.U. isolators	0.005μF	F3
C10	Osc. C.G.	0.01μF	G3
C11	Osc. anode coup.	56pF	G2
C12	L.W. osc. trim	0.001μF	F2
C13	M.W. osc. tracker	33pF	G2
C14	L.W. osc. tracker	515pF	G2
C15	L.W. osc. trim	365pF	G2
C16	L.W. osc. trim	240pF	G2
C17	A.G.C. decoupling	0.05μF	F2
C18	S.W. reaction coup.	56pF	G2
C19	S.G. decoupling	0.05μF	F2
C20	2nd I.F. trans.	110pF	B1
C21	tuning ...	110pF	B1
C22	I.F. by-passes	100pF	F3
C23	A.F. coupling	100pF	E3
C24	Part tone control	0.002μF	E3
C25	Tone correction	0.005μF	E2
C26	V3 cath. by-pass	50μF	E2
C27*	H.T. smoothing	50μF	B1
C28*	Mains R.F. by-pass	50μF	B1
C29*	S.W. aerial trim	0.01μF	G3
C30	M.W. aerial trim	—	G3
C31†	M.W. aerial trim	—	G3
C32†	Aerial tuning	—	A1
C33†	Oscillator tuning	—	A1
C34†	S.W. osc. trim	—	G2
C35†	M.W. osc. trim	—	G2
C36†	—	—	G2

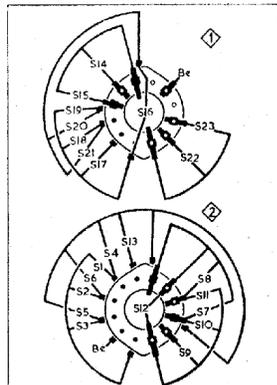
* Electrolytic. † Variable. ‡ Pre-set.

RESISTORS		Values	Locations
R1	Anti-static shunt	1MΩ	G3
R2	S.G. H.T. feed	27kΩ	F2
R3	V1 C.G.	680kΩ	G3
R4	V1 G.B.	330Ω	G3
R5	P.U. shunt	680kΩ	G3
R6	V1 osc. C.G.	47kΩ	F2
R7	Osc. anode feed	10kΩ	G2
R8	Osc. stabilizer	100Ω	G2
R9	V2 C.G. stopper	2.2kΩ	F3
R10	A.G.C. decoupling	1.5MΩ	F2
R11	Delay diode bias	20MΩ	E2
R12	I.F. stopper	47kΩ	E3
R13	A.G.C. decoupling	680kΩ	E2
R14	Signal diode load	330kΩ	E2
R15	Volume control	500kΩ	E2
R16	V3 C.G. stopper	47kΩ	E2
R17	Tone control	50kΩ	D2
R18	V3 G.B.	180Ω	E2
R19	H.T. smoothing	1kΩ	E3
R20	Scale lamp shunt	75Ω	D2
R21	V4 surge limiter	250Ω	C1
R22	—	1,030Ω	O1
R23	Heater ballast	200Ω	C1
R24	—	200Ω	C1

OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	Aerial coupling coils	—	G3
L2	—	50.0	G3
L3	—	—	G3
L4	Aerial tuning coils	7.0	G3
L5	—	20.0	G3
L6	1st I.F. trans. { Pri.	12.5	A1
L7	— { Sec.	12.5	A1
L8	Oscillator tuning coils	1.0	G2
L9	—	5.0	G2
L10	Oscillator reaction coils	—	G2
L11	—	5.0	G2
L12	2nd I.F. trans. { Pri.	12.5	B1
L13	— { Sec.	12.5	B1
L14	Speech coil	2.5	—
L15	—	3.0	C1
L16	Mains R.F. chokes	3.0	C1
L17	—	—	—
T1	O.P. trans. { a	410.0	—
—	— { b	—	—
S1-S23	Waveband sw.	—	G2
S24	Speaker switch	—	—
S25, S26	Mains sw., g'd R15	—	E2



Waveband Switch Diagram and Table



Switches	S.W.	M.W.	L.W.	Gram.
S1	o	o	o	o
S2	o	o	o	o
S3	o	o	o	o
S4	o	o	o	o
S5	o	o	o	o
S6	o	o	o	o
S7	o	o	o	o
S8	o	o	o	o
S9	o	o	o	o
S10	o	o	o	o
S11	o	o	o	o
S12	o	o	o	o
S13	o	o	o	o
S14	o	o	o	o
S15	o	o	o	o
S16	o	o	o	o
S17	o	o	o	o
S18	o	o	o	o
S19	o	o	o	o
S20	o	o	o	o
S21	o	o	o	o
S22	o	o	o	o
S23	o	o	o	o

L.W.—Switch receiver to L.W., tune to 1,400 m on substitute scale, feed in a 1,400 m (214 kc/s) signal and adjust the cores of L10 and L5 for maximum output. Check calibration over band.

M.W.—Switch the receiver to M.W., tune to 500 m, feed in a 500 m (600 kc/s) signal and adjust the cores of L9 and L4 for maximum output. Tune receiver to 200 m, feed in a 200 m (1,500 kc/s) signal and adjust C36 and C32 for maximum output.

S.W.—Switch receiver to S.W., tune to 30 m, feed in a 30 m (10 Mc/s) signal and adjust the cores of L8 and L3 for maximum output. Tune receiver to 15 m, feed in a 15 m (20 Mc/s) signal and adjust C35 and C31 for maximum output.

Switches.—S1-S23 are the waveband and radio/gram change-over switches, ganged in two rotary units beneath the chassis. These units are indicated in our underside view of the chassis, and shown in detail in the diagrams indicated by arrows in the under-chassis illustration. The associated switch table gives the switch operations for the four control settings, starting from the fully anti-clockwise position of the control knob. A dash indicates open, and C, closed.

Scale Lamps.—These are 3.5V, 0.15A lamps, with large clear spherical bulbs and M.E.S. bases.

Drive Cord Replacement.—About 50 inches of nylon-braided glass yarn is required for a new drive. The cord should be run as shown in the sketch of the tuning drive system, where it is drawn as seen from the front of the chassis with the gang at maximum capacitance.