

Intermediate frequency 470 kc/s.

CAPACITORS		Values	Locations
C1	Mains isolators	0.002 μ F	G4
C2	Aerial series	0.01 μ F	F4
C3	Aerial coupling	0.002 μ F	G4
C4	Aerial coupling	0.0032 μ F	G4
C5	1st I.F. trans. tuning	120pF	A2
C6	ing	120pF	A2
C7	V1 cath. by-pass	0.1 μ F	G4
C8	A.G.C. decoupling	0.05 μ F	F4
C9	S.W. tracker	0.0025 μ F	G3
C10	M.W. tracker	410pF	G3
C11	L.W. tracker	150pF	G3
C12	L.W. osc. trimmer	150pF	G4
C13	Osc. anode comp.	50pF	G4
C14	S.G. decoupling	0.1 μ F	F4
C15	2nd I.F. trans. tuning	120pF	B2
C16	ing	120pF	B2
C17	V2 cath. by-pass	0.1 μ F	F4
C18	I.F. by-passes	100pF	F4
C19	P.U. isolator	0.1 μ F	F4
C20	A.F. coupling	0.005 μ F	E3
C21	I.F. by-pass	400pF	E4
C22	Part tone control	0.01 μ F	E3
C23	A.F. coupling	0.01 μ F	E4
C24	Tone correction	0.002 μ F	E3
C25	V4 cath. by-pass	25 μ F	D4
C26*	H.T. smoothing	16 μ F	B1
C27*	H.T. smoothing	16 μ F	B1
C28*	H.T. smoothing	16 μ F	B1
C29*	H.T. smoothing	16 μ F	B1
C30	Mains by-pass	0.01 μ F	D3
C31†	S.W. aerial trim.	—	G3
C32†	M.W. aerial trim.	—	G3
C33†	L.W. aerial trim.	—	G4
C34†	Aerial tuning	—	A1
C35†	S.W. osc. trimming	—	G3
C36†	M.W. osc. trimming	—	G3
C37†	L.W. osc. trimming	—	G4
C38†	Oscillator tuning	—	A2

* Electrolytic. † Variable. ‡ Pre-set.

RESISTORS		Values	Locations
R1	Aerial shunt	4.7k Ω	F4
R2	A.G.C. decoupling	10k Ω	G4
R3	V1 G.B.	250k Ω	G4
R4	V1 osc. C.G.	56k Ω	G4
R5	Osc. anode feed	47k Ω	F4
R6	Stabilizer	147 Ω	G4
R7	S.G. H.T. feed	33k Ω	F4
R8	V2 G.B.	330k Ω	F4
R9	A.G.C. decoupling	2.2M Ω	F4
R10	I.F. stopper	56k Ω	F3
R11	Isolator Shunt	1M Ω	B4
R12	Volume control	500k Ω	B3
R13	V3 C.G.	10M Ω	B4
R14	V3 anode load	120k Ω	B3
R15	Tone control	500k Ω	D3
R16	V4 C.G.	470k Ω	B4
R17	V4 C.G. stopper	56k Ω	B4
R18	V4 H.T. pot.	10k Ω	B4
R19	divider	22k Ω	B4
R20	V4 G.B.	180k Ω	D3
R21	H.T. smoothing	2.2k Ω	F3
R22	Brimistor type C22	—	E3
R23	Heater ballast	512 Ω	C2
R24	resistor	100 Ω	C2

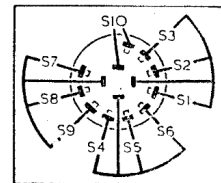
OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	S.W. coupling coil	Very low	G3
L2	Aerial tuning coils	Very low	G3
L3	Aerial tuning coils	4.4	G3
L4	Aerial tuning coils	34.0	G4
L5	S.W. reaction coil	Very low	G3
L6	M.W. reaction coil	1.0	G3
L7	Oscillator tuning coils	Very low	G3
L8	Oscillator tuning coils	5.0	G3
L9	Oscillator tuning coils	12.0	G4
L10	1st I.F. trans. {Pri.	10.0	A2
L11	1st I.F. trans. {Sec.	10.0	A2
L12	2nd I.F. trans. {Pri.	10.0	B2
L13	2nd I.F. trans. {Sec.	10.0	B2
L14	Speech coil	2.6	—
L15	Smoothing choke	160.0	B1
L16	Speech coil	2.4	D3
L17	Smoothing choke	2.4	D3
T1	Primary	360.0	—
T2	Secondary	0.4	—
S1-S10	Waveband switches	—	G3
S11	Mains sw., g'd.	—	D3
S12	Mains sw., g'd.	—	D3

VALVE ANALYSIS

Valve	Anode		Screen		Cath.
	V	mA	V	mA	
V1 14S7	142	0.7	68	0.6	1.3
V2 14H7*	78	2.2	68	0.5	1.0
V3 14B6	142	1.6	95	1.2	1.4
V4 50L6	83	0.22	—	—	195.0
V5 35Z4	150	65.0	—	—	—
	204†	—	—	—	—

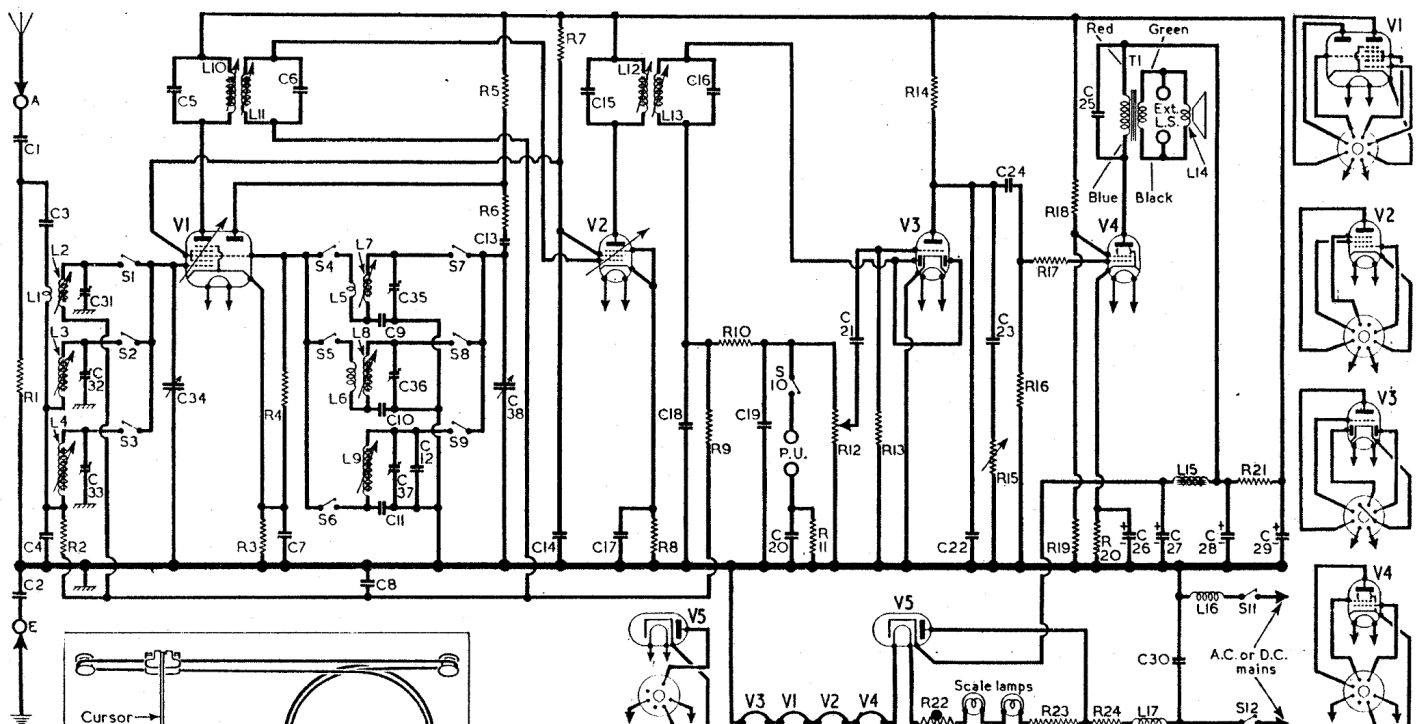
* V2 may be a 7B7.

† A.C. volts.



Above; Diagram of the waveband switch unit, with the associated table below.

Switch	S.W.	M.W.	L.W.	Gram.
S1	—	—	—	—
S2	—	—	—	—
S3	—	—	—	—
S4	—	—	—	—
S5	—	—	—	—
S6	—	—	—	—
S7	—	—	—	—
S8	—	—	—	—
S9	—	—	—	—
S10	—	—	—	—



Sketch showing the tuning drive system, as seen from the front with the gang at maximum capacitance.

Drive Cord Replacement.—Two cords of different material are used in this receiver; the drum drive which requires about 18 inches of fine gauge nylon braided glass yarn; and the cursor drive, which requires about 42 inches of fine gauge plaited flax fishing line.

The course taken by the two cords is clearly indicated in the sketch in col. 2, where the tuning drive system is drawn as seen from the front, but in order to gain access to the gang drum it is necessary to remove the metal plate forming the front member of the chassis structure.

To do this, remove the glass scale panel (spring clips at corners), remove the fixing nuts and lock washers from the tone control and volume control spindle bushes, and remove the four self-tapping screws holding the metal front plate to the rest of the chassis. The drive system is then exposed as shown in our sketch.

CIRCUIT ALIGNMENT

I.F. Stages.—Switch set to M.W., turn gang to maximum and set tone and volume controls fully clockwise. Connect the output from the signal generator, via a 0.1 μ F capacitor in the "live" lead, to control grid (pin 6) of V2 and chassis. Feed in a 470kc/s (638.3m) signal and adjust the cores of L13, L12 (location reference B2) for maximum output. Transfer "live" signal generator lead to control grid (pin 6) of V1, and adjust the cores of L11, L10 (A2) for maximum output. Repeat these adjustments.

R.F. and Oscillator Stages.—Remove chassis from cabinet and check that with the gang at maximum capacitance, the cursor coincides with the highest wavelength ends of the tuning scales. Transfer the signal generator leads, via a suitable dummy aerial, to A and E sockets.

L.W.—Switch set to L.W., tune to 2,000 m, feed in a 2,000 m (150 kc/s) signal and adjust the cores of L9 (G4) and L4 (G4) for maximum output. Tune to 1,000 m, feed in a 1,000 m (300 kc/s) signal and adjust C37 (G4) and C33 (G4) for maximum output. Repeat these adjustments.

M.W.—Switch set to M.W., tune to 500 m, feed in a 500 m (600 kc/s) signal and adjust the cores of L8 (G3) and L3 (G3) for maximum output. Tune to 200 m, feed in a 200 m (1,500 kc/s) signal and adjust C36 (G3) and C32 (G3) for maximum output. Repeat these adjustments.

S.W.—A dummy aerial consisting of a non-inductive 400 Ω resistor should be connected in series with the "live" signal generator lead. Switch set to S.W., tune to 50 m, feed in a 50 m (6 Mc/s) signal and adjust the cores of L7 (G3) and L2 (G3) for maximum output. Tune to 20 m, feed in a 20 m (15 Mc/s) signal and adjust C35 (G4) and C31 (G4) for maximum output, "rocking" the gang slightly while adjusting C31 to obtain optimum results. Repeat these adjustments.