

Valve	Anode		Screen		Cath.
	V	mA	V	mA	
V1 141TH	155	2.4	75	3.7	—
V2 171DDP	155	5.0	115	1.9	3.9
V3 451PT	168	33.0	156	6.3	4.2
V4 311SU	185*	—	—	—	184.0†

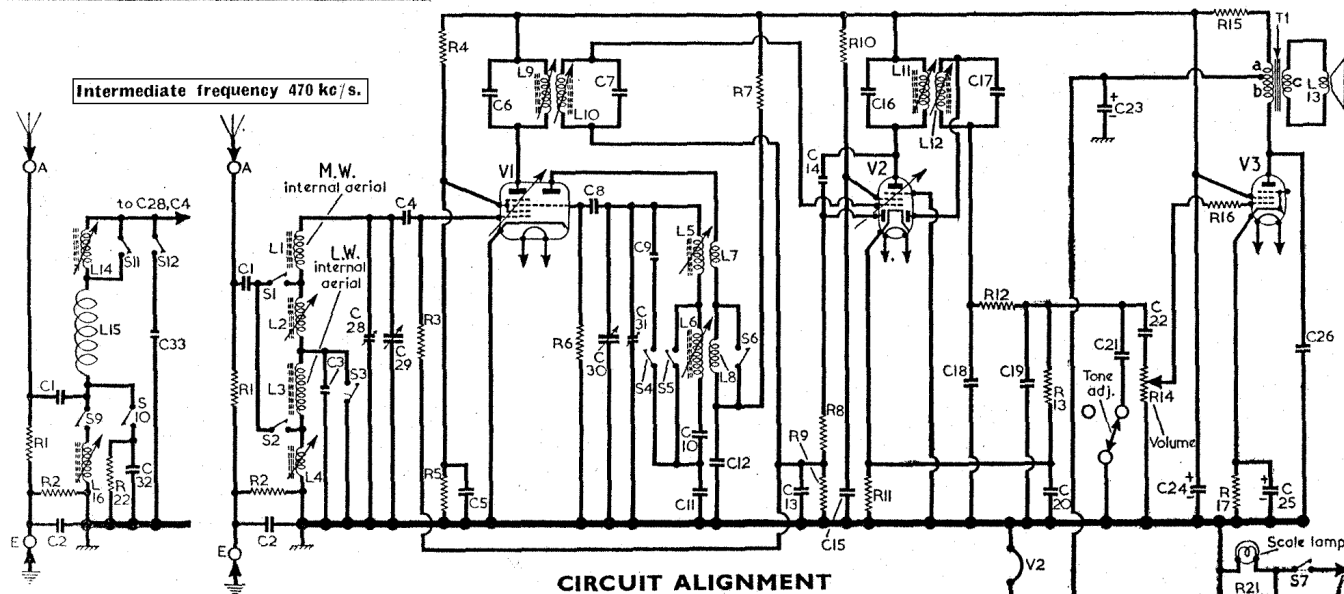
* A.C. reading. † Cathode current, 55.4 mA.

OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	M.W. Int. aerial ...	0.3	A2
L2	M.W. loading coil ...	1.5	G4
L3	L.W. Int. aerial ...	2.2	B2
L4	L.W. loading coil ...	2.2	G4
L5	Oscillator tun. coils	2.6	A1
L6		7.6	A1
L7	Osc. reaction coils	2.0	A1
L8		3.0	A1
L9	1st I.F. trans. { Pri. Sec.	12.0	A1
L10		12.0	A1
L11	2nd I.F. trans. { Pri. Sec.	12.0	B2
L12		12.0	B2
L13	Speech coil	2.5	—
L14	L.W. loading coil ...	2.2	—
L15	Frame aerial	0.5	—
L16	M.W. loading coil ...	1.5	—
T1	O.P. trans. { a ... b ... c ...	480.0	C1
S1-S6	Waveband switches	—	G3
S7, S8	Mains sw., g'd R14	—	D3

RESISTORS		Values	Locations
R1	Aerial shunt ...	1.5MΩ	G4
R2	Anti-static leak ...	330kΩ	F3
R3	V1 C.G. ...	2.2MΩ	G3
R4	V1 S.G. pot. divider	15kΩ	F4
R5		27kΩ	F4
R6	V1 osc. C.G. ...	47kΩ	F4
R7	Osc. anode feed ...	33kΩ	G3
R8	A.G.C. diode load	2.2MΩ	F4
R9		470kΩ	E4
R10	V2 S.G. feed ...	22kΩ	F4
R11	V2 G.B. ...	500Ω	E4
R12	I.F. stopper ...	47kΩ	E4
R13	Signal diode load ...	220kΩ	E3
R14	Volume control ...	500kΩ	D3
R15	H.T. smoothing ...	1.2kΩ	D3
R16	V3 C.G. stopper ...	47kΩ	D3
R17	V3 G.B. ...	270Ω	D4
R18	V4 surge limiter ...	180Ω	D4
R19	Heater ballast ...	950Ω	C2
R20		300Ω	C2
R21	Scale lamp shunt ...	83Ω	D3
R22	L.W. aerial shunt ...	4.7kΩ	—

CAPACITORS		Values	Locations
C1	Aerial coupling ...	0.0018μF	G4
C2	"E" socket isolator	0.01μF	E3
C3	L.W. aerial trim ...	33pF	G4
C4	V1 C.G. ...	100pF	G4
C5	V1 S.G. decoupling	0.1μF	F3
C6	1st I.F. trans. tun. {	100pF	A1
C7		100pF	A1
C8	V1 osc. C.G. ...	120pF	G3
C9	L.W. osc. trimmer ...	47pF	G3
C10	L.W. osc. tracker ...	220pF	G3
C11	M.W. osc. tracker ...	638pF	G3
C12	Osc. anode decoup.	0.1μF	G3
C13	A.G.C. decoupling	0.05μF	F4
C14	A.G.C. coupling ...	10pF	F4
C15	V2 S.G. decoupling	0.1μF	F3
C16	2nd I.F. trans. tun. {	100pF	B2
C17		175pF	B2
C18	I.F. by-passes ...	100pF	E4
C19		100pF	E4
C20	V2 cath. by-pass ...	0.1μF	E4
C21	Tone adjustment ...	0.001μF	E4
C22	A.F. coupling ...	0.01μF	D3
C23*	H.T. smoothing ...	32μF	C1
C24*		50pF	C1
C25*	V3 cath. by-pass ...	0.005μF	D3
C26	Mains R.F. by-pass	0.01μF	D3
C27	M.W. aerial trim ...	—	A2
C28†	Aerial tuning ...	—	A2
C29†	Oscillator tuning ...	—	A1
C30†	M.W. osc. trim ...	—	A2
C31†	L.W. aerial coup ...	0.0015μF	—
C32	L.W. aerial trim ...	22pF	—
C33			

* Electrolytic. † Variable. ‡ Pre-set.



CIRCUIT ALIGNMENT

All the core and trimmer adjustments can be made accessible by removing the cabinet base and back cover. Turn volume control to maximum and set the tone adjustment to "Brilliant."

I.F. Stages.—Switch receiver to M.W. and turn gang to minimum capacitance. Connect output of signal generator, via a 0.1μF capacitor in each lead, to control grid (pin 6) of V1 and chassis. Feed in a 470 kc/s (638.3 m) signal and adjust the cores of L12 (location reference B2) L11 (F4), L10 (A1) and L9 (F3) for maximum output. The core of L11 must be adjusted to the peak obtained with it screwed to its inner-most setting in the coil former, and the cores of the remaining coils adjusted to their outer-most settings.

R.F. and Oscillator Stages.—Although the receiver may be aligned with the chassis in its cabinet, calibration marks have been provided on the scale backing plate to allow for alignment outside the cabinet. Check that with the gang at maximum capacitance the cursor coincides with the high wavelength end of the tuning scale, or with the extreme right-hand calibration mark on the lower edge of the scale backing plate.

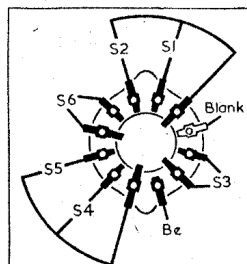
If it is intended to operate the receiver mainly from an external aerial and earth, then the output of the signal generator should be fed, via a standard dummy aerial, to the A and E sockets. If, however, the receiver is to be operated mainly from the internal aeri-als, then the output of the signal generator should be connected to a 20-turn, 4-inch diameter coil of wire, placed about one foot away from the internal aeri-als.

M.W.—Switch receiver to M.W., tune to 193.6 m (calibration mark at lower left-hand edge of backing plate) feed in a 193.6 m (1,550 kc/s) signal and adjust C31 (A2) and C28 (A2) for maximum output. Tune receiver to 521.7 m (middle calibration mark on lower edge of backing plate) feed in a 521.7 m (575 kc/s) signal and adjust the cores of L5 (A1) and L2 (G4) for maximum output. Repeat these adjustments until no further improvement results.

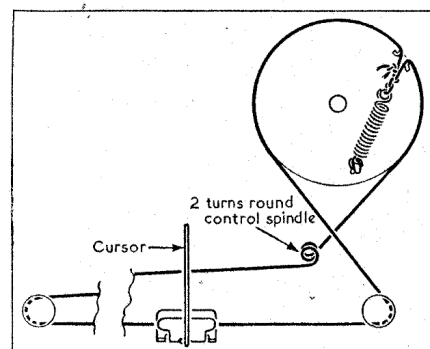
L.W.—Switch receiver to L.W., tune to 1,875 m (calibration mark at top edge of backing plate) feed in a 1,875 m (160 kc/s) signal and adjust the cores of L6 (A1) and L4 (G4) for maximum output.

Right: Diagram of the waveband switch unit.

Below: Waveband switch table.



Switch	M.W.	L.W.
S1	—	—
S2	—	—
S3	—	—
S4	—	—
S5	—	—
S6	—	—
S7	—	—
S8	—	—



Sketch of the tuning drive cord system, drawn as seen from the front of the chassis with the gang at maximum capacitance.

Modification.—Earlier models were fitted with a single conventional frame aerial winding in place of the ferrite internal aeri-als. A separate aerial input circuit for the earlier models is shown on the left of the main circuit diagram overleaf.

Drive Cord Replacement.—About 40 inches of nylon-braided glass yarn is required for a new drive cord, which should be run as shown in the sketch in column 1, starting with the gang at maximum capacitance and running the cord clockwise round the drum.