

VALVE ANALYSIS

CAPACITORS		Values (μF)	Locations
C1	Aerial series ...	0.0001	H6
C2	I.F. filter time ...	0.00015	J3
C3	V1 Lex. C.G. decoup. ...	0.01	H3
C4	V1 cath. by-pass ...	0.1	D4
C5	V1 osc. C.G. ...	0.0001	F4
C6	Osc. S.W. tracker ...	0.0057	E3
C7	Osc. M.W. tracker ...	0.00053	E3
C8	Osc. L.W. tracker ...	0.00025	F3
C9	Osc. L.W. trim. ...	0.00005	F3
C10	Osc. anode coup. ...	0.0001	F4
C11	V2 C.G. decoup. ...	0.05	C2
C12	S.G.'s decoupling ...	0.1	D5
C13	V2 cathode by-passes ...	0.1	D5
C14*	V2 cathode by-passes ...	25.0	D4
C15	A.G.C. decoup. ...	0.05	C2
C16	V2 anode capacitor ...	0.1	D6
C17	I.F. by-passes ...	0.0002	E6
C18	I.F. by-passes ...	0.0001	E6
C19*	V3 cath. by-pass ...	50.0	F6
C20	A.F. coupling ...	0.01	E6
C21	A.G.C. coupling ...	0.00005	C2
C22	Part tone control ...	0.05	F6
C23*	H.T. smoothing capacitors ...	8.0	A1
C24*	H.T. smoothing capacitors ...	16.0	A1
C25	Mains R.F. by-pass ...	0.01	J5
C26*	Aerial trimmers ...	0.00005	G3
C27*	Aerial trimmers ...	0.00005	G3
C28*	Aerial trimmers ...	0.00008	G3
C29*	Aerial tuning ...	0.000487	B1
C30*	Oscillator trimmers ...	0.00005	F3
C31*	Oscillator trimmers ...	0.00005	F3
C32*	Oscillator trimmers ...	0.00008	F3
C33*	Oscillator tuning ...	0.000487	B1
C34*	1st I.F. transformer tuning ...	0.00025	C1
C35*	2nd I.F. transformer tuning ...	0.00025	C1
C36*	2nd I.F. transformer tuning ...	0.00025	C2
C37*	2nd I.F. transformer tuning ...	0.00025	C2

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 TH41	250	3.5	102	8.1
V2 VP41	72	3.3	102	0.8
V3 PEN-45DD	190	3.0	102	0.8
V4 UU6	238	41.0	250	8.0
	302†	—	—	—

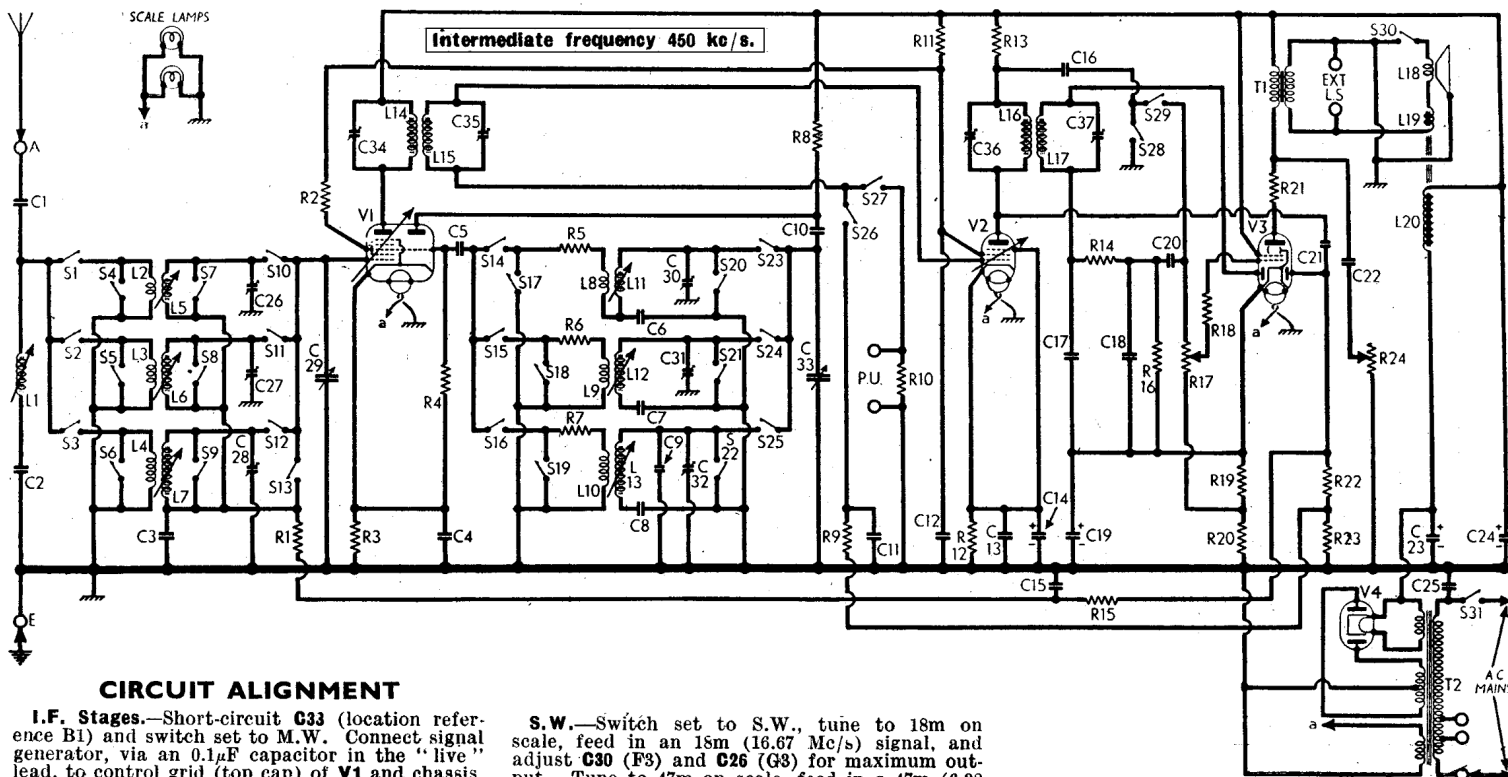
† Each anode, A.C.

RESISTORS		Values (ohms)	Locations
R1	V1 hept. C.G. decoup. ...	100,000	H4
R2	V1 S.G. stopper ...	10	E5
R3	V1 fixed G.B. ...	180	D4
R4	V1 osc. C.G. ...	47,000	F4
R5	Osc. stabilizing resistors ...	47	F4
R6	Osc. stabilizing resistors ...	1,000	F4
R7	Osc. stabilizing resistors ...	3,300	F4
R8	Osc. anode load ...	47,000	E4
R9	V2 C.G. decoup. ...	1,000,000	C2
R10	P.U. shunt ...	1,000,000	H6
R11	S.G.'s H.T. feed ...	15,000	D5
R12	V2 fixed G.B. ...	330	D4
R13	V2 anode load ...	15,000	D5
R14	I.F. stopper ...	47,000	E6
R15	V1 A.G.C. decoup. ...	2,200,000	C2
R16	Sig. diode load ...	500,000	E6
R17	Volume control ...	500,000	E5
R18	V3 grid stopper ...	47,000	C2
R19	V3 G.B., A.G.C. delay resistors ...	180	F6
R20	V3 G.B., A.G.C. delay resistors ...	180	E6
R21	V3 anode stopper ...	47	F6
R22	A.G.C. diode load resistors ...	470,000	C2
R23	A.G.C. diode load resistors ...	470,000	C2
R24	Tone control ...	25,000	G6

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OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	I.F. filter coil ...	12.8	J4
L2	Aerial coupling coils ...	0.1	H3
L3	Aerial coupling coils ...	18.5	H3
L4	Aerial coupling coils ...	50.0	H3
L5	Aerial tuning coils ...	Very low	H3
L6	Aerial tuning coils ...	1.9	H3
L7	Aerial tuning coils ...	19.0	H3
L8	Oscillator reaction coils ...	4.5	F3
L9	Oscillator reaction coils ...	0.8	F3
L10	Oscillator reaction coils ...	1.5	F3
L11	Oscillator tuning coils ...	Very low	F3
L12	Oscillator tuning coils ...	3.0	F3
L13	Oscillator tuning coils ...	6.5	F3
L14	1st I.F. trans. Pri. ...	3.5	C1
L15	1st I.F. trans. Sec. ...	3.5	C1
L16	2nd I.F. trans. Pri. ...	3.5	C2
L17	2nd I.F. trans. Sec. ...	3.5	C2
L18	Speech coil ...	2.0	—
L19	Hum neut. coil ...	Very low	—
L20	Field Coil ...	1,000.0	—
T1	Speaker trans. Pri. ...	230.0	—
	Speaker trans. Sec. ...	0.4	—
	Speaker trans. total ...	35.0	A2
T2	Mains trans. Heat. sec. ...	0.1	A2
	Mains trans. Rect. heat. sec. ...	0.1	A2
	Mains trans. H.T. sec., total ...	700.0	A2
S1--S29	W/band and Gram. Switches ...	—	G3
S30	Int. speaker sw. ...	—	—
S31	Mains sw., g'd S1-S29 ...	—	G4

*Electrolytic. † Variable. ‡ Pre-set.



CIRCUIT ALIGNMENT

I.F. Stages.—Short-circuit C33 (location reference B1) and switch set to M.W. Connect signal generator, via an 0.1μF capacitor in the "live" lead, to control grid (top cap) of V1 and chassis, removing the original top cap connector but connecting a 500,000-ohm resistor between the top cap of the valve and chassis. Feed in a 450 kc/s (666.7m) signal and adjust C37, C36, C35, C34 (C2, C1), in that order, for maximum output. Replace V1 top cap connector and remove short-circuit from C33.

R.F. and Oscillator Stages.—With the gang at maximum the pointer should indicate 550m on scale. Transfer "live" signal generator lead to A socket, via a suitable dummy aerial.

S.W.—Switch set to S.W., tune to 18m on scale, feed in an 18m (16.67 Mc/s) signal, and adjust C30 (F3) and C26 (G3) for maximum output. Tune to 47m on scale, feed in a 47m (6.38 Mc/s) signal, and adjust the cores of L11 (F3) and L5 (H3) for maximum output. Repeat these operations.

M.W.—Switch set to M.W., tune to 230m on scale, feed in a 230m (1,304 kc/s) signal, and adjust C31 (F3) and C27 (G3) for maximum output. Tune to 510m on scale, feed in a 510m (588.1 kc/s) signal, and adjust the cores of L12 (F3) and L6 (H3) for maximum output. Repeat these operations.

L.W.—Switch set to L.W., tune to 850m on scale, feed in an 850m (352.9 kc/s) signal, and adjust C32 (F3) and C28 (G3) for maximum output. Tune to 1,850m on scale, feed in a 1,850m (162 kc/s) signal, and adjust the cores of L13 (F3) and L7 (H3) for maximum output. Repeat these operations.

I.F. Filter.—Switch set to M.W., tune to 550m on scale, feed in a 450 kc/s signal, and adjust the core of L1 (J4) for maximum output