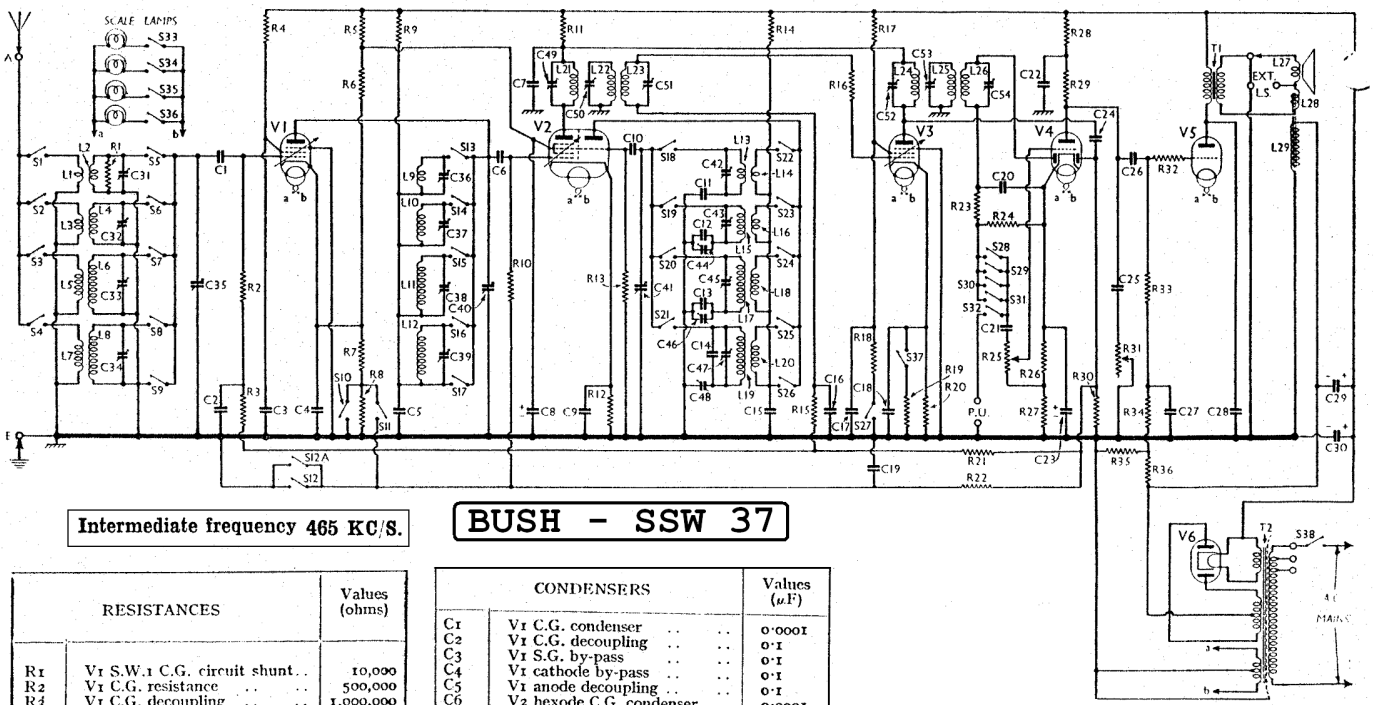

BUSH - SSW 37

Intermediate frequency 465 KC/S.

	RESISTANCES	Values (ohms)
R1	V1 S.W.1 C.G. circuit shunt	10,000
R2	V1 C.G. resistance	500,000
R3	V1 C.G. decoupling	1,000,000
R4	V1 S.G. H.T. feed	100,000
R5	V2 hexode S.G.'s H.T. potential divider	20,000
R6		20,000
R7	V1 fixed G.B. resistances	100
R8		5,000
R9	V1 anode decoupling	10,000
R10	V2 hexode C.G. resistance	500,000
R11	V2 hexode anode decoupling	5,000
R12	V2 fixed G.B. resistance	1
R13	V2 osc. C.G. resistance	30,000
R14	V2 osc. anode decoupling	15,000
R15	V3 C.G. decoupling	1,000,000
R16	V3 C.G. stabiliser	250
R17	V3 S.G. H.T. feed	100,000
R18	V3 S.G. circuit bleeder (gram.)	1,000
R19	V3 fixed G.B. resistances	100
R20		10,000
R21	V1 and V3 A.V.C. line decoupling	1,000,000
R22	V2 A.V.C. line decoupling	1,000,000
R23	I.F. stopper	50,000
R24	V4 signal diode load	500,000
R25	Manual volume control	500,000
R26	V4 G.B. and A.V.C. delay voltage resistances	1,000
R27		2,000
R28	V4 triode anode decoupling	10,000
R29	V4 triode anode load	50,000
R30	V4 A.V.C. diode load	1,000,000
R31	Variable tone control	50,000
R32	V5 C.G. I.F. stopper	50,000
R33	V5 C.G. resistance	250,000
R34	V5 C.G. decoupling	500,000
R35	V5 G.B. potential divider	20,000
R36		50,000

	OTHER COMPONENTS	Approx. Values (ohms)
L1	Aerial S.W.1 coupling coil	0·15
L2	Aerial S.W.1 tuning coil	Very low
L3	Aerial S.W.2 coupling coil	0·1
L4	Aerial S.W.2 tuning coil	0·25
L5	Aerial M.W. coupling coil	0·6
L6	Aerial M.W. tuning coil	2·3
L7	Aerial L.W. coupling coil	14·0
L8	Aerial L.W. tuning coil	7·25
L9	V1 anode S.W.1 tuning coil	Very low
L10	V1 anode S.W.2 tuning coil	0·25
L11	V1 anode M.W. tuning coil	2·3
L12	V1 anode L.W. tuning coil	7·25
L13	Osc. S.W.1 tuning coil	Very low
L14	Osc. S.W.1 reaction coil	0·15
L15	Osc. S.W.2 tuning coil	0·2
L16	Osc. S.W.2 reaction coil	0·1
L17	Osc. M.W. tuning coil	1·55
L18	Osc. M.W. reaction coil	1·25
L19	Osc. L.W. tuning coil	2·25
L20	Osc. L.W. reaction coil	1·85
L21	1st I.F. trans. Primary	7·0
L22	1st I.F. trans. Tertiary	7·0
L23	1st I.F. trans. Secondary	7·0
L24	2nd I.F. trans. Primary	7·0
L25	2nd I.F. trans. Tertiary	7·0
L26	2nd I.F. trans. Secondary	7·0
L27	Speaker speech coil	1·6
L28	Hum neutralising coil	0·1
L29	Speaker field coil	1500·0
T1	Speaker input trans. Pri.	280·0
	Speaker input trans. Sec.	0·5
T2	Mains trans. Pri. total	20·0
	Mains trans. Heater sec.	0·1
	Mains trans. Rect. heat. sec.	0·1
	Mains trans. H.T. sec. total	350·0
S1-27	Waveband switches	—
S28-32	Radio-gram. change switches	—
S33-36	Scale lamp switches	—
S37	Noise suppression switch	—
S38	Mains switch, ganged R25	—

	CONDENSERS	Values (μF)
C1	V1 C.G. condenser	0·0001
C2	V1 C.G. decoupling	0·1
C3	V1 S.G. by-pass	0·1
C4	V1 cathode by-pass	0·1
C5	V1 anode decoupling	0·1
C6	V2 hexode C.G. condenser	0·0001
C7	V2 hexode anode decoupling	0·1
C8*	V2 hexode S.G.'s by-pass	2·0
C9	V2 cathode by-pass	0·1
C10	V2 osc. C.G. condenser	0·00005
C11	Osc. S.W.1 tracker	0·0043
C12	Osc. S.W.2 tracker	0·0015
C13	Osc. M.W. tracker	0·0004
C14	Osc. L.W. trimmer	0·0001
C15	V1 osc. anode decoupling	0·05
C16	V3 C.G. decoupling	0·1
C17	V3 S.G. by-pass	0·1
C18	V3 cathode by-pass	0·1
C19	V2 A.V.C. line decoupling	0·1
C20	I.F. by-pass	0·0001
C21	A.F. coupling to V4 triode	0·005
C22	V4 triode anode decoupling	0·5
C23*	V4 cathode by-pass	25·0
C24	V4 A.V.C. diode feed	0·0001
C25	Tone control condenser	0·02
C26	V4 to V5 A.F. coupling	0·03
C27	V3 C.G. decoupling	0·5
C28	V5 anode by-pass	0·001
C29*	H.T. smoothing	8·0
C30*		16·0
C31‡	Aerial circuit S.W.1 trimmer	—
C32‡	Aerial circuit S.W.2 trimmer	—
C33‡	Aerial circuit M.W. trimmer	—
C34‡	Aerial circuit L.W. trimmer	—
C35‡	Aerial circuit tuning	—
C36‡	V1 anode circuit S.W.1 trimmer	—
C37‡	V1 anode circuit S.W.2 trimmer	—
C38‡	V1 anode circuit M.W. trimmer	—
C39‡	V1 anode circuit L.W. trimmer	—
C40†	V1 anode circuit tuning	—
C41†	Osc. circuit tuning	—
C42‡	Osc. circuit S.W.1 trimmer	—
C43‡	Osc. circuit S.W.2 trimmer	—
C44‡	Osc. circuit S.W.2 tracker	—
C45‡	Osc. circuit M.W. trimmer	—
C46‡	Osc. circuit M.W. tracker	—
C47‡	Osc. circuit L.W. trimmer	—
C48‡	Osc. circuit L.W. tracker	—
C49‡	1st I.F. trans. pri. tuning	—
C50‡	1st I.F. trans. tert. tuning	—
C51‡	1st I.F. trans. sec. tuning	—
C52‡	2nd I.F. trans. pri. tuning	—
C53‡	2nd I.F. trans. tert. tuning	—
C54‡	2nd I.F. trans. sec. tuning	—

* Electrolytic. †Variable. ‡ Pre-set.

VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 VP4B	250	0·9	170	0·3
V2 TH4	215	4·2	80	6·7
V3 VP4B	215	4·6	95	1·7
V4 TDD4	105	2·4	—	—
V5 ACO44	260	34·0	—	—
V6 IW4/350	305	—	—	—

Oscillator anode 160 V, 8·3 mA. Each anode, A.C.

Switch	L.W.	M.W.	S.W.2	S.W.1	Gram.
S1	O	O	O	C	O
S2	O	O	C	O	O
S3	O	C	O	O	O
S4	C	O	O	O	O
S5	O	O	O	C	O
S6	O	O	C	O	O
S7	O	C	O	O	O
S8	C	O	O	O	O
S9	O	O	O	O	C
S10	O	O	O	C	O
S11	O	O	O	C	C
S12	O	O	C	O	O
S12A	O	O	O	C	O
S13	O	O	O	C	O
S14	O	O	C	O	O
S15	O	C	O	O	O
S16	C	O	O	O	O
S17	O	O	O	O	C
S18	O	O	O	C	O
S19	O	O	C	O	O
S20	O	C	O	O	O
S21	C	O	O	O	O
S22	O	O	O	C	O
S23	O	O	C	O	O
S24	O	C	O	O	O
S25	C	O	O	O	O
S26	O	O	O	O	C
S27	O	O	O	O	C
S28	O	O	O	C	O
S29	O	O	C	O	O
S30	O	C	O	O	O
S31	C	O	O	O	O
S32	O	O	O	O	C
S33	O	O	O	C	O
S34	O	O	C	O	O
S35	O	C	O	O	O
S36	C	O	O	O	O

CIRCUIT ALIGNMENT

IF Stages.—Connect signal generator leads to control grid (top cap) of **V2** and chassis, switch set to LW, turn the gang to maximum capacity, turn the volume control to maximum, and depress the sensitivity switch knob.

Feed in a 465 kc/s (645.16 m) signal, and adjust **C54, C53, C52, C51, C50** and **C49** for maximum output, reducing the signal input as the circuits come into line.

RF and Oscillator Stages.—Transfer signal generator leads, via a suitable dummy aerial, to **A** and **E** sockets. The dummy aerial may consist of an inductance of 20 μH, a capacity of 0.0002 μF and a 15Ω resistor in series for MW and LW; and a 400Ω non-inductive resistor for the SW bands. With the gang at maximum capacity, the pointer should register with the 550 m and 2,000 m calibration marks on the scale.

SW1.—Switch set to SW1, tune to 18 m on scale, feed in an 18 m (16.67 Mc/s) signal, and adjust **C42** for maximum output, selecting the peak involving the lesser trimmer capacity. Then adjust **C31** and **C36** for maximum output.

SW2.—Switch set to SW2, tune to 80 m on scale, feed in an 80 m (3.75 Mc/s) signal, and adjust **C43** for maximum output, selecting the peak involving the lesser trimmer capacity. Then adjust **C32** and **C37** for maximum output.

Feed in a 150 m (2 Mc/s) signal, tune it in, and adjust **C44** for maximum output until the calibration is optimum. Return to 80 m, and re-check.

MW.—Switch set to MW, tune to 200 m on scale, feed in a 200 m (1,500 kc/s) signal, and adjust **C45** for maximum output, selecting the peak involving the lesser trimmer capacity. Feed in a 300 m (1,000 kc/s) signal, tune to 300 m on scale, and adjust **C33** and **C38** for maximum output.

Feed in a 500 m (600 kc/s) signal, tune it in, and adjust **C46** for maximum output while rocking the gang for optimum calibration. Return to 300 m and re-check.

LW.—Switch set to LW, tune to 1,000 m on scale, feed in a 1,000 m (300 kc/s) signal, and adjust **C47** for maximum output. Tune to 1,500 m on scale, feed in a 1,500 m (200 kc/s) signal, and adjust **C34** and **C39** for maximum output.

Feed in an 1,800 m (166.6 kc/s) signal, tune it in, and adjust **C48** for maximum output while rocking the gang for optimum calibration.