PILOT JACK T58

OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	Aerial coupling coils	0·4	H3
L2		0·1	A2
L3		6·0	A1
L4	Aerial tuning coils	Very low	H3
L5		1·0	A2
L6		24·0	A1
L7	S.W. osc. tuning	Very low	H4
L8	S.W. reaction coil	Very low	H4
L9	M.W. osc. tuning	2·5	H4
L10	M.W. reaction coil	0·2	H4
L11	L.W. osc. tuning	12·0	H4
L12	L.W. reaction coil	0·6	H4
L13	1st I.F. trans. Pri.	7·0	B2
L14	1st I.F. trans. Sec.	7·0	B2
L15	2nd I.F. trans. Pri.	7·0	C2
L16	2nd I.F. trans. Sec.	7·0	C2
L17	Speech coil	2·8	—
T1	Primary	0·5	—
	Secondary	430·0	
S1-S16	Waveband switches	—	H3
S17, S18	Tone switches	—	H3
S19, S20	Mains sw., g'd. R7	—	E3

Intermediate frequency 470 kc/s.

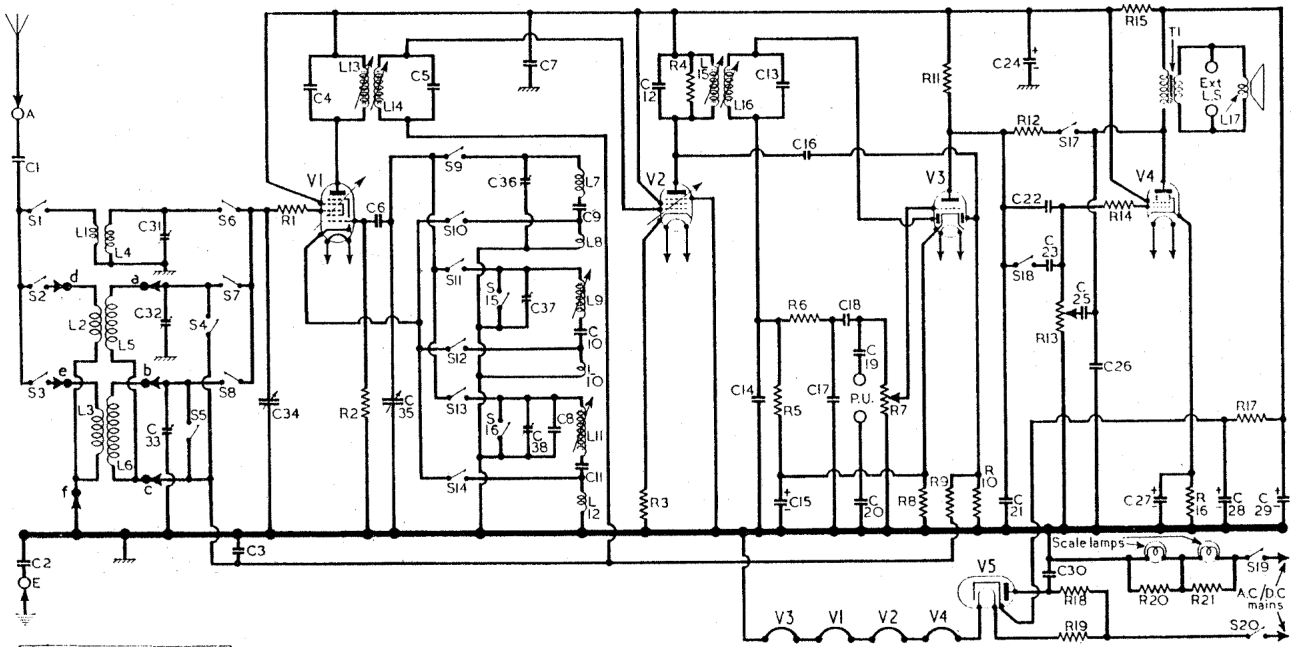
CAPACITORS		Values	Locations
C1	Aerial series	500pF	H3
C2	Chassis isolator	0·002μF	H3
C3	A.G.C. decoupling	0·1μF	G4
C4	1st I.F. trans. tuning	100pF	B2
C5	1st I.F. trans. tuning	100pF	B2
C6	V1 osc. C.G.	100pF	H4
C7	H.T. decoupling	0·01μF	G4
C8	L.W. osc. trimmer	150pF	H4
C9	S.W. osc. tracker	0·006μF	H4
C10	M.W. osc. tracker	530pF	H4
C11	L.W. osc. tracker	225pF	H4
C12	2nd I.F. trans. tuning	100pF	C2
C13	2nd I.F. trans. tuning	180pF	C2
C14	I.F. by-pass	100pF	F4
C15*	V3 G.B. by-pass	25μF	F4
C16	A.G.C. coupling	20pF	F4
C17	I.F. by-pass	100pF	F4
C18	A.F. coupling	0·01μF	F4
C19	P.U. isolators	0·02μF	F4
C20	P.U. isolators	0·02μF	F4
C21	I.F. by-pass	100pF	F4
C22	A.F. coupling	0·001μF	F3
C23	Tone corrector	0·01μF	G3
C24*	H.T. smoothing	8μF	G4
C25	Part tone control	500pF	F3
C26	Tone corrector	0·002μF	F3
C27*	V4 G.B. by-pass	25μF	E3
C28*	H.T. smoothing	32μF	D1
C29*	H.T. smoothing	32μF	D1
C30	R.F. filter	0·05μF	E4
C31‡	S.W. aerial trim.	50pF	H3
C32‡	M.W. aerial trim.	50pF	H3
C33‡	L.W. aerial trim.	50pF	H3
C34†	Aerial tuning	§528pF	B1
C35†	Oscillator tuning	§528pF	B2
C36‡	S.W. osc. trimmer	50pF	H4
C37‡	M.W. osc. trimmer	50pF	H4
C38‡	L.W. osc. trimmer	50pF	H4

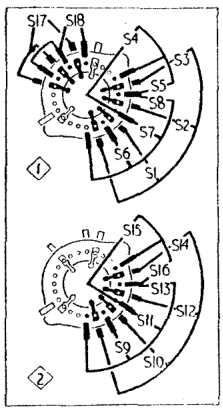
* Electrolytic. † Variable. ‡ Pre-set. § "Swing" value, min. to max.

Valve	Anode V	Anode mA	Screen V	Screen mA	Cath. V
V1 12BE6	96	3.6	96	6.4	—
V2 12BA6	96	3.0	96	7.0	1.1
V3 12Q7GT	60	0.12	—	—	1.2
V4 35L6GT	154	34.0	96	3.0	6.0
V5 35Z4GT	†210	—	—	—	220.0

† A.C. volts

RESISTORS		Values	Locations
R1	V1 C.G. stopper	33Ω	G3
R2	V1 osc. C.G.	22kΩ	H4
R3	V2 G.B.	100Ω	G4
R4	L15 shunt	470kΩ	G4
R5	Diode load	270kΩ	F4
R6	I.F. stopper	47kΩ	F4
R7	Volume control	1MΩ	E3
R8	V3 G.B.	10kΩ	F4
R9	A.G.C. decoupling	1MΩ	F4
R10	A.G.C. diode load	1MΩ	F4
R11	V3 anode load	470kΩ	F4
R12	Tone corrector	2·2MΩ	H3
R13	Tone control	500kΩ	E3
R14	V4 C.G. stopper	4·7kΩ	F3
R15	H.T. smoothing	3·9kΩ	F3
R16	V4 G.B.	180Ω	F3
R17	H.T. smoothing	680Ω	E3
R18	Surge limiter	100Ω	F4
R19	Heater ballast	830Ω	D2
R20	Scale lamp shunts	100Ω	C1
R21	Scale lamp shunts	100Ω	A1





Left: Waveband switch diagrams.
Below: Switch table.

Switch	S.W.	M.W.	L.W.
S1	C	—	—
S2	—	C	—
S3	—	—	C
S4	C	—	—
S5	C	C	—
S6	C	—	—
S7	—	C	—
S8	—	—	C
S9	C	—	—
S10	C	—	—
S11	—	C	—
S12	—	—	C
S13	—	—	C
S14	—	—	C
S15	C	—	—
S16	C	C	—
S17	—	C	C
S18	—	C	C

CIRCUIT ALIGNMENT

All the adjustments may be made with the chassis in the cabinet, the cores of **L14, L16** being made accessible by removing the cabinet base cover, secured by six round-head screws. Before aligning the I.F. stages, the cores should be freed by melting the wax seals.

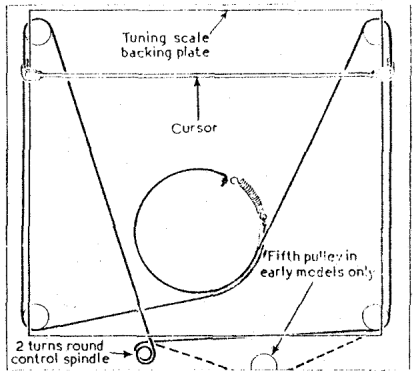
I.F. Stages.—Switch set to L.W., turn gang and volume control to maximum. Connect signal generator output, via a 0.1 μF capacitor in each lead, to control grid (pin 7) of **V1** and chassis, feed in a 470 kc/s (638.3 m) signal and adjust the cores of **L16** (location reference F4), **L15** (C2), **L14** (G4) and **L13** (B2) for maximum output, reducing the input as the circuits come into line. Re-seal cores.

R.F. and Oscillator Stages.—Check that with the gang at maximum capacitance the cursor coincides with the highest wavelength ends of the tuning scale. The position of the cursor may be adjusted by sliding it up or down the drive cord. Transfer the signal generator leads, via a dummy aerial, to **A** and **E** sockets.

S.W.—Switch set to S.W., tune to 13.4 m on scale, feed in a 13.4 m (23 Mc/s) signal and adjust **C36** (A2) and **C31** (A1) for maximum output. Repeat these adjustments.

M.W.—Switch set to M.W., tune to 200 m on scale, feed in a 200 m (1,500 kc/s) signal and adjust **C37** (A2) and **C32** (A1) for maximum output. Tune to 500 m on scale, feed in a 500 m (600 kc/s) signal and adjust the core of **L9** (H4) for maximum output. Repeat these adjustments.

L.W.—Switch set to L.W., tune to 1,000 m on scale, feed in a 1,000 m (300 kc/s) signal and adjust **C38** (A2) and **C33** (A1) for maximum output. Tune to 2,000 m on scale, feed in a 2,000 m (150 kc/s) signal and adjust the core of **L11** (H4) for maximum output. Repeat these adjustments.



The tuning drive, as seen from the front

Drive Cord Replacement.—50 inches of fine gauge nylon braided glass yarn is required for a new tuning drive cord, which should be run as shown in the sketch in col. 3, where the system is viewed from the front, as though seen through the scale assembly upon the back of which it is mounted, with the gang at maximum capacitance. The cursor can be slipped on afterwards.