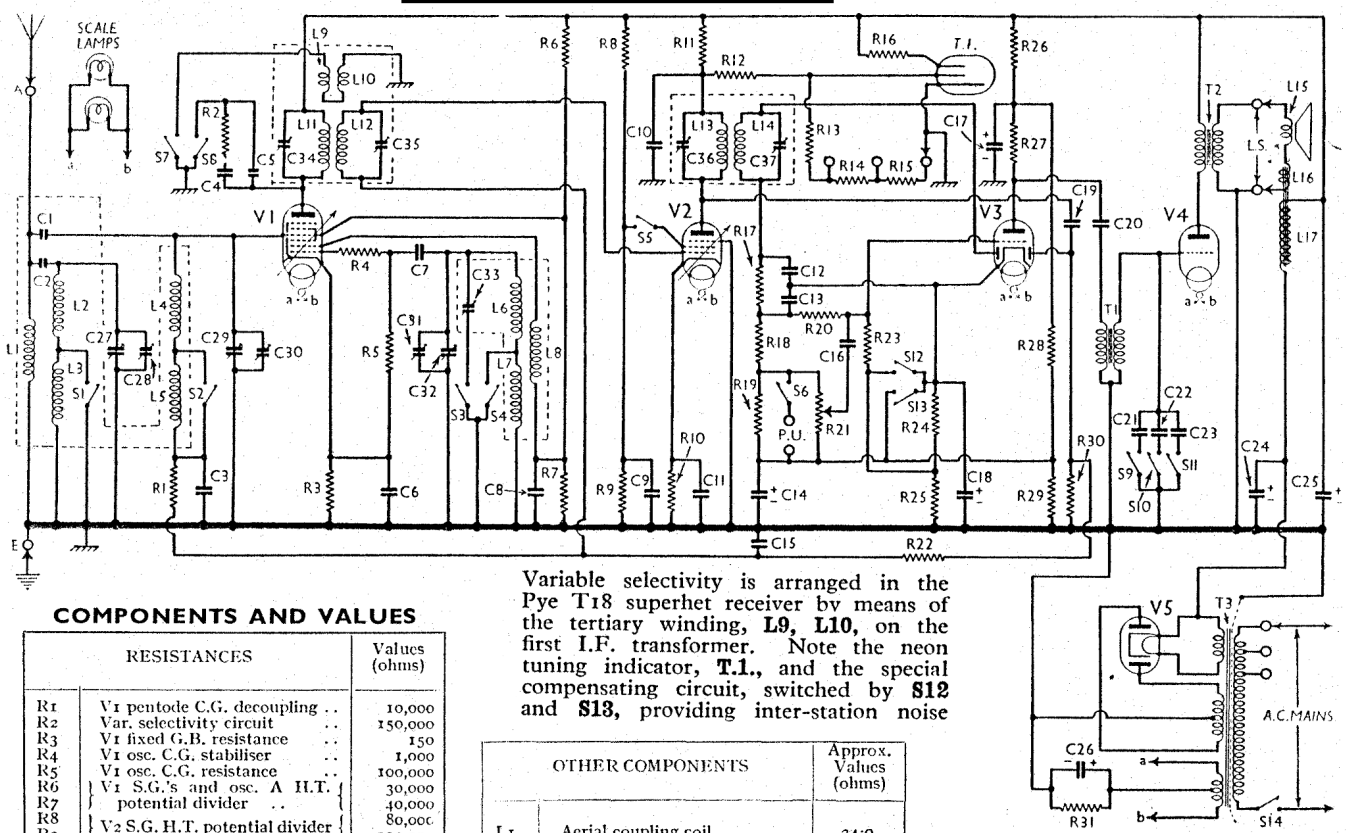
PYE - T 18



Variable selectivity is arranged in the Pye T18 superhet receiver by means of the tertiary winding, **L9, L10**, on the first I.F. transformer. Note the neon tuning indicator, **T.I.**, and the special compensating circuit, switched by **S12** and **S13**, providing inter-station noise

COMPONENTS AND VALUES

	RESISTANCES	Values (ohms)
R1	V1 pentode C.G. decoupling	10,000
R2	Var. selectivity circuit	150,000
R3	V1 fixed G.B. resistance	150
R4	V1 osc. C.G. stabiliser	1,000
R5	V1 osc. C.G. resistance	100,000
R6	V1 S.G.'s and osc. A H.T. potential divider	30,000
R7		40,000
R8	V2 S.G. H.T. potential divider	80,000
R9		100,000
R10	V2 fixed G.B. resistance	200
R11	V2 anode decoupling	27,000
R12	T.I. anode feed	100,000
R13	T.I. adjustment resistances	200,000
R14		150,000
R15		500,000
R16	T.I. exiter H.T. feed	2,100,000
R17	I.F stopper	100,000
R18	V3 signal diode load	160,000
R19		260,000
R20	V3 C.G. decoupling	1,100,000
R21	Manual volume control	250,000
R22	A.V.C. line decoupling	1,100,000
R23	V3 C.G. resistance	2,100,000
R24	V3 G.B. and A.V.C. delay voltage resistances	1,000
R25		3,000
R26	V3 triode A decoupling	10,000
R27	V3 triode A load	30,000
R28	Parts of Q.A.V.C. circuit	100,000
R29		3,000
R30	V3 A.V.C. diode load	510,000
R31	V4 G.B. resistance	750

	CONDENSERS	Values (μF)
C1	Image suppressor	Very low
C2	Capacitative aerial coupling	0·000005
C3	V1 pentode C.G. decoupling	0·1
C4	Parts of variable selectivity control circuit	0·01
C5		0·00003
C6	V1 cathode by-pass	0·1
C7	V1 osc. C.G. condenser	0·001
C8	V1 S.G.'s and osc. A decoupling	0·25
C9	V2 S.G. by-pass	0·1
C10	V2 anode decoupling	0·1
C11	V2 cathode by-pass	0·1
C12	I.F. by-passes	0·0001
C13		0·0001
C14*	Part of Q.A.V.C. circuit	10·0
C15	A.V.C. line decoupling	0·1
C16	L.F. coupling to V3 triode	0·25
C17*	V3 triode A decoupling	2·0
C18*	V3 cathode by-pass	10·0
C19	V3 A.V.C. diode feed	0·0001
C20	T1 L.F. feed	0·25
C21	Tone control condensers	0·001
C22		0·0003
C23		0·0007
C24*	H.T. smoothing	8·0
C25*		8·0
C26*	V4 G.B. circuit by-pass	20·0
C27†	Band-pass pri tuning	—
C28‡	Band-pass pri. trimmer	—
C29†	Band-pass sec. tuning	—
C30‡	Band-pass sec. trimmer	—
C31‡	Osc. circuit M.W. trimmer	—
C32†	Osc. circuit tuning	—
C33‡	Osc. circuit L.W. trimmer	—
C34‡	1st I.F. trans. pri. tuning	—
C35‡	1st I.F. trans. sec. tuning	—
C36‡	2nd I.F. trans. pri. tuning	—
C37‡	2nd I.F. trans. sec. tuning	—

* Electrolytic. † Variable. ‡ Pre-set.

	OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial coupling coil		24·0
L2	Band-pass primary coils		2·3
L3			15·0
L4	Band-pass secondary coils		2·3
L5			15·0
L6	Oscillator tuning coils		1·7
L7			3·3
L8	Oscillator reaction coil		45·0
L9	1st I.F. trans.	Tertiary winding	0·3
L10			
L11		Primary	93·0
L12		Secondary	93·0
L13	2nd I.F. trans.	Primary	42·0
L14		Secondary	42·0
L15	Speaker speech coil		1·7
L16	Hum neutralising coil		0·2
L17	Speaker field coil		1,650 0
T1	Intervalve trans.	Pri.	600·0
		Sec.	2,100·0
T2	Output trans.	Pri.	190·0
		Sec.	0·1
T3	Mains trans.	Pri. total	44·0
		Heater sec.	0·1
		Rect. heat. sec.	0·2
		H.T. sec. total	350·0
T.I.	Neon tuning indicator		—
S1-4	Waveband switches		—
S5	Radio muting switch		—
S6	Gram. pick-up switch		—
S7, S8	Var. selectivity switches		—
S9-11	Tone control switches		—
S12	Noise suppressor switches		—
S13			—
S14	Mains switch, ganged R21		—

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating on mains of 220 V, using the 216-235 V tapping on the mains transformer. The receiver was tuned to the lowest wavelength on the medium band and both the volume and sensitivity controls were at maximum (clockwise), but there was no signal input.

Voltages were measured on the 1,200 V scale of an Avometer, with chassis as negative.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 A80A*	320	1·5	80	3·9
V2 A50N	165	4·4	80	2·0
V3 A23A	110	4·6	—	—
V4 S30C	310	40·0	—	—
V5 A11B	355†	—	—	—

* Oscillator anode (G2) 80 V, 1.5 mA.
† Each anode, A.C.

GENERAL NOTES

Switches—**S1-S6** are the wave-change and gramophone switches ganged in an assembly mounted under the chassis immediately beneath the signal-frequency and oscillator coil units. The table below gives their positions for the various control knob settings, O indicating *open* and C *closed*.

Switch	M.W.	L.W.	Gram.
S1	C	O	C
S2	C	O	C
S3	O	C	O
S4	C	O	C
S5	C	C	O
S6	O	O	C

S7-S11 are the variable selectivity and tone control switches in a single rotary unit at the front of the chassis. The arrangement of contacts is clearly shown in a separate diagram on page VIII.

S12 and **S13** at the rear of the chassis form the single-pole change over switch controlling the noise suppression circuit. Looking from the underside of the chassis, the top fixed contact is part of **S12** and the bottom contact part of **S13**, the moving contact being common to both.

S14 is the Q.M.B. mains circuit switch ganged with the volume control **R21.**

Coils.—**L1-L5** are the aerial coupling and band-pass signal frequency coils in a single screened unit on the chassis deck. The can also contains **C1** and **C2.**

L6-L8 are the oscillator tuning and reaction coils in a screened unit on the chassis deck. **C33** in the same can is the pre-set oscillator L.W. trimmer.

L9-L12 and **L13, L14** are the two I.F. transformers which are housed with their respective pre-set tuning condensers **C34, C35** and **C36, C37** in screening cans mounted on the chassis deck. The additional winding **L9, L10** in the first unit is used to provide variable selectivity, while the additional components **R17** and **C12** in the second unit form part of an I.F. filter.

Condensers.—**C24** and **C25** are two 8μF, 550 V peak, dry electrolytic condensers in a single carton on the chassis deck. They have a common negative (black) lead and separate positive (red and yellow) leads.

Tuning Indicator.—This is a G.E.C. "Tuneon" neon tube with a 4-pin base. Should replacement become necessary, unscrew the milled nut fixing the tube-holder to the chassis and withdraw the holder. With a new tube in position, the adjustment provided may have to be

C14, C17, C18, C26.—These are dry electrolytic condensers of the tubular type. **C14** and **C18** have capacities of 10μF and are rated to work at 50 V D.C., while **C17** is a 2μF 300 V type and **C26** a 20 μF 30 V type.