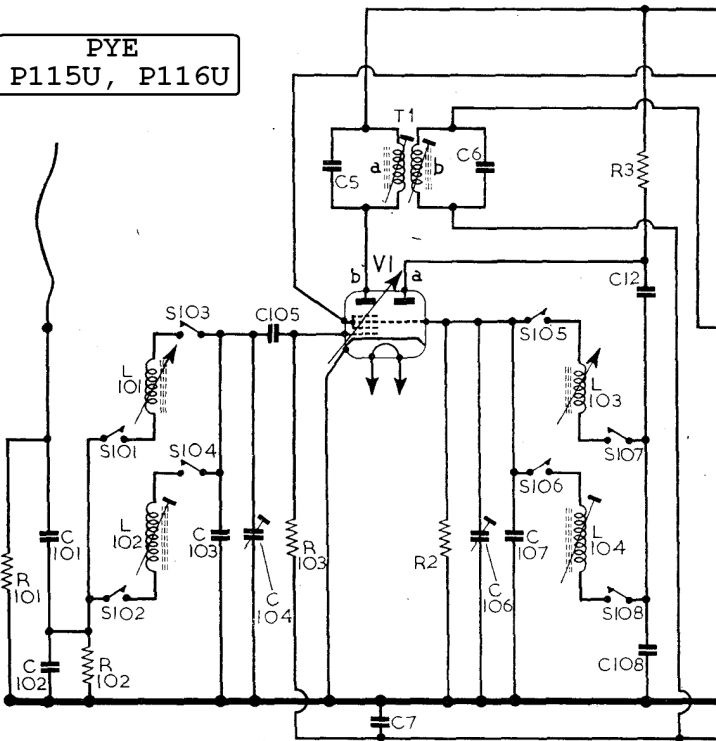


Model P115U

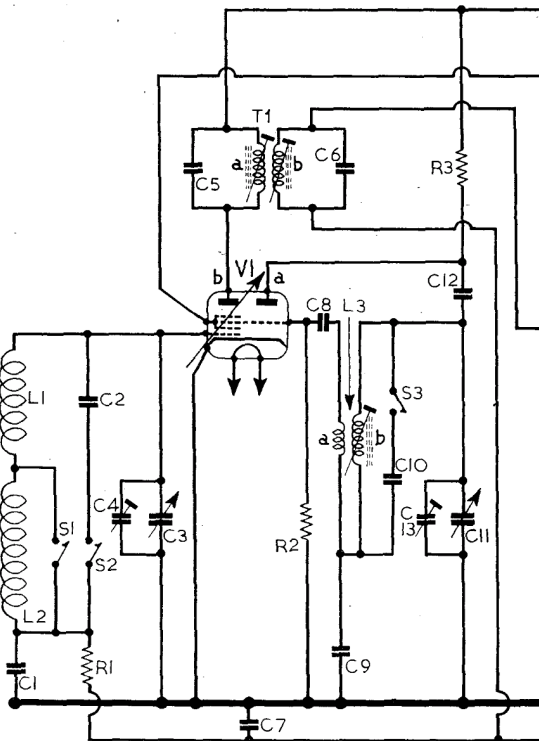
C	101 102	103 104 105	5	7	106 6 107	12 108
R	101 102	103		2		3
L	101, 102		T1		103, 104	

PYE
P115U, P116U



Model P116U

1	2	4	3	5	7	8,9,6	10	13	11,12
1						2			3
1,2						T1			3



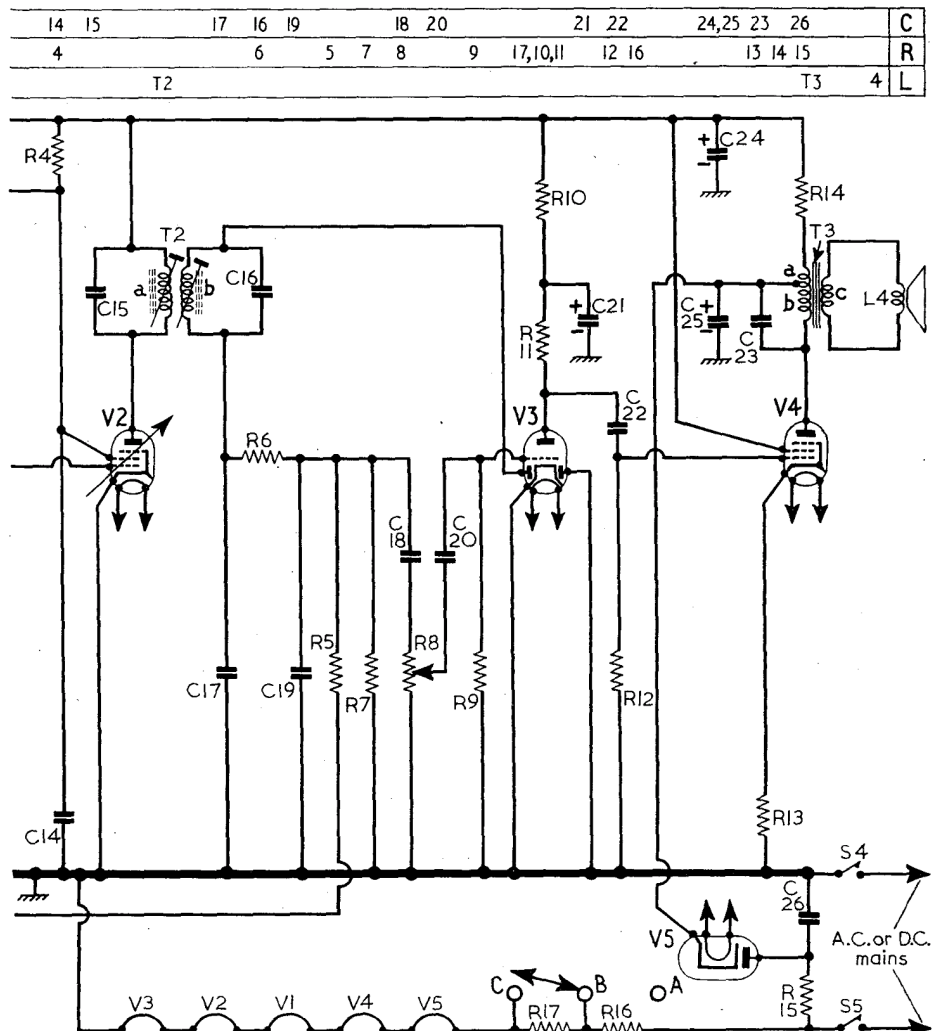
Circuit diagram of the Pye P116U and P115U "Piper" A.M. receivers. On the right is the diagram of the I.F., A.F. and power stages, which is common to both versions of the A.M. "Piper," and at the centre is the diagram of the aerial and oscillator stages of the P116U version, upon which this "Service Sheet" is based. The component numbers used there are the same as those in the manufacturers' diagram, and most of them are printed on the circuit board. The diagram on the left is that of the aerial and oscillator stages of the P115U version.

Models P115U and P116U

RESISTORS	Values	Locations
R1	V1b C.G. ...	470kΩ B1
R2	V1a osc. C.G. ...	47kΩ B2
R3	Osc. anode H.T. feed	22kΩ B2
R4	V1b and V2 S.G. H.T. feed	22kΩ B1
R5	A.G.C. decoupling	2.2MΩ C1
R6	I.F. stopper	100kΩ C2
R7	Diode load	470kΩ C2
R8	Volume control	1MΩ D1
R9	V3 C.G.	10MΩ C2
R10	V3 H.T. decoupling	47kΩ D1
R11	V3 anode load	470kΩ C2
R12	V4 C.G.	1MΩ D2
R13	V4 G.B.	220Ω C2
R14	H.T. smoothing	1.5kΩ D2
R15	V5 surge limiter	180Ω D2
R16	Heater ballast	930Ω D2
R17		300Ω D2

CAPACITORS	Values	Locations
C1	A.G.C. decoupling	0.04μF B2
C2	L.W. R.F. tuning	160pF B2
C3	Aerial tuning	523pF* B1
C4	M.W. aerial trim	30pF B1
C5	1st I.F. trans. tuning	100pF B2
C6	ing	100pF B2
C7	A.G.C. decoupling	0.02μF B2
C8	V1a C.G.	100pF B2
C9	Osc. tracker	510pF A2
C10	L.W. osc. tuning	470pF A2
C11	Osc. tuning	523pF* B1
C12	V1a anode coup.	100pF B2
C13	Osc. trimmer	30pF B1
C14	S.G. decoupling	0.05μF B2
C15	2nd I.F. trans. tuning	100pF C2
C16	ing	100pF C2
C17	I.F. by-pass	100pF C2
C18	A.F. coupling	0.01μF C1
C19	I.F. by-pass	0.001μF D1
C20	A.F. coupling	0.01μF D1
C21	H.T. decoupling	4μF C1
C22	A.F. coupling	0.01μF C2
C23	Tone correction	0.01μF C1
C24	H.T. smoothing	50μF C1
C25	Mains R.F. by-pass	50μF C1
C26		0.1μF D1

* Swing value, min. to max.



OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	Frame aerial	3-0	A2
L2	windings	20-0	A2
L3	Osc. tuning coils	{a 2-0 } total	B2
L4	Speech coil	2-5	—
T1	1st I.F. trans.	{a 10-5 } total	B2
T2	2nd I.F. trans.	{a 10-5 } total	C2
T3	Output trans.	{a 10-5 } total	—
S1-S3	Waveband switches	—	C1
S4, S5	Mains switches	—	D1

CIRCUIT ALIGNMENT (P116U)

Equipment Required.—An accurately calibrated signal generator; an output meter; a 0.1μF isolating capacitor; an insulated non-metallic trimming tool.

I.F. Stages

- 1.—Connect signal generator output via a 0.1μF isolating capacitor to the control grid (pin 6) of V1 and the frame of the tuning gang. Connect output meter across T3 secondary winding.
- 2.—Switch receiver to M.W. and turn gang and volume control to maximum. Feed in a 470 kc/s signal and adjust the cores of T2b (C2), T2a (C2) and T1b (B2) and T1a (B2) for maximum output.

Intermediate frequency 470 kc/s.

50 cm from the M.W. frame aerial. With gang at maximum, the cursor on the tuning knob should be horizontal. Tune receiver to 500 m and feed in a 600 kc/s signal and adjust L3 (B2) for maximum output. 50 cm is approximately a distance of 20 inches.

- 4.—Tune receiver to 200 m, feed in a 1,500 kc/s signal and adjust C13 (B1) and C4 (B1) for maximum output.
- 5.—Repeat operations 3 and 4 until no further improvement in calibration can be obtained.
- 6.—Switch receiver to L.W. and feed in a 214 kc/s (1,400 m) signal. Tune receiver to signal and check sensitivity and calibration.

Valve	Anode		Screen		Cath.	
	V	mA	V	mA	V	mA
V1 UCH42	{a 90 } {b 175 }	3-9	—	—	—	—
V2 UF41	175	—	65	5-0	—	—
V3 UBC41	55	0-23	—	—	—	—
V4 UL41	215	46-0	175	—	11-7	—
V5 UY41	225 ¹	—	—	—	225	71-0

¹A.C. reading.

MODEL P115U

The preceding information concerns the Model P116U and the following details concern the R.F. and oscillator stages of the P115U, which are different from those of the P116U. Complete component tables are given for the P115U, although in our service sheet those given below C100, R100, L100 and S100 are common to both models. Our component numbers for the P115U differ from those in the manufacturers' manual.

Component Tables

CAPACITORS		Values
C5	1st I.F. trans. tuning	100pF
C6	A.G.C. decoupling	100pF
C7	V1a anode coup.	0-02μF
C12	S.G. decoupling	0-001μF
C14	2nd I.F. trans.	0-04μF
C15	tuning	100pF
C16	I.F. by-pass	100pF
C17	A.F. coupling	0-01μF
C18	I.F. by-pass	0-002μF
C19	A.F. coupling	0-01μF
C20	H.T. decoupling	4μF
C21	A.F. coupling	0-01μF
C22	Tone correction	0-01μF
C23	H.T. smoothing	50μF
C24	Mains R.F. by-pass	50μF
C25	Aerial isolator	0-1μF
C26	Aerial coupling	470pF
C101	Aerial tuning	0-001μF
C102	Aerial trim.	33pF
C103	V1b C.G.	70pF
C104	Osc. trim.	100pF
C105	Osc. tuning	70pF
C106	Tracker	100pF
C107		0-001μF
C108		

RESISTORS		Values
R2	V1a osc. C.G.	47kΩ
R3	Osc. anode H.T. feed	10kΩ
R4	V1b and V2 S.G. H.T. feed	22kΩ
R5	A.G.C. decoupling	2-2MΩ
R6	I.F. stopper	100kΩ
R7	Diode load	470kΩ
R8	Volume control	1MΩ
R9	V3 C.G.	10MΩ
R10	V3 H.T. decoupling	47kΩ
R11	V3 anode load	470kΩ
R12	V4 C.G.	1MΩ
R13	V4 G.B.	220Ω
R14	H.T. smoothing	1-5kΩ
R15	V5 surge limiter	180Ω
R16	Heater ballast	930Ω
R17	Aerial shunts	300Ω
R101		470kΩ
R102		22kΩ
R103	V1b C.G.	1MΩ

OTHER COMPONENTS		Approx. Values (ohms)
L4	Speech coil	2-5
L101	tuning coils	—
L102		—
L103		—
L104		—
T1	1st I.F. trans.	{a 10-5 } {b 10-5 }
T2	2nd I.F. trans.	{a 10-5 } {b 10-5 }
T3	Output trans.	{a total } {b 225-0 } {c — }
S101-S108	Waveband switches	—
S4, S5	Mains switches	—

CIRCUIT ALIGNMENT (P115U)

Equipment Required.—An accurately calibrated signal generator; an output meter; a non-metallic trimming tool.

The cores of the permeability tuned coils L101 and L103 are pre-set at the factory and should not be disturbed.

Ensure that with the permeability tuning unit set to the extreme high frequency end of the band, the cursor coincides with the dot on the scale.

I.F. Stages

- 1.—Switch receiver to M.W. and tune it to 560M. Turn volume control to maximum. Connect signal generator output via a 0.1μF isolating capacitor to the control grid (pin 6) of V1b and the frame of the permeability tuning unit. Connect output meter across T3 secondary winding.
- 2.—Feed in a 470kc/s signal and adjust the cores of T2b, T2a, T1b and T1a for maximum output, reducing the signal generator output as the circuits are brought into line.

R.F. and Oscillator Stages

- 3.—Disconnect aerial. Tune receiver to 300m, feed in a 1,000kc/s signal across R101 via a 75pF capacitor, and adjust C106, then C104, for maximum output.
- 4.—Tune receiver to 500M, feed in a 600kc/s signal and check calibration and sensitivity.
- 5.—Tune receiver to 200M, feed in a 1,500kc/s signal and check calibration and sensitivity.
- 6.—Switch receiver to L.W. Feed in a 200kc/s signal and adjust L104 and L102 for maximum output.

Valve		Anode		Screen		Cath.	
		V	mA	V	mA	V	mA
V1 UCH42	{a 119 } {b 173 }	5-6	—	—	—	—	—
V2 UF41	173	—	65	5-0	—	—	—
V3 UBC41	55	0-23	—	—	—	—	—
V4 UL41	215	46-0	173	—	11-7	—	—
V5 UY41	225 ¹	—	—	—	225	72-5	—

¹A.C. reading.

Model P115U differs from model P116U in that it employs permeability tuning on M.W. and pre-set selection of a station in the L.W. band. Both models are covered by separate circuit diagrams of the R.F. and oscillator circuits and other minor variations are covered under "Model P115U" overleaf.

PYE
P115U, P116U