PYE PPU

Four-valve, plus rectifier, three waveband transportable superhet with five station-selecting push-buttons. For A.C. or D.C. operation. Made by Pye, Ltd., Cambridge.

Circuit.—A1 is a short-wave frame aerial and A2 a medium-wave frame. L1 is a loading coil brought into circuit for long-wave reception. In the oscillator section L2 and L3 are S.W. coils, L4 and L5 are M.W. coils and L6 is the L.W. coil. The tuned oscillator circuits are fed from the anode.

On push-button tuning, pre-set condensers are put into circuit across the aerial coils, and permeability coils are switched into the oscillator section.

Permeability adjusted I.F. transformers link up V2, the amplifier, and V3, the double-diode-triode. Both demodulation and A.V.C. circuits are straightforward. A negative feed-back connection is made to the triode grid circuit from a third winding on the output transformer.

The usual R.C. coupling leads to V4, with switched tone condenser in shunt.

H.T. is taken through a full-wave rectifier in a half-wave arrangement, the heaters and pilot lamps being run through an adjustable voltage dropping resistance. H.F. chokes and condensers minimise mains noise.

ADDITIONS.—More recent models have a 10,000 ohm resistance between the switch contact connected to L3 and H.T.+. A 200 mmfd. condenser is between junction of C34 and R15 (the volume control) and a tap on R15.

Wavebands: 15–52, 192–565, 850–2,000 metres. Mains consumption: 70 watts. Pilot lamps: 6.2v. .3 amp. M.E.S. type. Fuses: 1¼ in. 1 amp. type.

Output transformer connections: (top to bottom), red, yellow, white, green, blue.

GANGING

I.F. CIRCUITS.—Tune to 500 m. Inject 465 kc. by radiation to frame aerial. Adjust I.F. cores with insulated tool.

S.W. BAND.—Inject and tune to 15 m., adjust T1.

M.W. BAND.—Inject and tune to 210 m. Adjust T2 and T3. T3 is on the frame at left of cabinet. Repeat adjustments two or three times.

L.W. BAND.—Inject and tune to 1,800 m. Adjust T4.

Inject and tune to 1,300 m. Adjust T5. Repeat these two adjustments.

PUSH-BUTTONS

Select a button with the necessary wave coverage and push in. With set well warm, inject station frequency by radiation to frame aerials. Adjust appropriate osc. core and aerial trimmer in that order.

The trimmers are in sequence near the buttons.

PUSH-BUTTONS

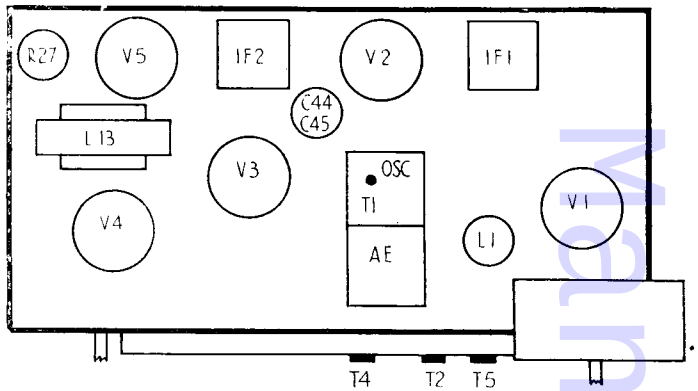
Button	*Wavelength Range (m)*	*Oscillator Trimmer.*	*Aerial Trimmer.*
4	200–240	L7	C6
5	245–540	L8	C7
6	245–540	L9	C8
7	1,150–2,000	L10	C9
8	1,150–2,000	L11	C10

WINDINGS

L	*Ohms.*	*L*	*Ohms.*
A1+A2	7.5	10, 11	4.4
1	15.4	12	2
2, 3	9	13	200
4, 5	2.25	I.F. coils	7.5
6	4.5	14	425
8, 9	2.15	15	24

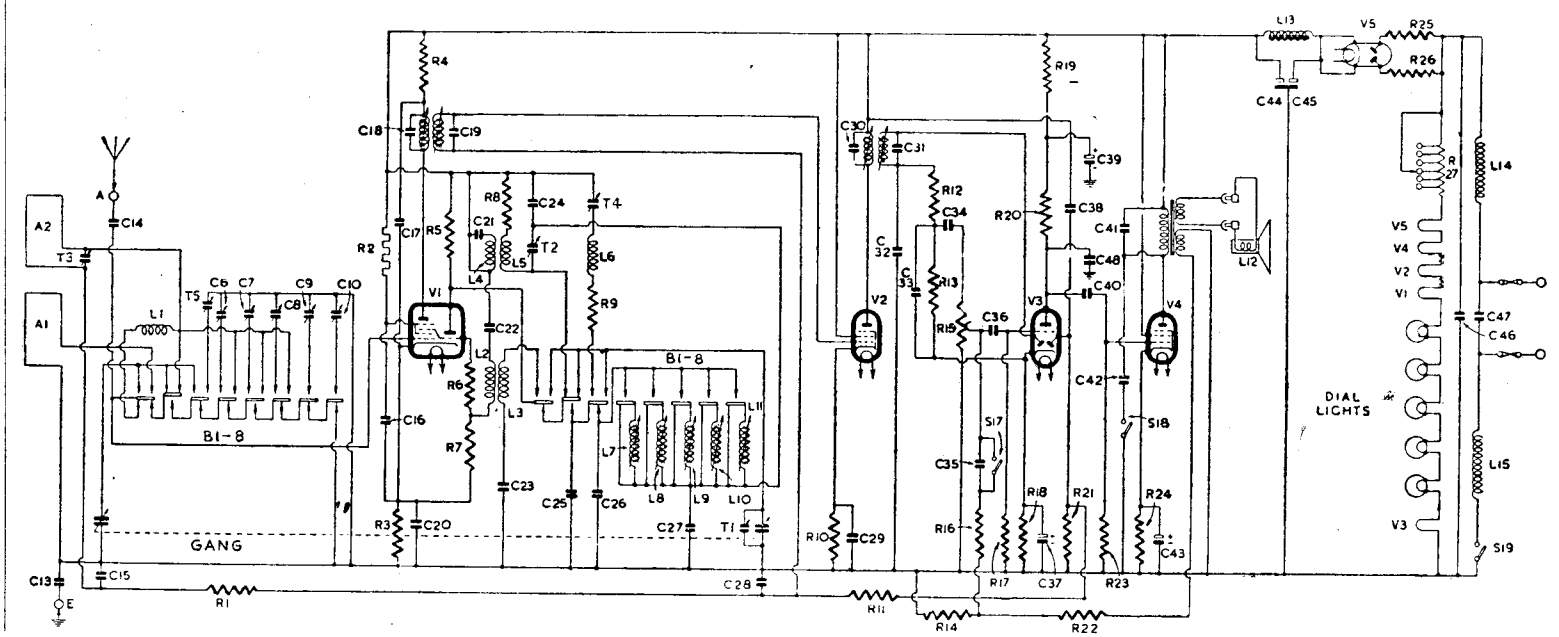
RESISTANCES

R	*Ohms.*	*R*	*Ohms.*
1	470,000	15	1 meg.
2	20,000	16	470,000
3	300	17	1 meg.
4	2,200	18	5,000
5	10,000	19	22,000
6	150	20	100,000
7	22,000	21	470,000
8	22	22	820
9	100	23	470,000
10	150	24	300
11	470,000	25	25
12	100,000	26	25
13	470,000	27	550
14	400	28	10,000



A universal version of the PPAC, this set is a neatly built transportable with push-button tuning.

Automatic tuning is by pre-set circuits, with capacities in the aerial circuit and permeability coils in the oscillator.



CONDENSERS

C.	*Mfds.*	*C.*	*Mfds.*
13	.05	31	140 mmfds.
14	5 mmfds.	32	100 ,,
15	.05	33	100 ,,
16	.1	34	.01
17	.1	35	.001
18	130 mmfds.	36	.025
19	140 ,,	37	26
20	.1	38	20 mmfds.
21	500 mmfds.	39	2
22	.0002	40	.05
23	.005	41	.005
24	630 mmfds.	42	.02
25	90 ,,	43	50
26	410 ,,	44	32
27	.002	45	8
28	.05	46	.1
29	.1	47	.1
30	140 mmfds.	48	.0005

VALVE READINGS

V	*Type*	*Electrode*	*Volts*	*Ma.*
1	TH30C	Anode	185	3.3
		Screen	115	3.8
		Osc. anode	70	8.6
		Cathode	4	15.7
2	VP13C	Anode	192	8.8
		Screen	194	3.2
		Cathode	1.8	12
3	TDD13C	Anode	9.6	.68
		Cathode	2.9	.68
4	Pen36C	Anode	185	24
		Screen	194	3.6
		Cathode	9.1	27.6
5	UR3C	Anodes	205A.C.	—
		Cathode	205	56

Measurements taken with 1,000 o.p.v. meter on 207 v. mains input.

Ohm's Law Saves Work

WHEN taking voltage and current measurements, it is as well to remember that sometimes Ohm's Law will save the trouble of breaking into a circuit for getting a current reading. Wherever the resistance of a component is known, for example, a field coil, or anode resistor, the voltage drop across it and C=E/R are all the engineer requires.