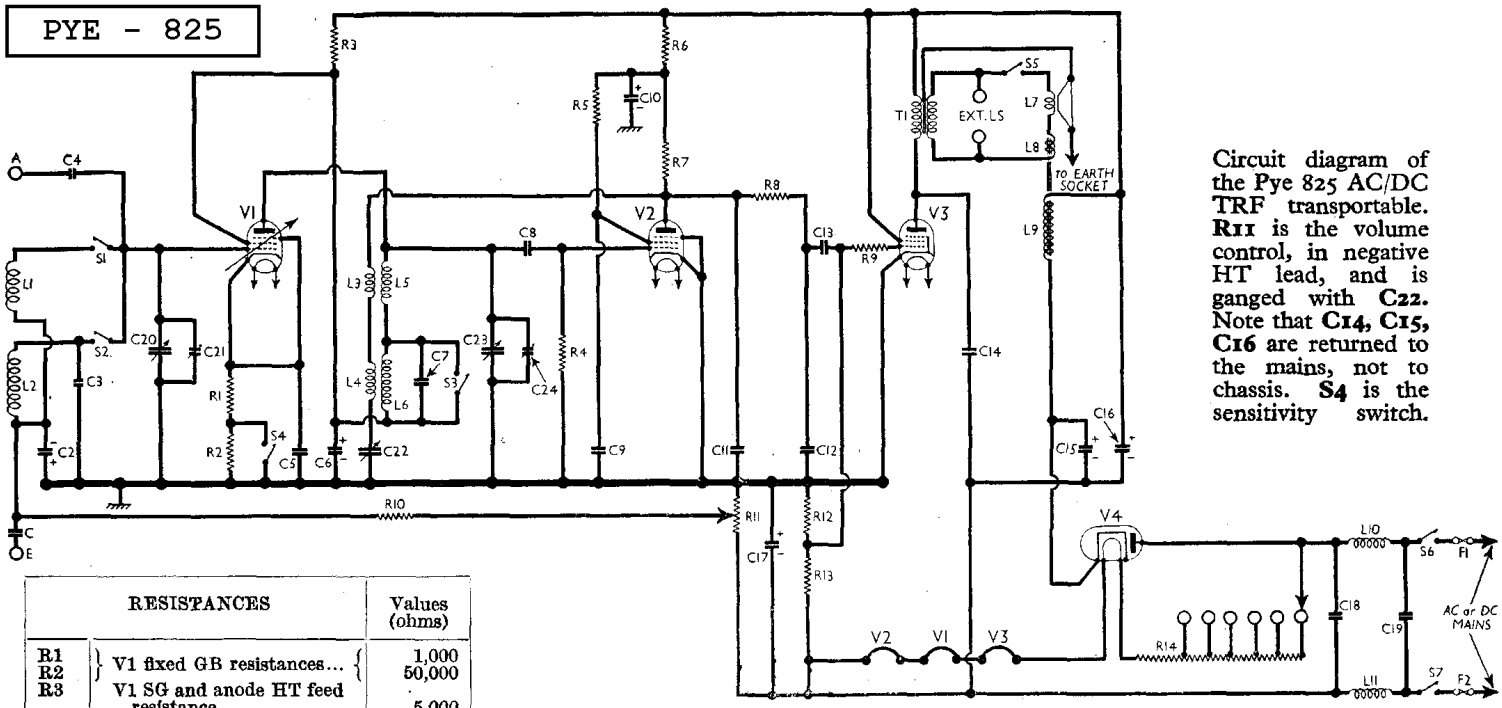
PYE - 825



Circuit diagram of the Pye 825 AC/DC TRF transportable. **R11** is the volume control, in negative HT lead, and is ganged with **C22**. Note that **C14, C15, C16** are returned to the mains, not to chassis. **S4** is the sensitivity switch.

	RESISTANCES	Values (ohms)
R1	V1 fixed GB resistances...	1,000
R2	V1 fixed GB resistances...	50,000
R3	V1 SG and anode HT feed resistance	5,000
R4	V2 grid leak	510,000
R5	V2 SG HT feed	260,000
R6	V2 SG and anode decoupling	20,000
R7	V2 anode load resistance	110,000
R8	RF stopper	110,000
R9	V3 grid stopper	50,000
R10	V1 CG decoupling ...	10,000
R11	Volume control, ganged C22	250
R12	V3 CG resistances ...	1,100,000
R13	V3 CG resistances ...	1,100,000
R14	Heater circuit ballast ...	840*

* Tapped at 590 Ω + 50 Ω + 50 Ω + 50 Ω + 50 Ω + 50 Ω from V4 heater.

	CONDENSERS	Values (μF)
C1	Earth isolating condenser	0·005
C2*	V1 CG decoupling ...	10·0
C3	LW frame aerial trimmer	0·000035
C4	External aerial series ...	0·000005
C5	V1 cathode by-pass ...	0·1
C6*	V1 SG and anode decoupling	2·0
C7	V1 anode LW trimmer ...	0·000025
C8	V2 CG condenser ...	0·0001
C9	V2 SG decoupling ...	0·1
C10*	V2 anode decoupling ...	2·0
C11	RF by-pass condensers ...	0·0002
C12	RF by-pass condensers ...	0·001
C13	V2 to V3 AF coupling ...	0·01
C14	Fixed tone corrector ...	0·003
C15*	HT smoothing condensers	8·0
C16*	HT smoothing condensers	16·0
C17*	Auto GB by-pass ...	10·0
C18	Mains RF filter condensers	0·1
C19	Mains RF filter condensers	0·1
C20†	Frame aerial tuning ...	—
C21‡	Frame aerial MW trimmer	—
C22†	Reaction control	—
C23†	V1 anode circuit tuning ...	—
C24‡	V1 anode MW trimmer ...	—

* Electrolytic. † Variable. ‡ Pre-set.

	OTHER COMPONENTS	Approx. Values (ohms)
L1	Frame aerial windings ...	0·8
L2	Frame aerial windings ...	21·0
L3	Reaction coils, total ...	4·0
L4	Reaction coils, total ...	
L5	V1 anode MW tuning coil	3·0
L6	V1 anode LW tuning coil	12·0
L7	Speaker speech coil ...	2·0
L8	Hum neutralising coil ...	0·15
L9	Speaker field coil... ...	1,000·0
L10	Mains RF filter coils ...	2·0
L11	Mains RF filter coils ...	2·0
T1	Output trans. Pri. ...	450·0
	Output trans. Sec. ...	0·3
F1, F2	Mains circuit fuses ...	—
S1-S3	Waveband switches ...	—
S4	Sensitivity switch ...	—
S5	Speaker muting switch ...	—
S6, S7	Mains switches	—

VALVE ANALYSIS

Valve voltages and currents given in the table below are those to be expected in an average receiver when operating on AC mains of 250 V, using the 250 V tapping on the mains resistance.

The receiver should be switched to MW, and the volume control should be midway between the minimum and maximum settings, but the MW frame should be short-circuited, so that there is no signal input.

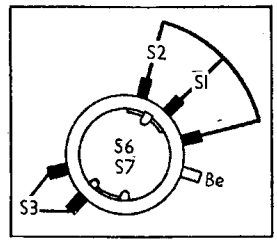
Voltages were measured with a meter having a resistance of 1,000 ohms per volt, chassis being negative.

Since voltage measurements will usually be made with the chassis in the cabinet, and the underside of the chassis is then inaccessible, it should be borne in mind if the valve base diagrams beneath the circuit diagram are used, that the bases are drawn as seen when viewed from the free ends of the pins.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 SP13C	186	1·7	186	0·6
V2 SP13C	39	1·0	48	0·4
V3 Pen36C	177	48·5	200	8·3
V4 UR1C	270†	—	—	—

† Cathode to chassis, DC.

Diagram of the waveband and mains switches, drawn as seen from the rear.



CIRCUIT ALIGNMENT

With the gang at minimum, the pointer should coincide with the 200 m calibration mark on the scale. Connect the signal generator leads, via a suitable dummy aerial, to external aerial and earth sockets. The chassis should be fitted in the cabinet, and the volume control should be adjusted to a position midway between its minimum and maximum settings.

MW.—Switch set to MW, tune to 210 m on scale, feed in a 210 m (1,425 KC/S) signal and adjust **C21** and **C24** for maximum output. There is not room to use the usual trimming tool for this operation, so that an insulated spanner is required. One could be made up from a flat strip of wood. Calibration should be checked at 550 m (545 KC/S).

LW.—There are no adjustments for the LW band, but the calibration should be checked at 900 m (332 KC/S) and 1,900 m (157 KC/S) and, if necessary, a compromise made between the MW and LW requirements. If they became seriously out of adjustment, a small fixed condenser could be introduced across whichever coil required it to balance out the mis-match approximately.