

# PYE MITE

Three-valve, plus rectifier, TRF two-waveband midget type receiver. For AC/DC mains 200 to 250 v. Made by Pye, Ltd., Radio Works, Cambridge.

**S**IGNALS are fed via condenser, C1, to the coupling coil, L1, and thence to earth via C2. The aerial input is shunted to chassis by the volume control, R3, which also varies the bias on V1, the HF amplifier pentode, by virtue of it being in the cathode circuit of that valve. Thus sensitivity is controlled by damping the coil, L1, and varying the gain of V1. Signals from L1 are transferred to the coil, L2 (MW), and L3 (LW), these coils being tuned by VC1 section of the gang condenser. The signals are fed direct to

the grid of V1, whose sensitivity is controlled as already described.

R2 provides standing bias for V1 at maximum sensitivity, both R2 and R3 being decoupled by C4.

A certain amount of extra current is caused to flow through R3 by its connection to the bleeder resistance, R4, which is taken to the main HT positive line. This extra current flowing through R3 provides a greater potential variation across the resistance as the control is manipulated than would otherwise be obtained.

V1 has tuned anode coils L4 (MW) and L5 (LW), C5 being the HF return capacity and decoupler for R5, which completes the DC anode circuit to the HT positive line. R1 is the screening grid voltage dropper decoupled by C3.

The anode coils are tuned by the VC2 section of the gang condenser, and signals are coupled to the grid of the detector valve, V2, by the grid condenser, C6, with its grid leak, R6.

V2 is a pentode valve, and its screen is fed from the HT line through R7 voltage dropper, which is decoupled by C7. R8 is the anode load for V2 with HF bypassing to cathode via C8.

The LF coupling is resistance capacity by R8 and C9 to the grid of the output

pentode valve, V3. R9 is a grid stopper, and R10 is the grid to chassis resistance.

V3 is biased by R11, decoupled by C11, and the screening grid is fed via the voltage dropper, R15, which is decoupled by C10. A permanent degree of tone correction is provided by C12, which is connected between anode and cathode of the output valve.

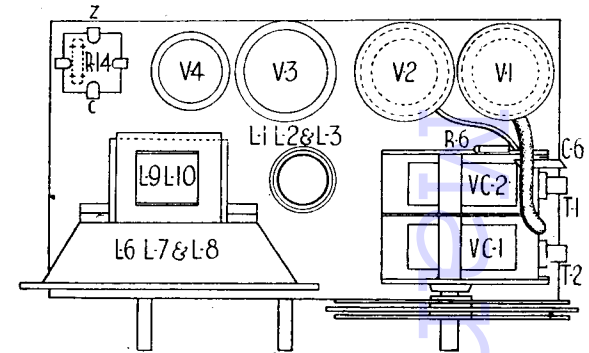
L9 and L10 are the output transformer windings which couple the output of V3 to the low impedance energised loud-speaker. L6 is the speech coil, and L7 a humbucking winding.

The HT supply circuit is obtained from the mains through a limiting resistance, R12 and V4, which operates as a half-wave rectifier. The mains input is filtered by C15. The speaker field, L8, acts as a smoothing choke, with C14 as a reservoir condenser and C13 the smoothing condenser.

The heater circuit is conventional with R13 dropping resistance in series with the heaters across the mains.

When the instrument is to be used on 250v mains an additional resistance, R14, of 60 ohms is included, as shown dotted in the circuit diagram. This resistance is fitted across two contacts (C and Z), which are connected by a shorting strip on voltages between 200 and 240.

Layout drawing of the top of the Pye Mite chassis showing the valve and trimmer positions. A "straight" receiver, it has only the two trimmers seen on the gang.



An important note concerns the mains lead. This comprises a red and black rubber-covered conductor and the voltage dropping resistance, R13. At the mains plug, R13 should be connected to the same terminal as the red lead, and at the set end, the red and black leads terminate at points R and B respectively (see circuit diagram). R13 terminates at C. The mains lead therefore must not be cut, and in order to dissipate the heat from the resistance the lead must be spread out as much as possible and must not be covered by carpets or coiled in a confined space.

## GANGING

Switch set to MW Band and adjust pointer to the 200 metre mark. Inject a signal of 200 metres between the aerial and earth leads and adjust T1 and T2 for maximum output as indicated on an output meter. Repeat for final adjustment.

## RESISTANCES

R	Ohms	R	Ohms
1	100,000	9	40,000
2	450	10	1 meg
3	10,000	11	450
4	50,000	12	100
5	15,000	13	(line cord) 530
6	1 meg	14*	60
7	1 meg	15	10,000
8	250,000		*On 250 v mains only.

## WINDINGS

L	Ohms	L	Ohms
1	11	6	5
2	3	7	5
3	11	8	629
4	3.6	9	128
5	11	10	Very low

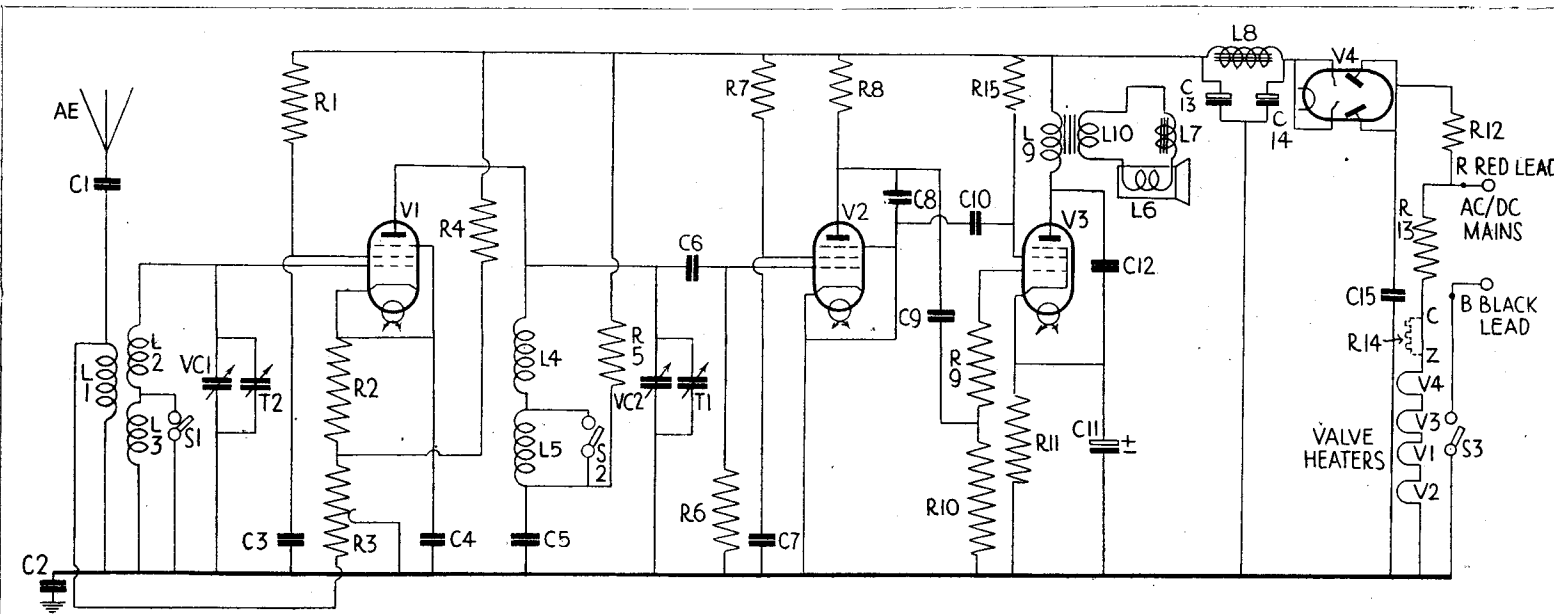
## CONDENSERS

C	Mfd	C	Mfd
1	.001	9	.01
2	.05	10	.1
3	.1	11	.10
4	.1	12	.01
5	.1	13	.8
6	.00015	14	.16
7	.1	15	.01
8	.003		

## VALVE READINGS

Taken with vol. control at minimum with 1,000 ohm per voltmeter.

V.	Type	Electrode	Volts	Ma
1	6K7G	Anode	188	1
		Screen	150	.5
		Cathode Heater	33	1.5
2	6J7G	Anode	6.3	.3
		Screen	40	.7
		Cathode Heater	25	.1
3	25A6G	Anode	6.3	.3
		Screen	203	34
		Cathode Heater	139	6.4
4	25Z6G	Anode	19	40.4
		Screen	25	.3
		Heater	215(AC)	48
		Heater	25	.3



The Mite is a "straight," tuned radio-frequency three-valve, plus rectifier, portable for operation from either AC or DC mains. Volume is controlled by the bias of V1 and there is no reaction from the pentode detector valve. It should be noted that HT is applied across the second section of the tuning gang.