

PYE MP/B

Four-valve, three-waveband battery operated superhet. Provision is made for connection of a pickup and extra loudspeaker. Made by Pye, Ltd., Cambridge.

Circuit.—The aerial input is fed to coupling coils L1 (SW) and L2 which transfer the signal to the single grid circuit of the electron-coupled frequency changer V1. When near a powerful transmitter the aerial may be connected via a small capacity C1 formed in the wiring. The oscillator section of V1 employs a tuned grid oscillator circuit with three pairs of windings for the various wavebands. C4 and R1 are the grid condenser and leak while the anode of the oscillator section is fed via the voltage dropping resistance R3 which is decoupled by C7.

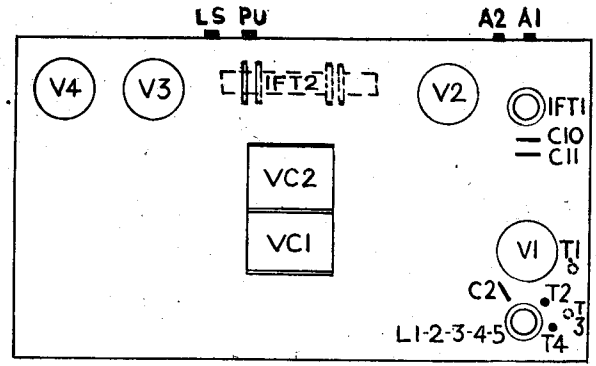
L9, L10 and L11 are the anode reaction windings. IF signals are transferred from V1 to the IF amplifier V2 by means of an inductively trimmed IF transformer comprising L12 and L13. The screens of V1 and V2 are fed from the HT line through R4 which is decoupled by C8. A second IF transformer L14 and L15 couples V2 to the double-diode triode valve V3. The signal diode of this valve is fed from L15, the total diode load comprising R8 and R9. R8, C15, and C16 form the IF and HF filter network, while C17 is the LF coupling condenser feeding the volume control R13.

Bass boost for the lower volume levels is provided by R12 and C18. The LF signal is fed in the usual way from the slider of the volume control to the grid of the triode section of V3. The volume control is ganged to the on-off switch S5—S6. The AVC diode of this valve is fed from the anode circuit of V2 via C14. The complete diode load, R6 and R7, is returned to the junction of R10 and R14, which forms an automatic biasing network between HT negative and chassis. The connection of R9 to this network

provides the necessary AVC delay voltage. Full AVC is applied via the decoupling components R5 and C3 to V1, while a smaller value of control is applied to the grid of V2 via R2 and C9. V3 is LF coupled to V4, the pentode output valve, by means of R11 and C21; R16 is the grid to chassis return via the full auto bias circuit R10 and R14. C19 is the anode HF by-pass for V3, while C20 and R15 provide tone control circuits from anode to filament of V3. V4 is coupled to the low impedance PM loudspeaker by a matching transformer, the primary of which, L16, is by-passed by C22. Sockets are provided for an extension loudspeaker which should have an impedance between two and four ohms.

GANGING
IF Circuits.—Inject a 462 kc signal between V1 control grid and chassis via a .1 mfd condenser. Remove control grid lead terminal and connect to AVC line via a .5 megohm resistance. Trim IFT's by moving outer coils only on each transformer; when adjusted seal to former by coil dope.

Components in dot lines are actually below the chassis.
MW Band.—Inject a 210m signal to aerial sockets via a dummy aerial. Switch receiver to MW and tune to 210m. Adjust T1 and T2 for max. output. Check calibration at 520m.
LW Band.—Switch to LW and inject and tune in a 1300m signal; adjust T3 for maximum output while rocking gang.
SW Band.—Switch to SW. Inject and tune in a 15m signal and adjust T4 for maximum output. Inject and tune in a 50m signal and check tracking. If necessary, correct tracking by spacing the SW aerial windings L3. Calibration can be adjusted if necessary by adjusting the SW oscillator winding L6.



VALVE READINGS
 Measured with a 1,000 ohms-per-volt meter.

V	Type	Electrode	Volts	Ma
1	FC2A	Anode	115	.85
		Screen	36	.8
2	VP2B	Osc. anode	112	1.85
		Anode	115	1.45
3	TDD2A	Screen	36	.6
		Anode	46	.6
4	PM22A	Anode	110	4.2
		Screen	115	.6

Pilot lamp, 2.5 v, .1 a, MES.

WINDINGS

L	Ohms	L	Ohms
1	3	9	Very low
2	65	10	12
3	Very low	11	17.6
4	2.6	12	7
5	14	13	7
6	Very low	14	7
7	1.45	15	7
8	1.9	16	700

RESISTANCES

R	Ohms	R	Ohms
1	40,000	9	510,000
2	1.1 meg	10	50
3	1,000	11	110,000
4	50,000	12	50,000
5	1.1 meg	13	1 meg
6	1.1 meg	14	300
7	510,000	15	20,000
8	110,000	16	510,000

CONDENSERS

C	Mfds.	C	Mfds.
1	5 mmfd	13	140 mmfd
2	40 mmfd	14	20 mmfd
3	.05	15	.0001
4	70 mmfd	16	.0001
5	230 mmfd	17	.003
6	700 mmfd	18	.01
7	.005	19	.0002
8	.1	20	.01
9	.05	21	.01
10	90 mmfd	22	.001
11	90 mmfd	23	8
12	140 mmfd	24	20

