SERVICE SHEET for

JEWEL CASE PORTABLE

MODEL P131MBQ

A.C. MAINS AND BATTERY PORTABLE

CIRCUIT ANALYSIS

Batteries H.T. = 90 volts. L.T. = 7½ volts. Current Consumption H.T. = 7·7 mA. L.T. = 28 mA.
V.4 Bias Voltage measured across R15 = 5·35 volts.

	Valve	Mullard	Ea	Ia	Es	Is	Osc. Ea	Osc. Ia	Osc. Ik
V1	Frequency Changer	DK.96	73	0·41 mA.	73	0·11 mA.	38	1·5	2·02 mA.
V2	I.F.Amplifier	DF.96	73	0·85 mA.	73	0·22 mA.	...	...	1·07 mA.
V3	Det. and A.F. Amp.	DAF.96	22	15 μA.	12	4 μA.	...	...	19 μA.
V4	Output	DL.96	87	3·9 mA.	73	0·70 mA.	—	—	4·6 mA.

Mains A.C. 205 volts. 9·2 watts consumption. Volts smoothed = 95.
V4 Bias Voltage measured across R15 = 5·6 volts.

	Valve	Mullard	Ea	Ia	Es	Is	Osc. Ea	Osc. Ia	Osc. Ik
V1	Frequency Changer	DK.96	77	0·44 mA.	77	0·12 mA.	41	1·65	2·21 mA.
V2	I.F. Amplifier	DF.96	77	1 mA.	77	0·33 mA.	...	...	1·33 mA.
V3	Det. and A.F. Amp.	DAF.96	23	17 μA.	13	5 μA.	...	...	22 μA.
V4	Output	DL.96	91	3·9 mA.	77	0·65 mA.	...	...	4·55 mA.
MR	Rectifier	Westing-house 16RE2-1-8-1	—	Anode to Anode	—	184 volts.	—		

Note. All measurements taken on M.W. band with no signal input. Gang fully meshed.
Mains input 205 volts into 200 210 volt tap.
Measurements taken with a Avometer Model 8 instrument which has a resistance of 20,000 ohms per volt.

TRIMMING PROCEDURE

Apply signal as below	Set Receiver controls to	Adjust in order for maximum output
(1) 470 kc/s. between chassis and control grid of V1 via 0·1 μF condenser	Low frequency end of M.W. band (572 metres)	Iron dust cores of T2 and T1
(2) As (1) but 600 kc/s.	M.W. (500 metres)	Iron dust core of L3
(3) As (1) but 1,500 kc/s.	M.W. (200 metres)	Trimmer C4
(4) Repeat (2) and (3) until calibration is correct		
(5) As (1) but 214 kc/s.	L.W. (1,400 metres)	Check calibration
(6) 1,500 kc/s. to Frame Aerial via loop at 50 cm.	M.W. (200 metres)	Trimmer C1. Check sensitivity
(7) As (6) but 600 kc/s.	M.W. (500 metres)	Check sensitivity
(8) As (7) but 214 kc/s.	L.W. (1,400 metres)	Check sensitivity

Note.—Tests (1) to (5) to be made on chassis.
Tests (6) to (8) to be made on complete Receiver with aerial cover in place.

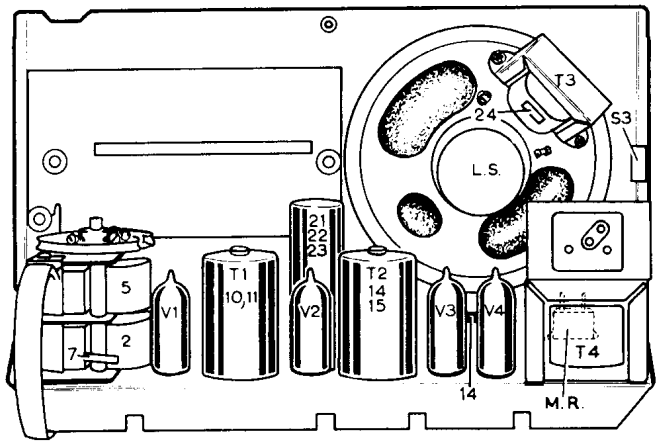


FIG. 1

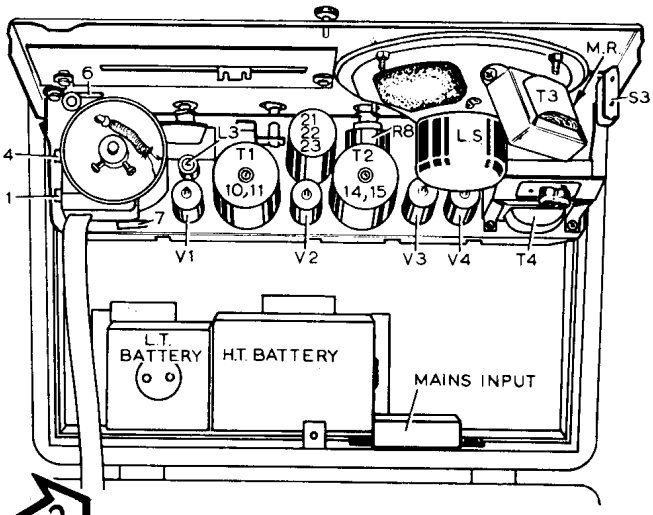
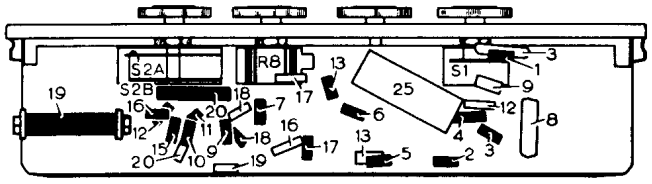


FIG. 2

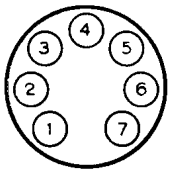


PLEASE NOTE: RESISTORS SHOWN BLACK

FIG. 3

VALVE BASE CONNECTIONS

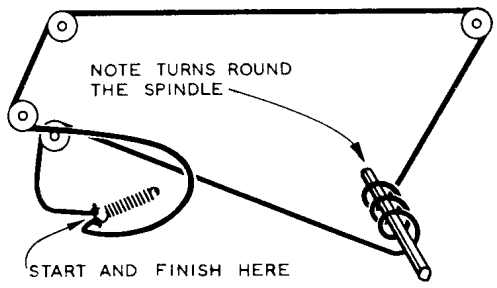
	1	2	3	4	5	6	7
V1	F-	A	G2	G1	G4	G3	F+ G5
V2	F- G3	A	G2	——	F- G3	G1	F+
V3	F- G3	——	DA	G2	A	G1	F+
V4	F-	A	G2	——	FCT G3	G1	F+



VIEW LOOKING AT PINS

FIG. 4

DRIVE CORD VIEWED FROM REAR OF CHASSIS WITH GANG FULLY CLOSED



THE DRIVE CORD SHOULD BE OF NYLON BRAIDED GLASS YARN. LENGTH 25 INCHES BETWEEN CENTRES OF LOOPS

FIG. 5

Notes

TO EXPOSE CHASSIS

1. Remove mains plug from supply.
2. Loosen knurled screw situated above the scale.
3. Lift top panel from the back edge and hinge forward.
4. Disconnect batteries.
5. Lift top panel clear of hinge pins, the chassis can then be manoeuvred to the best advantage, but take care not to strain the aerial lead.

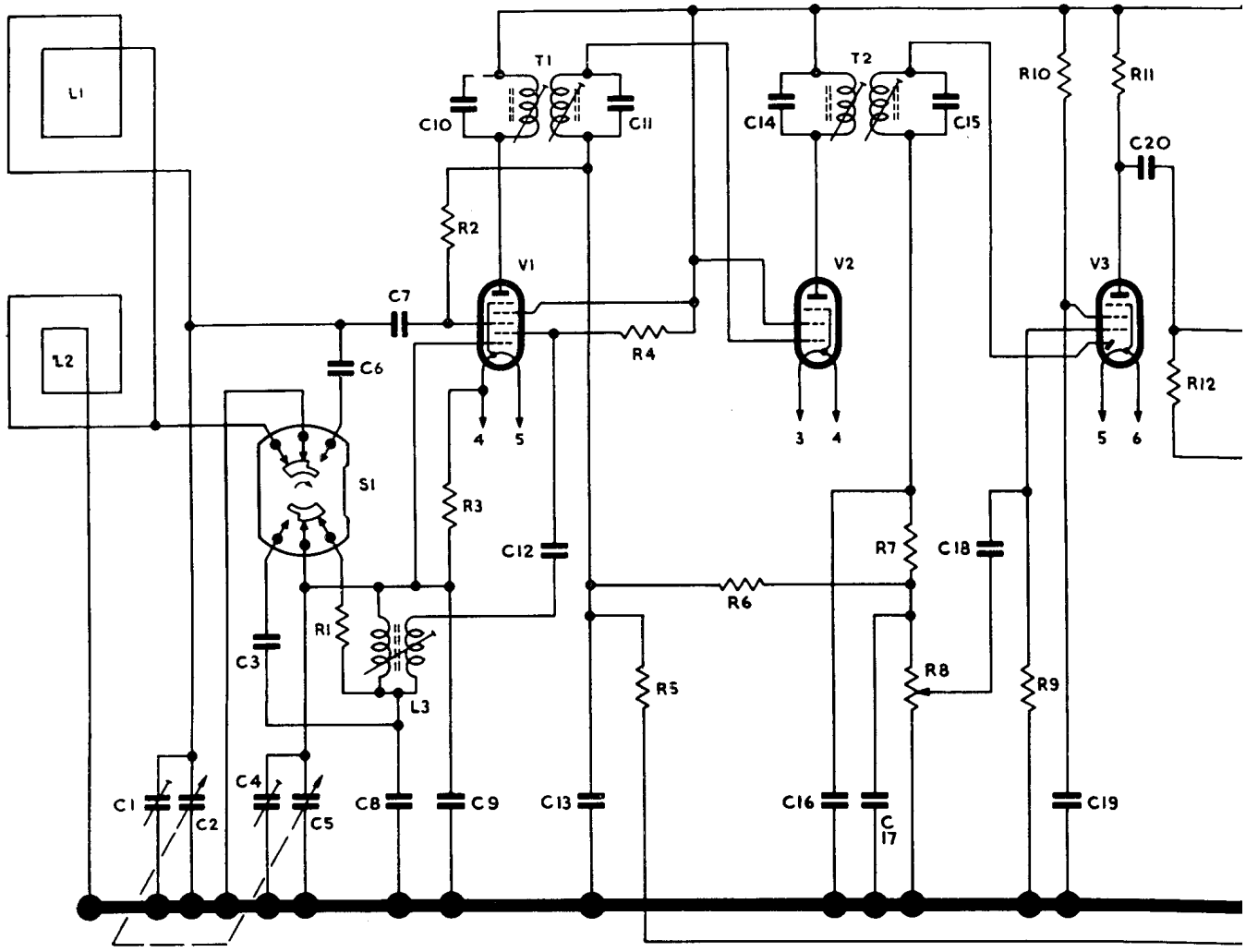
BATTERIES

The batteries should be replaced by:—

H.T. 90 volts .. Ever Ready Batrymax Type B126
Vidor Type L5512
or Drydex Type Drymax 526

L.T. 7½ volts .. Ever Ready Alldry 38
Vidor Type L5048
or Drydex Type H1187

17556/070527/547/4250/8/55



NOTE:- WAVECHANGE SWITCH SHOWN IN "MW" POSITION AND MAINS-BA

circuit diagram of the

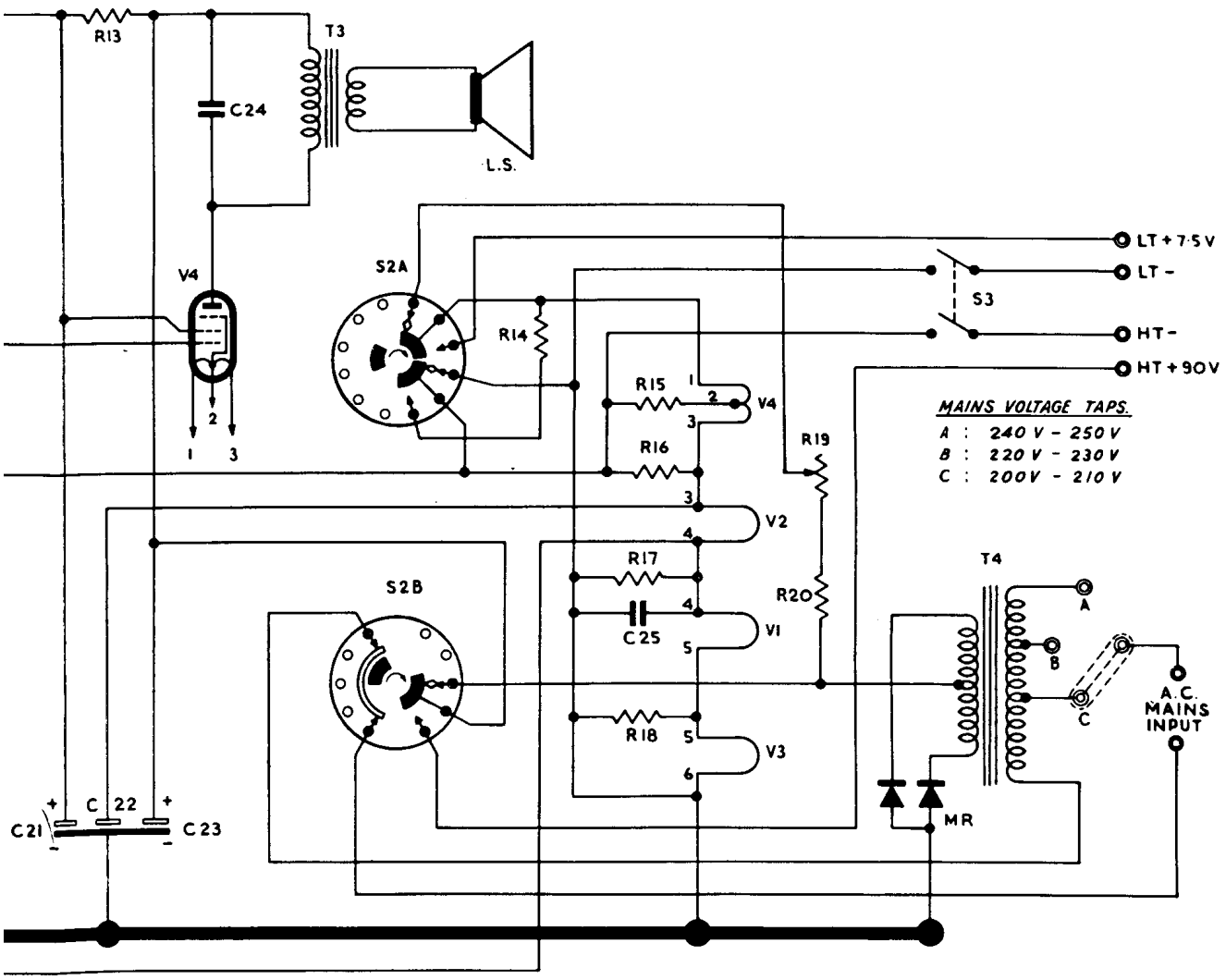
PYE JEWEL CASE PORTABLE

MODEL P131MBQ

CONDENSERS

	Specification	Volts	±	Fig.
C1†	3-35 pF Trimmer			2
C2	528 pF Swing Gang Condenser			1
C3	470 pF Mica		2%	3
C4†	3-35 pF Trimmer			2
C5	528 pF Swing Gang Condenser			1
C6	160 pF Mica		2%	2
C7	100 pF Ceramic		20%	1 & 2
C8	560 pF Mica		2%	3
C9	15 pF Ceramic		10%	3
C10*	100 pF Mica		2%	1 & 2
C11*	100 pF Mica		2%	1 & 2
C12	100 pF Ceramic		20%	3
C13	0·04 μF Tubular	150		3
C14*	100 pF Mica		2%	1 & 2
C15*	100 pF Mica		2%	1 & 2
C16	100 pF Ceramic		20%	3
C17	100 pF Ceramic		20%	3
C18	0·002 μF Tubular	350		3
C19	0·01 μF Tubular	150		3
C20	0·001 μF Tubular	350		3
C21	32 μF Electrolytic	150		
C22	100 μF Electrolytic	25		1 & 2
C23	32 μF Electrolytic	150		
C24	0·002 μF Tubular	350		1
C25	0·5 μF Tubular	350		3

Note.—* Integral part of I.F. Transformer.
† Part of Gang Condenser.



VS-BATT. SWITCH SHOWN IN MAINS "ON" POSITION.

RESISTORS

Fig.	No.		Ohms	Watts	±	Fig.	No.
2		R1	33,000	¼	20%	3	670401
1	800356	R2	220,000	¼	20%	3	670406
3	664252	R3	47,000	¼	20%	3	670402
2		R4	22,000	¼	20%	3	670400
1	800356	R5	4·7 meg.	¼	20%	3	670414
2	664140	R6	4·7 meg.	¼	20%	3	670414
1 & 2	666806	R7	100,000	¼	20%	3	670404
3	664272	R8	1 meg. Volume Control			2 & 3	810312
3	666515	R9	10 meg.	¼	20%	3	670416
1 & 2	666776	R10	10 meg.	¼	20%	3	670416
1 & 2	666776	R11	2·2 meg.	¼	20%	3	670412
3	666806	R12	4·7 meg.	¼	20%	3	670414
3	669106	R13	3,900	¼	10%	3	670525
1 & 2	666776	R14	1,800	¼	5%	1	672277
1 & 2	666776	R15	2,700	¼	5%	3	671097
3	666806	R16	1,800	¼	5%	3	672277
3	666806	R17	5,600	¼	10%	3	670527
3	669093	R18	680	¼	5%	3	672268
3	669082	R19	750 Sliding Track	10	10%	3	670896
3	669091	R20	3,200	4	5%	3	674449
1 & 2	667511						
1	669093						
3	668610						

INDUCTANCES

	Specification	Ref.	Fig.	No.
L1	M.W. } Frame Aerial Assembly			073199
L2	L.W. }			
L3	M.W. and L.W. Osc. Coil	M.W.14	2	780573

TRANSFORMERS

	Specification	Fig.	No.
T1	1st I.F. Trans. { Prim. 10 Ω / Sec. 10·8 Ω }	1 & 2	770369/A
T2	2nd I.F. Trans. { Prim. 10 Ω / Sec. 10·8 Ω }	1 & 2	770369/A
T3	Output Trans. { Prim. 570 Ω / Sec. — }	1 & 2	077072
T4	Mains Trans. { Prim. Start to Finish 430 Ω / Sec. Start to Finish 470 Ω }	1 & 2	077017

SWITCHES, ETC.

	Specification	Fig.	No.
S1	Wavechange Switch, 2 position	3	083038
S2A, S2B	Mains—Battery Switch	3	083053
S3	Battery Safety Switch	1 & 2	830171
L.S.	Loudspeaker, 5 inch P.M.	1 & 2	850140
M.R.	Metal Rectifier	2	705681

MISCELLANEOUS

Item	No.	Item	No.
Cabinet	063037	Scale	070450
Knob (Plain)	048105	Rivets (Scale Fixing)	706216
Knob (with Spot)	048106	Aerial Lead	040361
Knob Spring	700900	Mains Input Lead Assembly	073205
Top Panel Assembly	073189	Battery Plug, 2 pin L.T.	704266
Knurled Screw	030091	Battery Plug, 3 pin H.T.	701930
Top Panel Retaining Bracket	073204		