PORTADYNE CLASS B SUPERHET

Circuit.—The combined first detector-oscillator PM12M (clear) (V1) is preceded by a band pass tuner. Coupling for reaction is obtained by coils in each of the L.T. leads with the anode coil in series with the primary of the first band pass I.F. transformer (intermediate frequency 112 KC).

The I.F. valve S215VM met. (V2) is biased from a potentiometer across the G.B. battery which acts as a volume control. Coupling to the second detector is by a second band pass I.F. transformer.

The second detector L2DD met. (V3) is a double diode triode. The diode anodes are strapped together for rectification and the L.F. is taken from the low H.F. potential end of the IFT2 secondary. The diode load is formed by R4 and C6. C8 is the L.F. coupling condenser to the grid of the triode section. Bias for this part of the valve is taken from a G.B. tapping. Coupling to the next valve is by resistance capacity filter R5 and C9.

The driver valve PM2DX has an H.F. stopper in its grid circuit and the same bias potential is used as for V3. Coupling to the output stage is by a Class B transformer.

The output valve PD220A is a Class B valve operating with applied bias. The anode circuits are stabilised by means of a single condenser C12.

Special Notes.—Battery connections: HT and GB combined C.A.V. HTD112. GB —1, 3 v.; GB —2, 4.5 v.; GB —3, 13.5 v. HT +1, 40 v.; HT +2, 60 v.; HT +3, 123 v. The local-distance switch, underneath the cabinet, operates by connecting a 30 ohm resistance across the aerial input. The switch should be "in" for full sensitivity.

Quick Tests.—Practically the full H.T. battery voltage should be recorded at the anodes of the screen grid valves and any trouble can be partially localised by noting the response in the speaker.

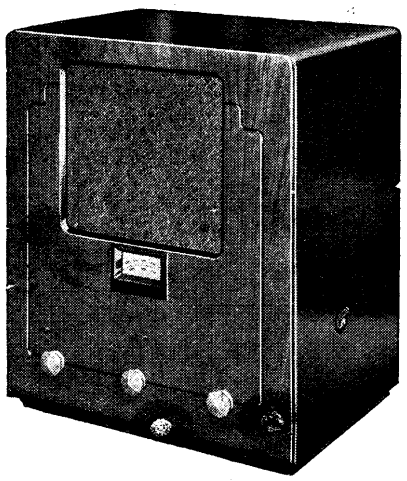
Removing Chassis.—Unsolder leads to local-distance switch underneath cabinet and remove holding screws. Remove the control knobs, noting that W.C. switch has two grub screws. Remove three screws from battery switch plate and lift the chassis out. The L.S. leads are sufficiently long to allow examination.

General Notes.—The wiring is straightforward and with the help of the lay-out diagram the H.T. and grid circuits are easily followed. The switch contacts can be reached from the end of the chassis.

The small coil suspended over the band pass M.W. coils is a second channel sup-

(*Continued on opposite page.*)

PORTADYNE CLASS B SUPERHET (Cont.)



Five valves, including double-diode triode and Class B types, are used in the Portadyne B72 receiver.

pressor and is adjustable, but this should not be altered unless it has been disturbed accidentally.

Replacing Chassis.—Lay the chassis inside the cabinet and push the L.D. switch leads through the hole in the bottom of the cabinet. Push chassis forward and pull the L.D. leads through.

Replace holding screws and knobs and resolder leads to L.D. switch. Replace the battery switch.

VALVE READINGS

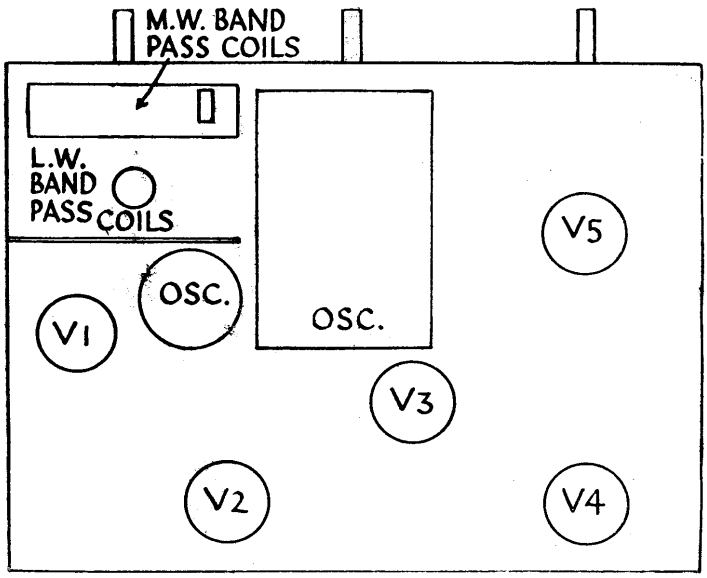
Valve.	Type.	Electrode.	Volts.	M.A.
1	PM12M ...	anode ...	120	1
		screen ...	as HT+1	
2	SG215VM ...	anode ...	120	1
		screen ...	as HT+	
3	L2DD ...	Triode anode	85	1
4	PM2DX ...	anode ...	115	2
5	PM2BA ...	eachanode	120	2

CONDENSERS

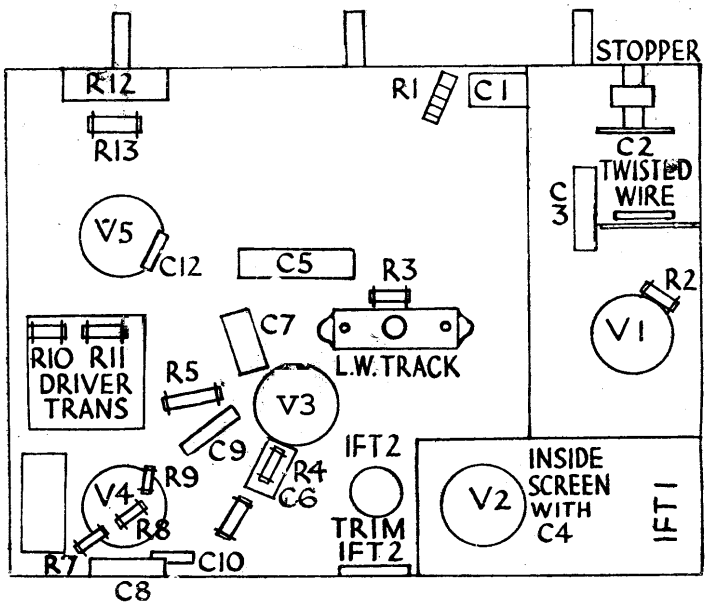
C.	Purpose.	Mfd.
1	Aerial series condenser	.0005
2	V1 grid (Twisted wire)	.00005
3	V1 screen	.1
4	Decoupling V1 anode lead ...	.1
5	V2 screen	.1
6	H.F. by-pass from diode ...	.0002
7	V3 anode H.F. by-pass	.002
8	L.F. coupling to V3 grid ...	.005
9	L.F. coupling to V3 to V4 ...	.005
10	H.F. by-pass	.0001
11	Across full H.T. battery tappings	4 el.
12	Stabilising V5 anodes	.002

RESISTANCES

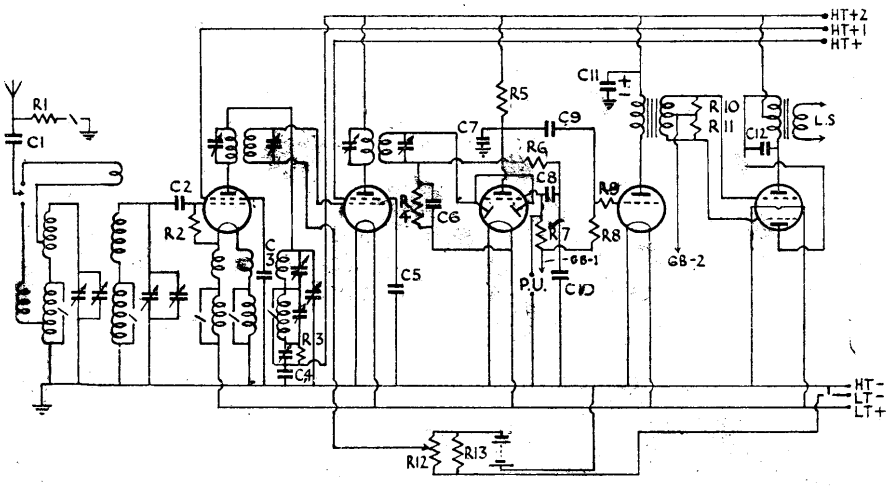
C.	Purpose.	Ohms.
1	Aerial damping for local reception.	30
2	V1 grid leak	.25 meg.
3	Across L.W. tracking condenser	10,000
4	Diode anode load	1 meg.
5	V3 anode L.F. coupling ...	30,000
6	H.F. stopper from diode ...	50,000
7	V3 grid leak	.5 meg.
8	V4 grid leak	1 meg.
9	V4 grid stopper	.25 meg.
10	Across one half of driver transformer secondary.	10,000
11	Across one half of driver transformer secondary.	10,000
12	Vol. control across G.B.... ...	6,000
13	Compensating for H.T. drop ...	1,200
	P. of output transformer ...	275+275
	S. of driver transformer ...	125+125
	P. of driver transformer... ...	2,000



How the components are placed on the top of the chassis of the Portadyne B72. A second channel suppressor coil is mounted over the medium wave band-pass coils.



With the aid of the above diagram the H.T. and grid circuits of the B72 are easy to follow.



A local distance switch connects a 30-ohm resistance across the input and in cases of poor sensitivity it is worth early investigation.