

PORTADYNE RADIO'S P.B.5 PORTABLE

Circuit.—The H.F. valve, PM12A (V1), is preceded by a conventional frame aerial in which the long-wave section is short-circuited when the medium wave is in use. The circuit has a "local-distance" switch which connects a condenser of small value in series with the grid condenser and at the same time connects a balancing condenser across the H.F. tuning condenser. The anode

of the valve is coupled to the tuned grid of the next valve by a choke-condenser filter.

The detector valve, PM2DX (V2) has its grid leak taken to a tapping on a potentiometer across the filament supply to provide bias for the most sensitive operating condition of the valve. Swinging coil reaction is used and the anode H.T. circuit is decoupled. Coupling to the first L.F. valve is by parallel-fed transformer.

The first L.F. valve, PM2DX (V3) has a tone control in the grid circuit in the form of a condenser between the grid and chassis. This is operated by a switch.

Coupling to the second L.F. valve is by another parallel-fed transformer, the primary of which has a complete tone correction filter in series with it. The anode H.T. supply to this valve is also decoupled. The next valve, PM2DX (V4) (driver) is also coupled to the output by a typical Class B transformer.

The output is a Class B B21 (V5) and is compensated for high note distortion by a

condenser between one grid and earth, by a condenser between each anode and earth and by another between the anodes. The speaker is a permanent-magnet type.

Special Notes.—The screen potential for the H.F. valve is derived from the H.T. through the resistance R4, which is the decoupling resistance of the detector. When the screen voltage is approximately that of the H.T. battery the detector valve is not drawing any current.

A resistance R9 is connected across the
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RESISTANCES

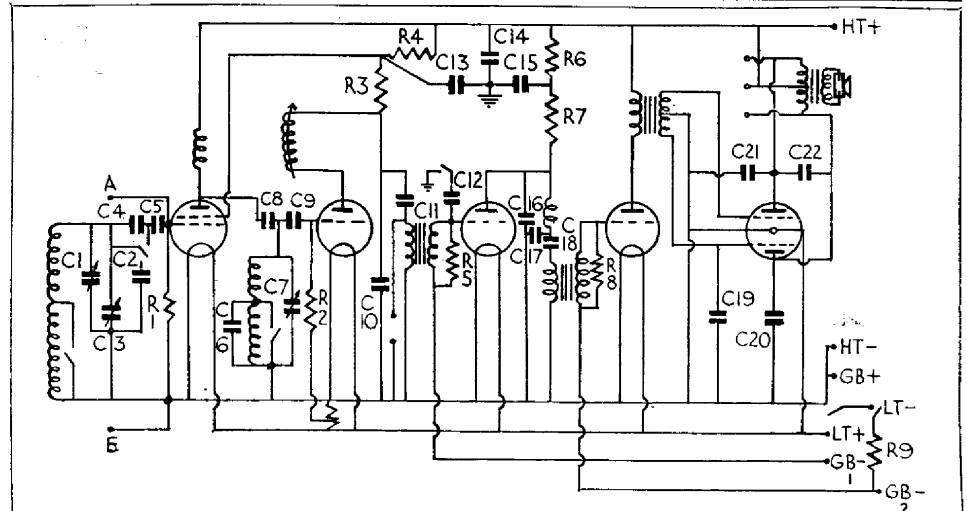
R.	Purpose.	Ohms.
1	V1 grid leak	1 meg.
2	V2 grid leak	1 meg.
3	V2 anode coupling to 1st LF trans.	30,000
4	V2 anode decoupling	50,000
5	Across secondary of 1st LF trans.	220,000
6	V3 anode decoupling	20,000
7	V3 anode coupling to 2nd LF trans.	20,000
8	Across secondary of 2nd LF trans.	220,000
9	Across GB battery	300
x	Across LW of V2 grid coil	250,000

CONDENSERS

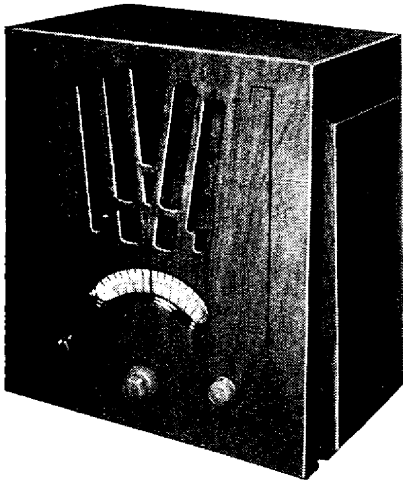
C.	Purpose.	Mfd.
4	In series with C5 for local reception (twisted wire)	—
5	V1 grid condenser ... ..	.0001
6	L.W. padding condenser (twisted wire)	—
8	H.F. filter from anode V1 to grid coil of V2 ... ..	.0001
9	V2 grid condenser ... ..	.0001
10	V2 anode by pass condenser ... ..	.002
11	LF filter to 1st LF transformer ... ..	.1
12	Tone control in grid circuit V3 ... ..	.002
13	V1 screen and V2 anode decoupling	1
14	Across HT battery	1
15	V3 anode decoupling	1
16	Part of tone correction circuit ... ..	.001
17	Part of tone correction circuit ... ..	.001
18	Filter to 2nd LF transformer ... ..	.1
19	Tone compensating, in one grid of V5 ... ..	.01
20	Between one anode of V5 and earth ... ..	.01
21	Between other anode of V5 and earth ... ..	.002
22	Between V5 anodes ... ..	.004
x	Tone compensating in other grid ... ..	.01

VALVE READINGS

Valve	Type.	Electrode.	Volts.	m.a.
1	PM12A	anode	117	.8
		screen	55	—
2	PM2DX	anode	38	.9
3	PM2DX	anode	70	1.2
4	PM2DX	anode	118	1.9
5	B21	each anode	130	—



Screen-grid H.F., detector, L.F. and driver valves precede the Class B output valve in the Portadyne P.B.5.



A self-contained battery portable, the P.B.5 is a product of Portadyne Radio, Ltd. It is fitted with a moving-coil speaker and the controls include a local-distance switch.

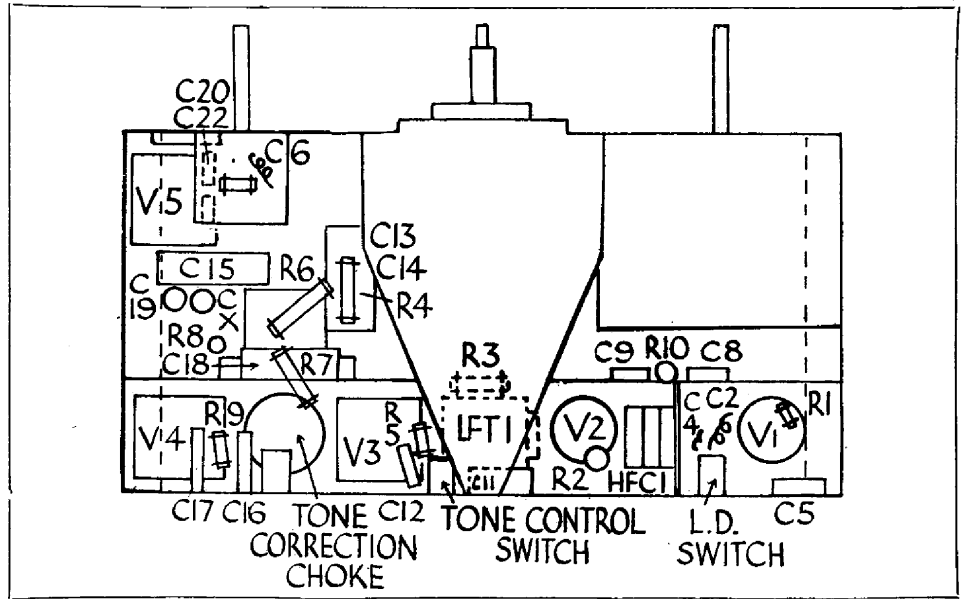
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GB battery to compensate for drop in H.T. volts.

Quick Tests.—With m.a. meter in negative H.T. lead :—
 Current with no signal ... 7 m.a.
 " " moderate signal 8 "
 " " loud signal ... 10-12 m.a.

Removing Chassis.—Remove knobs (grub screw), four wood screws underneath cabinet, battery platform and brackets, and slide chassis out complete with frame aerial.

Unsolder the two frame aerial leads on left hand side (looking from rear) (top yellow, bottom red), and the screened lead from the tag on the right-hand side. Unsolder speaker leads.



As the top-deck layout of the P.B.5 is straightforward only the underneath plan is given above.

Remove four screws holding chassis to base of frame, and lift chassis out carefully. Remove screen on switch side.

If any of the components on the inside of the chassis have to be repaired, it is more convenient to remove the gang condenser first. To do this, remove the three countersunk screws holding the condenser base plate to the chassis. Unsolder the two leads to the terminal on the rear condenser and the earthing lead. Ease the condensers out and unsolder the lead to the front condenser.

General Notes.—If the reaction control becomes loose, remove the lid on the intervalve coil box (the screws are threaded to the inside support and there are no nuts). Tighten the control by undoing the grub screw on the collar and re-tightening while pressing the collar against the spring.

Replacing Chassis.—Remember to replace screen. Lay the chassis inside the frame aerial and replace the four holding screws. Resolder the L.S. and frame aerial leads and replace the knobs.