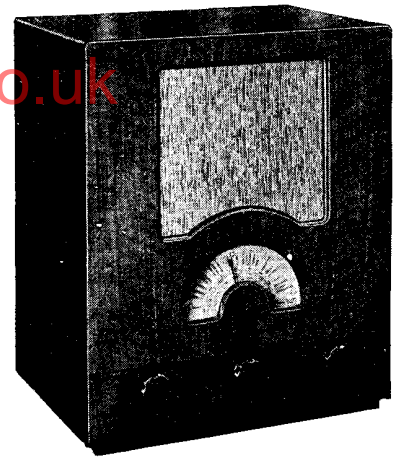


PORTADYNE JUBILEE- YEAR SUPERHET

www.radio-workshop.co.uk



The five-valve A.C. mains superhet receiver specially introduced by Portadyne Radio, Ltd., to commemorate the Royal Jubilee.

Circuit.—The combined detector oscillator valve, F.C.4 met. (V1), is preceded by a band-pass aerial coupling, which includes a medium-wave choke to prevent interference on the long waveband.

Tuning is in the oscillator grid circuit, and bias is partly fixed by cathode resistance and partly by A.V.C. The coupling to the next valve is by band-pass I.F. transformer (frequency 112 kc.).

The intermediate frequency valve, V.P.4

met. (V2), is also biased by cathode resistance and A.V.C., and is followed by a second band-pass I.F. transformer.

The second detector and L.F. valve, T.D.D.4 met. (V3), uses the orthodox circuit for L.F. signals and A.V.C., but the volume control is in the grid of the output valve. The L.F. coupling is a resistance capacity filter with anode decoupling.

An A.C.2 (pen.) (V4) output valve has both grid and anode stabilising resistances, and is tone compensated by a condenser between the anode and chassis.

Mains equipment consists of transformer,

full-wave IW3 indirectly heated rectifier, and the speaker field in the positive lead with electrolytic condensers for smoothing.

Special Notes.—Though the ganged condenser is a special superhet type, the long

(Continued on opposite page.)

CONDENSERS

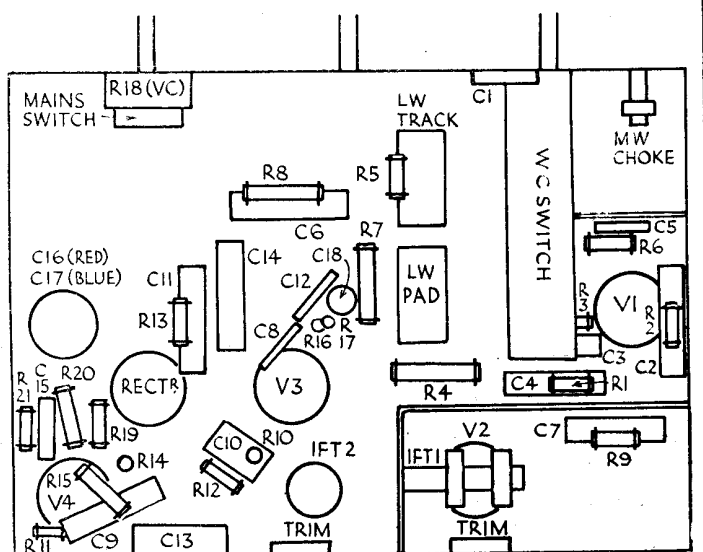
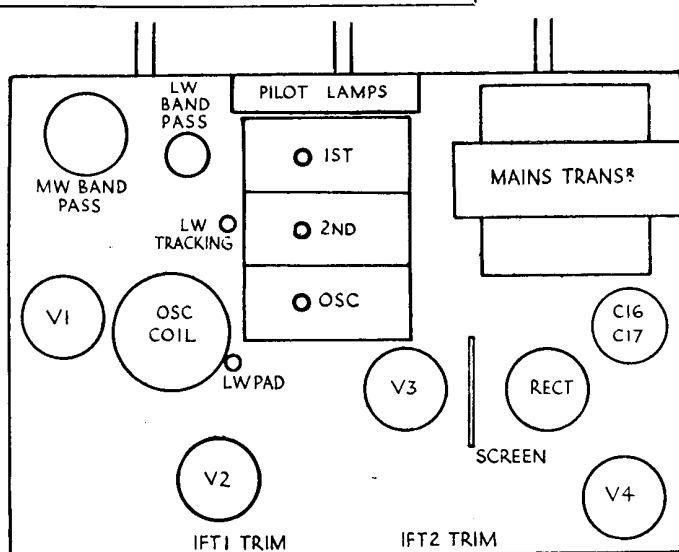
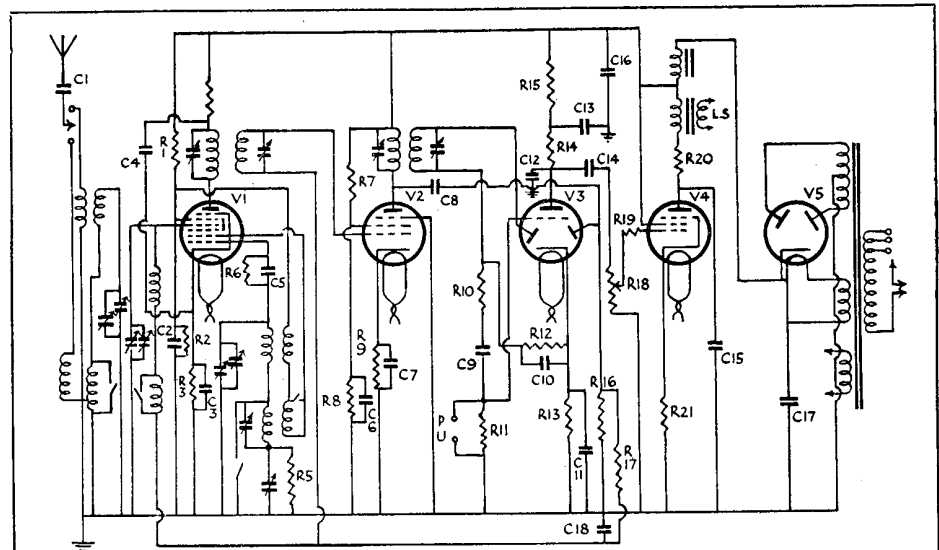
C.	Purpose.	Mfd.
1	Series aerial	.0005
2	V1 aux. grid by-pass	.1
3	V1 cathode by-pass	.1
4	V1 anode decoupling	.1
5	V1 osc. grid	.0002
6	V2 aux. grid by-pass	.1
7	V2 cathode by-pass	.1
8	L.F. feed to A.V.C. diode	.0001
9	L.F. coupling to V3 grid	.1
10	H.F. by-pass from diode	.0002
11	V3 cathode by-pass	.1
12	H.F. by-pass from V3 anode	.0005
13	V3 anode decoupling	1
14	V3, V4, L.F. coupling	.1
15	V4 anode, tone compensating	.002
16	H.T. smoothing	8 el.
17	H.T. smoothing	4 el.
18	Decoupling A.V.C. line	.1

VALVE READINGS

Valve.	Type.	Electrode.	Volts.	M.a.
1	FC4 met. (7)	anode	195	1-1.5
		aux. grid	65	
2	VP4 met. (7)	anode	223	3.5
		aux. grid	80	
3	TDD4 met. (7)	anode	100	2
		anode	200	27
4	A.C.2 Pen. (7)	aux. grid	225	

RESISTANCES

R.	Purpose.	Ohms.
1	Upper part of V1 aux. grid ptr.	30,000
2	Lower part of V1 aux. grid ptr.	30,000
3	V1 cathode bias	150
4	V1 anode decoupling	20,000
5	Grid return of oscillator	10,000
6	Osc. grid leak	50,000
7	Upper part of V2 aux. grid ptr.	30,000
8	Lower part of V2 aux. grid ptr.	25,000
9	V2 cathode bias	300
10	H.F. stopper from diode	50,000
11	V3 grid leak	1 meg.
12	Diode leak	.5 meg.
13	V3 cathode bias	1,000
14	V3 anode L.F. coupling	30,000
15	V3 anode decoupling	30,000
16	A.V.C. diode load	1 meg.
17	Decoupling A.V.C. line	1 meg.
18	Volume control ptr. V4 grid leak	.5 meg.
19	V4 grid stabiliser	100,000
20	V4 anode stabiliser	300
21	V4 cathode bias	150
	L.S. field	2,000



Top is the straightforward circuit of the Portadyne set, and below are the chassis layouts. Several of the resistances are inside systoflex, but are easily recognisable.

PORTADYNE JUBILEE- YEAR SET (Cont.)

waveband is trimmed by both padding and tracking condensers as shown in the diagrams. These are adjustable from above. The I.F. transformer trimmers are at the back of the chassis. The two for I.F.T.I. are slightly to the left of V2.

Pilot lamps are 6 v. .3 amp. type.

Quick Tests.—Between the terminals on the speaker transformer and chassis:—

Top (1) H.T. unsmoothed, 320 volts.

(2) and (3) H.T. smoothed, 225 volts.

(4) V4 anode, 200 volts.

Removing Chassis.—Remove the knobs

(two grub screws each), remove four holding screws underneath, pull out the three speaker connecting plugs, and free the earthing lead from underneath the nut.

Release the speaker leads from the cleat and lift the chassis out.

General Notes.—The condensers C16 and C17 are in one container. The red lead is C16 of 8 mfd. and the blue C17 of 4 mfd.

There is a small capacitative coupling between the band-pass coils, consisting of two wires looped together. This should not be disturbed.

The connections on the mains transformer are:—Terminals on top, counting from the outside:—

(1) and (2) rectifier heater; (3) and (4), set heaters; (5) and (6), mains and switch. Underneath (in same order):—

(1) chassis, (2) rectifier anode, (3) chassis, (4) rectifier anode.

The centre taps of the high voltage winding and the case are actually earthed through the earthed lead of the set heaters.

Replacing Chassis.—Lay the chassis inside the cabinet and pull the mains lead through the aperture. Replace the holding screws and the knobs. Connect the speaker leads (the panel is coloured to correspond) and clip them. Fix the speaker earthing lead under the nut.