

PORTADYNE JUBILEE-YEAR SUPERHET

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.).

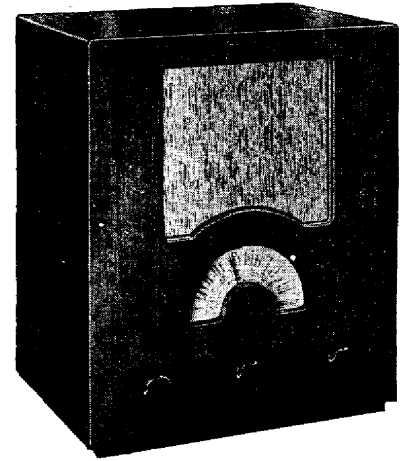
The intermediate frequency valve, V.P.4

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,



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

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 | I.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 | |

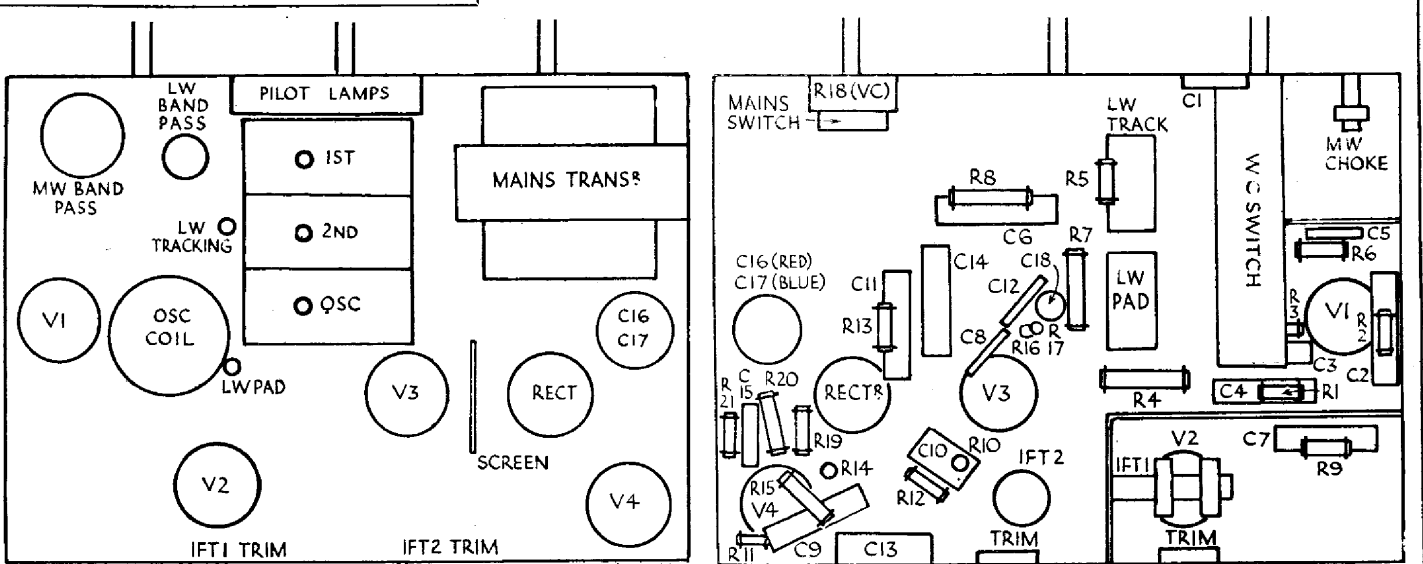
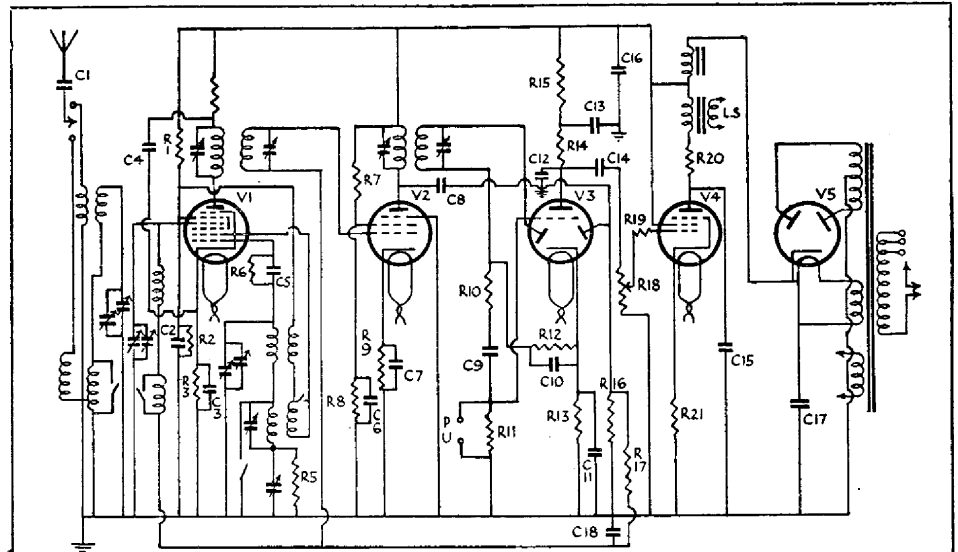
full-wave IW3 indirectly heated rectifier, and the speaker field in the positive lead with electrolytic condensers for smoothing.

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

(Continued on opposite page.)

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 load | .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 capacitive 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.