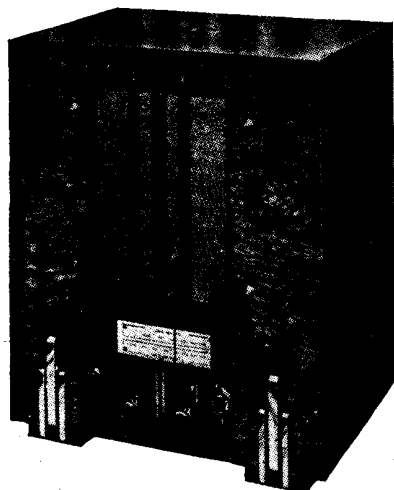


MARCONIPHONE 264 CHASSIS (Cont.)



The table model, type 264, of the Marconiphone Jubilee range of receivers. The same chassis is also used in the model 297 console and the model 287 radio-gramophone.

mounted on the condenser block and the condensers can be traced by counting the terminal tags shown on the diagram. The resistances also help as an indication to which condensers they are attached.

The long wave padding condenser for the oscillator (T.C.S.) is mounted on the panel at the side of V1 and is adjusted from the side.

The wave-change switch is of the same type of construction as that of the model

296, and contacts can be cleaned by using a thin nail file.

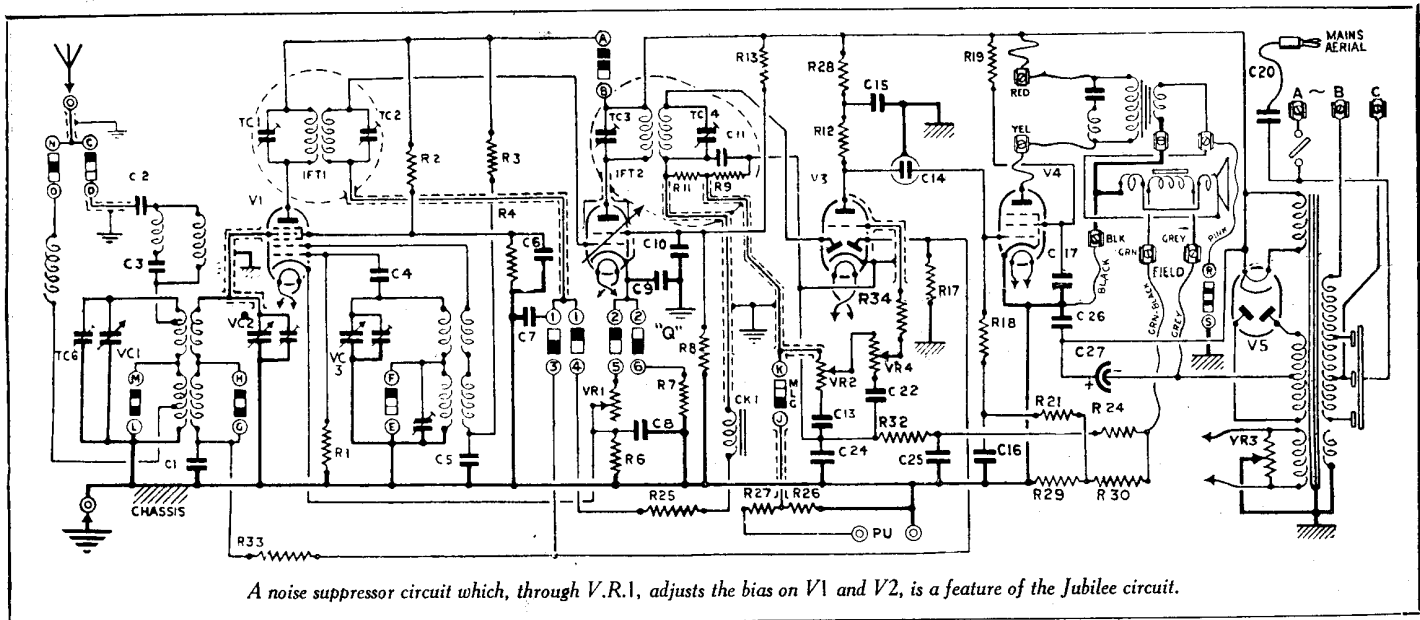
Condensers included in the block are: C1, C6, C8, C10, C14, C15, C17, C24, C25 and C26. In the diagram C22 is included to act as a point of reference.

Replacing Chassis.—Lay the chassis inside the cabinet, replace holding screws and knobs and clip the speaker cable.

| CONDENSERS | | |
|------------|--------------------------------|--------|
| C. | Purpose. | Mfd. |
| 1 | Decoupling V1 grid * | 1 |
| 2 | Aerial coupling on M.W. | .0005 |
| 4 | V1 osc. grid | .0001 |
| 5 | V1 osc. anode-decoupling | .5 |
| 6 | V1 aux. grid by-pass* | 1 |
| 7 | Decoupling V2 grid from A.V.C. | .035 |
| 8 | Decoupling V1, V2 bias * | .5 |
| 9 | V2 cathode by-pass | .25 |
| 10 | V2 screen by-pass* | 3 |
| 11 | H.F. by-pass from diode | .0001 |
| 13 | Low potential end of V.C. | .1 |
| 14 | L.F. coupling V3 to V4* | .1 |
| 15 | Decoupling V3 anode* | 1 |
| 16 | Decoupling V4 grid* | 1 |
| 17 | V4 aux. grid by-pass* | 1 |
| 20 | Mains aerial | .00035 |
| 22 | Part of tone control circuit | .0005 |
| 24 | Decoupling bias for A.V.C.* | 1 |
| 25 | Decoupling bias for A.V.C.* | 2 |
| 26 | H.T. smoothing* | .4 |
| 27 | H.T. smoothing | 8 |

* In condenser block. Part No. 19544D.

| RESISTANCES | | |
|-------------|---|---------|
| R. | Purpose. | Ohms. |
| 1 | V1 osc. grid leak | 50,000 |
| 2 | Top part of V1 aux. grid. ptr. | 23,000 |
| 3 | Decoupling V1 osc. anode | 50,000 |
| 4 | Lower part of aux. grid ptr. | 23,000 |
| 6 | Fixed part of V1 cathode bias | 500 |
| 7 | Fixed part of V2 cathode bias | 100 |
| 8 | Lower part of V2 screen ptr. | 23,000 |
| 9 | Diode load | 230,000 |
| 11 | H.F. stopper from diode | 50,000 |
| 12 | V3 anode L.F. coupling | 50,000 |
| 13 | Top part of V2 screen ptr. | 35,000 |
| 17 | A.V.C. diode load | 500,000 |
| 18 | V4 grid leak | 230,000 |
| 19 | Voltage dropping to V4 aux. grid | 10,000 |
| 21 | Decoupling V4 grid | 150,000 |
| 24 | Part of V3 cathode (A.V.C.) resistance. | 23,000 |
| 25 | Decoupling A.V.C. | 50,000 |
| 26 | Across pick-up | 35,000 |
| 27 | Across pick-up (series with C26) | 23,000 |
| 28 | V3 anode decoupling | 23,000 |
| 29 | Part of bias ptr. | 250 |
| 30 | Part of bias ptr. | 750 |
| 32 | Part of V3 cathode (A.V.C.) resistance. | 35,000 |
| 33 | Decoupling A.V.C. to V1 | 500,000 |
| 34 | H.F. stopper V3 grid | 230,000 |



A noise suppressor circuit which, through V.R.1, adjusts the bias on V1 and V2, is a feature of the Jubilee circuit.

BURNDEPT "209" ETHODYNE FIVE

Circuit.—The first detector oscillator valve, FC4 met. (V1), is preceded by a band-pass aerial tuner. Bias on the pentode section is by cathode resistance and A.V.C. and on the oscillator by cathode resistance. Oscillator tuning is in the grid circuit.

Coupling to the next valve is by band-pass I.F. transformer (frequency 473 kc.). The I.F. valve, VP4A met. (V2), is also biased by A.V.C. and cathode resistance, and is followed by a second band-pass I.F. transformer.

Visual tuning is provided by a meter movement connected in the common H.T. lead to V1 and V2.

The second detector, a 2D4A met. (V3), is a straight double diode utilising one anode for L.F. purposes and the other for A.V.C.

Coupling to the output consists of the load

resistance R13, the coupling condenser C15 and the potentiometer grid leak of V4, which forms the volume control.

The output valve, Pen4VB, or 42MP/Pen

(V4), has a grid stabilising resistance and tone control is provided by a condenser in series with a variable resistance between the anode and chassis.

The speakers have their speech coils wired in parallel. One speaker is a permanent magnet type and the field of the other is used for smoothing.

Mains equipment consists of transformer, full-wave R2 rectifier and 6 mfd. electrolytic condensers.

Special Notes.—The pilot lamp is a 6.5 volt .3 amp type.

Quick Tests.—Between the following points on right-hand speaker transformer:—
Lower tag, H.T. smoothed, 240 v.
Upper tag, V5 anode, 230 v.

(Continued on page 35. For diagrams see page 34.)

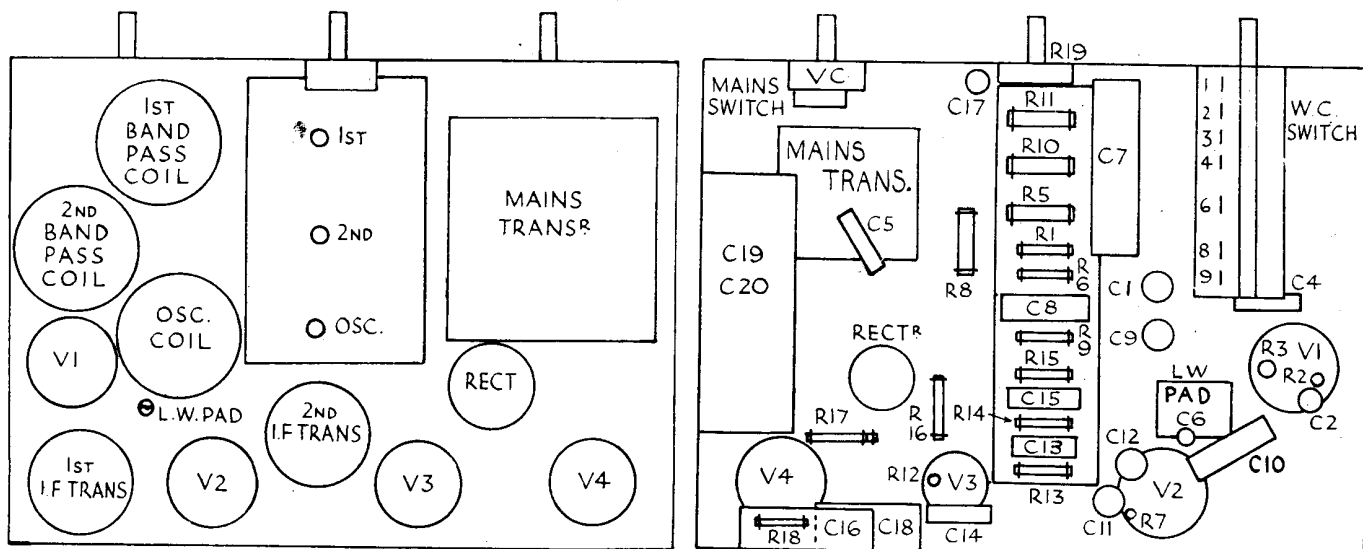
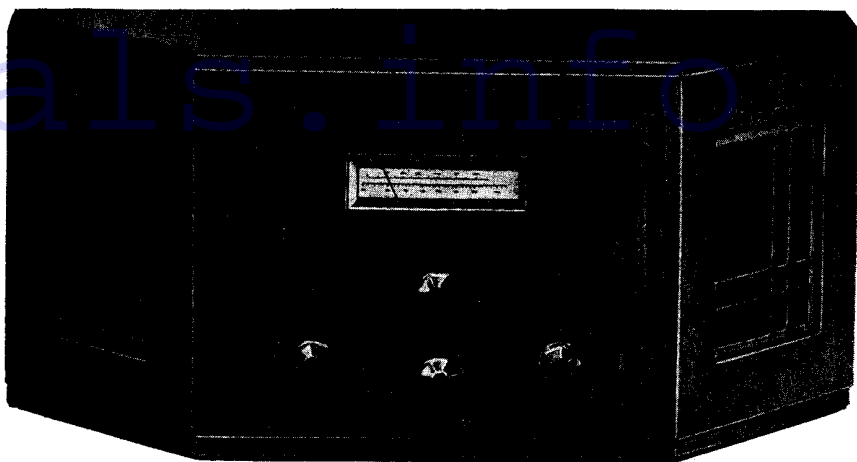
| VALVE READINGS | | | | |
|----------------|--------------------------------|-------------|--------|------|
| No signal. | | | | |
| Valve. | Type. | Electrode. | Volts. | M.a. |
| 1 | FC4 met (7) | anode | 235 | * |
| | | aux. grid | 85 | |
| | | osc. anode | 83 | |
| 2 | VP4A met | anode | 235 | * |
| | | aux. grid | 100 | |
| 3 | 2D4A | No voltages | | |
| 4 | Pen 4VB (7) (or 42 MP Pen.) | anode | 230 | 33 |
| | | aux. grid | 240 | 3 |

* Inclusion of leads for current readings may cause instability.

BURNDEPT ETHODYNE FIVE (Cont.)

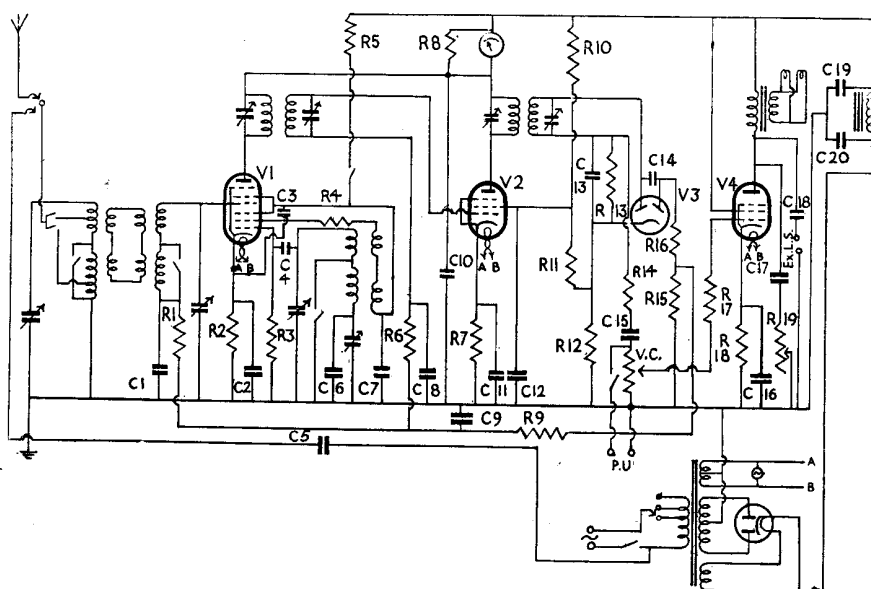
On this page are the layout diagrams and the theoretical circuit of the Burndept 209 Ethodyne Five receiver. The tables of component values are given on the opposite page.

Right, the Ethodyne Five was one of the first receivers with which Burndept re-entered the market during 1934. The model dealt with is the "209," and is similar to the "201," which was the first set of this type produced by the firm, with the exception that A.V.C. is provided.



The two above diagrams indicate the positions of the components above (left) and below (right) the Burndept chassis. The long-wave padding condenser is accessible from above the chassis, while below the general design is simplified by the central resistance-condenser assembly.

Right, the theoretical circuit diagram of the Burndept Ethodyne Five twin-speaker receiver. The circuit is an orthodox four-valve plus rectifier superhet arrangement. A double-diode valve is used instead of the more usual double-diode triode, and is followed by a high-slope output pentode.



Rectifier Burn-outs

After a rectifying valve has been burnt out the trial of a new one may very well result in that also being destroyed.

It is advisable to make a practice of testing the resistance between H.T.+ and H.T.— before fitting a new rectifier valve.

With sets in which potentiometer feed is used for screen grids, the resistance may be between 20,000 and 100,000, but any resistance of less than 10,000 ohms should cause a short circuit in a condenser to be suspected.

The most convenient method of applying the test is usually to insert a prod into one of the filament sockets of the rectifying valve holder with the other side of the ohmmeter connected to the chassis.

BURNDEPT ETHODYNE FIVE (Cont.)

Junction of red lead from set to black of speaker field H.T. unsmoothed, 420 v.

Removing Chassis.—Remove the knobs (grub screw), remove four holding screws from underneath and lift the chassis out.

General Notes.—The I.F. trimmers can be reached through the apertures in the tops of the cans and the longwave padding condenser is situated behind the oscillator coil as shown in the diagram.

Mains transformer coding:—

Yellow and black, rectifier heater.

Green and black, set heaters.

Red, rectifier anodes.

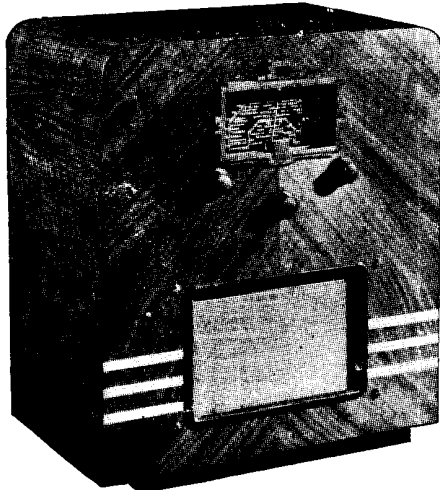
The wiring is straightforward, and tracing the circuit offers no difficulties.

The leads underneath the cabinet are those of the speech coil of the high note speaker.

Replacing Chassis.—Lay chassis inside cabinet, replace holding screws and knobs.

| CONDENSERS | | |
|------------|---------------------------|-------------|
| C. | Purpose. | Mfd. |
| 1 | Decoupling V1 grid | .1 |
| 2 | V1 cathode by-pass | .1 |
| 3 | V1 aux. grid by-pass | .1 |
| 4 | V1 osc. grid | .001 |
| 5 | Mains aerial | .0001 |
| 6 | Fixed part of L.W. pad | .0005 |
| 7 | Decoupling V1 osc. anode | 8 el. (150) |
| 8 | Decoupling V2 grid | .1 |
| 9 | Decoupling AVC line | .1 |
| 10 | Decoupling tuning meter | .1 |
| 11 | V2 cathode by-pass | .1 |
| 12 | V2 aux. grid by-pass | .1 |
| 13 | H.F. by-pass prim. diode | .0001 |
| 14 | I.F. feed to AVC diode | .0001 |
| 15 | L.F. coupling condenser | .01 |
| 16 | V4 cathode by-pass | 50 el (12) |
| 17 | Tone control circuit | .1 |
| 18 | Filter feed to extra L.S. | .5 |
| 19 | H. T. smoothing | 6 el. (450) |
| 20 | H. T. smoothing | 6 el. (450) |

| RESISTANCES | | |
|-------------|---|----------|
| R. | Purpose. | Ohms. |
| 1 | Decoupling V1 grid | 100,000 |
| 2 | V1 cathode bias | 250 |
| 3 | V1 osc. grid leak | 50,000 |
| 4 | V1 osc. anode harmonic suppressor. | 250 |
| 5 | Voltage dropping to V1 aux. grid | 30,000 |
| 6 | Decoupling V2 grid | 100,000 |
| 7 | V2 cathode bias | 200 |
| 8 | Parallel with tuning meter | 5,000 |
| 9 | Decoupling A.V.C. line | 250,000 |
| 10 | Part of V2 aux. grid ptr. | 10,000 |
| 11 | Part of V2 aux grid ptr. | 8,000 |
| 12 | Part of V2 aux. grid ptr. (delay bias). | 700 |
| 13 | Diode load | 1 meg. |
| 14 | H.F. stopper from diode | 100,000 |
| 15 | Part of A.V.C. diode ptr. | 1 meg. |
| 16 | Part of A.V.C. diode ptr. | .5 meg. |
| 17 | V4 grid stabiliser | .25 meg. |
| 18 | V2 cathode bias | 150 |
| 19 | Var. tone control | .25 meg. |
| | Volume control | .5 meg. |
| | L.S. field | 2,500 |



The 5001 battery superhet by Ever Ready Radio, Ltd.

EVER READY "5001"

The W2 rectifier is biased from a potentiometer across the G.B. battery. This gives the required delay action.

The W6 is coupled to the driver valve through an H.F. filter to the load resistance volume control, which is parallel fed to the first L.F. transformer.

The driver valve, PM2D1 met. (V4), is coupled by a typical driver transformer to the class B output valve, PM2B (V5). This is operated with bias and is compensated by a resistance and condenser in series between the anodes.

The external speaker is fed from the secondary of the output transformer and a jack plug automatically switches off the internal speaker.

Special Notes. — Battery connections are:—

- Yellow lead, 130 v.
- Blue lead, 90 v.
- Green lead, 69 v.
- Brown lead, 4.5 v. (G.B.).

The switch breaks L.T.—, H.T.— and G.B.+ leads.

Removing Chassis.—Pull off the knobs. Remove two screws holding the battery switch at the side, and free the cable from the cleat.

Pull the leads up through the circular hole and remove the three holding screws from

underneath the platform. Disconnect the speaker plug and remove the two screws at the ends of the front of the chassis (to reach the left-hand one the valves must be removed and a long screwdriver used).

The chassis can then be removed.

General Notes.—The connections on the semi-circular panel on the driver transformer are (see diagram): A, centre tap of secondary; B, H.T.+; C, V4 anode; D, V5 grid 1; E, V5 grid 2.

On the first L.F. transformer the one end of the primary is earthed through the soldering tag on the case.

C9, C10, C11, C13 and C19 are of the non-inductive type and are marked with a red spot.

On the suppressor coil former the different sections, counting from the outside, are: (1) and (2), L1; (3), L3 and L4; (4), L2.

The wiring colour code is as follows:—

V1, H.F. valve: Grid circuit, mauve; anode circuit, red flex.

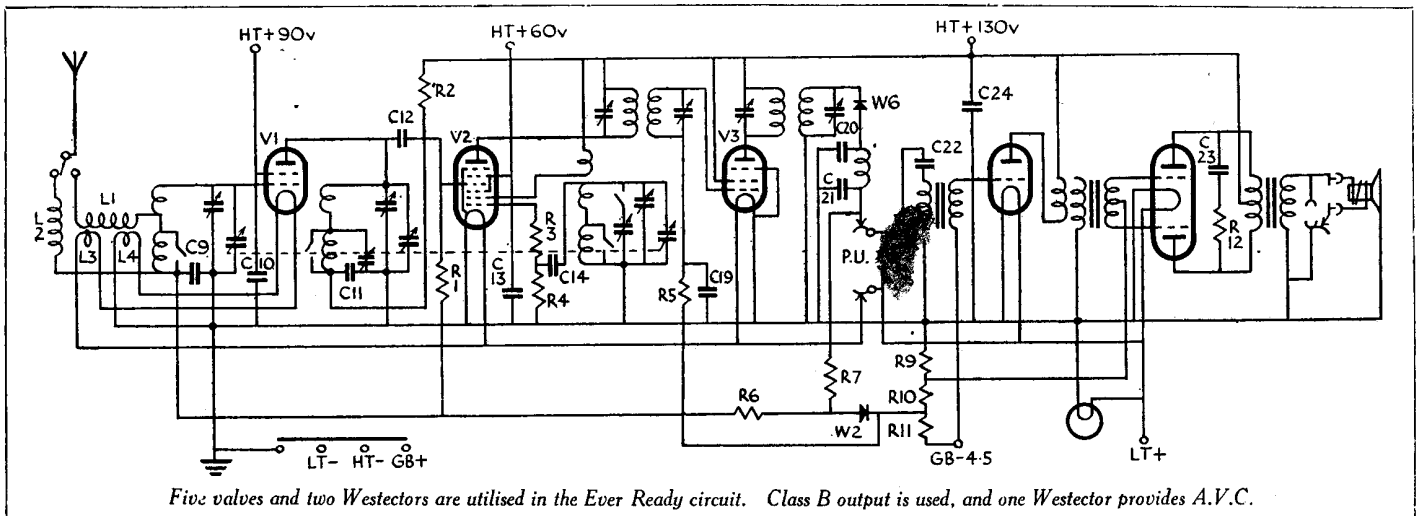
V2, frequency-changer section: Grid circuit, red flex; anode, red. V2, oscillator section: grid, blue; anode, blue with yellow tracer.

V3, I.F. valve: grid, green; anode, screened lead.

V4, driver valve: grid, pink; anode, red.

V5, output valve: grid, brown; anode, brown with yellow tracer.

(Continued on next page.)



Five valves and two Westectors are utilised in the Ever Ready circuit. Class B output is used, and one Westector provides A.V.C.