

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 of 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.)

BURNDEPT "209" ETHODYNE FIVE

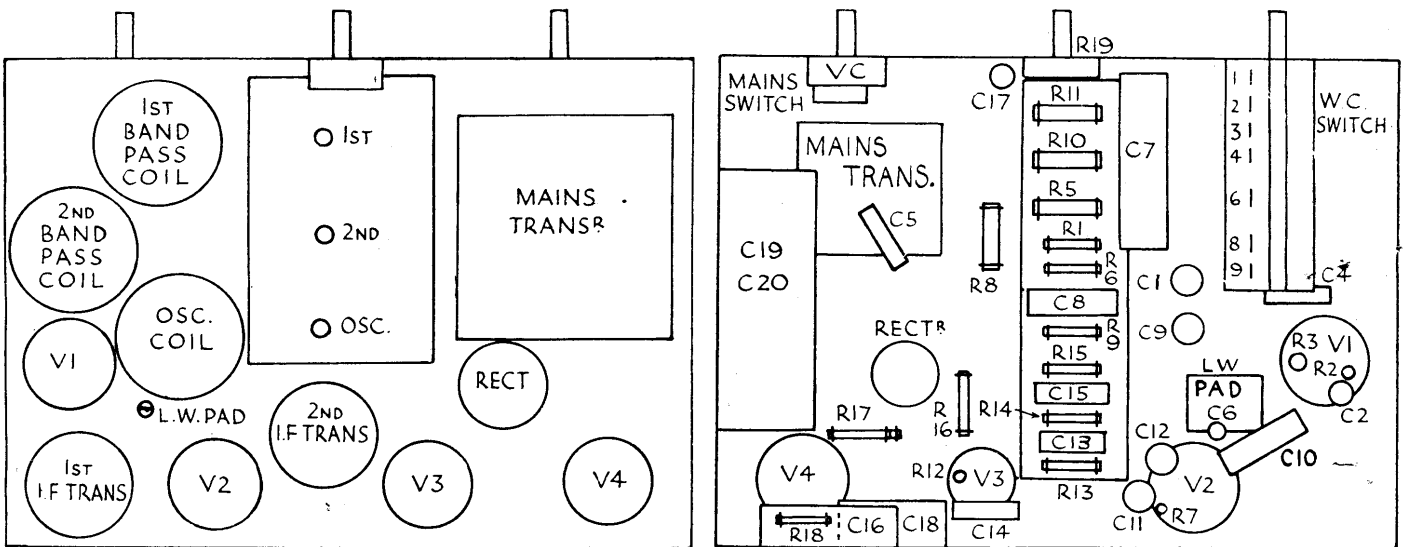
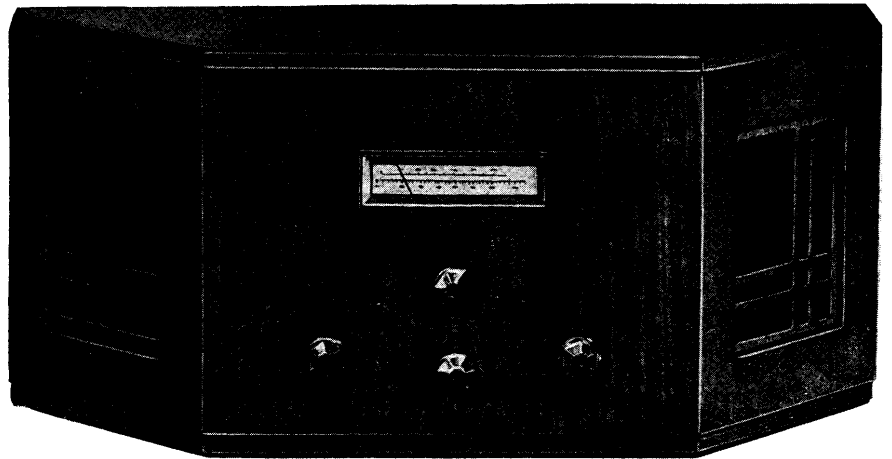
VALVE READINGS				
No signal.				
Valve.	Type.	Electrode.	Volts.	M.a.
1	FC4 met (7)	anode ..	235	*
		aux. grid ..	85	
		osc. anode..	83	
2	VP4A met	anode ..	235	*
		aux. grid ..	100	
3	2D4A	No voltages		
4	Pen 4VB (7) (or 42 MP Pen.)	anode ..	230	33
		aux. grid ..	240	3

* Inclusion of leads for current readings may cause instability.

BURNDIPT ETHODYNE FIVE (Cont.)

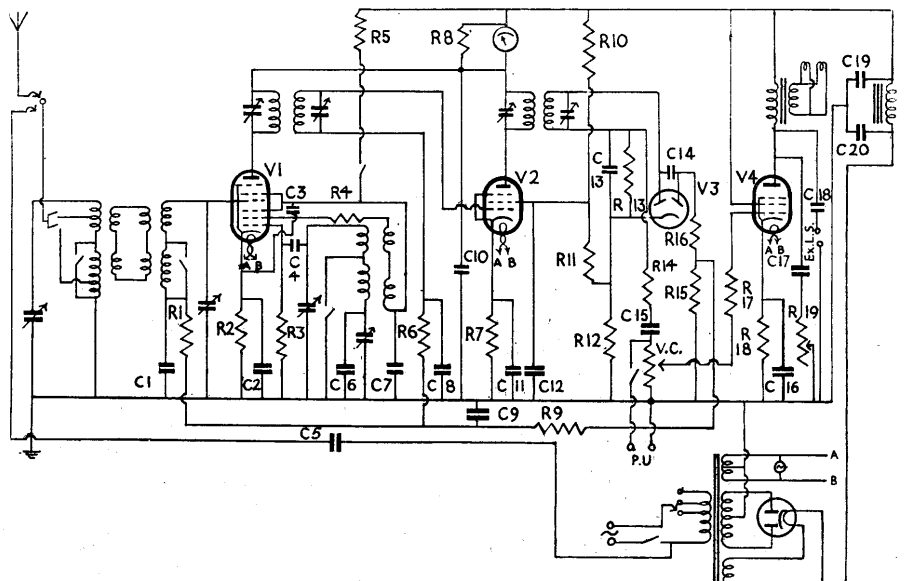
On this page are the layout diagrams and the theoretical circuit of the Burndipt 209 Ethodyne Five receiver. The tables of component values are given on the opposite page.

Right, the Ethodyne Five was one of the first receivers with which Burndipt 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 Burndipt 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 Burndipt 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.



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	V4 cathode bias	150
19	Var. tone control .. ..	.25 meg.
	Volume control .. ..	.5 meg.
	L.S. field	2,500