



The Aerodyne "Nightingale."

CONDENSERS

C.	Purpose.	Mfd.
4	Band pass coupling ..	.05
5	Decoupling V1 anode ..	1
7	V2 grid reservoir ..	.00005
8	V2 anode H.F. by-pass ..	.0003
9	L.F. coupling to transformer ..	.1
10	Tone compensating V3 anode ..	.002
11	Decoupling V2 anode ..	1
12	Band pass coupling (twisted wire)	3 mmf.

RESISTANCES

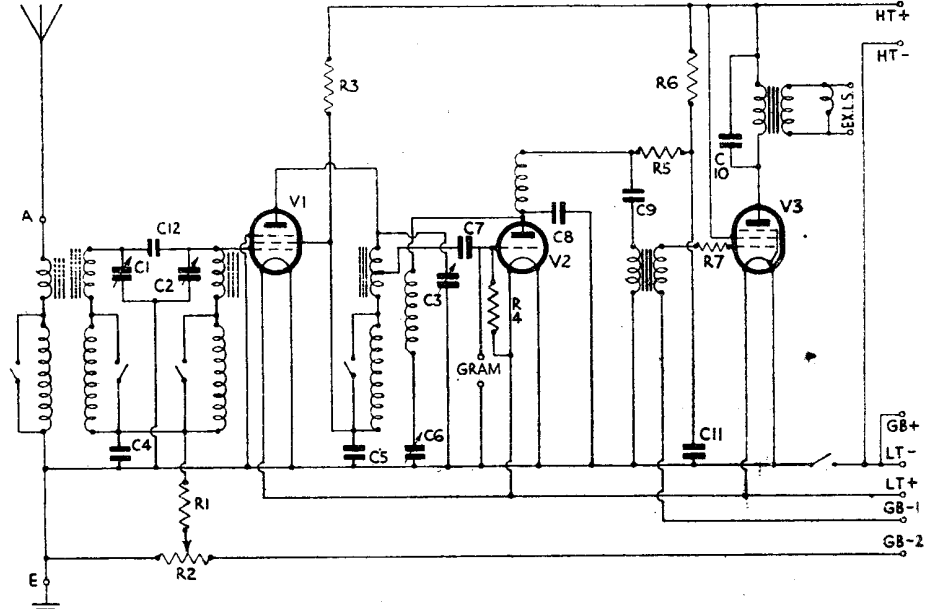
R.	Purpose.	Ohms.
1	Decoupling V1 grid ..	20,000
2	Volume control ptr. (var.) ..	8,000
3	V1 anode decoupling ..	3,000
4	V2 grid leak ..	2 meg.
5	V2 anode L.F. coupling ..	30,000
6	V2 anode decoupling ..	20,000
7	V3 grid stabiliser ..	.25 meg.

AERODYNE NIGHTINGALE "THREE" (Cont.)

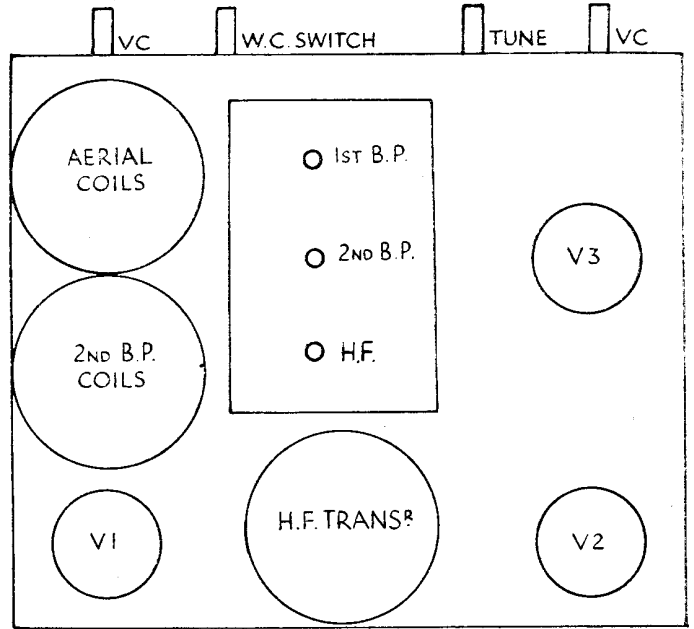
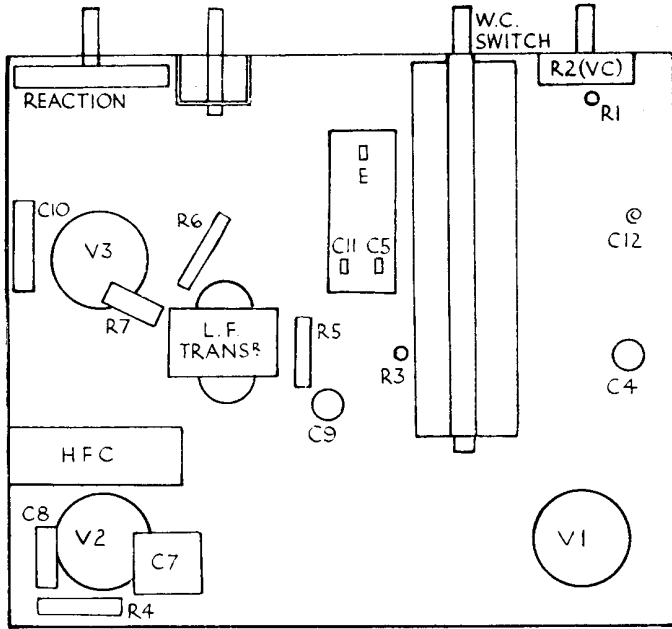
and remove three holding screws from underneath the cabinet.

General Notes.—This is a straightforward three-valve set with no complications. The small components are suspended in the wiring and are readily accessible.

Replacing Chassis.—Lay the chassis inside the cabinet, replace holding screws, two wood screws on dial, and press the knobs on to the spindles (see the top of chassis lay-out for the correct order).



The circuit of the Aerodyne is straightforward and the chassis construction correspondingly simple.



Circuit.—The combined first detector, FC4 met. (V1) is preceded by a band-pass aerial coupling with a special filter in the long-wave aerial lead. Oscillator tuning is in the grid circuit, and bias is obtained from the A.V.C. line and by limiting cathode resistance. Coupling to the next valve is by band-pass L.F. transformer (frequency 110 k.c.).

The I.F. valve, VP4 met. (V2), is also biased by cathode resistance and A.V.C., and is followed by a second band-pass I.F. transformer. The neon tube indicator is connected across part of the auxiliary-grid feed with the priming anode taken to H.T.+ through a separate resistance, R12.

The second detector and L.F. amplifier, MHD4 met. (V3), utilises one diode anode for

L.F. purposes, and the other for A.V.C. The grid leak of the triode section forms the volume control, and tone control is provided by a variable condenser between grid and chassis. The triode coupling to the next valve is by resistance capacity filter.

The output valve, Pen. 4VA (V4), has a grid stabilising resistance and the V3 cathode by-pass condenser, C21, is connected to a tapping on V4 cathode resistance.

Mains equipment consists of: Transformer, full-wave IW3 indirectly heated rectifier, with the speaker field in the positive H.T. lead with electrolytic condensers.

The speaker field is tuned by a .05 condenser to act as a hum filter.

Pilot lamp is a 4.5 v. .3 amp. type.

Special Notes.—The degree of induction provided by the neon tube can be adjusted by the variable resistance R27 at the back of the chassis, i.e., the projecting screw alongside the P.U. sockets.

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

Top: (1) Yellow and green, 0 volts; (2)

(Continued on next page.)

HALCYON MODEL A.C./7

HALCYON SUPERHET A.C./7 (Cont.)

blue and white, H.T. + smoothed, 230 volts;
(3) yellow and black, V4 anode, 210 volts;
(4) brown and yellow, 0 volts.

The red lead to the speaker field is H.T. unsmoothed, 350 v.

Removing Chassis.—For examination of the chassis it is necessary only to remove the board from the bottom of the cabinet.

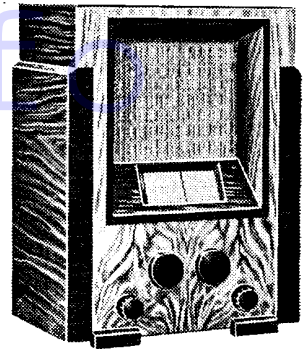
General Notes.—There may be variations in different chassis. In some a tone compensating circuit consisting of a resistance and condenser (RY and CX in the

lay-out diagram) may be connected across the output.

The auxiliary grid may be fed through a resistance RX with a corresponding by-pass condenser.

The condenser, C24, is one of a 30+30 mfd. block. Only one of the condensers is actually in use, and in the event of a break-down the other connection should be used.

The heater leads from A and B on the transformer to the two outer terminals on the strip are 3-in. lengths of 18 S.W.G. Eureka



Large control knobs facilitate handling the Halcyon A.C./7 Superhet.

CONDENSERS

C.	Purpose.	Mfd.
6	V1 grid decoupling	.25
7	V1 cathode by-pass	.1
8	V1 aux. grid by-pass	.1
9	V1 osc. anode decoupling	.1
10	V1 osc. grid	.001
11	Decoupling V2 grid	.1
12	V2 cathode by-pass	.1
13	V2 anode decoupling	.1
14	V2 aux. grid by-pass	.1
15	L.F. coupling to V3	.1
16	H.F. by-pass	.001
17	L.F. feed to A.V.C. diode	.001
18	H.F. by-pass from V3 anode	.005
19	L.F. coupling V3 to V4	.1
21	V3 cathode by-pass	.1
22	V3 anode decoupling	.25
23	Tuning L.S. field	.05
24	V4 cathode by-pass	el. 30 (20 v.)
25	H.T. smoothing	el. 8
26	H.T. smoothing	el. 4

RESISTANCES

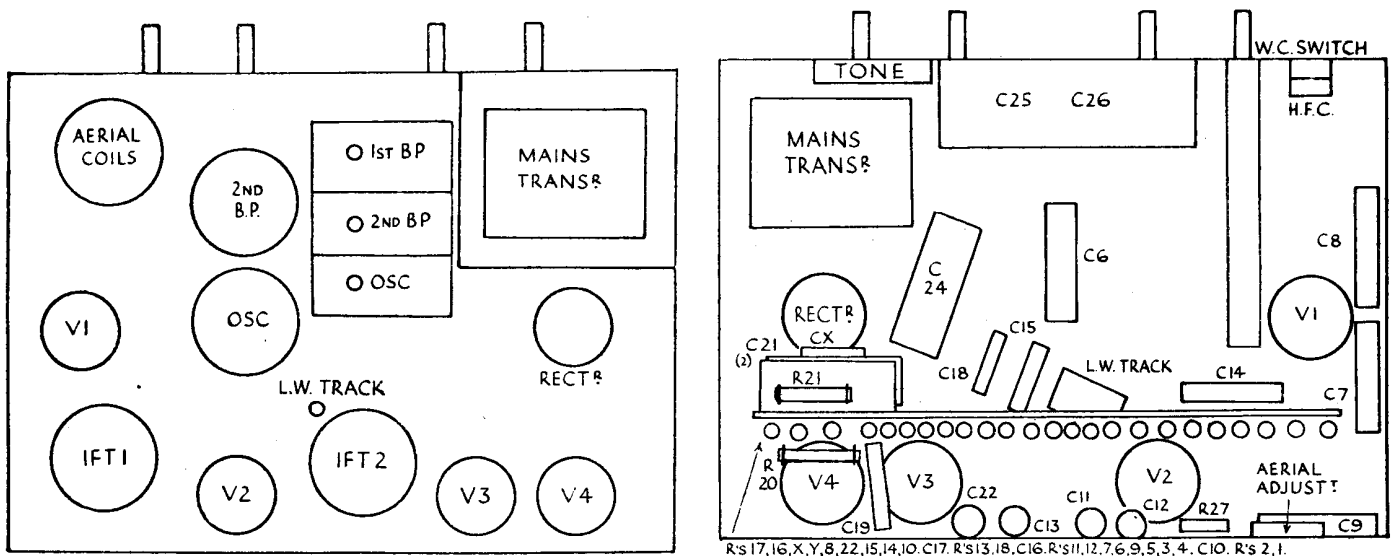
R.	Purpose.	Ohms.
1	V1 cathode bias	250
2	V1 on grid leak	19,000
3	Decoupling V1 aux. grid	40,000
4	Decoupling V1 osc. anode	40,000
5	V2 cathode bias	300
6	Decoupling V2 screen	33,000
7	H.T. feed Neon indicator	50,000
8	Decoupling V3 anode	30,000
9	Decoupling V2 anode	10,000
10	Decoupling A.V.C. to V1	2 meg.
11	Decoupling A.V.C. to V2	2 meg.
12	Pilot feed to Neon tube	2 meg.
13	Diode load	1 meg.
14	A.V.C. diode load	1 meg.
15	V3 cathode bias	1,000
16	V4 grid stopper	100,000
17	V4 grid leak	.25 meg.
18	H.F. stopper	.25 meg.
19	H.F. stopper in V3 grid	.5 meg.
20	V4 cathode bias	500
21	V4 cathode return	200 or 400
22	V3 anode, L.F. coupling	50,000
25	Decoupling V1 grid	.25 meg.
27	Neon indicator control	var. 50,000
28	Volume control	var. 1 meg.

wire. These are in series with each heater lead.

Where a 3,000-ohm speaker field is employed instead of the 2,000 field, a 50,000-ohm resistance may be found mounted on the cabinet in parallel with the field and a No. 3 output transformer will be included.

VALVE READINGS

Valve.	Type.	Electrode.	Volts.	M. A.
1	FC4 met. (7)	anode	230	.5
		aux. grid	60	4
		osc. anode	75	3
2	VP4 met. (7)	anode	170	4.5
		aux. grid	75	2.5
3	MHD4 met. (7)	anode	75	2
		aux. grid	210	30
4	Pen.4VA (7)	anode	230	6



R's 17, 16, X, Y, 8, 22, 15, 14, 10, C17, R's 13, 18, C16, R's 11, 12, 7, 6, 9, 5, 3, 4, C10, R's 2, 1.

Above are the Halcyon chassis layouts. The neon tuning indicator is controlled by a resistor alongside the pick-up terminals.

For variations in the Halcyon circuit in the region of the output valve see "General Notes."

