

EVER READY 5002 SUPERHET (Cont.)

CONDENSERS

C.	Purpose.	Mfd.
8	V1 grid decoupling	.1*
9	V1 aux. grid by-pass	.0002
10	V1 osc. grid	.0002
11	Decoupling tuning indicator	.2
12	Decoupling V1 anode	.1*
19	V1 osc. anode decoupling	.1*
20	V1 cathode	.1*
21	V2 grid decoupling	.1*
22	V2 cathode	.1*
23	V2 aux. grid by-pass	.1*
24	I.F. feed to A.V.C. diode	.0002
25	H.F. by-pass from diode	.0001
26	L.F. coupling	.1
27	H.F. by-pass	.0001
28	V3 cathode bias by-pass (A.V.C.)	50(12v.) el.
29	V3 cathode bias by-pass (A.V.C.)	25(25v.) el.
30	Decoupling A.V.C. line	.01*
31	Tone compensating V3 anode	.01
32	H.T. smoothing	16(450v.)el.
33	H.T. smoothing	8(440v.) el.

\* Denotes non-inductive type. Bracketed figures give peak working voltage.

RESISTANCES

R.	Purpose.	Ohms.
1	Voltage dropping to V1 aux. grid	25,000 (4)
2	V1 grid decoupling	.25 meg.(4)
3	V1 osc. grid leak	.1 meg. (4)
4	V1 anode decoupling	2,000 (4)
5	Across osc. coil	40,000 (4)
6	V1 cathode bias	1,000 (4)
7	Decoupling V1 osc. anode	100,000 (4)
8	Voltage dropping to V2 aux. grid	25,000 (4)
9	V2 cathode bias (wire)	600
10	V3 grid stabiliser	25,000 (4)
11	V.C.	.25 meg.
12	Diode load	.25 meg.(4)
13	V3 cathode bias (wire)	150
14	V3 cathode bias (wire)	750
15	A.V.C. potentiometer	.5 meg (4)
16	A.V.C. potentiometer	.25 meg. (4)
17	Decoupling A.V.C. line to V1	.5 meg.(4)
18	Decoupling A.V.C. line to V2	.5 meg.(4)
19	Tone compensating circuit	8,500 (4)
20	Voltage control of tuning indicator (wire)	3
—	Speaker field	6,650

V2: Grid, green; anode, screened lead.  
V3: Grid, white; anode, brown and yellow; diode, yellow.

Rectifier: heaters, red; anodes, black.  
The grid stabilising resistance of V3 (R10) is inside the screening cover of the valve.

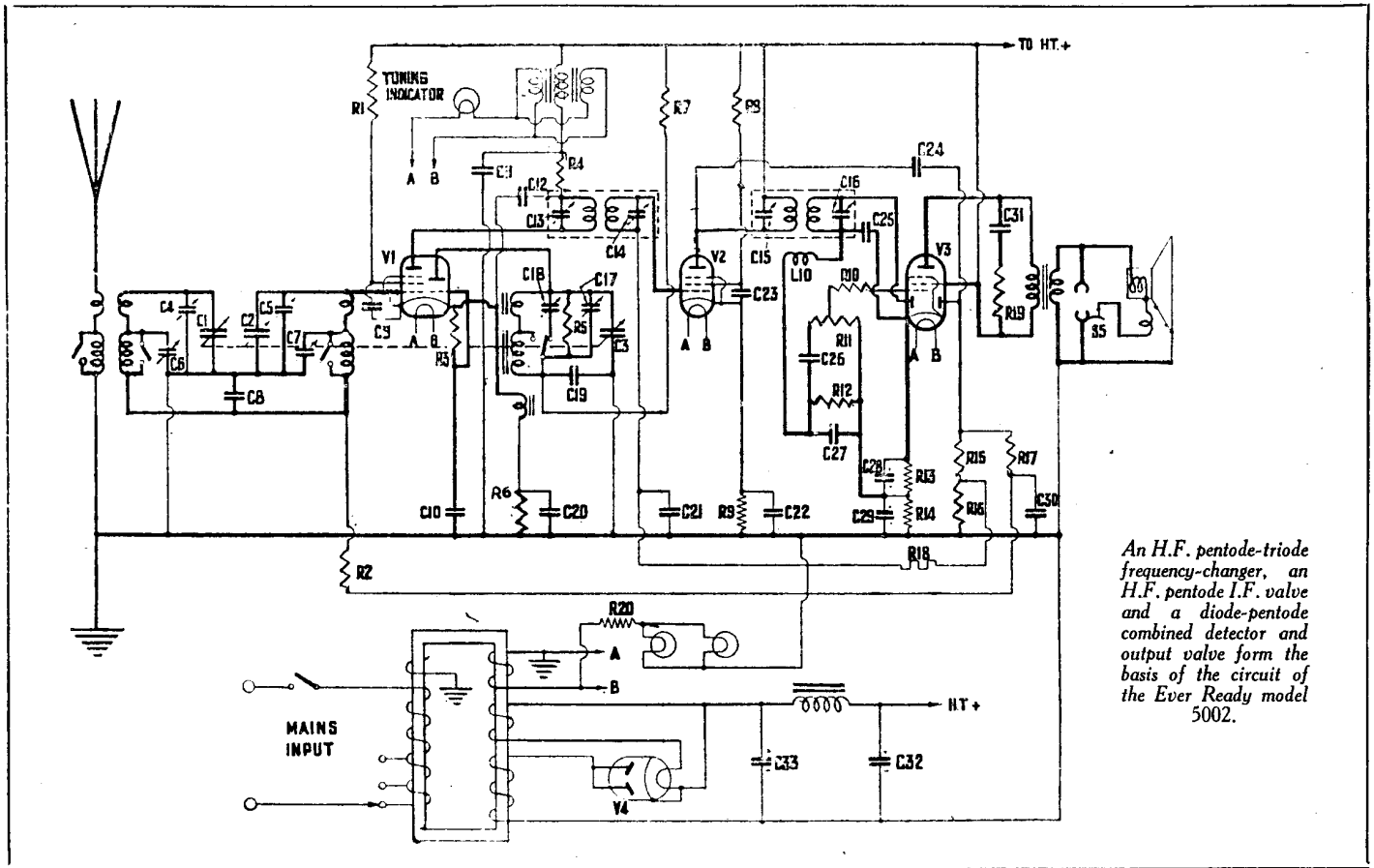
**Switch Contacts**, counting from the end of the chassis:—  
1 and 2, S1; 3 and 4, S2; 5 and 6, S3; 7, 8 and 9, S4.

The mains switch is at the end of the spindle.

The output transformer is inside the chassis and the connections (counting the tags from the front) are—

- (1) Earthed side of secondary.
- (2) Other end of secondary,
- (3) Junction of R19 and C31,
- (4) H.T. end of primary,
- (5) V3 anode primary.

**Replacing Chassis**.—Lay the chassis inside the cabinet, replace two wood screws on condenser brackets, replace holding screws and knobs, and re-connect the speaker plug.



An H.F. pentode-triode frequency-changer, an H.F. pentode I.F. valve and a diode-pentode combined detector and output valve form the basis of the circuit of the Ever Ready model 5002.

BURGOYNE UNIVERSAL "FURY"

**Circuit.**—The H.F. valve, VP13A met. (V1), is preceded by a single-tuned aerial coil, but the aerial lead contains a choke to prevent break-through on the long wave-band and also a Droitwich wavetrap (see "Special Notes").

Volume is controlled by the variable- $\mu$  characteristic of the valve. The following coupling is an H.F. transformer with reaction.

The next valve, an SP13 met. (V2), operates as a semi-power-grid detector, and is resistance-capacity coupled to the output pentode, a Pen. 3520 (V3). This has both grid and anode tone-compensating condensers and a grid stabilising resistance.

Mains equipment includes a half-wave 1D5 rectifier, which rectifies A.C., and acts as a resistance on D.C. The speaker field is used with electrolytic condensers for smoothing,

and the heater supply current is controlled by a Philips C1 baretter.

**Special Notes.**—There is no mains switch on the receiver.

Where Droitwich does not spread too much the No. 2 aerial tapping should be used,

VALVE READINGS				
Universal valves. 230 volts A.C. mains. V.C. max.				
Valve	Type.	Electrode.	Volts.	M.A.
1	VP13A met.	anode	160	4.2
		aux. grid	120	—
2	SP13 met.	anode	80*	.6
		aux. grid	40*	—
3	Pen 3520	anode	150	33
		aux. grid	160	7.5

\* Misleading readings due to high values of resistances.

but within the swamp area the receiver should be tuned to Droitwich and the wavetrap adjusted for minimum signal by means of the screw below the aerial and earth sockets.

**Quick Tests.**—Be careful of a live earth lead when testing this receiver.

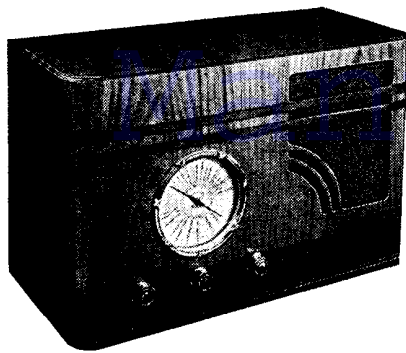
Voltages between the terminals on the speaker transformer and chassis (i.e., head of one of the bolts):

- Left (1) Grey, V3 anode ... 150 volts.
- (2) Red, H.T. smoothed ... 160 volts.
- (3) Black, H.T. unsmoothed 250 volts.

**Removing Chassis.**—Undo the knobs (grub screw) and remove the one-hole fixing nut of the wave-change switch.

Remove the three wood screws from the flange at the back of the chassis.

(Continued on opposite page.)



An "aeroplane" type tuning dial is a distinguishing feature of the Burgoyne "Fury" receiver.

### BURGOYNE A.C.-D.C. FURY (Cont.)

RESISTANCES		
R.	Purpose.	Ohms.
1	V1 cathode bias	400
2	Top part of V1 aux. grid ptr.	10,000
3	V2 grid leak	.5 meg.
4	Voltage dropping to V2 aux. grid	1 meg.
5	V2 anode L.F. coupling	.1
6	V2 anode decoupling	10,000
7	V3 grid stabiliser	50,000
8	V3 grid leak	.25 meg.
9	V3 cathode bias	100
10	Lower part of V1 aux. grid	30,000
11	Volume control	5,000
—	Speaker field	2,150

CONDENSERS		
C.	Purpose.	Mfd.
3	Earth isolating	.1
5	V1 aux. grid by-pass	.1
6	V1 cathode by-pass	.1
9	V2 aux. grid by-pass	.1
10	V2 grid reservoir	.0001
11	V2 anode H.F. by-pass	.0005
12	L.F. coupling	.01
13	Decoupling V2 anode	.1
14	Tone compensating, V3 grid	.001
15	V3 cathode by-pass	50* el.
16	Tone compensating, V3 anode	.005
17	H.T. smoothing	12* el.
18	H.T. smoothing	8* el.
19	Across rectifier	.01
20	Series with pick-up	.1

\* In one block.

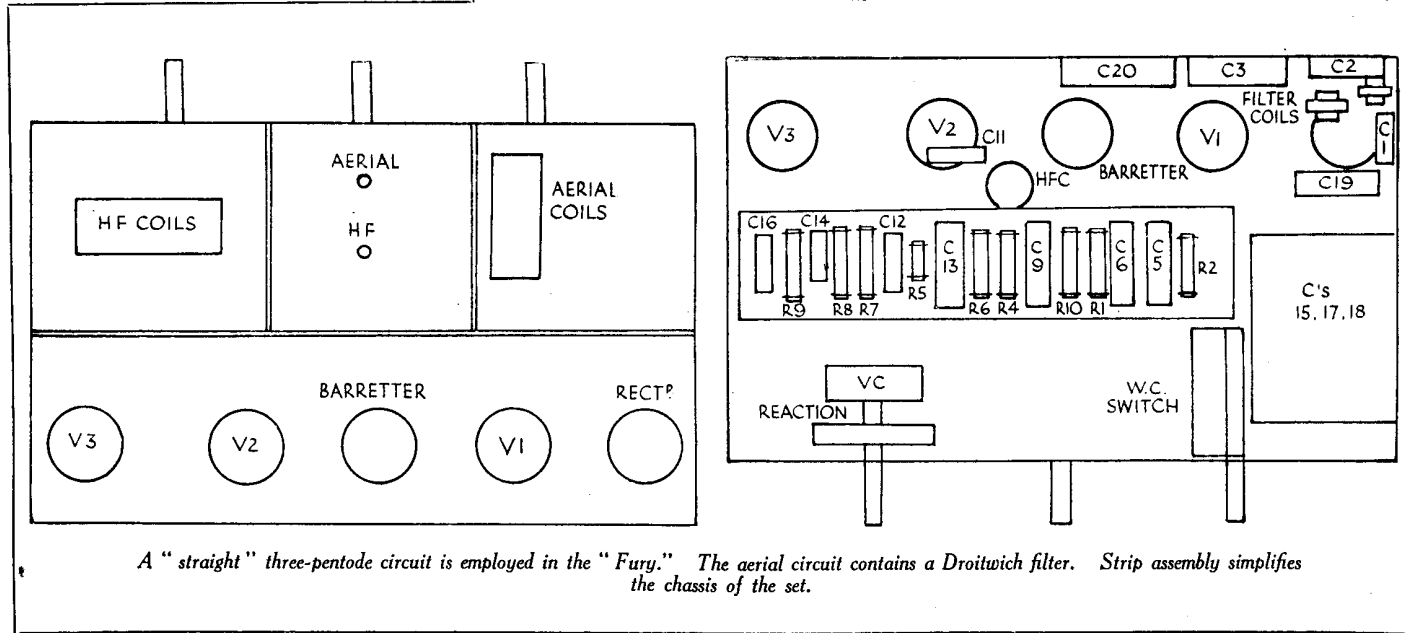
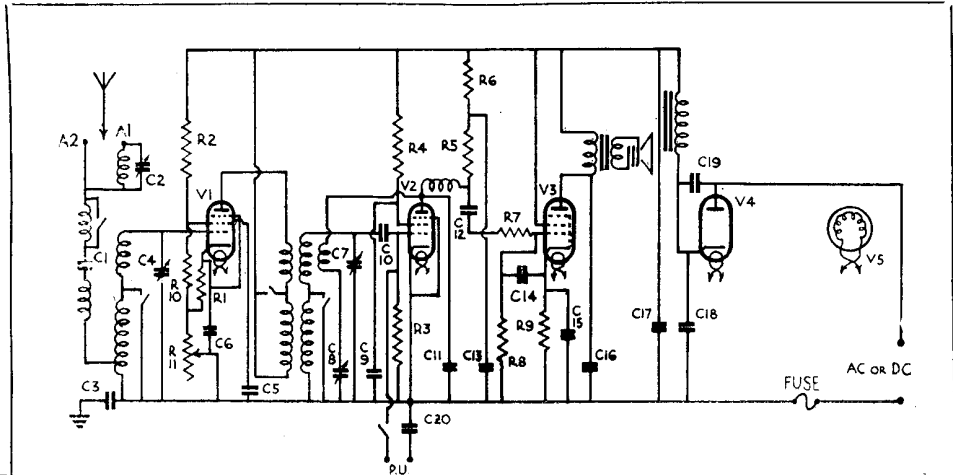
**General Notes.**—The block condenser is a special type containing 8, 12 (350 volt peak), and a 50 mfd. (12 volt peak) electrolytic condensers.

The leads are: 12 mfd., red; 8 mfd., yellow; 50 mfd., green. The negative (black) is common to all three.

The layout and connections are particularly simple, and tracing the components is facilitated by the resistance condenser panel.

**Replacing Chassis.**—Lay the chassis inside the cabinet, replace the three screws on the rear flange and screw the nut on to the switch.

After replacing the knobs cover the grub screws with the plastic insulating compound.



A "straight" three-pentode circuit is employed in the "Fury." The aerial circuit contains a Droitwich filter. Strip assembly simplifies the chassis of the set.

## HALCYON 6701 SUPERHET

**Circuit.**—The first detector, MS4B plain (V1), is used with a separate oscillator, MH4 plain (V2), and is preceded by a band-pass aerial coupling.

Bias is obtained from a cathode resistance common to V1 and V2. The coupling to the first I.F. valve is by band-pass I.F. transformer (frequency 110 kc.).

The first I.F. valve, VMS4 met. (V3), is biased by cathode resistance and A.V.C., and is followed by a second band-pass I.F. transformer. The tuning meter is connected in the anode circuit of this valve only.

The second I.F. valve is another VMS4 met.

(V4), and is followed by a third I.F. transformer.

The second detector and L.F. valve, MHD4 met. (V5), is used for L.F. purposes and A.V.C., the two diode anodes being fed through condensers from the secondary of the I.F. transformer.

In the coupling to the triode section, R14 and R15 are H.F. stoppers, R16 the load, and C13 the coupling condenser.

The following coupling is by resistance-capacity filter with anode decoupling of V5 by L.F. choke.

The output valve, MPT4 Cat. (V6), is tone-

compensated by a condenser across the primary of the output transformer, and another condenser can be connected in parallel by means of a switch at the back of the chassis.

Mains equipment consists of: Transformer; full-wave (MU12) indirectly heated rectifier; the speaker field, which is in the positive H.T. lead; and electrolytic condensers.

**Special Notes.**—The pilot lamps are 4 v. .3 amp types.

The receiver is assembled as two chassis, one containing the power pack and the other the set. These are connected by a cable and