

Marconiphone introduced the model 276 7-valve A.C. superhet for 1933/4 season.

### MARCONIPHONE MODEL 276 (Cont.)

#### RESISTANCES

R.	Purpose.	Ohms.
1	Decoupling V1 grid	200,000
2	Fixed part of V1 cathode bias	1,000
3	V2 grid suppressor	5,000
4	V2 grid leak	25,000
5	Decoupling V2 anode	2,000
6	V3 cathode bias	1,000
7	Decoupling A.V.C. line	.5 meg.
8	A.V.C. rectifier load	35,000
9	V4 cathode bias	1,000
10	Decoupling H.T. to V1, V3 and V4	10,000
11	Bias ptr. for A.V.C. rectifier	75,000
12	Bias ptr. for A.V.C. rectifier	10,000
13	H.F. stopper from M.R.2	100,000
14	M.R.2 load	200,000
15	Series with P.U. lead	230,000
16	H.F. stopper V5 grid	35,000
17	V5 anode coupling	50,000
18	V5 anode decoupling	25,000
19	V5 cathode bias	2,000
20	V6 grid decoupling	50,000
21	V6 cathode bias	450
22	Series with R1	450
VR1	Static suppressor control	14,000
VR2	Volume control	100,000
VR3	Tone control	23,000
VR4	ganged with VR3 for tone control	35,000
VR5	Hum-dinger	20
—	Speaker field, 3,750 + 7,500	—
—	C.K.2	2,000
—	C.K.3	1,500

#### CONDENSERS

C.	Purpose.	Mfd.
1	Decoupling V1 grid	.1
2	V1 cathode by-pass	.1*
3	H.F. coupling to V3	.00005
4	Osc. tracking	.0017
5	V2 grid reservoir	.0003
6	Decoupling V3 grid	.1
7	V1 anode decoupling	.1*
8	V3 cathode by-pass	.5*
9	V1, V3 and V4 screen by-pass	.1*
10	I.F. feed to A.V.C. rectifier	.001
11	V4 cathode by-pass	.1*
12	Decoupling bias on rectifier	.5*
13	L.F. coupling to V5	.1
14	H.T. by-pass	.001
15	H.T. smoothing to V1, V3 and V4	.4*
16	Across P.U.	.001
17	H.F. by-pass	.0001
18	L.F. feed to transformer	.025*
19	Decoupling V5 anode	.1*
21	V5 cathode by-pass	50 el.
22	Part of tone control circuit	.05*
23	Part of tone control circuit	.001
24	Decoupling to V6 grid	.1*
25	H.T. smoothing	8 el.
26	H.T. smoothing	8 el.
27	Mains aerial	.0003

\* In condenser block.  
The part no. of the condenser block is 7581 B.

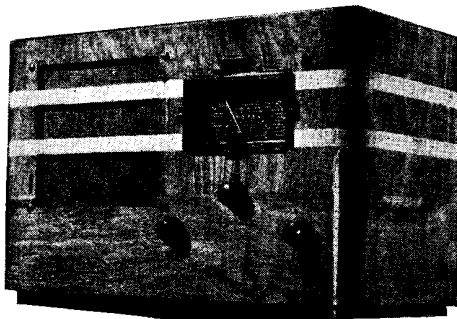
pass the loop over the gripping stud on the drum.

Lead the cord downwards, underneath the pulley-wheel and six times round the drive spindle beginning at the front and winding anti-clockwise. Take cord under the lower pulley and over the one nearer the drum.

After taking it round the drive section of the drum, pass it through the loose end of

the spring and pull tight. Knot it into a loop, maintaining the tension.

**Replacing Chassis.**—Lay the chassis inside the cabinet. Replace holding bolts, reconnect the speaker leads and clip the cable.



The 5002 receiver by Ever Ready features a tuning indicator in which the brilliance of a lamp shows the accuracy of the tuning.

## EVER READY 5002 SUPERHET THREE

is a double-diode pentode. One diode anode is used for L.F. purposes and is resistance-capacity coupled to the grid of the pentode section while the other diode anode is used for A.V.C. with delay to the extent of the full bias across R15 and R16.

The pentode anode circuit is tone-compensated by a condenser in series with a resistance across the primary of the output transformer.

Mains equipment consists of transformer, full-wave 1W3 indirectly heated rectifier, and

the speaker field, which is in the positive H.T. lead, and electrolytic condensers.

**Special Notes.**—This set is equipped with a visual tuning device, with which the brightness of the lamp increases with the strength of the signal in a similar way to that described in the Climax 534.

The pilot lamps are 4 v. .3 amp. type.

**Quick Tests.**—Between the upper ends of the terminals on the speaker plug and chassis:—

Black (heater pin), speech winding, 0 volts.

Red (heater pin), H.T. smoothed, 275 volts.

White, H.T. unsmoothed, 365 volts.

Green, speech winding, 0 volts.

**Removing Chassis.**—Disconnect the speaker plug, pull off the knobs, remove the four holding screws underneath and the wood screws on the brackets on either side of the tuning condenser.

**General Notes.**—The wiring is colour coded as follows:—

V1: Grid circuit, blue and mauve; anode, red; osc. anode, blue and yellow.

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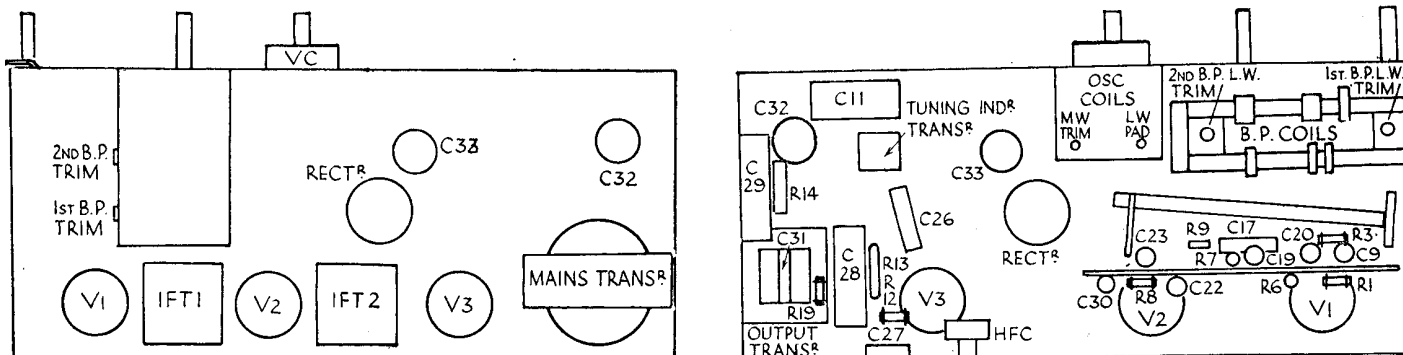
**Circuit.**—The combined first-detector-oscillator is an H.F. pentode triode, A.C./TP met. (V1), and is preceded by a band-pass aerial tuner. Bias for the pentode section is provided by cathode resistance and A.V.C., and the following coupling is a band-pass I.F. transformer (frequency 127 KC).

The I.F. valve, A.C./VP1 met. (V2), is also biased by cathode resistances and A.V.C., and is coupled to the next valve by another band-pass I.F. transformer.

The second detector and output valve (V3)

#### VALVE READINGS

Valve	Type.	No signal.		
		Electrode.	Volts.	M.A.
1	ACTP (met) (9)	anode	248	4.3
		aux. grid	212	—
		osc. anode	72	1.2
		anode	275	7.1
2	ACVP1met(7)	anode	275	—
		aux. grid	220	—
		anode	250	29
3	AC2PenDD	anode	250	29
		aux. grid	275	6



Clean, logical construction and arrangement of parts is found in the chassis of the Ever Ready 5002.

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.

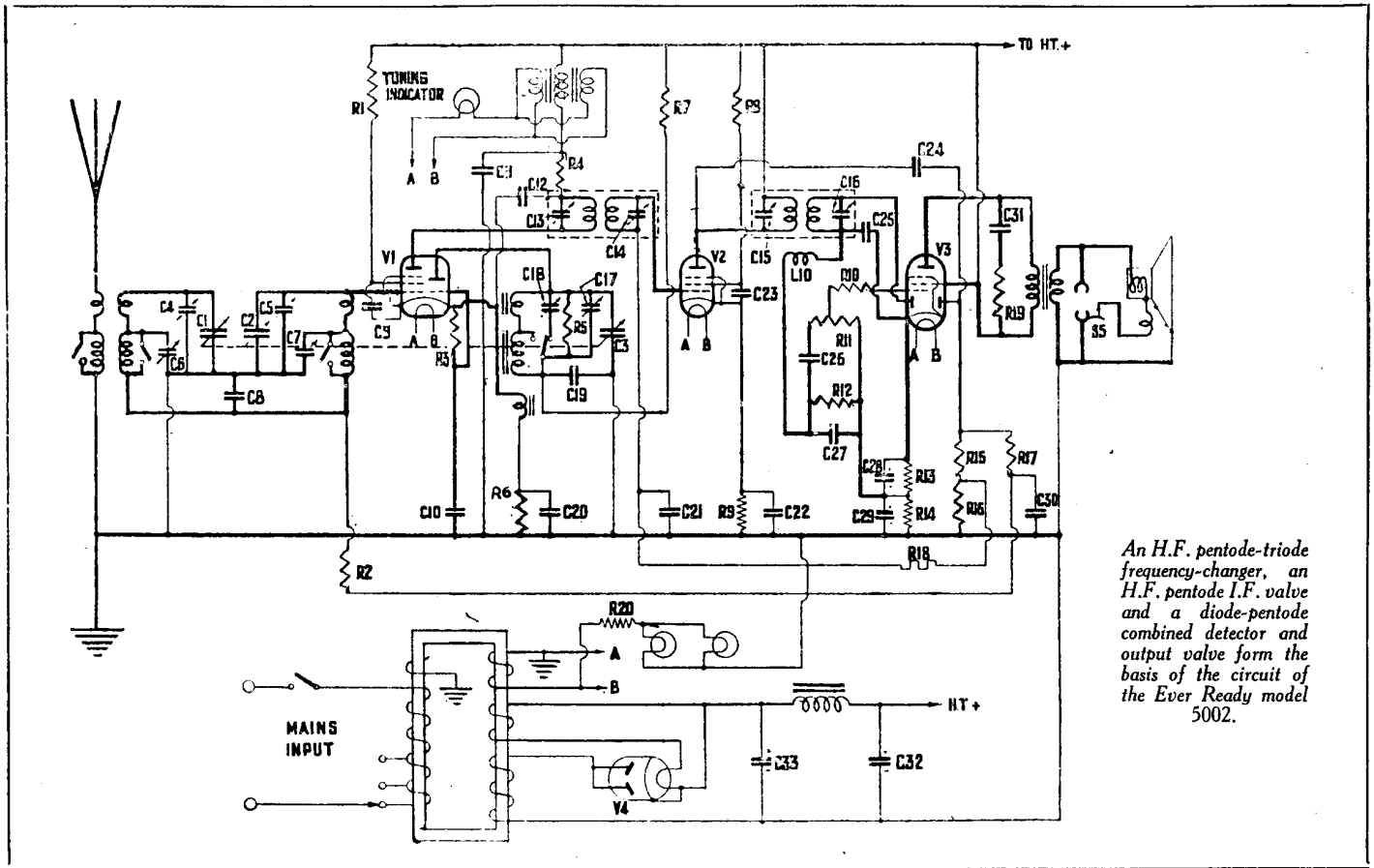
**Switch Contacts**, counting from the end of the chassis:—  
1 and 2, S1; 3 and 4, S2; 5 and 6, S3; 7, 8 and 9, S4.

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 1 D5 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.)