

MARCONIPHONE MODEL 276

Circuit.—The H.F. valve, VMS4B (V1), is preceded by a band-pass aerial circuit in which the semi-variable condenser, TC1, adjusts the aerial to the circuit.

Bias is by A.V.C. and by cathode resistances, one of which is made variable to form a noise suppressor control.

The separate oscillator valve, MH4 (V2), has the tuning in the grid circuit.

Coupling between V1 and V3 is by choke-capacity filter, and the grid circuit of the VMS4B first detector (V3) is coupled to the oscillator coils. V3 is also biased by A.V.C. and cathode resistance and is coupled to the next valve by a band-pass I.F. transformer (frequency 120 kc.).

The I.F. valve, MS4B (V4), is biased by cathode resistance and is coupled to the metal rectifiers by a special tapped I.F. transformer.

One metal rectifier, MR1, is used to provide A.V.C. and is fed from a tapping on the primary I.F. transformer through a condenser. The other, MR2, is fed from a tapping on the secondary. Coupling to the L.F. valve is through the H.F. stopper R13 and the coupling condenser C13. The volume control forms the grid leak.

The L.F. valve, MH4 (V5), is coupled to the output stage by a parallel-fed tone-correction transformer.

The output valve, PX4 (V6), is a triode, and a hum adjustment is provided by having the usual hum-dinger across the filament leads to provide an adjustable tapping.

Mains equipment includes a transformer

and a full-wave U12 rectifier. A separate smoothing choke is included in the H.T. lead to V5, and the speaker field is connected across the H.T., with a tapping to provide the potential for the screens of the H.F. valves.

Special Notes.—The pilot lamp is a 6-volt type.

The table model, type 276, has VR2, VR3 and VR4 mounted as shown in the diagram, but in models 290 and 291 VR3 and VR4 will be found in the position of VR2, while VR1 and TC1 will be mounted on the aerial panel.

Quick Test.—Between the following terminals (numbered) on speaker, transformer and chassis: (3) Yellow, V6 anode, 285 volts; (4) red, H.T. smoothed by CK3, 293 volts; (5) yellow and red, screen tapping, 88 volts (6) red and black, H.T. smoothed by CK2, 300 volts.

Removing Chassis.—Remove the knobs

VALVE READINGS					
No signal. Static suppressor knob "in." On M.W.					
Valve	Type.	Electrode.	Volts.	M.A.	
1	VMS4B (5)	anode ..	230	2.5	
		screen ..	80	—	
2	MH4 (5)	anode ..	80	2.5	
3	VMS4B (5)	anode ..	230	1.4	
		screen ..	80	—	
4	MS4B (5)	anode ..	230	1.5	
		screen ..	80	—	
5	MH4 ..	anode ..	145	1.5	
6	PX4 ..	anode ..	285	40	

(grub screw), disconnect leads from terminal panel on speaker and undo the cleat, remove four screws from underneath, and lift the chassis out.

Removing Speaker.—Remove the four nuts from the inside of the cabinet. The colour coding of the leads is: (1) Black, (2) pink, (3) yellow, (4) red, (5) yellow and red, (6) red and black.

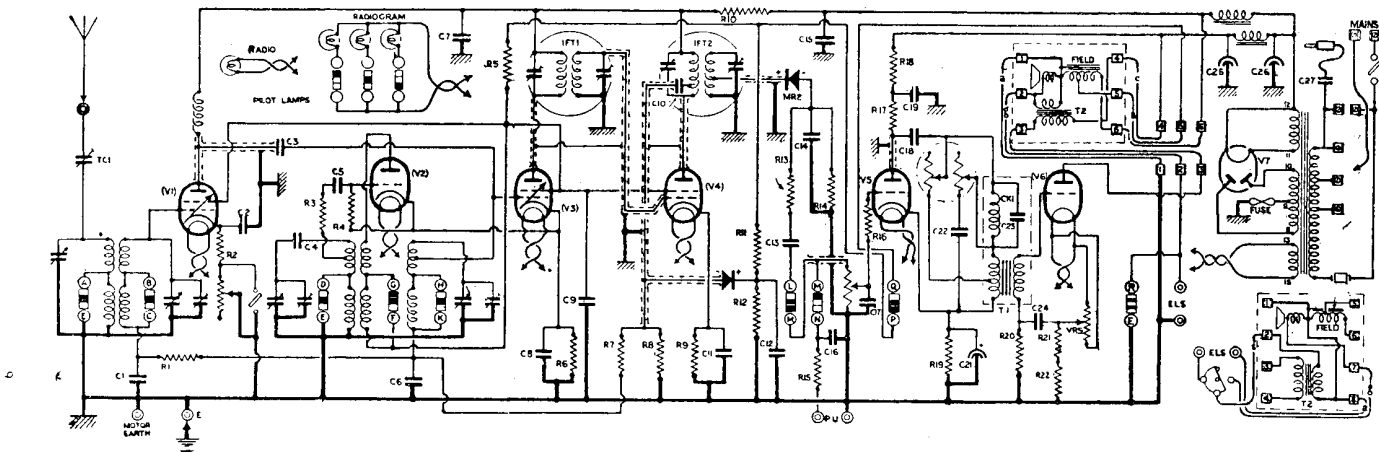
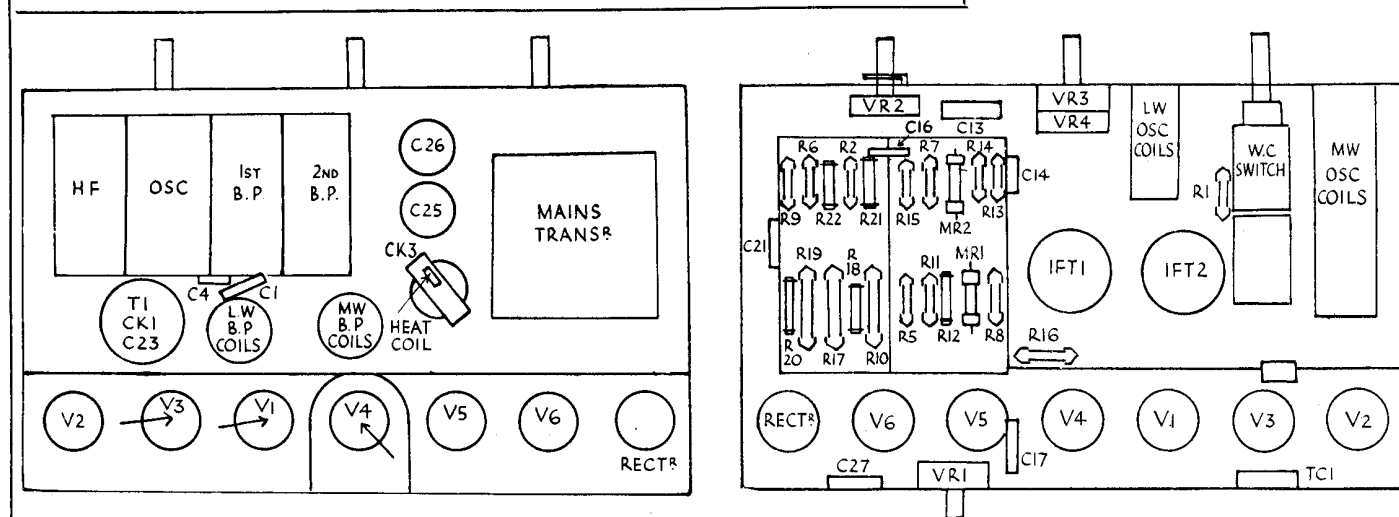
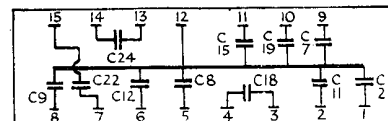
General Notes.—Either high- or low-resistance M.C. speakers can be used as extras. Connect high-resistance speakers across terminals 3 and 4. Low-resistance speakers should be connected to the appropriate sockets.

In working with this set remember that the heat coil of 1.5 ohms in the mains lead acts as a fuse and that a fuse is included in the negative H.T. lead from the transformer.

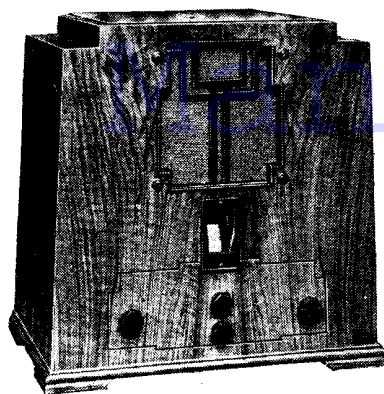
Replacing the tuning cord: Remove VR3 and VR4 as far as wiring will allow. If the correct cord (S.515) cannot be obtained from the makers, a piece of flax fishing line (40 lb. type) 27 in. long can be used.

Turn the condenser vanes to minimum (out) position and rotate spindle as far as possible anti-clockwise.

Tie a loop of 1-in. length on the cord and



The 276 circuit is typical of those in use before octodes and heptodes were introduced. A feature of the chassis is the inclusion of a heat-coil fuse. The detail drawing is of the condenser block which has the part number 7581B.



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.F. 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.

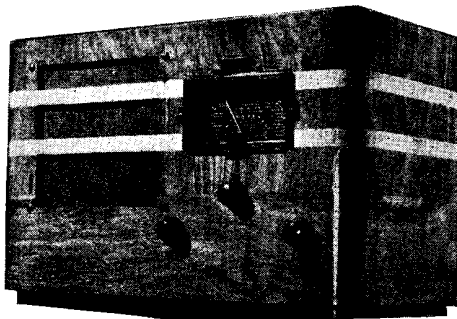
pass the loop over the gripping stud on the drum.

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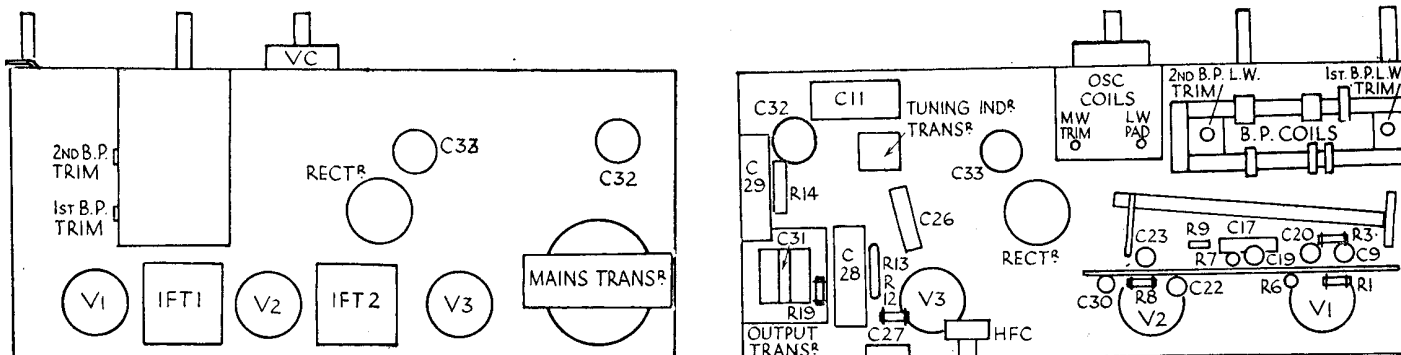
Circuit.—The combined first-detector-oscillator is an H.F. pentode triode, A.C./TP met. (V1), and is preceded by a band-pass aerial tuner. Bias for the pentode section is provided by cathode resistance and A.V.C., and the following coupling is a band-pass I.F. transformer (frequency 127 KC).

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)	aux. grid	220	—
		anode	250	29
		aux. grid	275	6
3	AC2PenDD			



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