

EKCO M23 A.C. MAINS THREE

Circuit.—The H.F. valve, MVSG (V1) has a tuned secondary aerial transformer in its grid circuit. A balanced control consisting of semi-variable and variable condensers in the aerial leads provides a selectivity and volume control. Bias is by fixed cathode resistance, and coupling to the next valve is by tuned secondary transformer.

The detector valve, 354V (V2) operates as a semi-power grid detector with reaction. Coupling to the output is by straight transformer.

The output valve, PT41 (V3) is directly heated. The grid circuit is decoupled, and tone compensation is provided by a condenser across the primary of the output transformer.

Mains equipment consists of transformer, half-wave metal rectifier with a tapped choke in the negative lead providing bias for the output valve. An artificial centre point of the heater winding is obtained by a potentiometer, which acts as a hum control.

The speaker is a permanent magnet type.

Special Notes.—The whole of the H.F. inter-valve circuits, coils and condensers, have their low potential ends connected to the cathode of V1. This causes the voltage drop across the bias resistance R2 to exist between the case of the condenser and chassis. Care

should be taken to see that this resistance measurement is obtained between them (300 ohms).

The screen potential for V1 is obtained from the low H.T. end of the decoupling resistance (R4) of the detector. As the detector loses emission the screening grid voltage automatically rises.

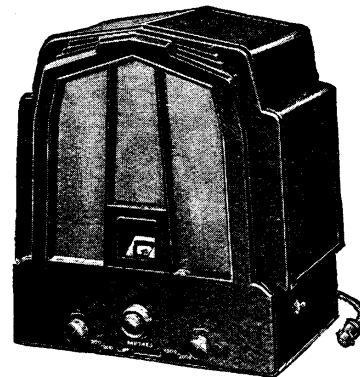
Quick Tests.—Between the following terminals on the L.S. transformer and chassis:—

Counting from the left: (1) V1 anode, 170 volts; (2) 0 volts; (3) H.T. smoothed, 174 volts.

No. 3 reading is also obtained from the end + plate of the rectifier.

Removing Chassis.—To examine the components underneath the chassis it is necessary to remove only the fibre plate on the bottom of the cabinet.

To remove the chassis and speaker com-



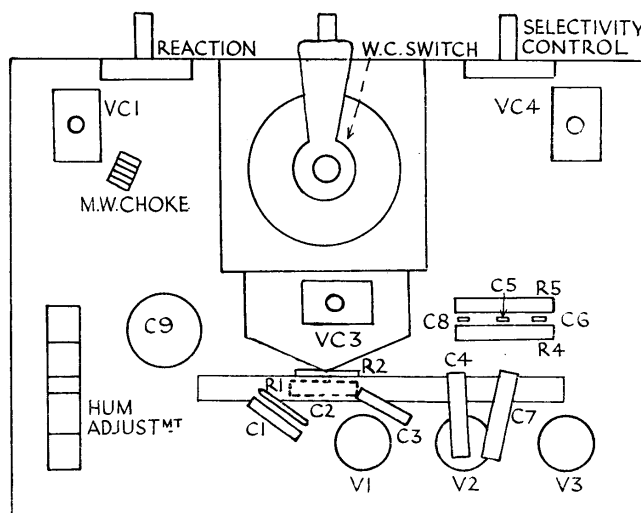
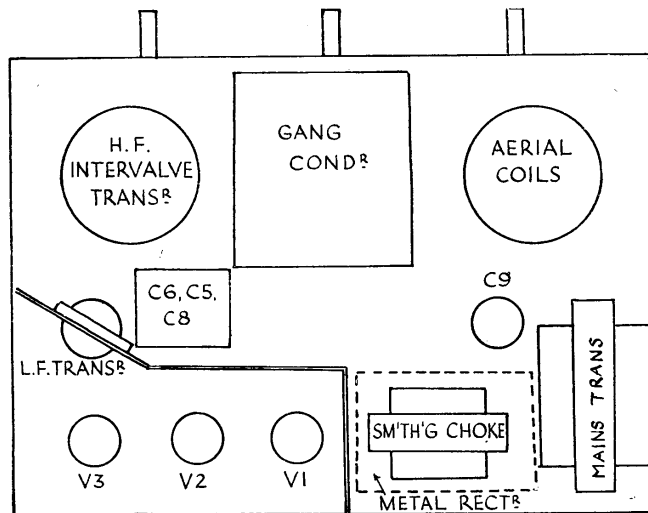
The popular M23 receiver produced by E. K. Cole, Ltd., was one of the first introduced, contained in a moulded cabinet.

VALVE READINGS

Valve.	Type.	Electrode.	Volts.	M.A.
1	MVSG (5) ..	anode ..	173	1.8
		screen ..	70	
2	354V (5) ..	anode ..	70	3
3	PT41 (5) ..	anode ..	170	15
		aux.grid	173	3.25

pletely, remove the knobs (grub screw) and undo the four screws in the flange of the bakelite case. Undo the nut on the mains switch.

(Continued on opposite page.)



Above "deck" in the M23 (left) the L.F. transformer is mounted on the valve screen. To reveal the components below, it is only necessary to remove a fibre cover.

EKCO M.23 MAINS THREE (Cont.)

General Notes.—The switch is of the wiping type. Should it be necessary to clean it, remove the rotor section by undoing the grub screw on the collar. Before replacing

(Continued in col. 2.)

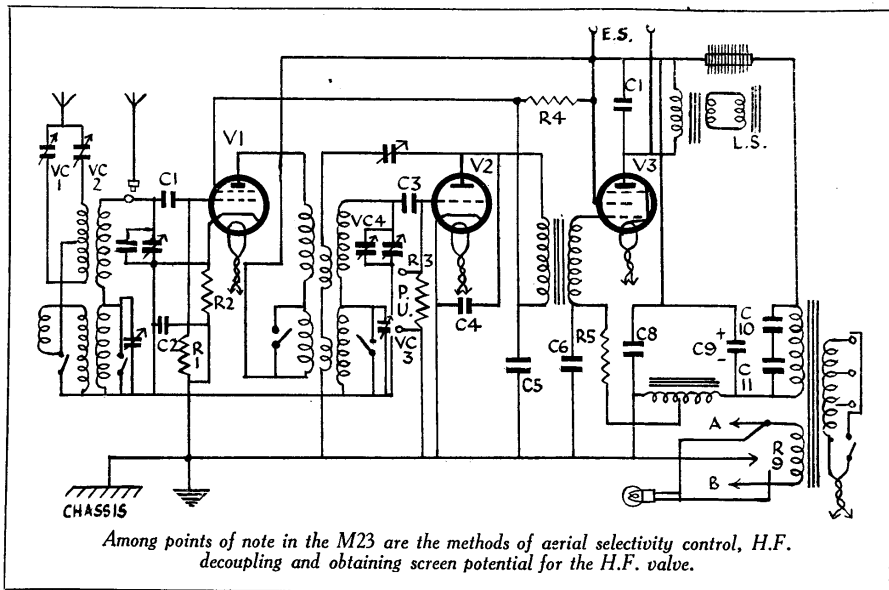
CONDENSERS

C.	Purpose.	Mfd.
1	V1 grid0001
2	V1 cathode by-pass1
3	V2 grid0003
4	V2 anode by-pass001
5	V2 anode decoupling	1
6	V3 grid decoupling	1
7	V3 anode, tone compensating004
8	H.T. smoothing	2
9	H.T. smoothing	8 el.
10	By-pass condenser from H.T. winding004
11	Series with 10004

RESISTANCES

R.	Purpose.	Ohms.
1	V1 grid leak	2 meg.
2	V1 cathode bias	300
3	V2 grid leak	1 meg.
4	V2 anode decoupling	25,000
5	V3 grid decoupling5 meg.
6	Hum adjustment*	—
—	Smoothing choke	1,350

* Owing to the fact that the valve heaters and the heater winding are across this resistance, it is impossible to obtain an accurate reading. Test for continuity between the slider and each end.



bend the contact makers slightly inwards.

Note that the case of C9, the electrolytic condenser, is insulated from chassis.

The lay-out and construction are very simple and all the components are readily accessible.

Replacing Chassis.—Lay chassis inside cabinet, and, holding the case in position, replace the holding screws—those at the front first.

Replace the fibre cover.