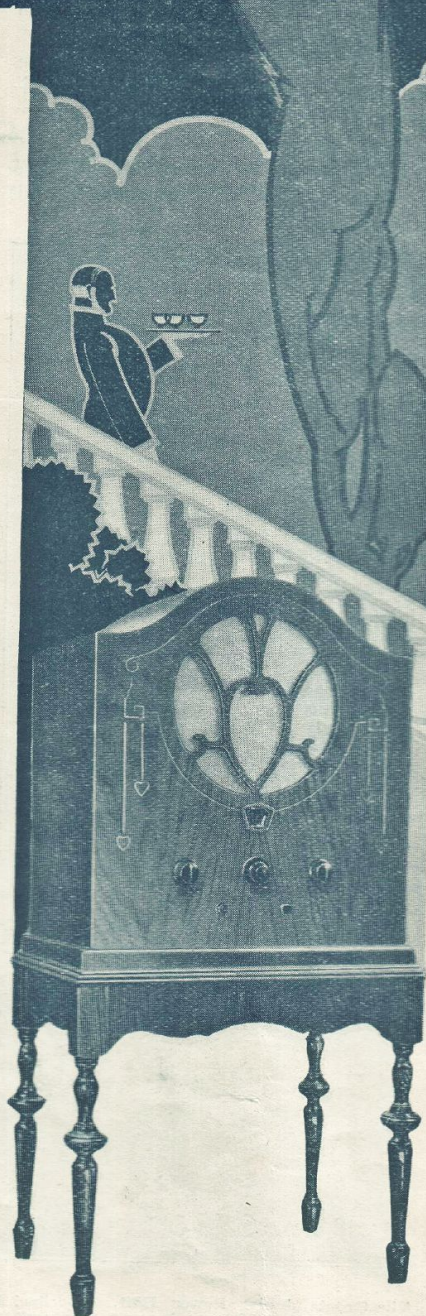


a PERFECT little ARISTOCRAT

How does this little receiver strike you? If I could build that, you will say, I should be proud of it. When we say that you can build it easily, in your own home, without soldering or drilling or cutting, doesn't it attract you? And when we tell you that, as a battery model, its price is covered by a £10 note, you will agree with us that it's a good thing. It is the Midget—the complete receiver in the handsome cabinet.

THE IDEA of the Midget is an American one—one of the *good* ideas emanating from across the water. The shortcomings of the average portable set were evident. The results which were obtained from it were not good enough for its size. And the womenfolk objected to turning the face away in order to point the aerial towards the stations they wished to receive. On the other hand there were equally serious objections to the cabinet receiver which needs a separate speaker and a separate supply unit.

So a compromise was necessary, and the compromise has proved more effective than the portable or the cabinet. The compromise was called the "Midget" and it was found that the Midget could incorporate into one handsome cabinet a receiver of excel-



lent efficiency *and* the loudspeaker *and* the supply unit, whether that be batteries or mains apparatus.

We have taken this idea and put into it all the many improvements which the new "R. for M." V.3 Chassis has offered.

OBVIOUSLY the first consideration which we had to give to our Midget was one of appearance. Its housing had to be compact yet roomy enough to take set, speaker and batteries with comfort. It had to be attractive without being expensive.

We think you will agree with us, after looking carefully at our photographs, that our Midget is most appealing in its attractiveness.

As we have said you can build your Midget either for Battery work or for Mains operation.

For the battery model you will require the "R. for M." V.3 chassis, built exactly as described in our article on that set. In addition you will need a good speaker movement, the necessary batteries to supply H.T., L.T. & G.B. and, of course, the Midget Cabinet, either with or without stool.

This cabinet is supplied to you ready drilled to take the various knobs, and there is no drilling work at all for you to do.

Included in this cabinet is a loose baffle board with a 6½ in. diameter

THE IDEAL £10 SET HAS ITS BATTERIES AND SPEAKER IN ITS CABINET

hole for mounting the speaker movement. If the movement which you choose has a bigger cone than is provided for by this baffle, it will be necessary for you to obtain a loose baffle board with a hole of the required diameter. To this board should be screwed your speaker movement before mounting it in the cabinet.

All other information on the building and final operation of the Battery Midget follows on the same lines as we have supplied for the "R. for M." V.3.

The A.C. Midget costs only 15 guineas!

CAN YOU imagine anything more comfortable, more up-to-date, than a little radio receiver that will jump into life at the pressing of a switch and give you music from the ends of the earth?

the improvements, from every point of view, which it offers.

This circuit is a very startling case in point. You have, in one handsome cabinet, the "R. for M." V.3 A.C. set—the most modern and what will prove to be the most popular of its kind. You have A.C. Valves; and anyone who knows anything of radio at all will tell you that A.C. valves give two or three times the value in efficiency. In addition you are enabled to use a moving coil speaker.

If you have not yet heard music or speech reproduced by a speaker of this type the last advantage will convey little to you. Our advice to you is to hear one of those we specify at once, for until you do you will have no idea of what capable reproduction can be. The marvellous fidelity, the great range of frequency response will amaze you, and your immediate judgment will be that here, at last, is quality reproduction.

All these advantages are offered to you in the Midget A.C. model, which you can build on your own kitchen table in the course of an evening.

THE CHOICE of speaker for the Midget receiver has received our most careful and earnest attention. For such an attractive set we could obviously not afford to specify anything but the best. There can be no question by anyone who studied the matter both theoretically and practically, that the only kind of speaker which can give really high quality reproduction when associated with a high-class modern radio equipment is of the coil driven type.

The difficulty, however, has been to find a specimen satisfactory in per-

formance and economical in running cost. In early specimens the supply of current for producing the necessary magnetic field has usually been a serious difficulty, and some makers have attempted to get round this by producing models with permanent magnets of special steels. None of the many specimens we have tested, except possibly one, has shown real progress in this direction, the permanent magnet models in each case being decidedly less sensitive than the same makers' separately energised types.

This question of sensitivity is of the utmost importance in the case of a small receiver, especially when the undistorted output from the set is comparatively low. With an insensitive speaker the last valve in the set has to be overloaded before anything much more than a whisper can be had from the set. This fact, more than all other possible failings, has accounted for the unkind things said about coil driven speakers in the past.

Latterly improved centering and consequent reduction of the gap has enabled decided advance to be made in this direction of sensitivity; considerable alterations have also occurred in the construction of the cone. Gone are all the excessive bass resonances; speech is crisp and clear, and at last music can really be listened to in comfort by a musician.

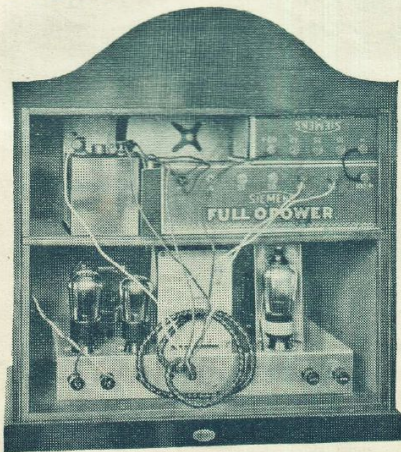


Fig. 21. The interior of the Battery Midget.

For that quite aptly describes the A.C. Midget. Until you have experienced the benefits of mains supplied radio you cannot possibly conceive



Fig. 22. The A.C. Midget has a coil-driven Speaker.

HOW TO CONSTRUCT THE A.C. MIDGET.

TO CONSTRUCT the A.C. Midget you will require to buy the components specified earlier in this book for the "R. for M." V.3 A.C. model. These will make the set; the components for the supply unit and the speaker are

furnishes H.T. and filament supply to the valves in the receiver. In point of fact the field winding is connected in series with the smoothed output from choke to the set, and no appreciable hum can be heard on the speaker. The illustration on this page will make

edge of the base board and prick through the screw holes in the bracket so that the right hand screw is exactly 2 inches from the side of the base-board. Delay fixing the plug portion for the moment.

Carefully insulate each wire and make a final check when the wiring has been done.

It will be seen that the transformer has a row of terminals on the mains side. Ascertain your exact mains voltage and then connect one wire from the safety socket to terminal O and the other to the terminal corresponding to your mains voltage.

Note by the way that a special transformer and extra smoothing is needed for 25 cycles supply, hence you should be careful to check your mains voltage and periodicity before ordering. The standard transformer is suitable for 40 to 100 cycles supply, and is manufactured in two models, one for 100/120 volts, and the other for 200/250 volts.

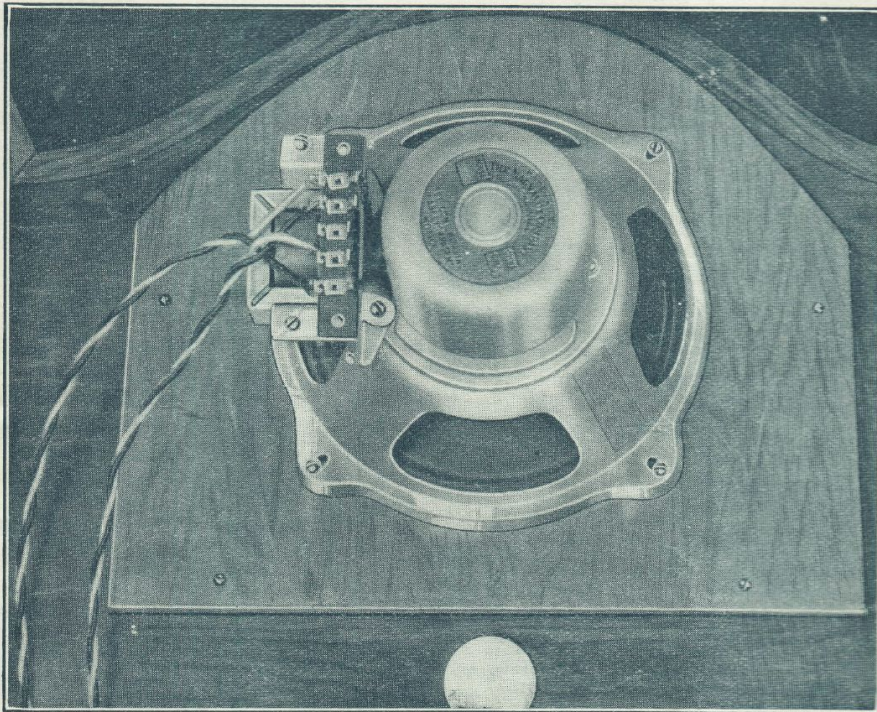


Fig. 23. The British Magnavox Speaker in position. The left hand lead is for field supply; the other connects to L.S. terminals on set.

specified at the end of this chapter and should be bought as specified.

Build the set exactly in accordance with the instructions laid down in the chapter describing the building of the "R. for M." V.3 A.C. model. You will find this on page 17.

The next step in the construction is to mount the speaker.

clear the actual connections.

The next step is to build the power unit. The components will be mounted on the strip of ply board taken from the cabinet, allowing room for the grid bias battery to fit along the back edge. To ensure accurate alignment of the safety mains socket and plug place the end of the socket flush with the

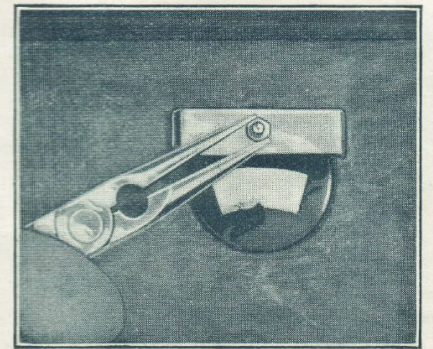


Fig. 24. Fitting the visor to the cabinet.

YOU WILL find that the makers have provided a loose baffle with the cabinet. The speaker should be mounted on this and then the baffle screwed into the cabinet. The outer pair of tags on the speaker strip take the field supply; the inner pair (ignore the centre tag) connect to the speaker terminals (L.S.+ and L.S.-) on the set.

Reference to the theoretical circuit below shows that the field supply is taken from the power unit which also

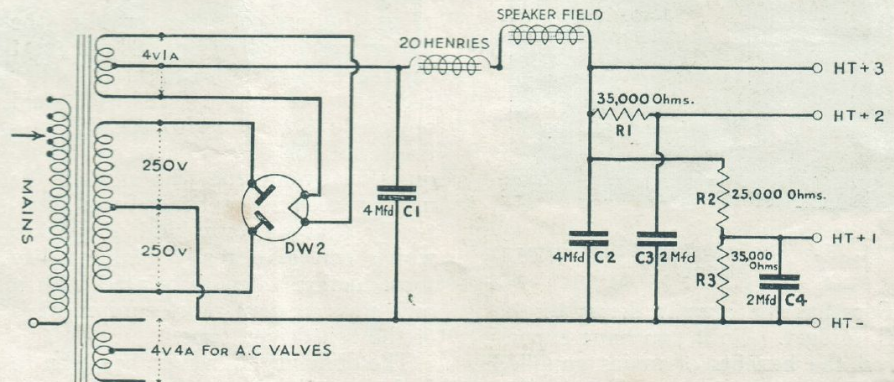
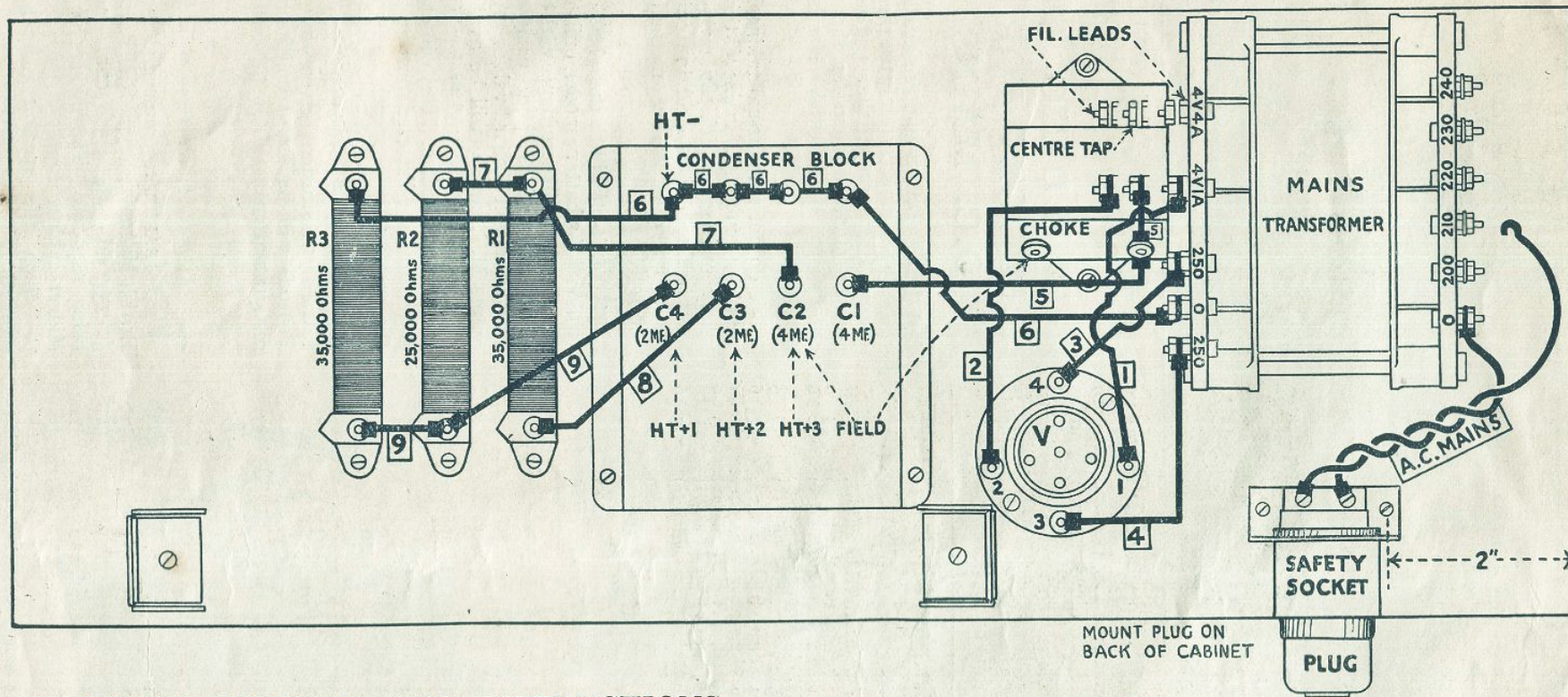


Fig. 25. The theoretical circuit of the A.C. Midget Power Unit.

PLAN OF ASSEMBLY OF "R. FOR M." A.C. MIDGET POWER UNIT.

SEPTEMBER, 1931.



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POINT TO POINT WIRING INSTRUCTIONS.

Wire No.

(All wires to be covered with sleeving).

- 1 Connect upper terminal "4V1A" to right hand terminal 1 on valve holder.
- 2 Connect lower terminal "4V1A" to left hand terminal 2 on valve holder.
- 3 Connect further terminal "250" to further terminal 4 on valve holder.
- 4 Connect nearer terminal "250" to nearer terminal 3 on valve holder.
- 5 Connect middle terminal "4V1A" to right hand terminal on choke and then to nearer right hand terminal (C.1) on condenser block.
- 6 Connect terminal "O" on transformer to the 4 further terminals of condenser block and then to further terminal of resistance R.3.
- 7 Connect nearer terminal (C.2) of condenser block to further terminal of resistance R.1 and then to further terminal of resistance R.2.
- 8 Connect nearer terminal (C.3) on condenser block to nearer terminal of resistance R.1.
- 9 Connect nearer terminal (C.4) on condenser block to nearer terminal of resistance R.2 and then to nearer terminal of resistance R.3.

POWER CONNECTIONS FROM SET TO UNIT.

- | | |
|------------------|--|
| FILAMENT LEADS | To top and bottom terminals "4V4A" on transformer. |
| CENTRE TAP | ... To middle terminal "4V4A" on transformer. |
| H.T.— LEAD | ... To further left hand terminal on condenser block. |
| H.T. + 1 | ... To nearer terminal (C.4) on condenser block. |
| H.T. + 2 | ... To nearer terminal (C.3) on condenser block. |
| H.T. + 3 | ... To nearer terminal (C.2) on condenser block. |
| FIELD SUPPLY | ... To nearer terminal (C.2) on condenser block and left hand terminal on choke. |
| MAINS CONNECTION | Connect one terminal of mains socket to terminal O on transformer. Connect the other terminal of mains socket to terminal on transformer corresponding to mains voltage. |

RADIO FOR THE MILLION.