

The "KESTREL THREE"

By The Technical Editor.



CONSTRUCTOR walked into our office last week and left a note—or rather an ultimatum—for me, for at the time I was out. His remark was that unless the "Kestrel Three" was published this week he was going to sue me. Now, in face of that, the constructional details can be held back no longer.

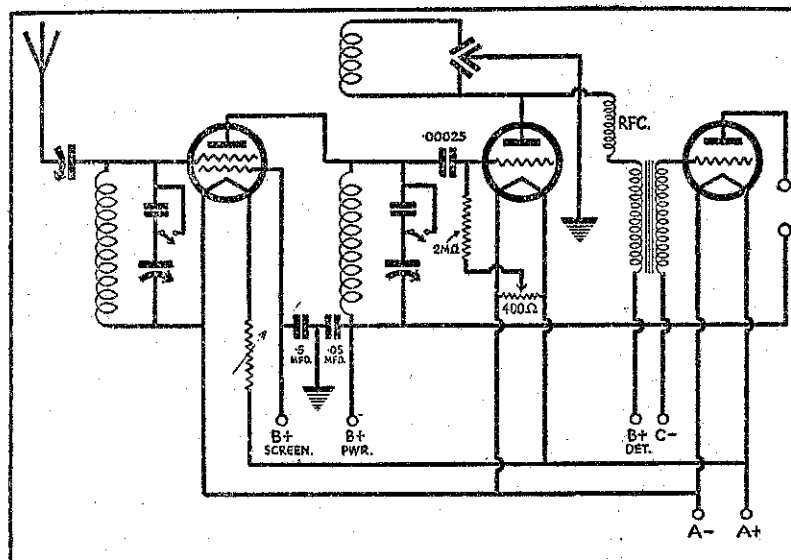
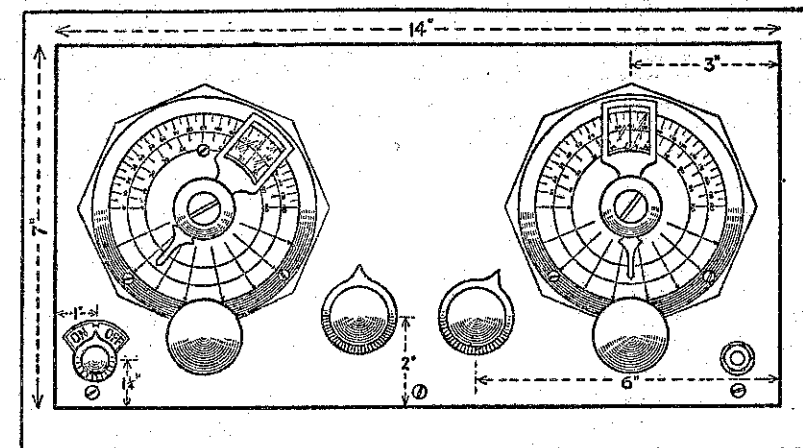
We are very sorry there has been delay with the publication of this set. It was due in the first place to the absence of differential condensers, then, on further experimenting with the set, some little troubles came to light, and we had to eradicate them. This necessitated certain structural alterations, and alterations in the circuit, with the result that the "Kestrel Three" was pulled down and rebuilt. In order to refrain from publishing a circuit that was not going to give 100 per cent. satisfaction, we again withheld publication until it was going absolutely perfectly. Now we can offer it to readers knowing that it is the best "Three" yet; that for an all-wave set, if made to specifications, it will give absolute satisfaction.

At the time of writing we are not quite satisfied with the results below 80 metres, and we are convinced that our coils can still be altered to good effect. However, we shall not hold back the description any longer, but next week, or at least when we are quite satisfied our coils are right, the complete specifications for short-wave coils will be published.

The "Kestrel Three" embodies several different ideas—we shall not call them new—and constructors are asked to follow the details minutely. Do not think because we say a connection should be made in such-and-such a way that another way is just as good. You can rest assured that it is not.

Constructing the Set.

NOW that we have told you all about what the set will do, we shall not bandy further words, but get right on to the job and tell you how to make it. In a separate panel you will find a shopping list. Get all the parts be-



fore you start and make sure the parts are as specified.

There is no real reason why two .0005 variable condensers will not do just as well as a .00035. If you like to make

alterations in the coils they will be all right. Furthermore, a larger or a smaller differential condenser will also do, but you must be prepared if you alter the specifications in condensers to juggle with the number of turns on the coils to get them absolutely right. We are publishing only one set of turns—those for the .00035 tuning condensers and for .00025 differential condensers. We know that they work, and work well. We know nothing about the others, although they will work equally as well, we feel sure.

For smooth operation we are introducing potentiometer control of grid return. This to us, seems easily the best method of bringing the grid return to the filament. It is an idea that is employed in most high-class English sets, and we can thoroughly recommend it. A proper setting of the potentiometer will give a smooth control of reaction. There is no need to be bothered with ploppy oscillation, for it can be made as smooth and silky as desired merely by adjusting this resistance. See, too, that you get a good radio frequency choke. A poor choke is one of the most common causes of poor regeneration. It should have a low self-capacity and a high inductance. You should be able to get quite a good one for 6/- or 6/6. Do not compromise on the grid condenser, as this has to act as a blocking condenser with regard to the high potential current that feeds the plate of the screen-grid valve. If it is cheap and shoddy, it is likely to break down, with detriment to your batteries and valves. Apart from these the components are not very critical. A word here concerning the baseboard will not be out of place. It is unnecessary to use a special aluminium sub-panel for this set. If the shielding recommended is employed there is no need to go to the extra expense entailed in the aluminium panel or sub-panel. A piece of three-ply will do splendidly, but it must be kept off the ground with wooden strips about 3/4 in. x 3/4 in. These are placed along both long sides, and the panel can then be fixed to the plugs along the side that will be the front. The size of the baseboard is 7 in. x 14 in. If, however, you are using bigish components, allow another inch or so in depth, 8 in. or 8 1/2 in. x 14 in.

The Panel.

IT will be seen from the diagram of the panel that the set when finished will present a quite neat appearance, and so the lay-out of the panel is quite an important part. Here are the directions.

Lay the 7 in. x 14 in. panel flat, and mark the points for the tuning condensers. These are 4 in. from the bottom and 3 in. from the end. The switch on the left is 1 1/2 in. from the bottom and 1 in. from the left-hand side, while the phone jack on the other side is in exactly the same position. The rheostat is 2 in. from the bottom of the panel and 6 in. from the left-hand end. The differential reaction condenser occupies the same position on the right-

Use English Components for "KESTREL THREE"

Ebonite Panel, 14 in. x 7 in., 5/- . Three-ply Baseboard, 14 in. x 7 in. complete, 2/- . Aluminium Screening Box, 7 in. x 5 in. x 6 in., open on two sides and top, 2/6 . .00035 Variable Condensers, Formo, each 7/- . Vernier Dials, Ormond, each 6/6 . .00025 Differential Condenser, Lotus, 8/- . 30 ohms. Rheostat. 400ohms. Baseboard Mounting Potentiometer, Igranite, 3/6 . Filament Switch, Ormond, 1/6 . .0001 Condensers with Grid Leak Clips, T.C.C., each 1/6 . .0002 Condensers, T.C.C., 1/6 . 2 mags. Grid Leak with Holder, 10 mags. Grid Leak. UX Sockets or 3 UX and 2 English, W.B., each 1/3 . 5 mfd. By-Pass Condenser, T.C.C., 3/- . .05 By-Pass Condenser, Standard, 2/6 . Midget Condenser, Utility, 4/6 . Push-Pull Battery Switch. Transformer, ratio 3:1 or 4:1, Premier, 7/6 . Slug Output Jack, Igranite, 2/- . R.F. Choke, Telsen, 3/6 . Terminals with short terminal strip, 1/- . Armoured Cable. Special Coils for broadcast, pair 14/- . 26 d.s.c. Wire, 2/6 . 30 gauge d.s.c. Wire, 3d . Wire Battery Cable, 3/6 .

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