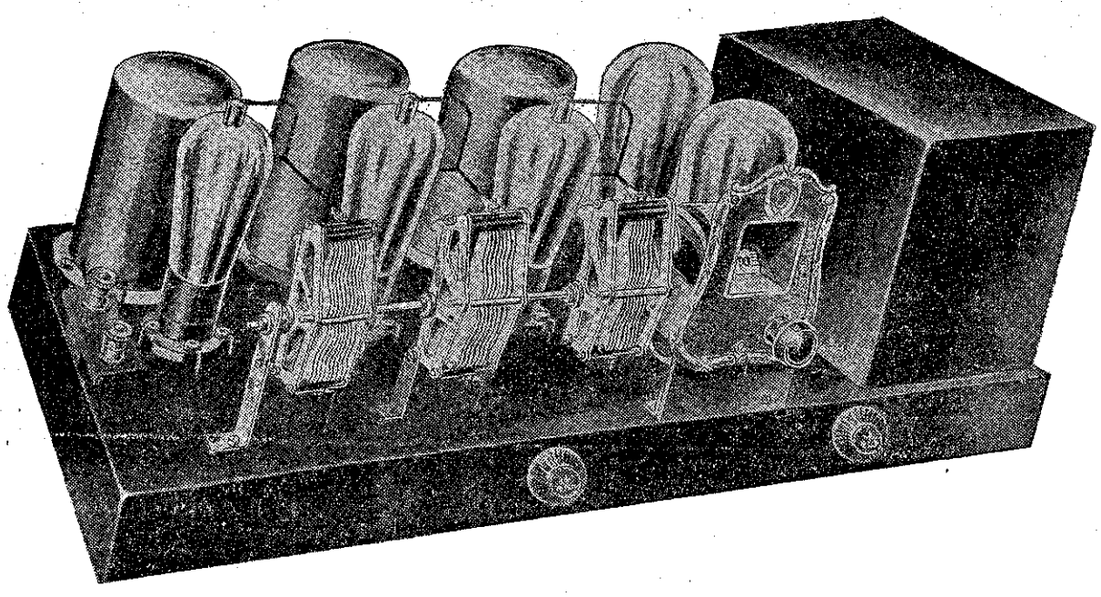
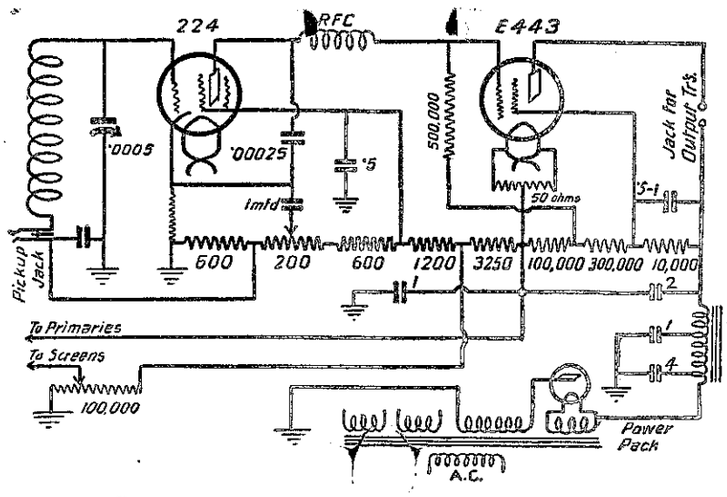


For Tonal Perfectio

Build the

LOFTIN-FOUR



WE now come to the ultimate set of the Loftin-White series—the "Loftin-Four." There is no doubt that this is the most powerful set we have described in our constructional columns and its distance getting ability must make it a favourite with all those who are in the a.c. areas. Of course, before we go any further we know that we are not going to satisfy all our readers who are waiting to build. Some we feel will expect that the "Loftin-Four" will be a better d.x.er than a modern superheterodyne, will be as easy to build as a Browning-Drake, and will be very cheap. Let us right from the onset dispel all these ideas. The set is no more powerful than an ordinary a.c. set using three of four screen grid stages and the usual transformer of resistance coupled amplifier.

We do claim that as far as distance is concerned, this set will be equal to a screen grid set with five valves but, and here is the whole point, the quality will stand out sheer from anything else in the same class. It will be found that the direct coupled system gives the same amount of amplification as the conventional leak detector followed by transformer coupling, but does not possess its inherent limitations of broad tuning and distortion. Greater selectivity is possible by this modern arrangement, and for this reason there is little need to choke back the amplification of the r.f. stages for the selectivity considerations.

Translating this into practical terms it means that we can increase the ratio of primary to secondary turns in all the r.f. transformers and yet keep the set selective. In fact everywhere but right under the shadow of powerful stations, the only limitation to the increase in the numbers of primary turns is the increasing instability of the set.

No Use for Reaction.

ANOTHER considerable point in the design of this receiver is that we say good-bye to reaction. And we are not sorry to do so either. Regeneration can be used on this set but it is not satisfactory—it has been rendered obsolete with the new valves that alone have made a set of the nature of the Loftin-Four possible.

Again we can recommend this set to constructors and know that we are not going to be swamped with queries from fellows who have encountered a multiplicity of difficulties, including hum. The unique arrangements made to combat it have been entirely satisfactory, and only where some deviation from specifications either intentional or accidental are made is there any cause for complaint. When we have finished talking about the merits and construction of this set we shall point out a few likely sources of trouble, and by studying them there is certainly no likelihood of anyone being stalemated.

The Circuits.

NOW, the first thing to do in describing a set is to present a multitude of circuits and confuse everyone who attempts to reach a decision as to which one to build. We think we have quite effectively done this, so shall pass on and try to unravel all these circuits and tell constructors the particular virtues of each so that they may intelligently decide which one to build. Our whole aim in this series has been to give constructors a choice so that they might have what they want.

Long experience has shown us that if we give a circuit with one particular set of constants and no alternatives there will be a host of work coming in r designing for constructors who wa something different. Of course we cou get over the difficulty by saying th what we have described is the very be and there can be no alterations. All th is very good for trade and saves us wor But the little difficulty is that other a rangements will do, so this time we a trying to forestall all these questions b giving the experimentally minded a nur ber of circuits and then he can plea himself. There are still more to com e.g., that containing the E406 in the la stage, but we cannot include it in th series because although the characteristi can be worked out on paper, they ha yet to be put into actual operation—b it is on the way.

The Output Valves.

CONSIDERING the whole set as the full circuit diagram it will noticed that in the last stage we ha