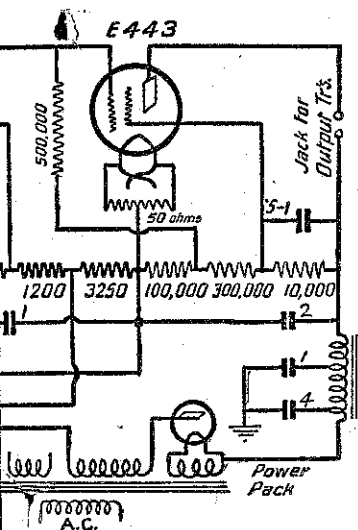


Perfection the -FOUR



constants and no alternatives there will be a host of work coming in re-designing for constructors who want something different. Of course we could get over the difficulty by saying that what we have described is the very best and there can be no alterations. All this is very good for trade and saves us work. But the little difficulty is that other arrangements will do, so this time we are trying to forestall all these questions by giving the experimentally minded a number of circuits and then he can please himself. There are still more to come, e.g., that containing the E406 in the last stage, but we cannot include it in this series because although the characteristics can be worked out on paper, they have not yet been put into actual operation—but this is on the way.

The Output Valves.

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

used the 250-valve. Our reason? Because we thought it the best. But we can see a kick coming from many constructors, for if they use this valve there is nearly £4 gone in one hit. Yet it is the valve for real quality, especially for the bass for an r.f. choke must be used to overcome r.f. components entering the speaker or otherwise causing instability, there is a marked tendency to cut off the higher notes. Nevertheless, with a well designed choke this will not happen to any extent, and the tone will be remarkably mellow. At the same time the set will be able to handle a great deal of volume without overloading.

The 245 costing about one-fourth of the 250, can also be used in the last stage, but it is possible to overload this with fairly strong signals. For a medium sized room that is not heavily damped with carpets and heavy hangings, this valve will take the load quite well. It is somewhat lost in a heavily draped big room. The constants for a circuit using this type of valve have already been published for the "Loftin-Three," and they can be used in the present circuit without further adjustment. A parallel arrangement will be described next week.

The two r.f. valves can be considered as a separate tuner following the general outlines given last week or it can be used in the rebuilt circuit or the adapted circuit. One important consideration is necessary and that is the introduction of an r.f. choke in the output of the power valve. It would be better in the plate circuit of the detector, but it would cut off some of the high frequencies. No doubt some who are after the bass notes will prefer it in this position, but we do not like them well enough to sacrifice the high notes.

The pentode in the last stage will appeal to a large number who want high

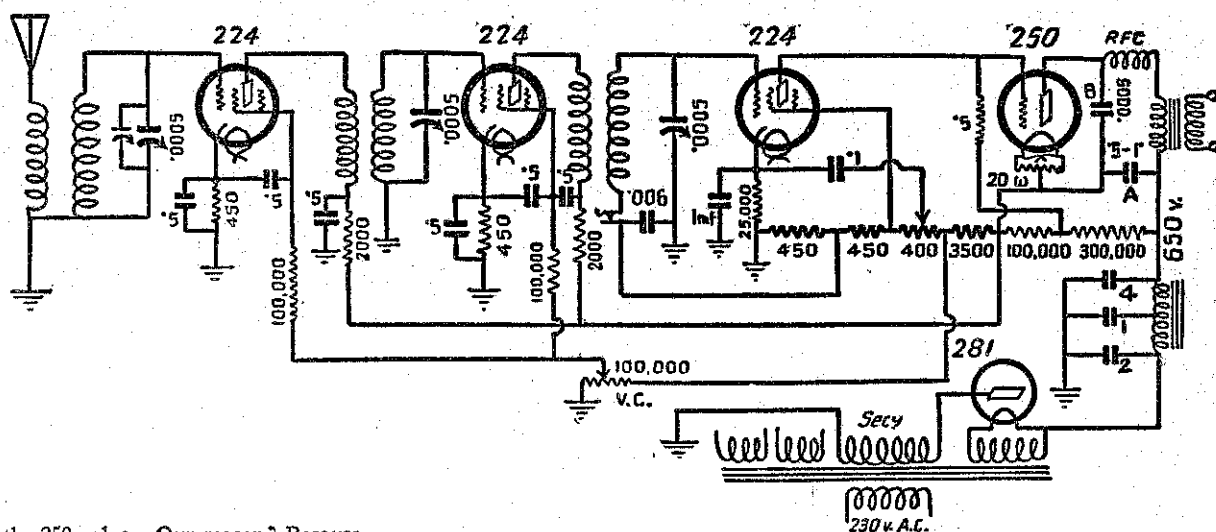
gain, and the characteristic strident tone of that valve. Furthermore, its use allows the r.f. filter to be moved into the place where it will be more effective, to wit, in the plate circuit of the detector. As we pointed out previously the filter will cut off the high notes, but this valve tends to emphasise them, so we arrive at some kind of a balance.

Using High-voltage Speaker.

A FURTHER point that may be of interest to those who have speakers

of the high voltage type is that these can be used in the main chain of resistance to replace one or part of one of the resistances. Most of these are designed to pass a current in the vicinity of 30 milli-amperes, that it may be conveniently placed in the main chain without placing any further drain on the output transformer. It will be necessary to find out the resistance of the winding though it is generally about 2500 ohms, and

(Continued on page 29.)



that's an idea! YES



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