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Letter to the editor by G. Stevenson
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From: Automotive Steam research, Box 65, Newton 58, Mass. U.S.A.

" ….Your letters and Bulletins are always welcome and most interesting. Such a continuing enthusiasm for steam power is very heartening to us. There is a wide-spread interest in it here also although it is not organized as it seems to be in your country.

Your experience indicates that better results are obtained by using a big enough engine and not working it too hard than with a small engine that works always on the limit. Our own experience with the "Alma" opposed 8 was much the same. We do not, however, favor a really big slow engine of the locomotive type, but rather a medium-size, medium-speed engine with plenty of overload capacity. I wonder if you would have gotten better results with the small engine if it had been permitted to rev up faster. In any case there is no substitute for displacement and I am all in favor of having enough of that. We figure that it takes a good efficient boiler of not less than 100 square feet of heating surface and an engine of not less than 200 cubic inches displacement to get the kind of performance required.

The Leslie boiler consisted of concentric, series coils. The plunger-type circulating pump was an expedient as it is difficult to find a centrifugal type suitable. Our unit consists of spiral, pancake coils in series, with series superheater; centrifugal circulating pumps; oil-fired from the top, one pass on the flue gases, just in the top and out the bottom. It should deliver about 1000 pounds of steam per hour at 750 lbs. pressure and 750 deg. F. Overall weight of the whole steam generating unit will be about 300 obs. It is very compact and should go easily under the hood of any car. This unit is nearing final assembly and should be under test by the end of the year. The engine, a fairly conventional double acting compound 4 cylinder, is still on paper.

Parallel flow is risky in a small unit, although it is used in the Lamont boiler. Care must be taken that the flow is equal through all the sections and that some of them don't get starved and burn out.

The Bradmore steamer sounds like some of the recent fakes dreamed up in this country. A story was going the rounds last summer that a steam car would enter in this year's Indianapolis 500 mile race. It received wide publicity in the newspapers and even detailed descriptions of a sort, were published of the power plant. It was subsequently revealed that the whole project was the day-dream of some engineer who had gotten kicked out of the Ford Company, and it did not even exist. I certainly don't know what a "flash boiler of the Derr type" is, and suspect that the Bradmore is in the same category.

We have seen so many of these phony developments (like the ill-famed "Perrymobile", the great California imposture) that we are reluctant to say much about our work until everything is tried and proven. Before distributing literature on our outfit we want to see if it works. When it does, you may be sure that the members of S.P.U.D.S. will receive full details.

In regard to some of your questions, we would say that pancake coils are harder to make, but have the advantage over the concentric coils of greater compactness and more surface in a smaller boiler; stay away from parallel flow deals, it's too tricky in a small outfit; super-heat surface depends on where you put the superheater (be sure it's accessible), and is largely a matter of trial and error—if it's right in the fire, start with about the same amount the Stanley had; small firebox size in an automotive unit precludes much dependence on radiant heating; small size in general gives little hope for convection; the main heat transfer job has to be done by conduction, i.e., push the heat through the boiler (we flow it through it, from top to bottom) and make sure that the boiler is of such design as to be able to squeeze the heat out of the flue gases on their way through. Heat transfer is tremendously increased by the vigorous turbulence of the water resulting from the forced circulation. Our unit, like the Clayton, feeds the water into the generating coils in such a way as to boost the action of the circulating pump; Leslie did not avail himself of this principle, and pumped directly into the water-level drum. Some boilers, like those the Beslers make, pump an excess of water and bypass it after it goes through the generating coils, returning it to some sort of heat exchanger or hot well. Our unit, like the Leslie and the Stanley, bypasses the excess back to the water tank before its entry into the boiler—there is no room for hot wells and the like in a car. The other arrangement does away with the need for a circulating pump, the feed pump doing the whole job, but is not practical where space is so limited as it is in an automobile.

That's about all I have to offer for the moment. When we get the outfit steaming, we'll give you an account of the results. Best regards, G. STEVENSON."