

Engineering Possibilities of the Tractor

A few Practical Suggestions from the President of the Society of Automobile Engineers

By C. E. KETTERING; in "Chilton Tractor Journal"

NO one should think that the tractor business is not a real engineering problem. It is an engineering problem of the most intense nature, and some of us will find that it is just about as exciting to build a good tractor engine as it is to build a good aircraft engine, because in the former we must consider something that we have never had to before, and that is the full load operation of the engine, in the hands of a man who does not know much about it. For the first time we encounter what is known as psychology in engineering, and we will find that the psychology of the operator has as much to do with it as any other factor.

We can build a tractor and send it out, and if a man tries to operate it and does not get good results, we can say that he has not sense enough to operate a tractor, but just remember that that is the type of fellow that is going to be the customer, and we must satisfy the customer. It has fallen to my lot to have had to do with a problem similar to the tractor problem; that is with a small farm lighting system. That has been about fifty per cent a mechanical and fifty per cent a psychological problem, and we have had to pay more attention to the psychological than to the mechanical end.

We sent out those machines and a man spilt chaff or oats or hay into the gasoline tank and choked his mixing valve, and, of

course, the engine would not run. A man can "limp" down to town on three cylinders of an automobile and go to a garage and get it fixed, but he cannot do that with a tractor nor can he do that with a lighting outfit.

Tractors Must be Fool-Proof

The boys used to come back and say, "The fellow put dirt in his gasoline can. No wonder it didn't work." That did not make a bit of difference. The fellow was dissatisfied with his engine. So we said, "Those engines have got to work, even if they are half full of clover seed or oats." It is only lack of appreciation on the part of an engineering department to want to blame the difficulty on the fellow who uses it, when with a little bit of the engineer's own constructive brains the engine could be made so that no matter whether the gasoline was full of wood or chips or anything else, it would burn whatever fuel was put in without choking up the carburetor.

We did that and have had no trouble since. But before, we would spend seventeen dollars to take a little bit of cigarette tobacco out of a carburetor. We used a proper number of strainers, and put them in a way so the owner could clean them himself.

I was born and raised on a farm, and I am trying to operate a couple of farms now with farm tractors. I find that this tractor problem has not been scratched yet. We have some good machines, but they have not been fitted



ONE GLORIOUS EXPERIENCE RECALLED

Officer (to wounded man to whom he has given a pull at his flask): "I wonder you can swallow it neat."

Joek: "Dod, sir, it was grand! It just gaed doon ma thrapple like carpet tacks."

Harvest Expectations vs. Harvest Realizations

Very often the crop does not come up to earlier expectations, which not only causes the farmer and his family, who have worked so assiduously, considerable disappointment, but, as a consequence the planning of months and years goes for naught. Just so through life. Every man with responsibilities hopes to leave his dependents in an independent position, but as a result of unforeseen events, is frequently unable to do so, regardless of his good intentions.



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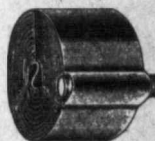
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