



FARM AND DAIRY

& RURAL HOME



We Welcome Practical Progressive Ideas.

Trade increases the wealth and glory of a country; but its real strength and stamina are to be looked for among the cultivators of the land.—Lord Chatham

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The Light Farm Tractor—A Summary

Some Features That the Model Light Tractor, When It Arrives, Will Possess—By Louis Simpson

INVESTIGATION leads to the conclusion that no make of farm tractor, hitherto offered for sale upon the Canadian market, possesses all the qualities required in a tractor to be used by the farmers of Eastern Canada. Several problems yet require satisfactory solution. Many of the tractors offered are simply light road tractors, others are light road tractors, slightly altered, but none show that the requirements of the Eastern Canadian farmer have been studied, understood and provided for. Of what has been done by Mr. Henry Ford in the direction of producing a satisfactory farm tractor, no authentic information is available, but rumor would have us believe that Mr. Ford has appreciated one or more of the essential requirements. The following would appear to be essential:

A Lighter Tractor Needed.

First: The farm tractor shall be made much lighter than the tractors hitherto offered for sale, consequently, and because of their less cost, they will be able to be sold at a much lower price. Tractors now being marketed and guaranteed to give a certain draw bar pull weigh from 3,650 lbs. to 5,000 lbs. Yet an ordinary Ford motor car, altered and equipped with a tractor attachment will weigh less than 2,100 lbs. It has been demonstrated that the car so altered will give an equal draw bar pull to that given by the heavier cars, and will do as much work, do it as well or better, and in less time than the heavier cars.

Certainly the excessive weight of the farm tractors, hitherto marketed, is not necessary; that is, if the reduced weight were properly distributed, and were certain parts of the tractors properly designed and proportioned, the excessive weight would not be necessary. With the road tractor, it is necessary that the weight of the tractor and of the load being carried or pulled by the tractor should be so distributed that the surface of the road should not be broken or disturbed. Weight is required so as to give a friction hold to the drive wheels. In a farm tractor it is possible to assist this friction hold by an intelligent use of "cleats" affixed to the outside of the rim of the drive wheels.

The conditions that govern the use of the two descriptions of tractors are so widely different that it is necessary to consider the requirements of one entirely apart from the requirements of the other. Yet, until quite recently, the makers have allowed the requirements of the road tractor to dominate the farm tractors they have designed and produced. Demonstration tests of the tractor attachment, applied to an ordinary Ford motor car, absolutely prove that it is not necessary to employ excessive weight in the construction of the tractor, and that if excessive weight be required, it is because certain of the other essential parts of the tractor are not properly designed. These

demonstrations indicate that no farm tractor need exceed in weight the following:

- For 8-16 h.p. farm tractor, 2,400 lbs.
- 10-20 h.p. farm tractor, 3,000 lbs.
- 12-24 h.p. farm tractor, 3,600 lbs.

An Erroneous Designation.

Just here it will be well to take the opportunity to register the strongest possible protest against a method (advocated in certain quarters) of designating farm tractors by the number of plow bottoms they are supposed to be able to draw. The adoption of such a method would be deplorable, because it is based not only upon one, but upon several denominations of variable value; hence the adoption of this method would lead to confusion and misunderstanding.

In the first article of this series it was shown that the power required to plow virgin sod, plow-

ing the same width and depth, might be seven times as much as that required when plowing after corn. It was also shown that the power required varied according to the width of the bottom and according to the depth plowed. How, then, can a farm tractor be designated to be of a size, based upon the number of plow bottoms it will draw, when that number will vary, within wide limits, according to the conditions under which the plowing is done.

The only feasible, the only possible intelligible method is to designate the sizes of the tractor by the size and capacity of the engine supplied to the tractor. Here also there is some difficulty, but the trouble is such as can be easily and completely overcome by regulation, issued by the Department of Agriculture.

Rating the Horse Power.

Makers to-day allow themselves much latitude as to the horse power they claim the engines they supply will produce. With a gasoline or oil engine there should be no difficulty in coming to an understanding on the point. As it is, one maker claims for the engine supplied to their make of tractor, an increase of 25 per cent. in the possible power over that produced by the engine supplied to another make of tractor, whilst the latter is actually 12½ per cent. more powerful.

The maximum horse power of a gasoline or oil engine is governed by the diameter of the cylinder, and by the length and speed of the stroke, in conjunction with the number of cylinders. The Ford motor car is driven by a four cylinder engine, three and three-quarters inch in diameter and four inch stroke turning 1,000 revolutions per minute. It is suggested that, as the Ford motor car is so generally and well known, this engine be accepted as a basis and be credited as producing 16 h.p. It is estimated that on a fairly well designed car, one-half this power is required to move the car, leaving the other half to draw any implement attached to the draw bar. It has been claimed that certain of the heavy cars will require more than one-half the engine power for the purpose of moving the car, and also that on the Ford car, converted by the application of the tractor attachments, into a farm tractor, less than one-half the engine power is required for the moving of the car itself. This question of draw bar pull is one difficult to decide. The draw bar pull required to start a load in motion is much more than the draw bar pull required to keep a load in motion.

Nor should it be forgotten that if it requires one-half of 16 horse power to keep in motion a car weighing 5,000 lbs., it should not require one-half of 16 horse power to keep in motion a car weighing 2,500 lbs. If it requires eight horse power in the first instance, it should only require about four horse power in the second case. In such cases the



Fishing and Farming

FAILURE is written at the end of many a life, simply because there was lacking the quality to stick to one thing instead of scattering effort.

The successful fisherman first knows what he is fishing for and cuts his bait accordingly. Then again the successful angler doesn't fish first in one pool and then rush to another, but patiently tries out the pool he first selects.

Good farming and good fishing are not unlike. Get the best pool known by experience, then use the best bait obtainable. This means real live, up-to-date methods, and when your "string" is landed there will be satisfaction in the results obtained.

Be original in plans and think out a line of action before beginning active work. Don't get too many irons in the fire, for if you do you are likely to get burnt. Because your neighbor happens to be successful in a certain line of farming is no reason for your taking up that line unless you are pretty sure of success.

Are you trying to do a little grain farming, a little dairying, a little fruit growing without special effort in any one line? If you are, nine times out of ten your chances for good profits at the end of the year will be lacking. Choose a line of work as your leader on the farm and make other lines subservient to it. Don't scatter your efforts.—Western Farmer.