



## The Why of a Motor Contest

FROM now until after the Winnipeg Exhibition which closes July 23rd, the Western Canadian farmer will hear a great deal about the motor contest. Through reading matter and advertisement, the proposition will be heralded far and wide and the farmer doubtless begins to wonder what it is really all about. Is it a thing that contains for him any real practical value? Is it an attraction for the Exhibition Association? Is it an advertisement for the manufacturers of farm motors? Or is it really a combination of all three?

The motor contest is not of Canadian origin. Its home is in England. The Englishman, as they would say in the States, is from Missouri, and must be shown. When he purchases a farm motor his conservative buying spirit compels him to make a thorough investigation of the merits of the machine and for this reason, probably more than any other, the motor contest was put on. Its early history does not contain a great deal of interest, but when taken hold of by the Royal Agricultural Society and placed upon a real competitive basis, it assumed proportions that made it not only of interest and value to the farmer and traction engine owners, but to the manufacturers as well.

The motor contest is not designed to fix a standard for farm motors. It is not in reality designed to determine which is the best motor, but when properly conducted and carried out it serves as a basis of comparison for determining the good and strong points of the various motors that are entered in the contest. This is why the test is made up of three things, brake test, hauling test and plowing test.

In the Winnipeg test in 1910 each engine will be allowed to go on the brake for a short period of time in order that the manufacturer can ascertain just what load his engine will carry economically. Once this is determined to the manufacturer's satisfaction, the engine starts on a two hours' economy horse power test. The engine is not pulling its full load, but is pulling a load under

which it will work with comparative ease consistent with the least possible amount of fuel and water. The brake is so arranged that by means of increasing the friction it can be varied up or down and registering instruments give the amount of horse power that is being developed. The load is such as an average engine owner would expect to pull when his engine is working on a separator or on any other load where belt power is required.

The average farmer has not the time, the inclination and in a great many cases, insufficient technical knowledge, to enable him to ascertain the actual cost of operating his engine per horse power hour, and herein lies a valuable test for the engine owner. While not every engine is entered in such a contest a sufficient number are entered to enable the farmer to classify them as regards the different types, and what is true of one engine in a class will be for all practical purposes, true of every other engine operating under the same condition.

There is one thing, however, that such a contest does not bring out and that is the cost of operating an engine under less than full load. Oftentimes the farmer who owns an engine is required to attach it to a feed grinder, a wood saw, or some other farm tool that does not require all the power of the engine, and while such a test might be of considerable practical value to the farmer the results that would be derived from such a test would hardly pay for the amount of time that would take to carry it out.

When a farmer buys an engine he buys horse power, and more than this, he buys economical horse power. An engine, unlike a horse, is worth only what the farmer can get out of it. A farmer oftentimes buys a horse partly because the animal attracts his fancy; but when a man buys an engine he buys horse power wholly and solely, and more than this, he buys the most horse power he can get per unit of fuel and water consumption. This being true, the economical horse power test is one of the prime requisites of a motor contest.

There is another test in connection with the brake test, and while it does not contain a great deal that is of practical value to the farmer, it is nevertheless of considerable interest, and that is the maximum horse power test. Every engine owner knows as between an engine operating under an economical load and operating under a maximum load, that the fuel and water consumption will be greater in accordance with the horse power developed in case of the maximum load. No careful engine owner has any disposition to operate his engine under a maximum load. He is developing a small amount of extra horse power at an undue sacrifice of fuel and water and at the same time causing undue wear and tear on his engine.

The traction plowman who has followed the proposition carefully, knows that if his engine will pull six plows with ease but yet has sufficient power to pull eight plows working under a maximum load, that it is far more economical for him, all things being considered, to pull the six plows. He, furthermore, knows that it is not economical for him to pull four plows with the same engine, causing his machine to work under a partial load, as it takes a certain amount of fuel and water to move his engine over the ground in any case and this amount of fuel and water is practically the same whether the engine is working under a full load or a partial load.

The farmer who starts out to buy an engine to-day is up against a rather mystifying proposition. All of the steam engines and quite a number of the gas engines have long since passed the experimental stage. The machines are well constructed, will live out the lifetime of such machines and will render good services throughout that lifetime. For this reason it is hard for the farmer to choose and get the most value for his money. It is largely a matter of the conditions which his engine is obliged to meet and herein lies the practical value of a motor contest to the farmer. Through the brake test, the hauling test and the plowing test, practically every farm oper-

ation is covered, and if the farmer will go carefully into the figures and the results as developed through a carefully conducted motor contest he can with very little difficulty pick out the engine that is best suited to his particular needs. One engine may show a disposition to develop a large amount of power, but is somewhat extravagant on the use of water. Water to a particular farmer may be only a small item; consequently this matter of extravagant water consumption may not be of any particular consequence to that farmer. Another engine may be extravagant on the use of coal. Perhaps in a particular locality coal is cheap and easily secured. Now, providing the contest shows that a particular engine develops a large amount of power, though its fuel consumption is somewhat extravagant, it may not be a detriment to that engine in some localities.

There is another comparison to be made in a motor contest and that is between steam and gasoline. In Western Canada there are certain sections of the country where it is almost next to impossible to secure a good and sufficient water supply. The cost of securing water to keep a steam engine in operation in these localities is of considerable moment to the engine owner, and if the farmer were to base his judgment in selecting the kind of engine that he was to use upon the cost of fuel and water in other localities he would probably find that when he had purchased a steam engine that he had gotten into pretty deep water when it comes to supplying the necessities for keeping that engine running. Even though his oil for use in an internal combustion engine might appear to be a large expenditure, judged from the price of oil per gallon, he would probably find when taking water teams and water men into consideration that the balance is in favor of the internal combustion engine.

The motor contest, of course, does not bring out these costs under all conditions and it requires some little figuring from the standpoint of the farmer in

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