

Good Road Building

Good roads have become a necessity in the West. The rapid development of the country along agricultural lines demands good roads for quick transportation. The days of the ox cart are gone, and even the horse is giving place to vehicles propelled by motor power; thus the demand for good highways in the West is imperative.

There are approximately ten miles of wagon roads in America to each mile of railway. No one knows exactly what a mile of railway costs, but it is stated by many authorities to average about \$15,000 per mile, exclusive of right of way and station grounds, but including buildings and equipment.

A good macadam road costs approximately \$7,500 for a double-track, that is, a road sixteen feet wide, so that two vehicles can readily pass at once. However, there is no urgent necessity for double-track wagon roads in the country, at least not so much as there is for double-track railways. A single-track macadam road would therefore cost \$3,750 a mile. The ratio of cost of a single-track railway to a single-track macadam road would be therefore ten to one. Consequently, since the mileage ratio of railways to roads is exactly reversed, it would cost no more to pave every road in America than it has already cost to build all railways.

The West cannot look for roads such as the older countries have, at least for many years to come. However, much could be done to improve the present condition of the roads and at no such figures as quoted above. Yearly the farmers are losing large sums of money through the present condition of the highways. A practical engineer of the West gives the following figures showing how much an ordinary municipality loses each year because of bad roads:

Some Statistics

"A farmer in loading a car (1,000 bushels) of wheat hauls a distance of eight miles over the average road of the province. He finds 50 bushels a sufficient load, and one load per day all he can haul. It requires twenty loads to fill a car. At \$4.50 per load it costs him \$90.00. With good roads he can double his load and save \$45.00 in loading one car. If he farms a half section he will probably load three such cars a year, and his loss will be \$135. Add to this loss of time, extra wear and tear of harness and vehicles, extra feed and injury to animals, and your own annoyance and discomfort during the year \$65. Now we have a loss of \$200. In the standard municipality there are 648 half sections. Allow 148 for non-residents and you have 500 farms, or a loss of \$100,000 a municipality. If you think this sum is large, divide it by two and you will have a loss of \$50,000 per year. Bear in mind now that this is an absolute loss. Now a council to tax you to the limit, supposing every part of the municipality is taxable, has not the power to tax

you to nearly this amount. To overcome this I say borrow money, make good roads and enjoy them. Good roads save time, add to your comfort, add to the value of your property, and make life worth living."

Many people will have the opinion that the figures given above are rather large in estimating the average loss to a municipality yearly through bad roads. It cannot be denied, however, that the loss is indeed great.

During the past, the system that has been in vogue for the purpose of making good roads has been statute labor. However, there has been a general feeling among various municipalities that a better system could be put into practice. In regard to statute labor, Colonel Evans, reeve of Wallace, said the following before the Good Roads Association:

"As a general rule, but for several years past we have been paying out pathmasters. We pay them three dollars a day to stay there and keep their gangs working properly, provided they have not less than six teams working. If they have less than six teams, we don't pay them unless they take out their own team and work themselves, and then they get the ordinary rate of pay of forty cents an hour. We find that system works very well. The position of our municipality is very different altogether from the flat land in the neighborhood of Winnipeg and other parts of the province. Our land is rolling, and the principal part of the work up to the present time has been making grades through the sloughs. I am glad to say that we are getting somewhere near the end of that now."



A good road in the Municipality of Springfield in the vicinity of Winnipeg, well kept by a splitting drag by Gen. Miller Jr., winning First Prize in that municipality in the Split-log Drag Competition.

tion held in Winnipeg in July, 1910.

"I represent one of these benighted municipalities that still believe in statute labor. We did abolish it some years ago, and we found a good deal of difficulty in getting contractors to do the work satisfactorily, and we went back to the statute labor system again, and we do most of our work now, with the exception of any particularly large job, by a mixture of statute labor and teams hired by the day, but we abolished altogether the old system of doing statute labor. It wasn't so much the statute labor system that was to blame as the way that system was carried out. At one time our pathmasters were not paid at all; they simply told us and so to go here, and so-and-so to go somewhere else, and they went there and laid under the wagons and went to

sleep, as a general rule; but for several years past we have been paying out pathmasters. We pay them three dollars a day to stay there and keep their gangs working properly, provided they have not less than six teams working. If they have less than six teams, we don't pay them unless they take out their own team and work themselves, and then they get the ordinary rate of pay of forty cents an hour. We find that system works very well. The position of our municipality is very different altogether from the flat land in the neighborhood of Winnipeg and other parts of the province. Our land is rolling, and the principal part of the work up to the present time has been making grades through the sloughs. I am glad to say that we are getting somewhere near the end of that now."

There are many theories advanced as to what makes the best road for the country. Unfortunately, the character of the soil and geography of the country in the West is not uniform, and roads that would suit in one section of the country would not be applicable to another. In the matter of good road

building Mr. McGillivray, highway commissioner for Manitoba, one of the best authorities on good road making in the West, has the following to say:

Earth Roads

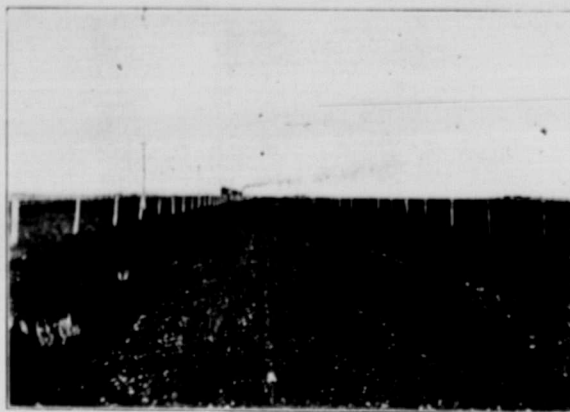
"The style of road to be adopted will depend considerably on the prevailing conditions of the locality over which it is to traverse. There is no doubt that in this province, for some time to come, the earth road will be the most common type. This class of road provides splendid accommodation for light traffic in dry weather when properly built and cared for, but during spring and wet seasons they are very deficient in the important requisite of hardness, and are almost impassable. In the construction of earth roads, drainage is of primary importance; in fact, without it, it is impossible to keep them in a serviceable condition. Good drainage is the first requirement of all good roads, and an earth road is the foundation of them all. Side drains must be made continuous to proper outlets and sufficiently large to adequately carry off all the water that may be collected in them during frosts and wet seasons. The earth grade should be properly crowned by giving it a fall at the least of one (1) inch to the foot, from the centre to the sides; no shoulders or ridges should be left along the sides of the grade that will hinder the water from having free access to the side ditches. Tile drains are of immense importance where roads are built across springy ground or soil of a retentive nature. They keep an excess of water from accumulating in the sub-soil, and permit the roads to dry up more quickly in the spring, thereby leaving them less liable to 'break up.'"

Height of Road

"The height of a newly-constructed road depends in a measure on the conditions of the soil that forms the grade and to the fall obtainable in the side ditches. Where the soil is heavy and sticky, it is generally found that the surrounding country is flat, and difficulty may be experienced in securing sufficient fall for the drains. Across such places the grade should be kept high, being at least three (3) feet above the ground level, so as to keep the water level as far below the surface of the road as possible."

Width of Roads

"Leading highways should have a roadway of eighteen (18) feet in width, and nearer cities and towns this might well be increased to twenty-two (22) feet, while a width of sixteen (16) feet will be found sufficient on side roads in the country, where traffic is somewhat lighter. While the maintenance of wider roads will be found more expensive than that of narrower ones, on account of the earth sides flattening out and being cut up by traffic, it is desirable that sufficient width should be



Road in Municipality of Rosser, kept in condition with split-log drag. Won First Prize in the competition by John Taylor.



Split-log drag kept this road well rainproof but was neglected after a rain and was soon in poor condition. Drag would have removed ruts.