

The Commercial

A Journal of Commerce, Industry and Finance, specially devoted to the interests of Western Canada, including that portion of Ontario west of Lake Superior, the provinces of Manitoba and British Columbia and the Territories.

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The Commercial certainly enjoys a very much larger circulation among the business community of the country between Lake Superior and the Pacific Coast, than any other paper in Canada, daily or weekly. By a thorough system of personal solicitation, carried out annually, this journal has been placed upon the desks of the great majority of business men in the vast district designated above, and including northwest Ontario, the provinces of Manitoba and British Columbia, and the territories of Assiniboia, Alberta and Saskatchewan. The Commercial also reaches the leading wholesale, commission, manufacturing and financial houses of Eastern Canada.

WINNIPEG, NOVEMBER 23, 1892.

Economies of Water Transportation.

THE COMMERCIAL has long been an ardent advocate of the improvement of our water route to the east, via the lakes, for the cheapening of transportation to and from the west. Following is an article showing the economy of water transportation, which will prove interesting in this connection. Lewis W. Haupt, consulting and maritime engineer, in a late issue of the *Manufacturers' Record*, says:—

If the same attention were given to improvement of artificial waterways as has been devoted to railways, the economy of movement would be greatly increased, millions of dollars would be saved for investment in manufacturers or other more permanent improvements, instead of being spent in repairs to a short-lived and perishable form of plant, and, best of all, the railroad managers themselves would utilize the canals, which have become the property of their companies, for the enlargement of their revenues, while, at the same time, they reduced their rates and thus stimulated and increased their business. Now, the energy and attention of their numerous solicitors is expended in securing every pound of freight for the railroad, while the same industry in behalf of the canal would put in motion as large tonnage which cannot be touched at the present rail rates. And yet we find the railroads in many cases patronising competing canals for the transportation of their own construction materials, rather than haul it on lines under their own control and connecting the same terminals. Why, if not because it is cheaper?

Even to-day, a comparison between the old time canal and the most improved and efficient railroad in the country may be made which will show the superiority of the waterway. Thus a canal terminating in Philadelphia, having a

draft of 5½ feet, and capable of carrying boats of 175 tons' capacity, charged from 40 cents to 70 cents per ton tolls from the mines to tide water, 103 miles. This canal has a bottom width of 40 feet and depth of 6½, with locks 110x18 feet. The boats weigh about 65 tons, making a gross load of 240 tons to each train of three mules, or 80 tons per mule, moved at the rate of 1½ miles per hour. The tractive force was only 1.78 pounds per ton, while on a railroad it is about 9 pounds. The boat and team cost \$2,500, or 38.44 per ton. The ratio of paying to dead load is 175 to 65, or nearly three to one.

On a first-class modern grain car of 60,000 pounds' capacity, weighing 30,000 pounds, the ratio is two to one. The average weight of the box car being 13.4 long tons and its cost \$625, the cost per ton of the car is \$46.34. But the 125,000-pound locomotive costs \$10,000, and the average train load in the United States, by Poor's Manual for 1891, was 163 tons, requiring but, say six, or a 30-ton cars; hence the motive power per car cost \$1,666, or \$124 per ton, which, added to the \$46.34, gives for the cost of rolling stock per ton \$170.34, as compared with \$38.44 for the canal. It is true, however, that on favorable grades one engine can handle from 40 to 50 cars, thus greatly reducing the cost of motive power, but the averages are a better base of comparison. The life of the boat is longer also than that of the car being 18 to 20 years.

Now as to the load. One boat's load of 175 tons would fill nearly six cars of 30 tons' capacity, or an average train, for which the expenses of movement are much greater; but, without going into a detailed analysis of individual items of expense, we may take the reported average rate for freight movement per ton mile as being the measure of the cost of overcoming all the resistance opposed by railroads to traffic. The lowest rate reported for 1890 in Poor's Manual was that of the Chesapeake & Ohio, which was 0.54 cent, or 5.4 mills, per ton mile. The next lowest was the Louisville & Nashville, on which the rate was 5.7 mills, while the New York, Lake Erie & Western ranks next at 6.4, and the Pennsylvania next at 6.5, and the rate rises to 16.1 mills for the Southern Pacific. The average rate of all is over 9 mills per ton mile. Compared with this we have on the canal for captain and crew \$4.75, feed for three mules \$1.50—total for movement of boat per diem \$5.75; depreciation and interest at 20 per cent., \$500; total expense for season \$638 per boat, making twenty round trips and delivering 3,500 tons of coal, which is at the rate of 18½ cents, per ton. Adding 8 cents for unloading brings it up to 26½ cents for 108 miles, or 2.4 mills per ton-mile, but as the boats return empty, their round trip is, in fact, 216 miles, and the cost, if there were return loading, would then be but 1.4 mills. In neither case has the roadway been considered. The surprising economy of water transportation is, however, more fully illustrated by the results of the tramp freight vessels on the ocean, which may carry 3,000 tons or more 20 miles a day at a cost of \$300, or 10 cents per ton for 250 miles, which is but four-tenths of a mill per ton-mile.

Even greater economy has been secured in many of the recent freight steamers built on the great lakes, some of which have a capacity of 3,000 tons on a draft of 16 feet, and one is reported to be on the stocks capable of carrying 6,000 tons. The rate of 1 cent per bushel on wheat from Chicago to Buffalo is not now unusual. At 33 bushels to the ton this is but one-third of a mill per ton-mile, or one twenty-seventh the average railroad rate.

The success of the whaleback C. W. Wetmore was such as to cause other parties to engage in the construction of additional vessels of this type, both here and abroad, with promise of still greater efficiency.

These astounding results are attributed to the great efficiency of marine steam engines, and to great capacity for storing the paying load, so that, notwithstanding the long haul

over non-productive waters, the ocean carrier is out of reach in the competition with the land lines; in fact, there can be no competition, for the two are reciprocal and mutually beneficial. The marine engine requires only one-half ounce of coal per ton-mile, or a ton of coal would produce 64,000 ton miles of ocean carriage at freight speed, while the same amount of fuel will only produce 10,000 ton miles on a railroad, or about one-seventh as much.

From whatever standpoint, therefore, the question be viewed, it would seem that, even with the improved efficiency of the railroads, which, it is stated, was increased last year over 60 per cent., they are not able to cope with the unpretentious and antiquated system of canal transportation, and the attempts which are systematically made to obliterate our canal routes, limited though they are, if consummated, would be a calamity to the nation as well as to the railroads, for manufacturers and commerce would be restricted by increased taxes.

The prosperity of the country would be greatly enhanced if a more general interest were manifested in enlarging our great system of waterways and in bringing them into more intimate co-operation by improving their connecting arteries. It has been shown by statistics that the \$30,000,000 expended on the improvements on the great lakes have effected an economy in the freight moved in one year of more than three times the total cost. Surely there are few, if any, expenditures of the government that can produce a better result than this of the river and harbor bill.

The sample copy of the Christmas number of the *Dominion Illustrated* is a genuine surprise; we had no idea that such a superb work could be turned out in Canada. Everything in the number, coloured supplements, reading matter and illustrations is not only of a very high order but most attractive and will, we think, tempt everyone—even editors—to indulge in a few copies as souvenirs. The comic supplement is excellent, and shows great originality and skill on the part of the designer; the adventures of the hero at sea and in Paris are very funny. Another very good thing is the double page plate of the "Legislative Halls of Canada"—where our worthy M.P.'s and M.P.P.'s luxuriate and wrangle. As a rule the buildings are noble and imposing, and will give our friends abroad some idea of the progress of the Dominion in self-government. The large supplement "Christmas-Morning" is a beauty, and is well worth a handsome frame. The reading matter appears to be just the thing for the holidays, bright, interesting and beautifully illustrated; a new departure is in reproducing on title page the portraits of the authors. The whole number forms a literary and artistic treat and must be seen to be appreciated. From the high merit of the work we do not doubt but that the whole edition will be disposed of as soon as put on the market.

The war between the whiskey trust, known as the Distillers and Cattle Feeding Company of Illinois, with headquarters at Peoria, and a few independent distillers is nearly at an end, and the trust is practically victorious. The only St. Louis concern which has held out against the trust has been the Central Distilling Co. Of the outside firms that have remained independent the Denson Distilling Co. of Cincinnati, the Star Distilling Co. of Pekin, Ill., and the Crescent Distilling Co. of Pekin, Ill., have been the most active opponents of the trust. These with the co-operation of the Central company of St. Louis have successfully fought the trust until the present time. According to information obtained from one of the gentlemen who engineered the deal these four companies have been absorbed by the trust, and within two days the trust will be able to absolutely control the price of whiskey and high wines at its own pleasure. It is understood the trust pays \$1,500,000, partly in cash and the balance in stock for the four distilleries. Of this amount \$500,000 is for the St. Louis company.