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COMMERCE ON THE GREAT LAKES

BY

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IF THE ordinarily informed person were told that the freight traffic of the Great Lakes for 1906 was almost double that of 1904, it is quite probable that he would doubt the statement until conclusive figures were produced. Yet this growth is a fact.

Only a few years ago, shippers and ship owners looked far into the future without seeing any obstruction to their traffic; they rejoiced at the excellent lock service at Sault Ste. Marie, and prided themselves on possessing fine and ample harbors. Now, there is a belief that traffic on the inland seas is outgrowing its present accomodations. During the last year the great ship-building companies along the Lakes have received more orders for vessels than they could fill; they have been working extra time, and have employed extra forces of men; new ships have been built and launched with unprecedented rapidity—and still the demand for ships is unabated.

This increase in the volume of freight, while causing great satisfaction, is at the same time arousing anxious speculation. If the growth continue at its present rate, it will be but a comparatively short time before the canals at the Soo will be unable properly to care for the freight demanding passage, and tremendous financial loss will fall upon shippers and ship owners. Foreseeing such a condition, Congress has this session been asked to authorize the expenditure of a large sum of money for the enlargement of facilities at the Soo; though in just what form the improvement will be made is not yet known, as several plans for meeting the increasing freight bulk are now being worked out by Col. Charles L. Davis, the engineer in charge of the district.

When, in 1843, Senator Norvell, the first United States Senator from Michigan, introduced a bill into the Senate requesting a grant of land for the building of the Sault Ste. Marie canal, Henry Clay said that "the money might as well be wasted for a project in the moon." For a time after the completion of the canal in 1855, it looked as though the Kentucky statesman had been right. During the first year only 14,503 tons of freight, or little more than the tonnage carried by a single vessel at the present time, passed through the canal. The million-ton mark was not reached until 1876. In 1885, the Soo canal began its race with Suez; and in 1890, with a freight passage of 9,000,000 tons, it exceeded the Suez tonnage by more than two millions. In 1900, 25,062,580 tons of freight passed through the canal; by the end of 1904 this had increased to 31,546,106 tons. Then came the tremendous growth of 1905–06. In the one season of 1905, there was an increase of 12,253,561 freight tons—an increase as great as that of the preceding eight years. When to 1905 is added the increase of 1906, one arrives at the astonishing fact that the Lake freight of the past two seasons shows an increase as great as that of the fourteen years preceding!

Estimating from official figures made at Sault Ste. Marie, it is quite safe to say that 100,000,000 tons of freight have been transported upon the Great Lakes during the last year. Unless set out in a way that the eye and the mind can seize upon, the magnitude of these figures can hardly be appreciated. What does 100,000,000 tons of freight mean? To handle it required for eight months the services of 1,500 Lake captains, 3,000 mates, 15,000 sailors, and 100,000 landsmen. It was nine times as great as the tonnage that passed through the Suez canal; twice the combined annual tonnage of London and Liverpool, two of the world's greatest seaports; and more than 50,000,000 tons in excess of that which entered and left New York.

If the total amount of grain which was carried last season were made into flour, and to it were added the flour tonnage, the aggregate would make 42,936,683 barrels. From a barrel of flour 250 one-pound loaves of bread can be made. Estimating that every person

eats an average of one-half pound of bread daily, this tremendous supply of bread would feed 21,468,341,500 people for one day; or it would supply a city of 1,000,000 adults for a period of nearly 60 years.

Last year 12,000,000 tons of coal were carried through the Detroit River by northbound boats. Had this quantity of coal been transported by one train, calculating 50 tons to the car (which would require the largest cars), 238,563 cars would have been called for, and the train would have been 2,259 miles in length.

And despite the tremendous growth of the last two years, it is generally conceded in shipping circles that the increase of 1907 will be even greater. This conclusion is reached because of the flood of orders for big ships that has poured in upon shipbuilding companies during the last few months. Only recently an order was placed by the Lackawanna Steel

OUTLINE MAP OF THE GREAT LAKES

Company, calling for eight vessels, to be in commission by August 1, 1907. In point of number, this order may not appear impressive, especially to the railroad man who hears of car construction in hundreds and even thousands, but in reality the results will swell the figures of next season. Five of the vessels are to be of 7,500 tons carrying capacity each, and the other three of 9,000 tons each. In other words, this fleet will carry an aggregate of 64,500 tons of freight to a trip, a tonnage that would require the use of more than 1,600 ordinary cars, or more than 50 trains. And yet this order for eight ships, perhaps the largest order ever given, is only one of scores of orders during the year.

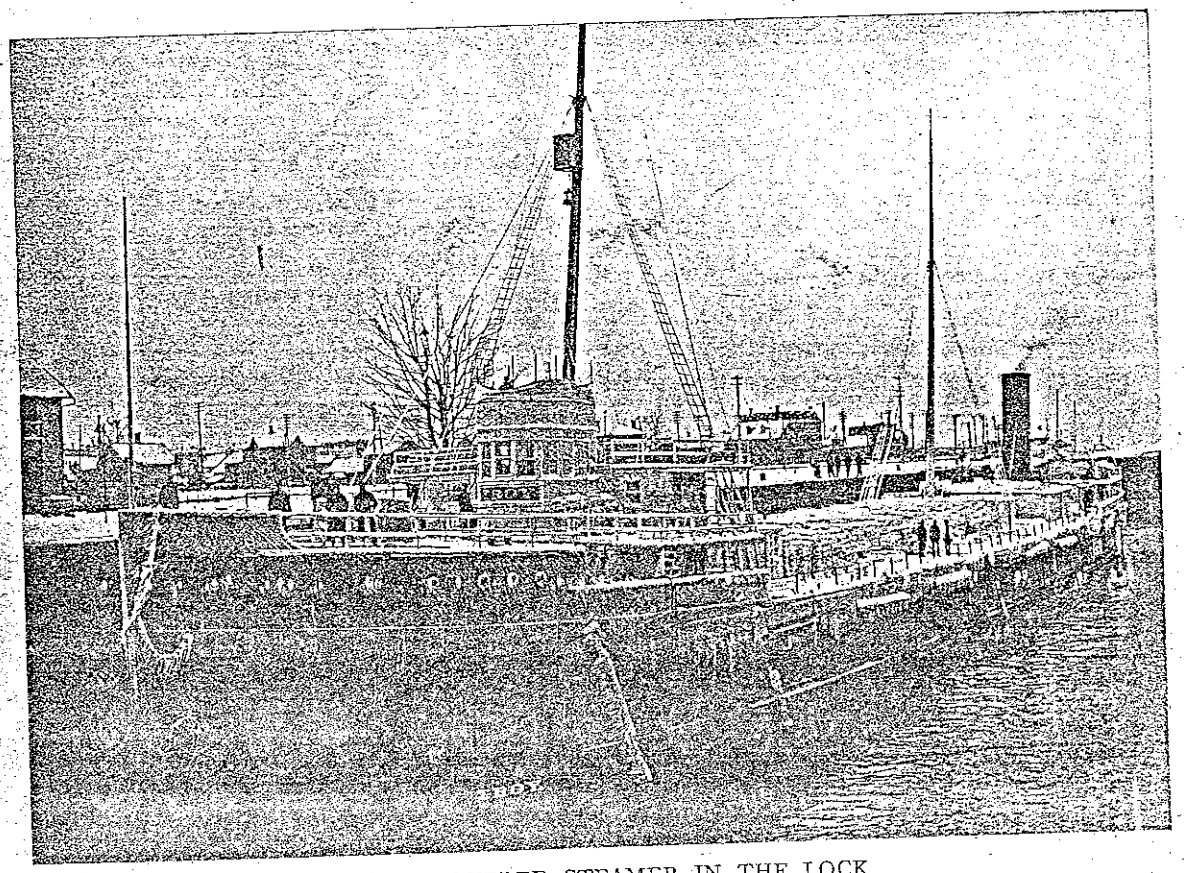
Perhaps the most forceful illustration of the growth of traffic on the inland seas is shown in the history of the Pittsburg Steamship Company. A comparatively few years ago, there was no very large fleet on the Lakes; to-day this company alone has 108 steel vessels, with an average carrying capacity of 6,000 tons each of iron ore. In one trip, this huge commercial navy moves 648,000 tons; and during a season of eight months it transports a total of 5,184,000 tons. The total length of the 108 vessels is 41,776 feet; that is, if placed end to end, they would reach a distance of eight miles. It would take a freight train 133 miles in length to transport the freight carried in one load of the entire fleet. And this is the "moving capacity" of but a single corporation!

It is only natural that this tremendous traffic of the Lakes should have its effect upon railway transportation. Indeed, the country could have no greater safeguard against railroad aggrandizement than in this tremendous water commerce. There is not a state north of the Ohio River and east of the Rocky Mountains which is not affected by the cheap transportation afforded by the Lakes. The railroad system of the United States comprises more than 200,000 miles, constructed and equipped at a cost of $12,500,000,000; yet, on the basis of ton miles, the traffic on the Lakes is more than one-seventh as great as upon all the railroads of the United States. The average charge per ton per mile of Lake freight is but a little more than one-tenth of that charged by the railroads. The cost per mile per ton for 1906 was about $0.00085, so that it costs just 85 cents to ship a ton over the distance of a thousand miles from Buffalo to Duluth.

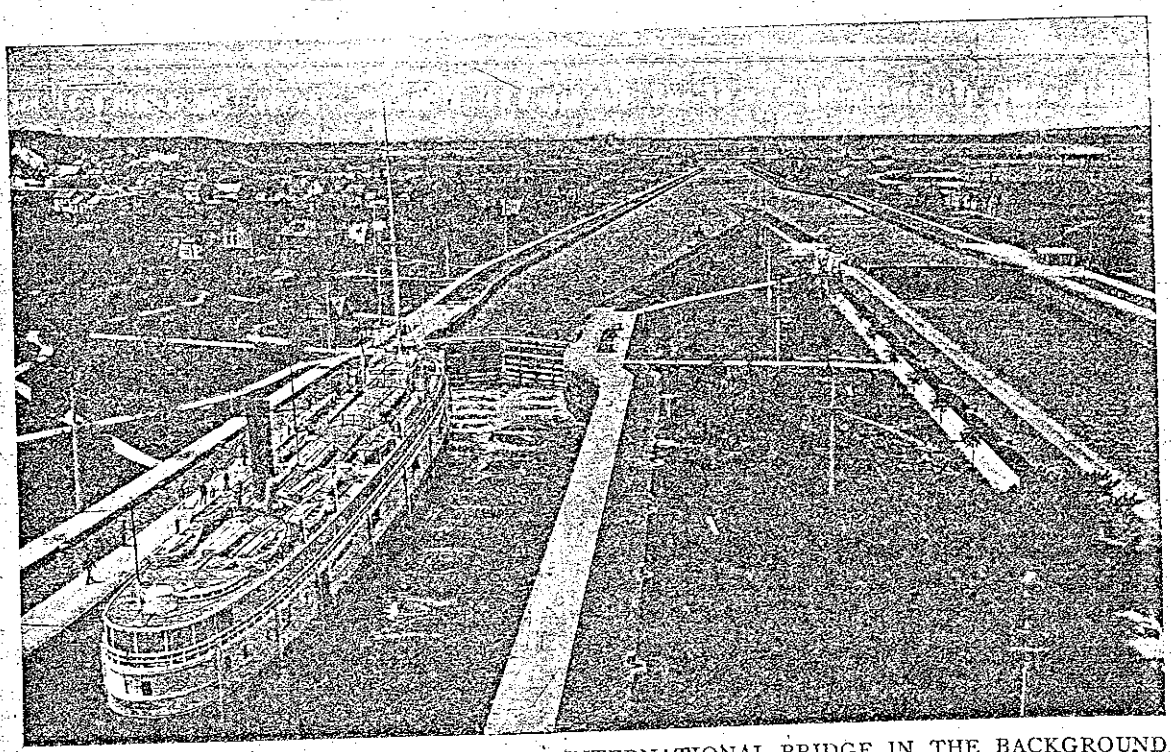
According to an estimate of the Lake Carriers' Association, more than $500,000,000 is saved annually because of this low cost of transportation. The saving in the transportation of iron ore alone is enormous, for about 35,000,000 tons are carried from the Lake Superior iron regions to the smelters of the East at the trifling cost of 60 cents per ton. Not many years ago the carrying of ore meant an expenditure for freight of $3 a ton.

QUICK LOADING AND UNLOADING

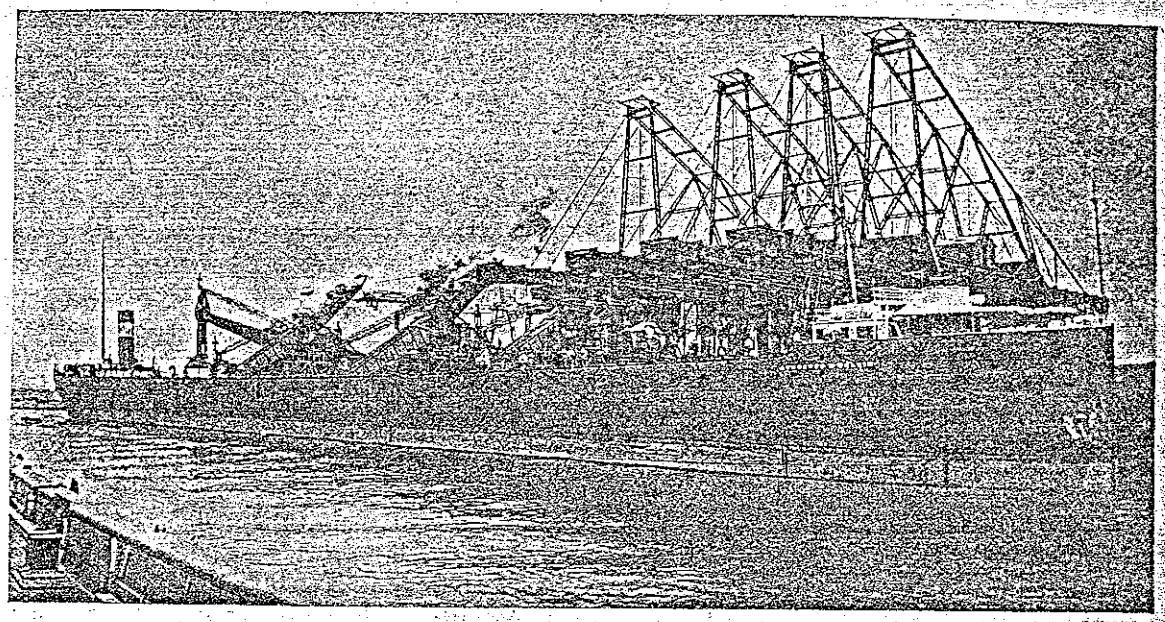
The transportation of freight on the inland seas has now been reduced to a fine art, and the railroads can never hope to compete successfully against it, except during the winter months. Take, for example, a "500-footer." At Buffalo she will tie up at one of the docks to take on a cargo of coal. With her eighteen or twenty hatches open, the vessel is ready to receive her load. On the dock is an enormous steel platform upon which run cars, each carrying about fifty tons of coal. As a car comes into



AN ICE-COVERED STEAMER IN THE LOCK



THE POE AND WEITZEL LOCKS, WITH THE INTERNATIONAL BRIDGE IN THE BACKGROUND

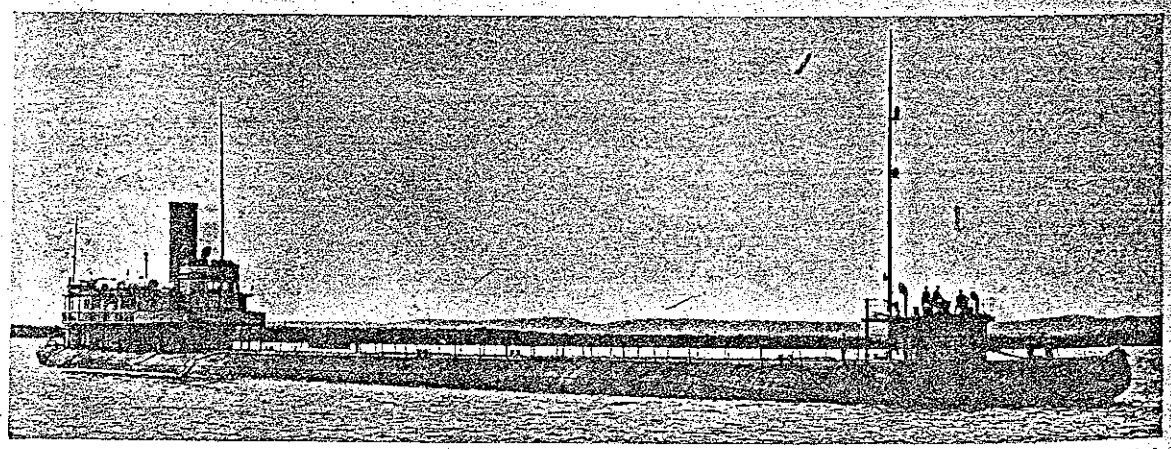


THE STEAMER "AUGUSTUS B. WOLVIN" UNLOADING
It has a record of loading 12,250 tons in an hour and a half

position, it is caught by great steel claws, is lifted completely from the track, and its contents are dumped into great chutes, the smaller ends of which are in the hatches of the freighter. With a great roaring noise the coal rushes downward. In the car it looks like a large quantity, but in the cavernous hold of the vessel it reminds one of a handful of dirt in a tub. Carload follows carload. Clouds of black dust float out of the hatches, and every part of the boat and every person near it becomes black and grimy. Not until the coal contained in 200 cars has gone down the chutes is the freighter full. This loading process takes from three to four hours.

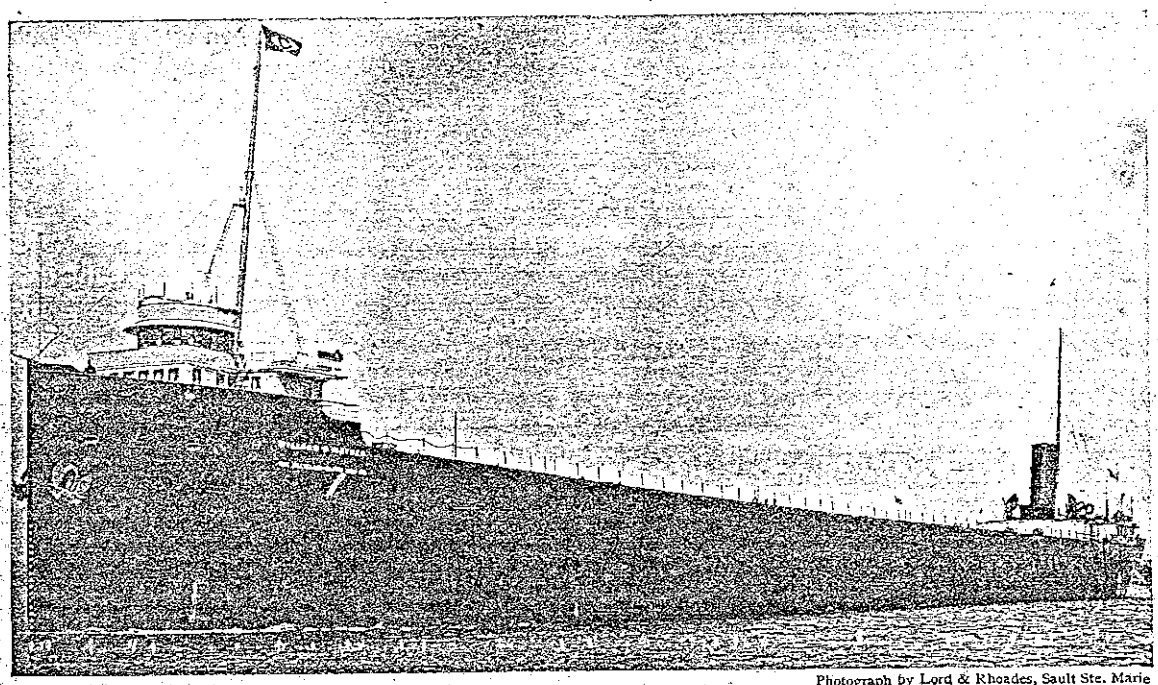
The huge vessel is now towed out of the harbor and the thousand-mile trip to the north begins. Arriving at Duluth or Ashland, the hatches are again opened. Great six-ton hoists are lowered into them, and an army of from 250 to 300 men, known as "fillers," comes aboard. As fast as they fill a hoist it is raised, swung over the wharf, and its contents are dumped in a great pile. For eight or ten hours there is the rattling of coal, the clanking of chains and steel shovels, and the shouting of the men. Then, once more, the cavernous hold is empty, and the vessel is ready to receive a cargo for the return trip.

From the coal dock she moves to one of the



Photograph by Lord & Rhoades, Sault Ste. Marie

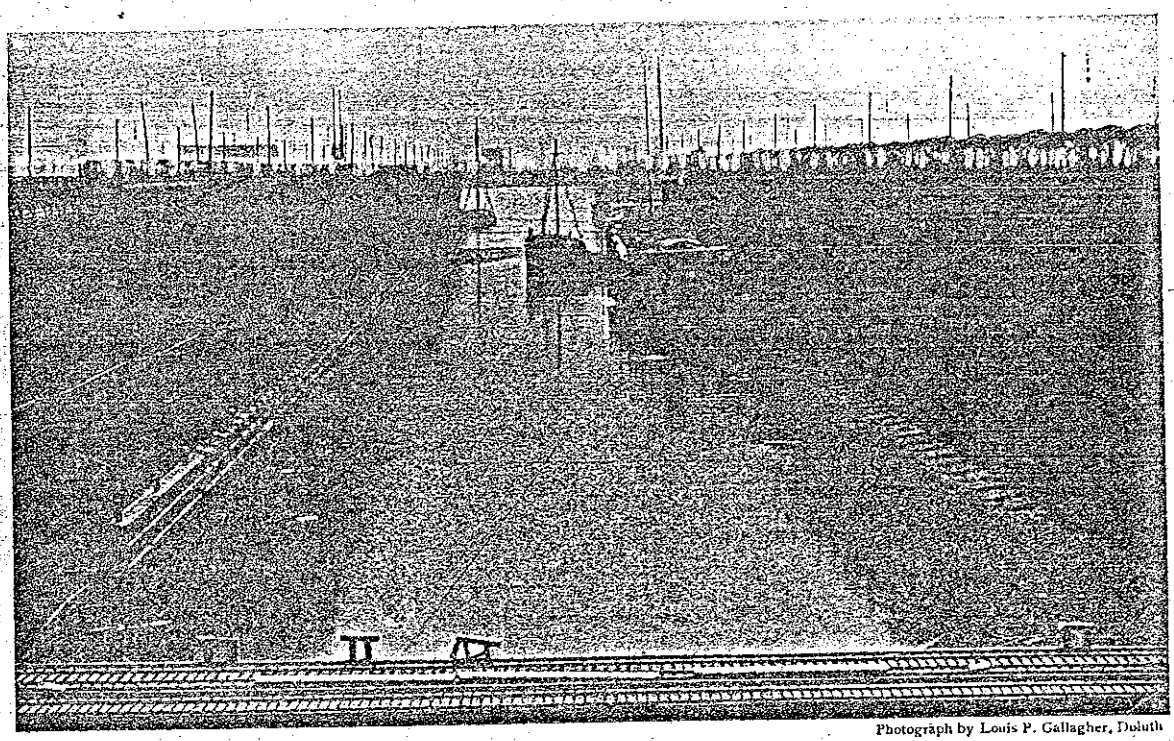
A WHALEBACK STEAMER OF THE GREAT LAKES



Photograph by Lord & Rhoades, Sault Ste. Marie

A 12,000-TON STEEL LEVIATHAN OF THE LAKES

great ore chutes. These are not unlike the coal-loading stations, and the process of filling the freighter is much the same. From "pockets," built high above the wharf, chutes are run into the hatches. Then the chute "doors" are opened and the ore rushes into the hold. By this modern method a cargo of 12,000 tons can be put into a boat in about two hours.



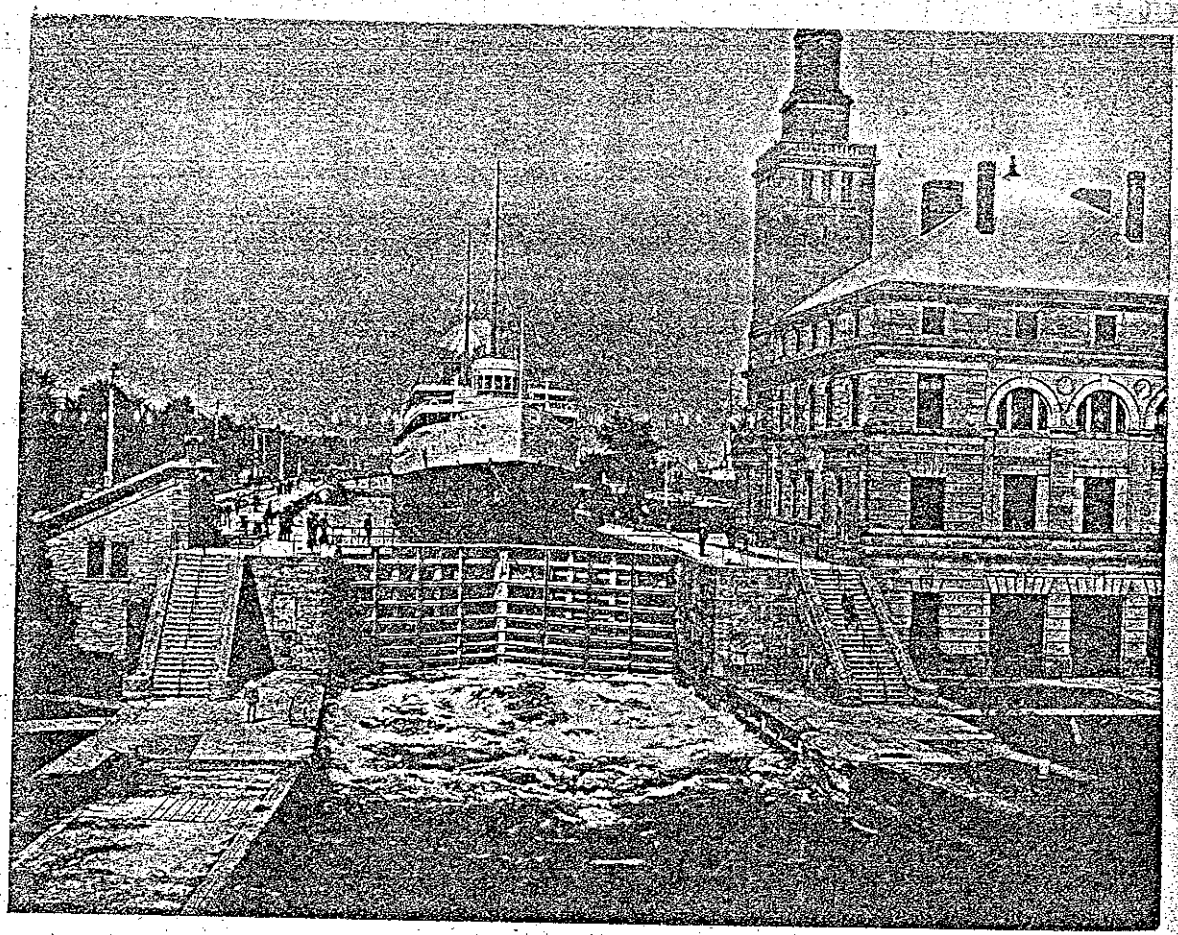
Photograph by Louis P. Gallagher, Duluth

ORE DOCK AT DULUTH, MINNESOTA

The steamer *Wolvin* set a record during the last season by loading a cargo of 12,250 tons in one hour and thirty minutes.

But with a grain boat, the scenes at the shipping places are quite different. Instead of tying up alongside a grimy, rattling coal derrick or ore chute, the vessel lies alongside a great elevator. From small openings in the elevator, pipes are run into the hatches and through these the grain rushes with a pleasant buzzing sound. In an hour and a half, a 10,000-ton freighter can in this way be filled with grain, which runs through the pipes at a rate of about 125,000 bushels an hour. When such a cargo is to be unloaded, pipes similar to those with which the loading is done are run into the hatches of the vessel; but instead of the grain pouring down from the elevator into the ship it now begins to disappear up the pipes, at the other end of which engines are creating a suction of several hundred pounds to the square inch. A number of Lake vessels now carry as much as 380,000 bushels of grain to a trip, and this vast quantity can be unloaded in from two and a half to three hours. It is interesting to note that the average freight profit of a 10,000-ton vessel is from $7,500 to $8,000, although there are exceptional cases where the freightage was as high as $18,000. These enormous freight bills come at the end of the season, however, when shippers are willing to pay twice the ordinary freight rates in order to be "cleared" before navigation closes —and even then their grain and ore are carried for a small fraction of what the railroads would charge.

[EDITOR'S NOTE: Since the above article was written, the official report has shown the total Sault Ste. Marie tonnage for 1906 at 51,751,080 tons, against 44,270,680 tons in 1905. Of this, American ships carry from 94% to 96%. The total value of the American ships in 1905 was over $73,000,000, and of Canadian ships $5,429,000.]



Photograph by Lord & Rhoades, Sault Ste. Marie

COMING THROUGH THE LOCKS OF THE SOO CANAL

As the water confined in the lock is let out, the ship drops down to the level of the canal on this side