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## Reply to Discussion on Shipping on the Great Lakes of America

BY MR. A. E. JORDAN (MEMBER).

IN reply to the remarks of the Chairman, Mr. Timpson, the terms hard and soft coal used in America apply to anthracite and bituminous, the principal difference being in cost. The anthracite coal-fields of America are in the hands of the Railway Companies, and the cost per ton of 2,000 lb. to the consumer is from 6 dollars to 7 dollars in New York, where no bituminous coal is allowed to be used for household or manufacturing purposes in the city limits, hard coal being practically smokeless. I may say also that all trains coming into New York have to leave their coal-burning locomotives some miles out and are hauled into the city by electric locomotives. Bituminous (soft coal) for bunker purposes costs, in New York, about 3.25 to 3.50 dollars per ton of 2,240 lb. My paper referred to the American more than to the Canadian side of the Lakes. The cost of living in the larger Canadian cities, such as Montreal, is, however, considerably greater as a whole than at home, but it is the large American cities, Chicago and New York particularly, that are so expensive. House rent

in New York is from three to four times that in London, a decent suit of clothes or an overcoat costs from 40 to 60 dollars, servants, 25 dollars a month, and the cost of food, especially in hotels and restaurants, is very high. I can confirm Mr. Timpson's remark about serpentine tracks made by steamers; one on which I was second engineer steered so badly that we used to say she wrote her name and then turned round to read it.

There is no doubt that Canada will eventually cut a canal for vessels of good size by way of the Ottawa River and Lake Huron, so that ships can go through from England to the western end of the Lakes. The Railway freight rate for grain from Buffalo to New York and other American ports is so high that it is no wonder Canada has taken advantage of it, and whereas some ten or twelve years ago most of the grain was shipped from New York, Philadelphia and Baltimore, Montreal now ships more grain than all three American ports put together. There has been a deal of agitation to get the rail rates reduced, but so far they have not been successful in doing so.

Mr. Clark raises a point about electrically-driven machinery, but with the low temperature in winter, hydraulic machinery would be impossible, and in any case electricity is in such common use in America that there is, I think, no doubt it is cheaper and more efficient. The 15s. per ton paid for discharging iron ore is not considered to be too high, although done in such a short time; it is very materially to the ship-owner's benefit to have the use of his ship in a few hours instead of her lying two or three days discharging. The record of 10,111 tons loaded in thirty-nine minutes is not a misprint, the previous best time being 10,500 tons loaded in ninety minutes including shifting; the thirty-nine minutes' record was made without any shift being necessary; when this work was done everything was in readiness: all the ore was in the pockets, and it was only necessary to open the doors of the chutes and the ore ran into the ship's holds until she had received the required amount. These records are timed, and it would be of course impossible to load in such a time if the ore was not all ready, as the moving of, say, only one train of cars would occupy as much time as it took to load in this instance, and with the ships built to fit the loading and discharging docks, and vice versa, the dock equipment fitting



the ships, very rapid handling of cargoes is comparatively easy.

The beam of the *Christopher Columbus* is a misprint, as it should read 364 ft.  $\times$  42 ft.  $\times$  24 ft.

The pneumatic tools are usually worked at 100 lb. air pressure, and when a considerable length of hose is used they do give a deal of trouble in very cold weather, but if used continuously and not allowed to lie they do not freeze up altogether, but they lose a large percentage of pressure, and often in very cold weather a mixture of alcohol and glycerine is passed through the lines of piping.

I appreciate Mr. Kidston's remarks, and would like to say that my paper was not meant to be one on shipbuilding, but of a more general character of the difference between our home practices and those I noticed during my work on the Lakes. The present American law, however, precludes our building ships at home for other than Canadian interests, and at present by far the greater amount of tonnage is carried between American ports, and has to be carried in American bottoms; but there is no doubt that the Canadian traffic will grow enormously, especially if the larger canal is built. The American shipbuilders have already foreseen this and built a shipyard and dry docks at Port Arthur, forming a company under Canadian jurisdiction which is, however, only a branch of the American Shipbuilding Company of Cleveland, but I have no doubt our home yards can beat them in price when the time comes. The propellers do not give any trouble, in fact the key is driven in so tight that it is often necessary to drill it out before the propeller can be removed. In reply to Mr. Ross, the canals are kept up by the State, as are also the harbours, light vessels, etc. The cost of bunkering or loading coal can hardly be considered in the light of dues, the coal either for bunkers or cargo being private property. The cargoes are loaded from special coal docks somewhat similar to our own at home, and bunkering at ports where coal is not shipped is done by specially equipped coal pockets, and in some cases by lighters with coal-tipping machinery on board.

Mr. Shackleton mentions the time for building; and on this point I may say Messrs. Doxford, of Sunderland, launched in one year twenty-five steamers from six berths, or a fraction over four for each berth, or less than three months for each steamer, a number of these vessels being practically duplicates.

Referring to Mr. Robertson's remarks on steel-plate hatches, these are about 9 ft.  $\times$  3 ft., flanged at each end, and run over each other from side to side, being handled by wires. The double bottoms of lake vessels are very much after the style of a Macintyre tank, but with 15-inch channel frames in place of angle-bar frames, the channel floors do not support the tank top; the fore and aft girders and deep-plate floors doing this, there also being reverse frames under the tank top at every frame space.

I am sorry that owing to pressure of work I have not been able to answer the points raised at greater length nor to have sent you this short answer earlier, but I greatly appreciate the kind way in which my paper has been received, and tender my best thanks to all my fellow members.

