175. The explanation of the apparent anomaly of a system of inland water transport, dependent upon canals, operating upon a vast scale, partly in conjunction, but largely in substitution for modern rail transport, is that in natural expanse, safety, despatch, and capacity, not to speak of sources of traffic, the Great Lakes-St. Lawrence waterway is without a counterpart among systems of inland navigation. To provide continuous navigation from Montreal through twelve hundred miles of lake and river and to the head of lake Superior has required only seventy miles of canalization. Indeed conditions of navigation on these great bodies of water present a resemblance much closer to the scale and freedom of ocean transport than to the restrictions of the narrow inland waterways which the original advent of railways so largely superseded.

176. The sources of traffic are as extensive as the system itself. Draining the mid-continental basin, the Great Lakes-St. Lawrence route provides not only an interior system of unique length, but an outlet, the sole large outlet by water, to the North Atlantic seaboard, for the widest and richest agricultural areas of both Canada and the United States.

177. The arterial pulse of the movement of commerce through the Great Lakes navigation system is to be found in the Canadian and United States locks at Sault Ste. Marie. It is not generally appreciated that the traffic through the St. Mary's river connecting lakes Superior and Huron is, in a normal season, in excess of the combined anuual traffic through the Panama, the Suez, the Kiel and the Manchester Ship canals. In 1929 the total traffic passed at Sault Ste. Marie (Canadian and United States locks) was 92,616,808 tons; for the Panama it was 30,663,006; for the Suez, 33,466,014; for the Kiel, 21,613,088; and for the Manchester, 6,558,598, a total, for the four salt-water canals of 92,300,000, or a slightly less tonnage than that of the fresh-water system as registered at the principal tally point for our international inland waters.

178. As a result of the trade depression the decline in the ore and grain traffic of the upper lakes is strikingly indicated by the decrease in tonnage passing through the combined Sault Ste. Marie canals since 1929. In 1930, it dropped to 72,897,895 from the peak ninety-two millions in 1929, and to 44,606,325 in the season of navigation of 1931, or more than 50 per cent.

179. Plying these waters are scores of vessels of more than 600 feet in length and of 60 and 70 feet beam, some capable of carrying in a single load 17,000 tons, or 566,666 bushels of grain. The completion of the new Welland Ship canal has admitted these large upper lake freighters to lake Ontario and the upper St. Lawrence waters, and only one hundred miles of river remain to be dealt with to completely modernize the Great Lakes-St. Lawrence route from the ocean to the heart of the North American continent.

180. In 1931, by no means a representative year, the total traffic through the purely Canadian canals along this route amounted to 16,189,074 tons. This figure would necessarily include duplications of cargoes carried through two or more canals. To this movement 27,651 vessels contributed.

The classes of commodities carried included:

	Tons
Agricultural products	7,737,307
Animal products	15,830
Manufactures	2,976,780
Products of forests	748,419
Products of mines	4,690,738
Total	16,189,074

181. Two-thirds of the movement of agricultural products, as listed above, consisted of grain, principally wheat. Canadian wheat passing through the

Canadian and United States locks at Sault Ste. Marie during the season of 1931 amounted to 146,016,991 bushels, compared with 312,425,869 bushels in 1928.

182. The magnitude of this inland shipping route to the Atlantic should not be allowed to obscure the great importance to Canada of the Panama canal, not merely as a means of increasing the flow of export grain through the port of Vancouver, but in promoting generally the export trade of British Columbia. Nor should the effect upon Canadian transport generally of the utilization of the Panama canal as an alternative route for Canadian transcontinental traffic be overlooked. During the year ending June 30, 1930, Canadian inter-coastal cargo used this canal to the extent of approximately 180,000 tons westbound and 190,000 tons eastbound.

183. Railway transportation in so far as the movement of grain and bulk commodities is concerned has been largely adjusted to the problem presented by competition from the great inland waterway. The railways carry to and from the head of the lakes and to and from the lower lake ports. The movement of grain in particular is dependent on low inland water transport and the fortunes of the railways themselves in Western Canada are dependent upon the ability of the grain grower to place his product at low cost at ocean ports. In this movement to the eastern coast the inland waterways are a necessary part. If the producers of Western Canada are to continue in the business of growing for export the great bulk of grain and heavy commodity traffic between west and east must continue to use the inland waterways.

184. If and when grain in any considerable volume passes out of the country by the Hudson's Bay route, there will still remain a very large tonnage which will seek the eastern and western ports, and it is not likely that the volume of traffic from west to east will vary greatly from the present figures. Increases in production have in general kept pace with the movement of grain to the Pacific coast, and it is more than likely that a similar experience will result from the opening of the port of Churchill to the export grain trade.

185. While on first consideration it might appear that the construction of canals which are free of all tolls to water carriers is in effect a form of state subsidy to a rival transport agency, yet in so far at least as bulk traffic in grain and heavy commodities is concerned, complaint is not made by the railways on this score. The imposition of tolls would not help and would probably hinder the railways as tending to discourage production. The Canadian Pacific Railway has now, and for many years has had, its own lake boats engaged in the carriage of passengers and package freight, and the Canadian National Railway has a working arrangement for the same purpose with one of the largest of the lakes shipping companies.

186. The further development of the St. Lawrence and lower lakes canal system, whereby package freight may pass from Montreal direct to the head of the lakes without transhipment may eventually make further inroads into the all-rail haul from east to west, but in the case of much of the package freight movement, time is an essential element, and the railways should be able to hold a large share of this movement against their slower competitor.

187. Water-borne traffic will continue to be a factor of major importance in Canadian transportation both on the inland waterways and coastwise through the Panama canal, but rail traffic has in the main been adjusted to the conditions now existing and it does not seem probable that the developments now under way and in contemplation in connection with the Hudson's Bay route, and the deepening of the St. Lawrence-Great Lakes canals, will seriously prejudice the