



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

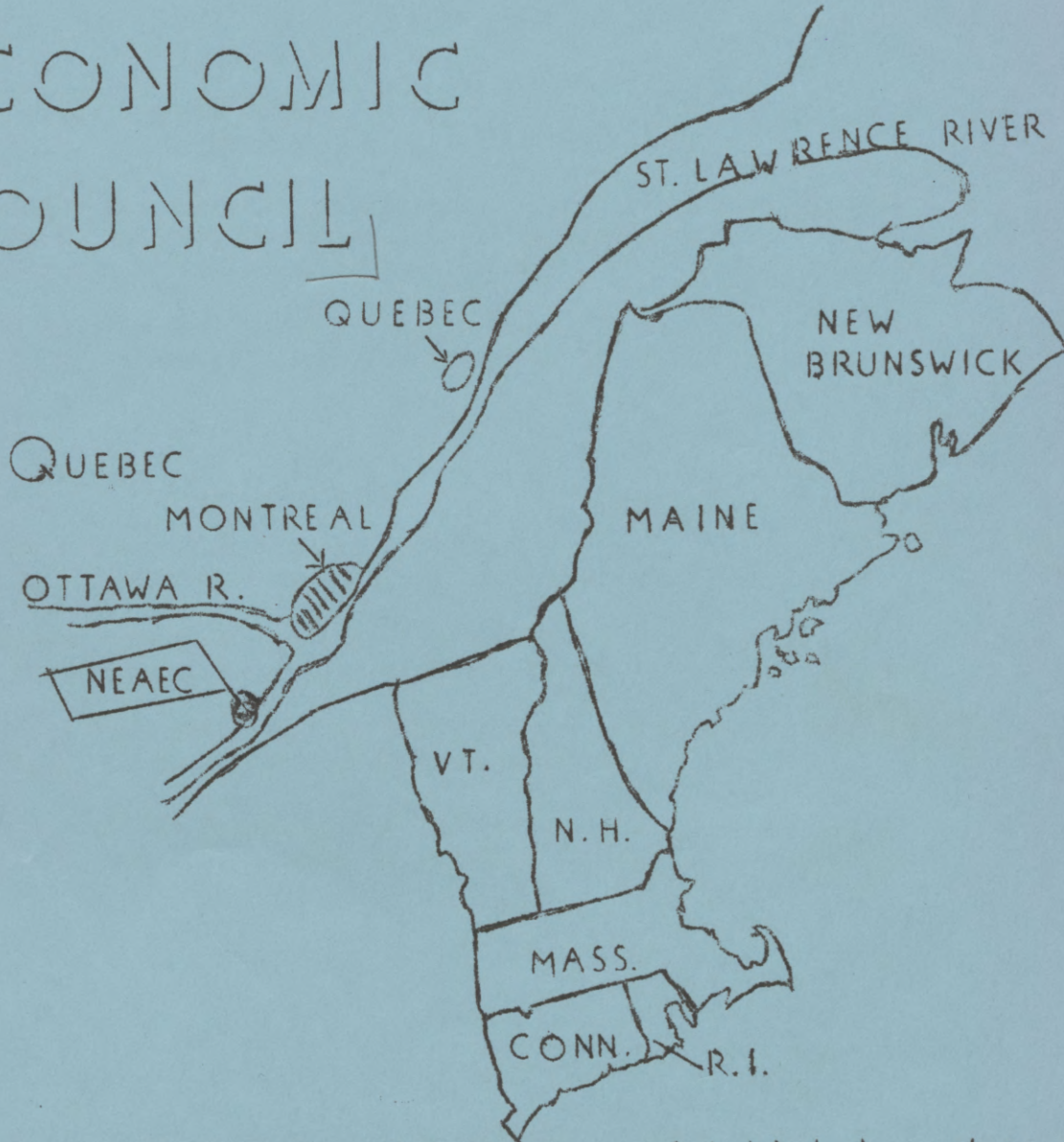
*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

0 2 a (pl)

# NEW ENGLAND AGRICULTURAL ECONOMIC COUNCIL

GIANNINI FOUNDATION OF  
AGRICULTURAL ECONOMICS  
LIBRARY

JUL 18 1961



## PROCEEDINGS, JUNE 1960

AT  
MACDONALD COLLEGE - MCGILL UNIVERSITY  
STE. ANNE DE BELLEVUE, MONTREAL, QUEBEC, CANADA

## THE ROLE OF THE ST. LAWRENCE SEAWAY

T. R. McLagan, President  
Canada Steamship Lines Limited

### Introduction

I am greatly honored to be asked by the New England Agricultural Economics Research Council to make an address on the St. Lawrence Seaway. It would have been better for you if you had asked the gentleman who has just introduced me as he is a transportation expert whereas, I am just a hireling of one of the companies which uses the Seaway.

However, as President of the Canada Steamship Lines, I do have some interest and I will be happy to at least give you my viewpoint on the various items with which you have expressed some interest.

Your Chairman has asked me to say something about the historical aspect, and therefore, I believe it will be helpful if I trace briefly for you the history of the "Seaway" or what I prefer to call it - "The Great Waterway" - which stretches from the Straits of Bell Isle to the head of the lakes at Fort William and Port Arthur. The present "Seaway" is but the finishing of "The Great Waterway" which was originally begun from either end and this new seaway is in the middle.

As you know, the Great Lakes System i.e. Lakes Ontario, Erie, Huron, Michigan and Superior, is connected by a series of rivers leading into the St. Lawrence River. Before the advent of railways and highways, this waterway offered a means of travel and transport. We are all familiar with the exploits of the early pioneers and the use they made of the water route.

Future events, however, made the waterway of much greater importance to the national development of both the United States and Canada.

First of all, as a young exporting nation, it was necessary for Canada to get her grain surplus to the seaboard.

Again, iron ore was discovered on the shores of Lake Superior by men who were prospecting for copper.

It was obvious to our forefathers that the chain of rivers and lakes afforded a cheap and easy way to transport the bulk commodities of grain and iron ore and coal. All that was necessary was to find a way around the various rapids or waterfalls which was done by constructing the locks at Sault Ste. Marie, at Niagara (i.e. the Welland Canal) and the various steps of the St. Lawrence system not the least important of which was the digging of the ship channel from Quebec to Montreal.

Now please bear with me a moment while I trace the history of the various phases of the "Great Waterway" which is important for us to comprehend if we are to guess what may happen to business now that the final phase has been completed.

- 1) The first step to connect the lakes was the building of the first Welland Canal, 1824-1829, which linked Lake Ontario to Lake Erie and enabled ships to be carried over the Niagara escarpment. This canal is about 27 miles long. Closely following this work was the construction of the Erie Canal, 306 miles long, which linked the Great Lakes with tidewater at Albany, N. Y. and some authorities claim that this canal was responsible for the great growth of the Port of New York which need not concern us here except that the construction of the final phase of our Seaway is also linking the Great Lakes with tidewater.

- 2) Canada commenced the building of the ship channel from Quebec to Montreal in 1844 and finally finished it in 1952 and make no mistake, this is part of the "Seaway" except that the banks of the canal are below water.
- 3) The first lock at Sault Ste. Marie was built in 1855 and was only 12 feet deep. This connected Lake Superior with Lake Huron. The present Soo system was built 1887-1895, and only just in time because it was in 1890 that the fabulous iron ore deposits in the Mesabi Range were discovered and this discovery changed the way of life in both Canada and the U.S.A. From this date the "Waterway" got into high gear and the great industrial developments, as is exemplified by the teeming industrial population on the shores of Lakes Erie and Ontario, took place as some 60% of North American ore has come from the Mesabi Range. Finally, at the Soo, the great MacArthur Lock was finished in 1943 and lifts ships of 25,000 tons up to Lake Superior in 20 minutes.
- 4) The Lower St. Lawrence System, with which we are familiar and which we are now watching disappear, was opened in 1848. It reached its present stage, of what I call its imperfection in 1901. These canals limited the size of ships to a maximum of 3,000 tons requiring everything going east to west, in big ships, to be transferred to small ships with attendant high costs and slow speed.
- 5) Finally, the industrial development grew to such great proportions that bigger ships were required and the modern Welland Canal was built which enabled ships as big as 25,000 tons to be lifted over the Niagara excarpment.
- 6) Now, in our time, we have modernized the last 115 miles between Montreal and Kingston so that big ships can go all the way East or West. On April 1, 1959, the "Great Waterway" was completed and, in my opinion, iron ore again forced the building of this new canal as it did the systems at the Soo and Welland. A new source of ore was discovered at Seven Islands and this canal, called the Seaway, will enable it to be transported inland in big ships. History here is in the making because the trade is being reversed. Instead of iron ore flowing from the U.S.A. to Canada, it will go the other way.

Now what is going to happen to Montreal? Enthusiasts say that the building of the ship channel from Quebec to Montreal put the "skids" to the port of Quebec and the new "Seaway" will do the same thing to the port of Montreal but there is a difference. The word "Seaway" is a misnomer because it envisages some broad unrestricted body of water, such as the English Channel, extending into the heart of North America and nothing could be further from the truth. The "Seaway", so called, restricts the beam and the length and the draft of ships and, in many ports, restricts the speed. The "Seaway", therefore, will not be open to all ships. For instance, an ocean ship capable of carrying 22,000 tons can only carry 15,000-16,000 on the "Waterway". Many of the great ships coming to Montreal cannot get into the Seaway because the locks are only 80 feet wide. The "Queen Mary" is not going to dock at Toronto. Thus, all the ships cannot sail past Montreal as they did at Quebec when the ship channel was dug. The width of the locks and the depth of the canals are a sort of artificial coastal protection for Canadian inland ships. I believe I saw a statement emanating from a U. S. Admiral that 75% of the U. S. merchant marine could not use the Seaway.

Anyway, to sum up the situation, the Seaway has been completed. It is the final completion of the greatest piece of surgery ever performed on the North American continent. It was built in double quick time and the designers and contractors deserve every possible credit. However, despite this accomplishment, I still believe that the All-Canadian project - the Welland Canal - is the most spectacular when you think that great ships of 25,000 tons deadweight are being hauled over the Niagara mountain. I maintain that that is doing something. Unfortunately, this great work of the Waterway is liable to be the bottle-neck and I will have more to say about it.

#### Reasons for building the Seaway

Many reasons have been advanced for the building of the Seaway, the most popular of which is that all the ports on Lakes Erie, Huron, Michigan and Superior will be seaports and that there will be great export and import shipments of general cargo. I am not so sure that this is correct but we will examine the nature of cargos later on. As I have said, I believe the impelling reason was to bring in an alternative source of iron ore from the Province of Quebec and from the way that ore is being discovered and the number of ore projects which are being created, there appears to be some ground for my suspicion. Anyway, the Seaway has brought much hope to many of the ports on the Lakes for increased business. I should remind the enthusiasts that water transport to the Lakehead now has to pay tolls on the Seaway and Welland Canals and it is not an inconsiderable item of cost.

#### First year of completion of the Seaway

Well, we have completed the first year of the Seaway and to say that it has been a year of excitement is to put it mildly.

You will appreciate the fact that, after sailing through the Seaway enroute to the Lakehead, all ships must pass through the Welland Canal which has only single locks at either end. I may say that there are some people who have not appreciated that simple fact and that is why I am mentioning it.

The Seaway was so well advertised that at the opening there was a regular gold rush. It seemed that any ship in the world that did not have anything better to do arrived at Montreal to explore this new trade route. I think there were some forty-five ships waiting at the opening and they kept on coming and, unfortunately for us regular customers, all these ships had to return. The Queen's visit did not exactly speed it up but I am sure we all agree that we can afford a little delay on behalf of Her Majesty. Then the U. S. Navy - 28 ships strong - decided to invade and that alone took two days of the capacity of the Welland Canal. Unfortunately they too had to return.

#### Capacity of Welland Canal

Lest you think I am making light of these situations, I should offer a word of explanation regarding the Welland Canal and its capacity which, up to this year, was about 15 lockages a day each way. We must think in terms of lockages and not in ships. The capacity is determined by the number of tons passing through on each lockage. For instance, if one of the big ships passes through with 20 to 25 thousand tons, that lockage produces that much whereas if a smaller ship passes through with little or no cargo or even a full cargo, the lock operates much below its capacity. I bring this to your attention because much has been said about the

capacity of the Welland Canal and much of the publicity has misrepresented the situation. Some of the planners have said that the capacity of the Welland Canal is 60 million tons per year. In 1959, some 26,945,300 short tons passed through and there were 7,866 ship passages giving an average load of about 3,400 tons per passage. Naturally, the average size of the ships passing has plenty to do with the total tons passed in a season of navigation. In our own Great Lakes bulk fleet, the average tons per passage were 11,696. (I mention our own fleet because these are the only figures I have access to.) These averages include return trips empty because returning empty is inherent in the Great Lakes trade but this is more than made up for by the many passages. About 28% of our own trips were light returns. For instance, some of our ships will pass through 48 times in a season whereas an overseas ship could probably not make more than 8 to 10 single trips through the canal in a year and in many cases they go one way with little or no cargo.

### Time of Passage

Now a word of the time of passage which determines the all important item of cost. The time of passage through this canal has steadily increased even before the Seaway was built. For instance, on our own ships the time of passage between 1936 and 1953 increased 75%. The writing was on the wall on what was going to happen before the Seaway was commenced.

What happened last year? The time of passage of our big ships up to the beginning of the U. S. steel strike on July 15th averaged 28.5 hours whereas in 1958, it was 10.8 hours and we thought at that time that the time of passage was slow. Some of our ships took as much as three days to get through the canal. Some of them spent 24 hours waiting where the total normal voyage time was 24 hours. The canal is about 28 miles long and so it may be said that our ships average about one mile an hour. It may be said that our costs for this journey at this time increased by 170% and this without figuring the cost of the tolls. To reduce these delays to money, we figure we ourselves lost \$848,000 gross income as a result and I see that one of our competing companies has put their loss of income at \$400,000.

Having comprehended these figures, you will now see how important it is to get the maximum tonnage out of each lockage. The Minister of Transport has rightly suggested that small ships should be displaced by big ships. Lest it be thought that the Canadian operators have been backward in this respect, I may say that since 1949, the Canadians have spent \$111.5 millions and our company has spent \$50 millions and currently we are adding two more vessels.

Now I have told you about what happened in the Welland Canal in the first year of the operation of the new Seaway. We are now well into June and have had more than two months of operation in 1960 and I am happy to say that our friends in the St. Lawrence Seaway have made vast improvements. They have installed new tie-up walls and so far our ships are passing through in about the same time as they did in pre-Seaway days.

You will appreciate the fact that big ships are the answer to get the full potential out of the St. Lawrence Seaway and particularly the Welland Canal. Conversely, if these big ships have delays, then the loss to the shipping companies likewise is very heavy. All shipping operations require rapid turn arounds. We only have 8-1/2 months to do our job and we pride ourselves in the high efficiency

of the Great Lakes ships. When anything goes wrong in the canals, we yell to high heaven and it generally works as our Seaway friends understand the problem of rapid dispatch just as well as we do. Indeed, they have a vested interest as they have the desire to make the Seaway pay its way and it cannot do so if we do not carry the cargos through to the utmost of capacity.

#### Actual tonnage passing through the Welland Canal in 1959

I would like to say something about the actual tonnage passing through the Welland Canal in 1959. I keep talking about the Welland Canal as we do not have much complaint about the new Seaway and, as far as I can see, the tonnage through the Welland will always be greater than that going through the Seaway as there is much cargo that starts or terminates on Lake Ontario.

For instance, in 1959, some 27 million net tons passed through the Welland Canal both ways and the similar figure for the Seaway was 20.4 million.

Of the 27 million tons passing through, the general cargo was 1,666,200 tons or only 6.1%. For some reason the press and other people seem to think that general cargo is the all important thing and, in my opinion, nothing could be further from the truth and, therefore, I am calling to your attention this proportion of 6.1% and it is this amount which some people seem to think is going to make the Great Lakes ports prosperous. My company carries general cargo up the Waterway in very fine fast ships and I hope that it will grow but the building of the Seaway has enabled iron ore to be carried up from Seven Islands in the Gulf of St. Lawrence with the result that the upbound bulk traffic in 1959 through the Welland Canal increased 92% and it was overwhelmingly iron ore. In this respect, I do not think we have seen anything yet as the bulk westbound is going to increase by leaps and bounds. The limit will be the capacity of the Welland Canal.

Now, just to reinforce what I have said, let us take a look at what I think will happen in 1960 as I have made what I think is an intelligent guess.

I believe that this year some 30 million net tons will pass up through the Welland system and the analysis is as follows.

Bulk products, which may be said to play a big part in the Canadian and American economy, i.e. ore, coal, grain, stone, etc., amount to about 25.72 million tons.

We have other miscellaneous bulk cargos including gasoline, scrap steel, sulphur, pulpwood, etc. which amount to about 2.12 million tons.

Thus, the total bulk tonnage will be about 27.84 million tons.

The general cargo we think will equal 2.49 million tons of which about 2.0 million tons is export and import to and from American and Canadian ports and most of it American. There will be about 500,000 tons of Canadian domestic tonnage.

Therefore, you will see that of the total traffic through the Welland Canal, some 92% of it is bulk and 86% is composed of those well known products, ore, coal, grain and stone.

The important point to realize is this - that this 86% of the traffic will be carried in only 47% of the passages. In other words, 14% of the tonnage requires 53% of the passages.

I mention this fact because the bulk traffic is important to the Canadian and American economies. Steel mills will not work if we do not get it through and the farmers will not sell their grain. Everything should be done to encourage the building of big ships and to get them through fast and, as I have said before, it is to the Seaway's advantage as they collect tolls which now brings me to that particular question.

### Tolls

I cannot honestly say that tolls are not just. Someone must pay for the Seaway but I do say that the new imposition of tolls in the Welland Canal is unjust because there has been little cost reduction work done to improve the Welland Canal. The work done has been mostly on behalf of ocean vessels but not lake vessels. The imposition of tolls on the Welland Canal has increased the cost of all cargo traversing that waterway and this is not what the people of Canada have been led to believe. There is, of course, a saving to the agricultural people in carrying grain, tempered by tolls, which can now go directly across the ocean or to Montreal and beyond in big lake ships without transshipment at Prescott or Kingston. The benefit of the latter operation has been about 4.5 cents per bushel.

United States grain out of Duluth can now move directly overseas to destination without use of either rail or barge transportation.

To illustrate the cost advantage of such a movement, which is made possible by the St. Lawrence Seaway, the comparison must be made of the rates applicable.

At prevailing ocean freight rates the cost of shipping wheat to Rotterdam direct from Duluth by ocean vessel through the Seaway averages 24.78 cents per bushel including toll.

By previously used method of lake barge and rail combined to Baltimore and thence by ocean vessel, the cost is 37.07 cents per bushel. In this case the reduced cost of the new routing is equivalent to about 33%.

If wheat is shipped entirely by rail from Duluth to Baltimore for furtherance by ocean vessel, the cost to Rotterdam amounts to 49.51 cents per bushel and in this case the saving in transportation cost effected by use of the St. Lawrence Seaway amounts to 50%.

As I have said, the Seaway has made possible the export of iron ore from the shores of the Gulf of St. Lawrence to Lake Erie ports and that may be claimed as one of the big benefactions of the Seaway.

The tolls have been set on both the registered tonnage of the ships and the cargos carried.

For instance, the total per gross registered ton is 6¢ regardless of whether the ship is loaded or not. In addition, there is a toll on the cargo tonnage of 42¢ per ton of bulk cargo and 95¢ per ton of general cargo.

The equivalent toll on a bushel of wheat is about 1.3 cents.



Another curious thing about tolls is this. On the Panama Canal a ship going through light only receives a 20% discount. On the Seaway and Welland Canal a light ship going from Montreal to Lake Erie receives a 93% discount. Thus the tolls encourage light ships from the ocean to go up which is exactly the opposite of the desired end because light ships do not add to the income of the canal, and in addition, they slow up the traffic and lockages.

### Lake Shipping

I would like to say a few words about Canadian shipping and, in particular, lake shipping.

I believe we have created the most efficient bulk carriers in the world and I have already told you how we have scrapped old tonnage and created new to the tune of \$111.5 million since 1949. Total carrying capacity of the Canadian Great Lakes fleet is now about 1,510,000 long tons.

Our ships are manned by wonderful people, both officers and crew, and they operate with the greatest possible efficiency. The wage rate problem is always with us but it is much misunderstood. In Great Britain and the United States the ship wages are geared to the industrial wages of the respective countries. In Canada the same thing happens only to our discomfiture the British wages are only about one third of our wages. Further to our discomfiture, by an old law enacted about 1929, British ships have the right to trade in the Canadian coasts. Ours is the only Canadian industry which is subjected, without protection in our own country, to the low wages of Great Britain. Already our deep sea ships have been driven from the high seas by these low wages.

What do our American cousins do? The Merchant Marine Act permits only American built and American owned ships to trade in the American coasts. In this manner, U. S. ships can enter our bulk trade by carrying ore from Duluth to Lake Ontario ports or Seven Islands to Lake Erie but Canadian ships cannot retaliate by entering the trade between Duluth and Lake Erie because it violates the U.S. Coastal Laws. It is true that U. S. ships cannot enter our small coastal trade but British low wage ships can.

The U. S. Merchant Marine Act also provides for operational and constructional subsidies in the U. S. foreign trade and now we hear of an agitation to subsidize the Lake trade between Canada and the U.S.A. If this should go through and British ships continue to be permitted to trade in the Canadian coasts, what will there be left for the Canadians? Many Canadians do not appreciate the vast difference in wage rates, expressed in our money, between Canada and Europe and Asia.

We in the Canadian Lake fleets do not look up to anyone when it comes to the operation of ships in the Great Lakes. Likewise, we do not take second place to anyone in the building of ships and the building of ships puts a lot of work into Canada. A ship is a veritable floating community and the amount of man hours it creates is almost incalculable. In this respect, a recent study in six Ontario towns and two in Quebec reveal the effect of the employment, in those towns, of 100 extra men in industry. The effect is 66 more school children, 163 more motor vehicles 980 more telephones, \$1 million more retail sales per year and 117 more men employed in ancillary industries. Canada should think twice before she allows other people to take all the Canadian gravy.

I was informed that you wished to know the impact of the Seaway on the New England region. Frankly, I do not know what impact it will have on your region and I have never heard it discussed. I have heard some discussions about cutting a canal through to Lake Champlain and thence to Albany connecting New York with the St. Lawrence Seaway. Such work will be a tremendous job and I do not know of any particular economic reason why such work should be undertaken.