*(November 19, 1928)*

# Deepening and Development of the St. Lawrence Waterways

By Senator The Honourable Dr. W. L. McDougald,
President, Harbour Commissioners of Montreal.

President Daly:—Gentlemen, there can be no doubt that one of the most significant problems confronting Canada today from the standpoint of the development of its commerce and industry is that associated with the administration of the St. Lawrence waterway and its use and conservation for transportation and power. In giving us the benefit of his knowledge and experience both as chairman of the corporation of the Harbor Commissioners of Montreal and as a member of the St. Lawrence Waterway Advisory Board, our guest of honor of today is performing a most valuable and timely public service. We welcome with great pleasure today Senator the Hon. W. L. McDougald and I shall now ask him to address us.

Senator McDougald:—May I say what a thrill and pleasure it gives me to find myself the guest of honor in the capital city of this grand old province, at a Canadian Club luncheon, and may I thank you, Mr. Chairman, for giving me this opportunity of addressing so many of Toronto's leading citizens. Your club, in common with similar clubs throughout the Dominion, is doing a real service in bringing a wider knowledge of the country's problems and of the means by which it is sought to solve them.

May I say, also, that as one who was born and received his education and lived happily in the eastern section of this great province for many years, and who afterwards by force of circumstances moved to the sister province of Quebec, where as one of a minority I have had contacts of a business and social nature with the members of that



cultured, kindly and great French-Canadian race, full of enthusiasm and loyalty for everything Canadian and British, I feel I am perhaps in a position to understand the mentality of the people of both provinces and to appreciate the growing desire for round table conferences regarding matters of mutual concern and for harmonious and co-operative action in regard to inter-provincial and Dominion-wide problems. For after all, the aims, ambitions and principles of both provinces are almost identical and nothing should be left undone to bring them to a happy solution. Personally, I am a firm believer in close-up contacts and frank discussion as the best and safest way to obviate possible misunderstandings, which too often arise from long-distance dealings.

And I think we must all realize that if we are to have a united and prosperous Canada we cannot overdo this growing and much to be desired tendency on the part of gentlemen in charge of affairs in these two provinces and of the other provinces of the Dominion as well, to get together and discuss openly and freely their various difficulties. Certainly, I think we must all feel that an essential preliminary to the solution of international problems must be a universal and concerted effort toward national harmony.

And in this spirit let us approach this great question of the deepening and development of the St. Lawrence waterways, a question which has been before the public of this country from its earliest days until the present time—a question which has been recognized by men of affairs, not only in Canada but in the United States as well, to be not alone of national but of international importance.

For in a discussion of this matter we must not lose sight of the fact that the St. Lawrence waterway does not entirely belong to Canada, nor entirely to the United States, but is the valued heritage of both countries, and that both countries must lean upon each other if they are to have that support in trade and commerce and industry which a deepened and developed St. Lawrence will bring in such generous measure. This international aspect, I am afraid, is something which is too often lost sight of and which is frequently misrepresented and distorted.

The St. Lawrence River, as gentlemen here will be aware, has from the days of Jacques Cartier, been the highway by which pioneers and settlers have gained entry to this country, and by its upper reaches and the Great Lakes from which it derives its flow, our forefathers took their adventurous way to the very heart of the North American continent and to the fertile prairie lands beyond. Flanked by mountains and by high lands on both sides, it was the only feasible and natural route to the interior, and today as then, the St. Lawrence route is recognized as the great commercial inlet and outlet for the trade and commerce of a large section of this continent and particularly of this great country which contains the greater part of its length. From the earliest days settlements have grown up on both banks of the river and through the years the trend of settlement and development has been westward, until we find to-day the whole course of the route dotted with towns and cities, and, with the cultivation of millions upon millions of acres of fertile lands of the prairie provinces, coming down this mighty waterway a golden flow of wheat from Fort William and Port Arthur, finding its way into the elevators at Montreal, thence by ocean boats to all parts of Europe and adding a hundredfold to the trade and commerce of the whole Dominion.

Now in order that you may at once get a clear picture of the course and geography of the St. Lawrence and the Great Lakes I have taken the liberty of having a map hung on the wall, which I hope you will all be able to see.

And with your permission I shall briefly trace the course of the waterway and point out a few facts which I think you should have at the very beginning.

Starting from Fort William and Duluth at the head of Lake Superior, the first obstacle to navigation is encountered at Sault Ste. Marie or the "Soo' as it has come to be popularly known. Here the fall from Lake Superior to Lake Huron is twenty-one feet, which causes the St. Mary's falls. At this point passage for vessels has been secured through the construction of canals on both the Canadian and United States sides, but the Canadian canal has been inadequate for a number of years and the huge



bulk of traffic, both American and Canadian goes through on the United States side.

Proceeding further we pass through Lake Huron with clear sailing until we come to the second step down which occurs in the slope of the St. Clair and Detroit Rivers. The drop is only eight feet and this difference makes shallows in both rivers. Here the channel has been dredged by the United States to a depth of twenty feet.

On through Lake Erie now, with no drop until we come to Niagara and here the fall is three hundred and twenty-five feet. At this point the old Welland Canal, fourteen feet deep lets traffic through, but the new Welland Canal, now under construction and likely to be completed in 1930, will provide a depth of twenty-seven feet.

Through Ontario now, with comparatively little difficulty until we get into the International Rapids section, which consists of forty-eight miles between Prescott and Cornwall. The sixty-seven miles from Kingston through the Thousand Islands give a deep narrow channel with a drop of only a few feet and provide no power, but in the forty-eight miles further on the river steps down ninety-two feet in a succession of swift rapids; the Galop Rapids, then the Rapide Plat and then the Long Sault. Present navigation is carried around these rapids in a series of fourteen-foot side canals.

And next we get into what is known as the National Section, starting at the Quebec border and taking us into Lake St. Francis, some twenty-six miles long, which has deep water almost to its foot and takes care of present navigation. From here is the Soulanges area also in Quebec, eighteen miles in extent, but with a drop of eighty-three feet, tumbling out of Lake St. Francis in another succession of rapids, the Coteau Rapids, then the Cedar Rapids, then the Split Rock and then the Cascades. Present navigation is through the fourteen-foot Soulanges Canal which parallels the river on the north. The remaining part of the National Section is the Lachine division, which completes the twenty-three miles into Montreal harbor. It consists of the deep water of Lake St. Louis for the first part and then steps down again forty-eight feet through the Lachine Rapids, La Prairie basin and

rocky shoals to the harbor. Present navigation is through the fourteen-foot Lachine Canal which cuts through the edge of Montreal. From here it proceeds through the thirty-foot improved channel to the Gulf.

And there is your waterway, two thousand miles to the sea, over a navigation course eleven hundred miles of which are in Canada and nine hundred miles in the United States, with a drop of about six hundred feet between the head of Lake Superior and the Sea.

Having now traced in outline the path of the waterway from the head of the Lakes to the sea, let us return and examine in a little more detail the international and national sections, because this is the area which comprises the real crux of the waterway project. For with the completion of the Welland Canal we will have this rather curious state of affairs; there will be a twenty-two foot channel from the top of Lake Superior to the foot of Lake Ontario or rather to Prescott, where the Government is erecting a terminal to take care of transhipment at that point, when the Welland Canal is completed. And there will be a thirty foot channel up from the sea to Montreal. But in the middle of the waterway, the one weak link will remain. Of the whole two thousand miles of waterway there will be a matter of some eighty-three miles of rapids holding back from us the way to the sea and to the lakes.

To finish the deep waterway means really dealing with the following situation between Kingston and Montreal. There are two sections which have no rapids but which will require some improvements of channel to fix them for navigation. These are the Thousand Islands section, sixty-seven miles and the Lake St. Francis section, twenty-six miles, a total distance of ninety-three miles. Then come the two sections in which rapids have to be overcome to allow navigation, the first, Prescott to Cornwall, is known as the International Rapids section, forty-eight miles, with ninety-two foot drop and the National section devided into two divisions, the Soulanges division, eighteen miles, with eighty-three foot drop, and the Lachine division, twenty-three miles, with forty-eight foot drop, a total distance of eighty-nine miles with a drop of two hundred and twenty-three feet.



In this last eighty-nine miles the Lachine division has eleven miles of channel through Lake St. Louis, which might be deducted. So far, therefore, as the deep waterway problem is concerned, we might say that of the whole two thousand miles of waterway, seventy-eight miles of rapids bar us from the sea. Of this forty-eight miles are in the International Rapids section between Ontario and the United States and thirty miles are in the National Section in the Province of Quebec. Here is the waterway question reduced to its practical essentials; seventy-eight miles of rapids in the International and National Sections.

We have now seen, as I have traced the waterway from the Lakes to the Gulf that we now have or will have, when the Welland Canal is completed, a twenty-two foot channel from the head of the Lakes to the Welland Canal, and a twenty-seven-foot waterway through the Niagara peninsula to Lake Ontario, which will provide for the navigation as far as Prescott of vessels having a draft of twenty-two feet. The proposal now under consideration and reported upon by the engineering bodies appointed by both governments for that purpose is to complete a twenty-seven-foot channel from Lake Superior to Montreal, and owing to re-arranged lockages so as to bring about a reduction from forty-six to fifteen, an estimated saving in time by the removal of present obstacles of approximately twenty-four hours in the trip from the head of the lakes to Montreal.

At this point may I pause and perhaps explain why I have been asked here to-day. I am often called upon to make speeches at functions which I attend. Recently, in my home city I found myself at a military gathering where I was asked to say a few words. In trying to explain my standing, I pointed out to the audience that I was a medical doctor by profession and that by my association with the harbor of Montreal as president I had much to do with harbor docks. I made the observation that sometimes I was in doubt myself as to whether I was a medical doc. or a harbour dock. One of my military friends in the audience called out: "There's one thing, sure, you're not a dry doc." And on this occasion I am not here in the capacity of president of the Montreal Harbor Board nor

in the capacity of a senator, but possibly because I am a member of the National Advisory Committee which was charged with the responsibility of reporting on this great scheme.

The National Advisory Committee, as you are no doubt aware, was appointed by the Dominion Government for the purpose of advising it with respect to the best course to be followed in connection with the continuation of the deepening of the waterway from the Great Lakes to the sea; but before dealing with the recommendations of the committee I would like to outline briefly the nature of the preliminary steps which led up to the report made by the Advisory Committee in 1927.

In 1918, arising out of some power developments in the international section at Massena, a delegation fortified by an order-in-council passed by the government of the Rt. Hon. R. L. Borden, and consisting of Rt. Hon. Arthur Meighen, Hon. A. L. Sifton and some others, went to Washington to urge on the United States government the desirability of going on with a joint scheme of development of the St. Lawrence River. There was little or no response from that government and nothing was done until some time later when a delegation of United States farmers came to Ottawa asking that the matter be opened up again. And it was then that the government of the day took advantage of one of the clauses of the 1909 treaty and referred the whole matter to the International Joint Commission who submitted certain questions as to the engineering feasibility of the deep waterways to a board of engineers consisting of W. A. Bowden and Col. W. P. Wooten, representing the Canadian and United States governments, who in due course presented their report to the Commission. In addition to this the Commission had the power to, and did actually, carry on extensive and elaborate investigations extending over a period of two years in the course of which they examined leading experts and industrialists in both countries and as a result of their investigations submitted a report to the Dominion and United States governments in which they declared that the deepening of the waterway was quite feasible and that it would be advantageous to both Canada and the United States.



Following a suggestion made in this report the King Government, in co-operation with the government of the United States, appointed an enlarged engineering board consisting of three representatives of each country. The chairman of the Canadian section was Mr. D. W. McLachlan of Ottawa, one member of the Canadian section was Brig.-Gen. C. H. Mitchell, a resident of Toronto, and the third was Oliver Lefebvre, an outstanding engineer of the Province of Quebec.

Almost simultaneously with the appointment of this enlarged engineering board, the governments of both countries appointed an advisory committee, the Canadian committee consisting of representatives of practically all sections of the country, appointed for the purpose of considering the great waterway project and advising the government in connection therewith.

Before commenting on the report of the Advisory Committee proper, I should like to refer briefly to the information which the Advisory Committee had before it in preparing its Report as one of the criticisms which has been levelled at the Advisory Committee by uninformed persons has been that the various aspects of this problem have not been given sufficient study to enable the advisory committee to form a proper and intelligent conclusion in regard to the problem.

Let me review the information which I myself and members of the committee had at our disposal.

1. Report of the International Joint Commission, which extends over a two-year period and which was unanimously in favour of the joint proposal.
2. The report by the Grain Elevator Committee, appointed to advise the Departments of Marine and Fisheries, Railways and Canals and the Montreal Harbor Commissioners in regard to the elevators and other facilities necessary to be provided for to take care of the growing grain traffic. This report was particularly exhaustive and covered completely every phase of the grain movement.

3. An inter-departmental committee consisting of representatives of the various departments of the governments having information upon the subject made a report to the advisory committee of various phases of the undertaking during two years preceding the advisory committee's own report.
4. In addition to all this members of the advisory committee and myself were in constant touch with the operation of existing transfer facilities at Port Colborne and the St. Lawrence canal system, and also with the movement of traffic through the Great Lakes to Montreal, to such an extent that we had actually seen in a very practical way the growth of traffic in our great waterway to an extent which indicates that at the present moment some of the links in the fourteen-foot canal system have already almost reached their practical capacity. Confirmation of this will be referred to later.

We also had valuable information gained from the experience of the Montreal Harbour Commission.

Speaking for myself as a member of the Montreal Harbor Commission, I may say that when that body took over the administration in 1922 it was found that a programme which had been undertaken in 1907 and intended to provide facilities for a period of twenty-five years had been carried to completion and the existing facilities were then working to capacity. In order to lay down a plan for additional facilities to meet growing business on lines which would as nearly as possible keep pace with such increased business a committee was appointed by the Department of Marine and Fisheries and Railways and Canals known as the Grain Elevator Committee, composed of representative experts in transportation problems. The labors of this committee extended over a year and involved personal inspection of all the marine and grain handling equipment of the lake and waterways of the United States and Canada and of the tributary rail systems. Much as I should like to tell you in detail about the investigations of this committee I am afraid that time will not permit, but



I may say that as a result of the information collected by this committee all doubt was dispelled in our minds as to what should be done in respect of one question so far as the Montreal Harbour Commission is concerned, namely, that of providing greatly extended facilities at the harbour of Montreal and a further question, the complement of the first so far as I personally was concerned, namely, the improvement of the lakes, canals and river and elevator systems above Montreal for the purpose of adequately providing for future requirements.

Between 1922 and 1927 the capital outlay of the commissioners, authorized unanimously by Parliament reached the sum of $27,000,000 or a total of not much under the entire capital outlay of the preceding ninety or more years. And yet, gentlemen, and I should like you to consider this statement very carefully, in spite of the fact that our predecessors on the Harbor Board rushed to completion a twenty-five-year programme of construction in fifteen years, in spite of the fact that we spent the tremendous sum that I have indicated between the period 1922 to 1927 in desperate haste to try and keep pace with the flow of trade and commerce to and from the lakes, and to and from the ocean, we are today, at the close of 1928, short of adequate accommodation for the traffic that is pressing us and shipping companies desirous of coming to Montreal cannot be accommodated for lack of pier and shed facilities.

And now, Gentlemen, I am sure that you will agree with me when I say that no Advisory Board was ever better fortified with information and data relevant to the case than were the National Advisory Committee of which I was a member, and this brings me to the Report of that Committee: let me sum up some of our findings and the reasons therefor:—

1. On the exhaustive engineers' reports before us we unanimously decided that the undertaking of the deepening of the waterways was practicable and feasible.

2. We considered carefully the international and financial aspects of the whole project and a majority of the Board decided that in order to obviate any possible question as to sovereign rights Canada should build, own, con-

trol and operate every part of the works within the national section of the river, that is from St. Regis on Lake St. Francis to the Sea, all within the Province of Quebec and also to own, control and operate as at present the Welland Canal about to be completed. For the free use to the United States of these proposed facilities in the National Section and the Welland Canal as well as the stretch of river below Montreal we suggested to the Canadian Government that the U.S. Government would be only doing their share if they were asked to pay for the entire deepening from the International Boundary at St. Regis to Lake Superior, including the Sault Canal. And that in addition to paying for navigation in this section that they would turn over as part of their contribution to Canada 1,000,000 horse power of the 2,000,000 to be developed in the International Section. Having in mind the principles of private ownership in the Province of Quebec we suggested that private capital should build the canals and turn them over free and clear of all charges to the Federal Government in return for the power rights granted them under a term lease.

3. We suggested that a twenty-seven-foot channel, instead of a twenty-five-foot channel as recommended by the engineering body, be provided having in mind that it would be more economical to deepen in the initial stage than later.

4. We recommended that the Ontario Government be asked to name two or more engineers to further advise with the present engineering body on engineering problems in the International Section in order that the interests of this great Province as well as the interests of the Province of Quebec might be better safeguarded.

5. We recommended that the work upon the National Section between Lake St. Francis and Montreal be proceeded with in advance of the work on the International Section because of the fact that we felt that it would be necessary for some little time to be given to the private interests developing the power in that section to market their power, feeling that it would be possible on account of the large amount of power available for the requirements of Ontario to be supplied until the work on the International Section was gone on with.



Let me now state what I think the result of the carrying out of these recommendations would be: first, it would provide a twenty-seven-foot channel from the head of the lakes to the Gulf of the St. Lawrence for Canadian trade and commerce without an additional expenditure on capital account by the Federal Government.

Second, by adopting the plan suggested of carrying out the work in purely Canadian territory, that is to say, the Welland Canal, and from Lake St. Francis to Montreal, by purely Canadian agencies, and all under the control of the Canadian government in their construction and subsequent operation, Canadian sovereign rights would be adequately protected.

Third, the providing and safeguarding of the interests of Canada in the international section of the river through the organization of a joint board of control.

Fourth, the protection fully of the power rights on the purely national section for use in Canada alone and the development by the United States in the International Section of a million horsepower for Canadian use.

Fifth, the adoption of a continuation policy of successive development of a great waterway to supplement or supersede the existing waterway, the capacity of which in certain sections has already been reached, and thereby providing the cheapest possible form of transportation for the increasing trade and commerce of the country.

The Committee's report may be said to mark the end of one phase of the story of the waterway and the beginning of a second phase. It marks the end of the period of investigation. All the engineering enquiries have practically been completed and both governments have now received from their respective advisory committees recommendations as to national expediency. In other words both governments at least have a plan of action. It marks the beginning of the period of negotiations and execution by which the plans of the two governments it is hoped, will be fitted together into some sort of international treaty or agreement and then carried into effect.

I have shown you that completed official investigation, culminating in the report of the Advisory Committee indicates the feasibility, necessity and urgency for the con-

struction of the waterway. And I believe that uncompleted official investigation will show a like result. I refer to the special committee of the Senate which last session heard a large mass of testimony on the waterway project. Most of the evidence has been printed and I believe it will not be long before this evidence will be issued and made available to the public with a summary. In the meantime I think I may venture to say that the trend of opinion and of facts submitted to the committee completely supports the findings of the commission and reports and recommendations of the engineers and the various bodies which have been investigating and considering this subject for so many years.

Of the evidence which was given before this committee perhaps I may be pardoned if I mention (I shall do so very briefly) what one or two of the technical transportation men had to say about the necessity and urgency of the project. And they are pretty well in agreement about the matter.

Colonel A. E. Dubuc, Chief Engineer of the Department of Railways and Canals, made this significant statement:

> "With the last six or seven years as a guide, it seems clear that even if you started the construction of the deep waterway today, long before you could complete it you would have congestion in the canals and the present system would not be able to cope with the traffic that would offer."

Asked as to whether this would mean loss of traffic, Colonel Dubuc pointed out that it would either be diverted to American ports or else might find its way down to the lower end of Lake Ontario and then move to Montreal at whatever extra cost this would mean. And Col. Dubuc also pointed out the folly of seeking to patch up the present system when he said:

> "To take care of all the traffic which it is reasonable to assume will present itself in the next ten years, even anticipating only a yearly increase of 10 per cent. would need the rebuilding of all the present canals between Lake Ontario and Montreal, the cost of which would be totally unthinkable in view of the fact that it would be only a temporary relief pending the building of the deep waterway."



Mr. Alex. Ferguson, assistant general manager of the Montreal Harbor Commission, and with a wide experience as engineer in railway and other transportation matters, came to this conclusion:

> "The canal statistics, those published for 1927, contain a statement to the effect that under the present conditions of traffic and average cargoes, the estimated theoretical capacity of the Cornwall canal is 9,000,000 tons, and of the Soulanges and Lachine canals, 12,000,000 tons. As the total traffic, both through and way, in 1927, was 7,912.952 tons, the Lachine and Soulanges are up to 66 per cent. of their capacity. When I first heard those figures I plotted a time tonnage chart to get an idea of when the ultimate capacity would be reached. The projection into the future of the general average rate of increase in tonnage from 1920 to 1927 along a straight line indicates 12,000,000 tons in 1935.

At the risk of wearying you I should like to quote another important statement by Mr. Ferguson in reply to a question as to what economic reaction might be expected if, after the Welland ship canal is opened, the St. Lawrence waterway is not enlarged: Listen to this and think it over carefully: It sounds an alarm about what a choke on the St. Lawrence route might bring to our grain route and to the price and production of grain—and that would mean a lot to a grain-growing country like Canada.

> "I have already expressed the opinion that the all-water route is the controlling factor in the cost of carrying grain from the Middle West to the seaboard. As long as the canal route is carrying less than its full capacity other routes are in competition with it, and have to meet the rates established by it because all grain tributary to it has the choice of moving by it. When it has reached capacity and there is still a surplus, that surplus must go out by other routes, and those routes, so far as the surplus is concerned, are no longer in competition with the water routes. The cheapest of the other routes then becomes the con-

trolling factor, and the surplus will have to pay the rates established by it. This will bring about an increase in rates and the all-water rate will rise to the new level. A choke on the St. Lawrence will thus cause an increase in the cost of moving the whole crop tributary to the St. Lawrence and this will, in turn, react on the price of grain, and that on the production of grain. The tendency will be to retard development of grain-growing areas in the west."

I don't want to risk worrying you with too much relation of the testimony of experts, but would like to give you the opinions of two more. After all it is to expert and technical opinion that we must look largely in a technical and intricate question.

Mr. R. A. C. Henry, director of the Bureau of Economics of the Canadian National Railways, with a long engineering experience in transportation problems, and a member of the Grain Elevator which made an exhaustive inquiry into lake and river navigation problems in connection with an inquiry for the Montreal Harbor Commission, is another expert who points to the necessity for, and the danger of delays in, pushing forward the waterway. Mr. Henry pointed out in his evidence that "the capacity of the canals is within measurable distance of being reached" and sounded a note of warning when, in reply to question about United States competition through developments at Oswego and Albany, he said: "We have been able in these last few years to influence the traffic through that channel (the St. Lawrence route) because it is demonstrated to the world that it is a reliable channel. If anything happens to congest it," emphasizes Mr. Henry, "it is altogether probable that the grain will find other outlets and that it may be rather difficult to get it back."

From this aspect of the danger (if we delay the completion of the waterway project) of the United States establishing routes which may divert grain shipments through their ports, may I turn for a few moments to another international aspect of this waterway proposition in an endeavour to correct some erroneous impressions.

In the first place, let us get rid of the notion that this waterway is an entirely Canadian possession. It isn't, and



neither is it an entirely American possession. It is a joint possession and must be regarded as such and must essentially be handled as an international undertaking. It has been so handled all through the years, and I, for one, am free to say, and I hope you will agree with me that there has been a reasonable and fair give and take on both sides of the boundary and a desire for co-operation in a matter that must essentially be co-operative.

Let us have another look at the map to assist us in understanding something of the international situation. And the first thing we observe is this Soo canal on the United States side. Through this canal passes the great bulk of Canadian traffic. And why? Because, while there is a canal on the Canadian side it is inadequate for traffic needs. So Canadian traffic goes through the Soo canal on the United States side quite as freely as traffic of American origin. And the Americans spent a lot of money on this canal. Then when we come to the St. Clair and Detroit Rivers, what do we find? We find that the United States has deepened and widened the channels in this section and at certain congested sites that an up and down channel has been provided. One of these, the South Pass Channel in the St. Clair river and the St. Clair flats, lying partly in the United States and partly in Canada, has been under improvement by the government of the United States from time to time as necessity required, ever since an initial appropriation was made by Congress in 1852. Large expenditures have been made by the United States from year to year down to the present time in these waters, as well as in the Detroit river channel in every instance with the acquiescence of the Canadian government by an order-in-council. This, I understand, has been the procedure and the only procedure deemed necessary whenever works have been undertaken upon the channels in which the two countries have a joint interest. Similarly, by joint acquiescence and arrangement of the governments, regulations for shipping, lighting and buoying the channels have been established from time to time as conditions required.

To keep vessels afloat in navigable waters having adequate draft from Lake Superior to the sea, mariners cross and recross the international boundary, now in Canada,

now in the United States, and totally oblivious as to where the imaginary line lies, whether they sail over the Sault Ste. Marie river and locks, over the restricted channels of the St. Clair and Detroit rivers or down the international section of the St. Lawrence river itself between Presscott and Cornwall.

I could say more on this subject; I could refer you to the tremendous percentage of Canadian grain that goes through the American Soo locks and to the other advantages which Canada possesses in the reciprocal arrangement made by the Treaty of Washington, 1871, whereby Canada secured the free use of American canals and channels upon like terms of equality for the use by the United States of the Canadian system of canals from Lake Erie to Montreal, but I think I have shown you enough to have you realize that the usefulness and efficiency of the route is dependent upon the ability of every one of its links to operate in complete co-ordination with every other, and to show you that there is no basis for this curious form of hysteria which has developed in certain quarters against what is called "the American plan", implying that there is some sinister design at Washington to overreach our government and to impose upon it an improvident bargain; that there is no danger of our sovereignty being invaded or imperilled, and that in seeking to have an international and reciprocal arrangement we are doing nothing more than would be done by any group of safe and sane business men as part of an ordinary business deal—making a fair arrangement or business agreement that will protect the rights of all parties. Our sovereign rights and privileges will be retained and maintained by treaties just as they have been in the past, and I do not think there is any reason to believe that the Canadian statesmen of today are any less capable or patriotic than those who in the past saw that our rights and privileges in the waterway were not infringed.

Now having traced the waterway through at least a number of its ramifications, and having, as I hope, laid the ghost of American aggressiveness, let us regard the waterway as an accomplished fact and see what it offers



in the way of benefits to the country from the standpoint of both navigation and power.

In navigation we shall have the benefit, for one thing, and a most vital and important thing, of a big reduction in the rate for carrying grain from the head of the lakes to Montreal. Experts like Mr. D. W. McLachlan, of the Department of Railways and Canals; Mr. R. A. C. Henry, of the Bureau of Economics, Canadian National Railways; Mr. Thomas W. Harvie, General Manager and Secretary of the Montreal Harbor Commission, and Mr. Alex. Ferguson, Assistant General Manager of that Board, are agreed that this reduction will not be less than three cents and some of them figure it a few cents higher than that.

These experts are of the opinion that if the improvements in the international and national sections are carried out as suggested in the report of the National Advisory Board—without expense to the Dominion Government and consequently without expense to navigation, that the movement of freight through the canals would be appreciably increased and that with the increase in size of canals and locks would come increase in the size of vessels and bigger cargoes. That for this and other reasons the region served by the St. Lawrence route would become considerably larger and even a portion of the wheat which now moves from Alberta to Vancouver would likely flow through the lake route.

So that you may realize the importance of this saving in rates, may I remind you that our grain has to travel two thousand miles to the seaboard, as compared with one hundred and fifty miles in the Argentine, our greatest competitor in the world markets, which means a differential in Argentine's favor of about twenty cents a bushel.

And when I tell you, also, that one-eighth of a cent a bushel is sufficient to divert cargoes from the St. Lawrence ports to United States ports, you will understand what a difference of three cents per bushel means to all Canadian interests.

The country would have the advantage that lower rates on other commodities would mean to the trade and commerce of the Dominion. Millions of dollars would be saved for Canadian farmers by the lower carrying rates

on grain alone. The benefits to the country would be innumerable, but with the time at my disposal I cannot deal with them in detail. I think, however, it will be apparent to everyone what the benefits will be and that an open way to the sea means a growth of trade and commerce through the Dominion that is difficult to measure.

In the construction of the waterway, in addition to the rewards which the completion of the project would mean to navigation and the attendant prosperity to the commerce and industry of the country, there is the other prize of power. Navigation and power are joint gifts contained in the waterway, the one supplementing and making possible the other and both of them operating to the increased prosperity and development of all Canada. To regard them as separate is to miss the high national significance of the whole project.

And there are five million horsepower in the tumbling waters between Kingston and Montreal. Not all of it will be developed simultaneously, but all of it is quite certain to be needed within a twenty-year period.

And here let me correct a tendency in many quarters to regard the benefit of power development as confined chiefly to the provinces wherein it is developed. For while it is true that industries using the power will be chiefly located close to sources of supply which will give a radius for effective use of about three hundred miles, as far west as Hamilton and beyond Quebec City in the east, we must remember that the increased population and industrial expansion which will be located in Ontario and Quebec represent just as definite a factor in the prosperity and growth of the Western Provinces and of the Maritimes as the wealth of the western grain crop now represents in the prosperity of the east.

We must not lose sight of the fact that we Canadians are one people, living in one country. Pouring wealth into one end of the country raises the level of the whole, just as a river pouring into a lake creates an equal higher level all over its surface.

As an idea of what power means in the growth of our country, perhaps I may repeat here some of the information which I gave to the Senate in the course of a discussion in that body last session.



From estimates published in the Journal of Electricity it was shown that each 1,000 new horsepower developed means three hundred and eighty-five workmen employed by the industries using the power, and that these three hundred and eighty-five workmen represent, with their families, a new population of 1,925 people. Applied to the 4,000,000 Caandian horsepower which would be developed in the international and national sections of the St. Lawrence, this means a total new population of over 7,000,-,000 people. In terms of new industries, according to the experience of power groups in the United States, the 4,000,000 horsepower means $2,500,000,000 of new money invested in this country, building factories to use the power.

There are Canadian economists like Professor Goforth who feel that the foregoing calculation is too high, but even cutting these figures in half, we would still have a population of nearly four million people in Ontario and Quebec during the next twenty years employed in using the power alone. And what that means in reflected prosperity to the whole country, in trade and commerce, in industry and in agriculture cannot really be estimated in dollars and cents. It means more than trade and commerce. It means in effect almost a new nation.

We have seen something of what the waterway will mean to the prosperity of the whole country and perhaps to a gathering of this kind, I should say something about what it will mean to Toronto.

In the first place, Toronto will share, in the same way that other parts of the country will share, but in greater degree owing to the industrial and commercial supremacy which it occupies as the greatest centre west of Montreal, in the general reflected prosperity which the waterway will bring to the Dominion as a whole.

The city will have the advantage of cheap water rates, one-fifth to one-sixth the cost of rail transport; it will be able to get coal and lumber direct from their sources with little in the way of transhipment, as well as many other basic and finished commodities.

And undoubtedly the city will gain in tramp and coast-

wise shipping which a twenty-seven-foot waterway from the sea to the head of the lakes will bring.

Frankly, I must say here, as I have said in Montreal, I do not think Toronto will become an ocean port, in the sense of Montreal, where steamers can figure on an unbroken passage from the sea and must run on schedules with assured cargoes.

But while I agree that the liner will not go above Montreal, I believe, on the other hand, that the tramp, or the vessel which is not tied to any definite route and for the most part independently operated, presents a different situation and that this type of vessel or a fair proportion of those which enter the St. Lawrence, will traverse the inland route.

And if Montreal still remains the premier port of Canada, as I am firmly and frankly convinced it will, there is no doubt that Toronto will share in Montreal's reflected prosperity, just as the rest of the country will. Ocean boats will discharge their cargoes to lake boats at that point and with the way to the lakes open for larger boats and a reduction in time through reduced lockages, trade and commerce in and out of Toronto is bound to be speeded up.

Unquestionably, also, Toronto will benefit tremendously through the development and distribution of the power which the waterway will provide in the international and national sections.

Let me sum up the situation as I see it, and I would ask you to take away with you and carefully consider these points.

We have seen something of the history of the St. Lawrence waterway; we have followed its route on the map and have absorbed something of its geography; we have seen the situation as it exists to-day, or will exist with the completion of the Welland Canal; we have looked at the proposed plan and I think we are agreed that it is feasible, practical, necessary and urgent; we have considered the international aspect and I think we are not worrying over the fear of American aggression or the loss of our sovereign rights; we have seen that the proposition involves no further cost to the Dominion exchequer or the taxpayers; we have considered the general and incalculable benefits to be derived from the waterway in navigation and power and I think we must agree that they are possible and that the whole waterway project is a consummation devoutly to be wished.



And in my concluding words I would remind you, gentlemen, that for one hundred years and more the Canadian people have been developing the St. Lawrence waterway, increasing the depth of the canals and enlarging the dimensions of the locks as time went on and commerce grew.

It has been a steady and progressive movement, and where is the authority that will undertake to limit the extent of the development which should suffice to meet the demands of our growing commerce, the industrial expansion and the hopes and aspirations of a young but yearning Canada for a greater and more prosperous nation?

An old formula declares that to stand still is to retrograde. The Canadian people, I venture to believe, will not long suffer this fundamental service to continue on the basis of the water transport standards of thirty years ago.

It is inconceivable, gentlemen, that the rapidly expanding industrial and commercial needs of the St. Lawrence basin will permit five million horsepower of electrical energy, and the full potentialities of one of the world's greatest waterways to remain much longer undeveloped.