

## St. Lawrence River Winter Navigation Possibilities.

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The possibilities of navigating the St. Lawrence in winter and making Quebec an all year open port, may at first glance look to many as a local subject affecting Canada alone, and, therefore, of little concern to the United States. However, if we throw a look at the map of the North American continent, we find that the routes of transportation by rail and water are so intimately connected and interlocked in all the territory along the St. Lawrence and the Great Lakes, that anything which is apt to affect or prolong the navigation on any portion of this great waterway is of vital concern, not only to Canada, but also to our great enterprising neighbor to the south. Any one who, in recent years, has followed closely the construction of railways in Canada, and the rapid improvement and development of our trade routes, may well ask himself why the port of Quebec from which flows clear and open water during 12 months of the year right through to the Atlantic, is closed during 4 months to ocean traffic, and this at a time when the use of that great waterway would be of immense advantage for the transportation of the ever growing products of the west. What is the chief reason for this unfortunate state of affairs? 1. Is it the lack of facilities in the port of Quebec? 2. Are the railways serving Quebec inadequate to handle the traffic which a more extended use of the port would develop? 3. Is the cause to be found in the fact that winter navigation as far as Quebec is a physical impossibility? To the first two questions I will reply briefly.

**Quebec Port Facilities**—Quebec, located on the St. Lawrence River, 181 miles above the entrance to the Gulf of St. Lawrence, at Father Point, and 166 miles below Montreal by the river, is in a commanding position at the widening of that great natural waterway. The facilities afforded in Quebec harbor for the accommodation of large vessels were demonstrated in a decisive manner when, during the embarkation of the first Canadian overseas contingent, in Sept., 1914, thirty-one steamships, ranging from 4,000 to 19,000 tons, were accommodated at the deep water docks and wharves, for taking on board men, horses, ammunition, and supplies for the contingent. In 1918, the last year of the war, there were on several occasions 14 large steamships lying at the berths at the same time, aggregating over 150,000 gross tons.

The harbor facilities are such that steamships of any size, or class, can be berthed at any time, day or night. The present shed space for ocean steamships has a capacity of 523,000 sq. ft. Eleven of these sheds have railway tracks serving them. The site selected for the development of wharves is unusually favored, from the standpoint of desirable requirements for water terminals. In addition to the large natural basin, with its many shelters, from a point several miles below Quebec, in fact, as far as Murray Bay, a distance of 85 miles, to 5 miles above the City of Quebec, the port affords the most ideal shelters for ships awaiting loads of wharf assignment, and provides ample sea room to guarantee at all times a full reserve of vessels to occupy dockage. This is a

favorable feature in that, by providing the proper car storage room, the transportation companies can be always assured of constant employment of the yard and dock labor, which is necessary to maintain a permanent organization as well as an efficient one. The port of Quebec, in recent years has been properly and adequately equipped for handling of passengers, grain and other freight traffic. Unlimited space exists for further improvements in sheds, grain elevators, docks, etc., as the development of trade justifies. (For further information, see Quebec Harbor Commission's annual reports).

**Railways Serving Quebec**—From the standpoint of railways converging into Quebec the port offers unrivaled facilities. It is served by three through transcontinental railways, under unique management. The Canadian Pacific Ry., with its numerous branches and connections by rail and water all over the world; the National Transcontinental and the Canadian Northern Ry., now owned and operated by the Canadian Government. Besides, it is served by the Grand Trunk Ry., the Quebec Central Ry., the Quebec and Saguenay Ry. and the Intercolonial Ry.; the two latter roads owned and operated as part of the Canadian National Rys. These railways form a vast net all over Canada and tap all the great trade routes of the North American continent. Through the building of the National Transcontinental, Quebec has been made nearer to Winnipeg by some 214 miles, and owing to the low gradients of that railway, the grain of the west can be hauled at a much reduced rate. All these railways have direct access to the Quebec Harbor Commission's docks.

**Winter Navigation**—The approach by water to the City of Quebec via the Gulf of St. Lawrence and the St. Lawrence River, affords a most desirable entrance to the port of Quebec for the largest of ocean vessels, but in the past, this approach has not been navigated during the winter, usually closing early in December and remaining so until the latter part of the following April. Without seriously going into the problem, this condition has been accepted, and still, by some authorities, it is argued that navigation on the St. Lawrence River from the Gulf to the port of Quebec is impossible during winter. The principle obstacles that have been accepted in the past as making the navigation of the river impossible are, by order of importance: 1. Ice. 2. Snow storms. 3. Absence of navigation guides.

As early as the middle of November, in some years, the ice forming on the river above Montreal and to a point at Cap Rouge above Quebec, gradually flows with the current to the narrows of the river at Cap Rouge and at this point forms an ice bridge, effectually backing up the ice as far as the port of Montreal. Below this point the ice forms in the small bays and the gulf along the river to the port of Quebec and in the Straits of Belle Isle in the same manner, and with the rising of the tides, it is severed from its shores anchorage and forced by northeasterly winds into the channel. This ice obstacle never forms to any great extent in flocs of sufficient size to impede navigation and with the

outgoing tide usually disappears or remains in such small cakes as to be almost negligible as an obstacle. I give here in support of this contention the names of vessels and trips made in winter, from Quebec, after the official close of navigation:

### December—

Montmagny left for Halifax Dec. 9, 1910.  
Carleton left for Anticosti, Dec. 13, 1911, returning Dec. 22.  
Montmagny left for Halifax, Dec. 13, 1913.  
J. D. Hazen left for Archangel, Russia, Dec. 21, 1916.  
Sicoa left for Halifax, Dec. 21, 1917.  
Castalia left for sea, Dec. 30, 1916.

### January—

Montcalm left for north shore ports, Jan. 14, 1913.  
Favorite left for Boston, Jan. 11, 1918.  
Montcalm left for Gaspé ports, Jan. 16, 1918, returning Jan. 23.  
Canadian Voyageur left for Halifax, Jan. 21, 1919.

### February—

Lady Grey left for north shore and Gulf ports, Feb. 29, 1908.  
Montcalm left for Gulf ports, Feb. 5, 1911.  
Montcalm left for Gulf ports, Feb. 9, 1912.

### March—

Savoy left for Gulf ports, Mar. 26, 1903.  
Montcalm left for Gulf ports, Mar. 23, 1910.  
Montcalm left for Gulf ports, Mar. 16, 1912.  
Montcalm left for Gulf ports, Mar. 31, 1913.  
General Wolfe left for Gulf ports, Mar. 24, 1910.  
Aranmore and Natashquan left for north coast, Mar. 28, 1912, returning April 6.

### April—

St. Olaf left Quebec for Gulf ports, April 7, 1900.  
King Edward left for Gulf ports, April 9, 1904 and April 12, 1905.  
Polino left for Newfoundland, April 12, 1905.  
Aranmore left for north shore ports, April 4, 1909.  
Aranmore left for Gulf ports, April 9, 1911, returning April 19.  
Savoy left for Anticosti, April 15, 1911, returning April 22.  
Laurentian left for north shore ports, April 15, 1916.  
Druid left for Gulf ports, April 4, 1917.

These sailings have been made in winter, during all kinds of weather, with signal stations all closed up, and without any of the improvements which are suggested hereafter to make winter navigation safe. This fact alone should suffice to convince the unprejudiced mind that, with the inventions and means that modern science has placed at our disposal, winter navigation on the St. Lawrence as far as Quebec can easily become an accomplished fact.

**Ice**—Another obstacle to navigation in the form of ice affecting the operation of the Gulf is caused in the spring from the middle of April to the middle of May by the rush of ice out of the Gulf, causing a block between the St. Paul Islands, northwest of Cape Breton Island, and Cape Ray, the southwest point of Newfoundland. This block, which sometimes lasts for two weeks and completely prevents the passage of ships, is known as the bridge and it is a matter of record that at one time 300 ships have been detained by this obstacle and many wrecks have occurred in consequence on the Newfoundland coast. Ice from the Gulf is generally met with in Cabot Strait early in January, and at this time it is thin, but increases gradually to as much as 5 ft. thick. Occasionally small bergs, some 18 ft. high, are seen, although a large berg is seldom visible, and the ice has been known to float in this manner as late as the beginning of June. The prevalence of northwesterly and northerly winds drive the ice towards the strait and along the north coast of Cape Breton, while incoming vessels meet no ice except southward of St. Paul Island. Southwest gales occasionally take ice be-