



THE CANADIAN PILOT

Pilotage Makes a Strong Net Contribution to Canada's Economy

Canadian Marine Pilots' Association

Marine Pilotage in Canada: A Cost Benefit Analysis

Prepared by
TEMS
Transportation Economics & Management Systems, Inc.

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A Cost Benefit Analysis report

Message from the President



Once again, the Government of Canada has launched a review of matters related to pilotage in Canada. Those who follow the pilotage file closely will know that there have been many inquiries and investigations into pilotage issues over the years, a fact that is especially impressive when one considers that no other aspect of transportation comes close in terms of the number of times that it has been subject to review.

Others might find grounds for complaint under these circumstances. For my part, I think this most recent review provides an opportunity to not only clear the air on a few transactional issues, but also creates space for a discussion on how the country balances such trade-offs as costs and benefits, and growth and the environment.

Just as every action has a reaction, every transportation activity or initiative comes with its own consequences. The most important task of both government policy-makers and players in the transportation sector is to find the right balance between what is deemed to be a transportation priority and what its cost might be, not just in terms of dollars but also in terms of broader social and environmental considerations.

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In fact, this is where the concept of “social license” comes into play. The extent to which potential negative impacts of a transportation initiative can be mitigated by specific practices or measures, is the extent to which it can be supported, thereby allowing Canada to reap the benefits without incurring undue cost.

Pilotage represents an important measure that enhances the social license for many marine transportation activities and projects

that might otherwise create unacceptable risk. In this regard alone, pilotage represents extraordinary value. To further inform these considerations, the Canadian Marine Pilots' Association recently commissioned a study to analyze the evidence pertaining to the benefits that Canada's world-class pilotage system has in terms of safety and efficiency. This is the subject of an article in this issue of *The Canadian Pilot*.

I will consider the current review of pilotage a success if the very significant, indeed essential, contribution that pilotage makes not only to marine transportation but to Canada's economy as a whole is fully recognized.

James Cook

CARTOGRAPHER OF THE ST. LAWRENCE

The Enlightenment was an era that saw vast intellectual achievement, when individuals such as Newton, Locke, Voltaire, Franklin and countless others, revolutionized the way we think and understand the world we live in. Another such individual was Captain James Cook.

Born on 27 October, 1728 in North Yorkshire, James Cook first travelled to Canada in 1758 as master of the Royal Navy's *Pembroke*, sailing to Halifax in the context of the Seven Years War. It was in Halifax that Cook first learned how to survey. Impressing his superiors with his extraordinary detail and precise mapping skills, he eventually gained the attention of General Wolfe and was looked upon to help capture the last main French stronghold of Québec City.

In 1759, in preparation for the assault on Québec, a highly comprehensive chart of the St. Lawrence River and Gulf was made, facilitating the arrival of Admiral Saunders' fleet. Manuscripts of the time suggest that Cook played a leading role in the process, ultimately gaining credit for the construction of the *New Chart of the River St. Lawrence*, which was published in London in 1760 and became the standard chart for the difficult waterway for years to come.

After the successful siege of Québec by the English, Cook's charts came to be trusted in a way that those of his predecessors had not, due to his technique of blending land-based triangulation surveying with offshore running surveys. Cook's combination of information from land and sea was highly detailed, for example accurately showing whether individual rocks and shoals were covered at high water.



Cook would eventually lead the charting of Newfoundland's coastline over five seasons, the South Pacific – including Tahiti, New Zealand and the east coast of Australia – and accepted the challenge that had defeated Europe's finest seamen for almost three centuries: the quest for a northwest passage. It was on this final voyage that Cook was killed in Hawaii.

Cook's achievements for the time went simply unmatched; he discovered new lands, helped map several large areas of the world, and supported the effort that made England a global empire. It is interesting to know, however, that he spent many of his formative years on Canadian waterways, and to reflect on the role these years may have played in his life.

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CANADA'S COASTING TRADE

and its Role in the National Economy

Like most countries, Canada protects its domestic shipping by requiring that goods travelling by water from one Canadian point to another must be moved on vessels that are both Canadian-flagged and crewed.

This requirement, which is enshrined in the *Coasting Trade Act*, was called into question in the Final Report of the *Canada Transportation Act Review*, tabled in Parliament in February 2016. Given that the coasting trade had not been the subject of discussion or consultation with stakeholders, it came as something of a surprise that the report recommended the elimination of these provisions protecting the domestic industry.

Because acceptance of the Review Panel's recommendation would have had a devastating impact on coasting trade, the Canadian Merchant Service Guild (CMSG) – which in addition to marine pilots includes Masters, Mates, Engineers and other ships' officers in its national membership of nearly 4,000 – commissioned a study to determine what the actual consequences of the Panel's recommendation would be on Canadian jobs and the economy.

The study examined impacts on Canadian jobs, wages and tax revenue, as well as on marine training institutes and the country's capacity to sustain a robust maritime sector. Eliminating the requirement for Canadian content would lead to the loss of 12,000 jobs. Over half of these would be seafarers, who would be replaced by foreign crews. In addition, the loss of spending power from those jobs would result in the loss of more than 5,000 other jobs across the economy. These job losses mean that \$746 million in wages, per year, would be lost to the Canadian economy, and a further \$148 million in income tax revenues would be foregone.

The seven marine training institutes, which rely on demand arising from the coasting trade for qualified Canadian personnel to generate their student enrollment, would virtually disappear, along with 237 full-time equivalent jobs in teaching, administration and management, and the \$18.4 million in wages that they generate.

The loss of highly-skilled Canadian mariners and the training institutes that qualify so many individuals working in the marine industry would also compromise the very existence of Canada's maritime sector. The country's capacity to deliver strategic sea-lift would be virtually eliminated; national sovereignty, especially in disputed waters would be at risk; and foreign interests would likely overwhelm Canada's domestic shipping industry.

All in all, the study delivered a highly-credible and compelling argument against changing the provisions of the *Coasting Trade Act*. The CMSG presented the study's findings to Transport Canada officials, who welcomed the evidence-based input to the policy discussion. As it currently stands, it seems unlikely that the Review Panel's recommendation will be implemented by the federal government.

5TH TRIENNIAL CMPA CONGRESS

The fifth Congress of the Canadian Marine Pilots' Association was held in Montreal from February 14 to 17, 2017. As was the case with previous congresses in Quebec City, Vancouver, Halifax, and Niagara Falls, the event was a successful opportunity for leaders in the maritime sector to discuss important issues of the day, and enjoy each other's company.

Joining marine pilots from each of Canada's four pilotage regions, were shipping industry leaders, senior government officials, port and pilotage authority executives, and pilots from a number of U.S. and European jurisdictions.

The Mid St. Lawrence pilots played host to the Congress and those attending were unstinting in their praise of the hospitality, accommodation and fine meals.



The Honorable Marc Garneau, Minister of Transport, represented the Government of Canada during the opening ceremonies.



Participants in the opening ceremonies (left to right): Minister of Maritime Affairs for the Government of Quebec, Jean d'Amour; Capt. Pierre Vallée, then President of the Corporation of Mid St. Lawrence Pilots; IMPA and CMPA President, Capt. Simon Pelletier; and Capt. Bernard Boissonneault, CMPA Vice-President for the Laurentian Region and President of the Congress host Committee.



Participants in the session on "Performance Excellence in the Shipping Industry" (left to right): Mr. Marc Gagnon, Director, Government Affairs and Regulatory Compliance, Fednav Limited; Mr. Serge Le Guellec, President and General Manager, Transport Desgagnés Inc.; Session Chair, Mr. Gaétan Boivin, President and Chief Executive Officer, Trois-Rivières Port Authority; and, Mr. Daniel Dagenais, Vice-President Operations, Port of Montreal.



Participants in the session "Pilotage Authorities and Service Delivery": Capt. Sean Griffiths, Chief Executive Officer, Atlantic Pilotage Authority; Mr. Fulvio Fracassi, Chief Executive Officer, Laurentian Pilotage Authority; Capt. Kevin Obermeyer, Chief Executive Officer, Pacific Pilotage Authority; Session Chair, Capt. Simon Pelletier, IMPA and CMPA President; and, Mr. Robert Lemire, Chief Executive Officer, Great Lakes Pilotage Authority.

PILOTAGE ACT REVIEW

On 31 May, 2017, three Ministers of the federal Cabinet announced measures to promote marine safety and the marine environment. One of the Ministers, the Honorable Catherine McKenna, Minister of Environment and Climate Change, provided details of the *Pilotage Act* Review that had been announced previously by Transport Minister Marc Garneau, in November 2016.



Participants in the Session titled “Change and Constancy in Maritime Transportation” (left to right): Dr. Jan Hoffmann, Chief of Trade Logistics Branch, United Nations Conference on Trade and Development, and President, International Association of Maritime Economists; Session Chair, Ms. Nicole Trépanier, President and Chief Executive Officer, St. Lawrence Economic Development Council; and, Dr. Jean Paul Rodrigue, Department of Global Studies and Geography, Hofstra University, New York.



During the Gala Dinner, Capt. Marc-André Poisson (on the right), President of the Marine Accident Investigators' International Forum (MAIIF) and Director of Marine Investigations at the Transportation Safety Board of Canada kindly presented CMPA and IMPA President, Capt. Simon Pelletier, with a frame of the poster that was jointly developed by MAIIF and IMPA in the context of an international campaign to raise awareness on the importance of effective teamwork on the bridge of vessels.

The Review, to be chaired by Marc Grégoire, former Commissioner of the Canadian Coast Guard and former Assistant Deputy Minister of Safety and Security at Transport Canada, will focus on topics such as tariffs, service delivery, governance, and dispute resolution.

In making the announcement, Minister McKenna noted that “Marine pilotage in Canada has a success rate of over 99%, providing Canadians with the assurance that ships in their waters are travelling safely to and from their destinations. (...) this *Pilotage Act* Review is a commitment to ensuring Canada has the modern legislation and regulations needed to inspire this confidence.”

An important dimension of the Review will be extensive consultations with stakeholders and, in this regard, the Canadian Marine Pilots' Association intends to play a significant role. In addition to preparing national and regional submissions for consideration by the Review Chair and his team, marine pilots plan on an active engagement and dialogue with officials as the exercise unfolds.

A first round of consultations is scheduled to take place through the fall, with a second round, focused on draft recommendations, taking place in the spring of 2018. A report will then be provided to the Minister of Transport for consideration. Further information on the process is available at www.tc.gc.ca/en/reviews/pilotage-act-review

Although pilotage has been the subject of many reviews over the years, the CMPA regards this latest initiative as an opportunity to once again affirm the great value of pilotage to marine safety, maritime transportation, and the Canadian economy. In this regard, the CMPA's recent cost-benefit analysis of pilotage will provide an important evidence-based measurement of the value of Canada's pilotage system (see related article).



Pilotage Makes a Strong Net Contribution to Canada's Economy

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Editor's Note: Anyone interested in obtaining a copy of the study should contact the CMPA directly at tlafamme@apmc-cmpa.ca.



The benefit from Canada's world-class pilotage system has always been clear in terms of safety and efficiency. Putting a dollar value on this benefit, however, has always been elusive.

For this reason, the Canadian Marine Pilots' Association commissioned a cost-benefit analysis of pilotage in Canada. The report, prepared by Transportation Economics & Management Systems and issued in March 2017, provided, for the first time, a comprehensive measure of pilotage's economic benefit.

What makes this study especially credible is the fact that its findings are based on comparative data, allowing for an empirically-valid statistical analysis. The Great Belt of Denmark is to thank for this. This marine transportation corridor has a mix of piloted and non-piloted traffic, which yields data on accident rates for both types of traffic. This circumstance is very rarely found anywhere else in the world.

Using the lowest statistical rate of probability derived from this Danish data that a non-piloted vessel will have an accident, the study found that safety benefits of pilotage were enormous. For example, in respect of oil tankers, the cost benefit ratio for pilotage is 62 to 1.

In the case of cargo ships, while the environmental costs of accidents are nowhere near as large as they are with oil tankers, they remain huge in relation to the avoidance cost of pilotage. A U.S. Coast Guard analysis puts the current cost of such an accident at \$3.7 million dollars, resulting in a 3.3 to 1 cost benefit ratio.

Overall, given the mix of tanker and cargo traffic, the contribution to safety arising from the provision of pilotage services has a cost benefit ratio of 18.9 to 1.

Moreover, the many ways in which pilotage contributes to efficiency, also has an economic value, which was quantified in the study. The navigational efficiency measures examined by the study included:

The security of supply chain arrangements as exemplified in a Port of Saint John case study;

Innovative practices for navigation on the Great Lakes and St. Lawrence River, including nighttime navigation during the winter on the St. Lawrence and extended navigation season on the Great Lakes; and,

New navigational and docking techniques at Vancouver and Halifax, allowing for growth in Canadian ports' market share against U.S. competitors.

The cost benefit ratio, based on only the efficiency benefits identified in the specific cases cited above, is 2.98 to 1.

Overall, the study put the cost benefit ratio of the combined safety and efficiency benefits generated through pilotage at 21.9 to 1. This means that the \$208 million spent on Canadian pilotage buys at least \$4.56 billion in economic benefit to Canada.

It is no exaggeration to say that the economic benefit of pilots to Canada is truly staggering.

The effort and rigour that has gone into this study to quantify economic benefit, both in terms of safety and efficiency, is groundbreaking. The work has been shared with Government of Canada officials and will certainly inform discussion around pilotage, especially in the context of the current review of pilotage being led by Transport Canada.

A LOOK BACK ...



Quebec Government Minister for Maritime Affairs Participates in Pilotage Assignment

Last March, the Minister for Maritime Affairs of the Government of Quebec graciously took the time to see with his own eyes how pilots conduct vessels on the St. Lawrence River when he participated in a pilotage assignment from Quebec City to Trois-Rivières. The Minister was at the pilot station at 05:30 and debarked at 12:45. On this picture, Minister d'Amour is in the middle with, on his right, Capt. Pierre Vallée who was then President of the Corporation of Mid St. Lawrence Pilots. Also on the picture (second from the right) is Capt. Sylvain Lachance from the Laurentian Pilotage Authority.



Strong Pilot Participation in Le Grand Défi Pierre Lavoie

This year again, the strong legs and big hearts of an impressive team of Lower St. Lawrence Pilots participated in « Le Grand Défi Pierre Lavoie », a 1,000 km ultra-endurance cycling challenge that was created to encourage young people to adopt healthy life habits and which has become the largest health-related event in Québec. The team – comprised of Captains Yves Pelletier, Carl Robitaille, Bernard Cayer, Daniel Ouimet and Mr. Christian Ouellet – not only successfully completed the event but also raised over \$30,000 in support of charitable causes.



International Trade Minister, the Honorable François-Philippe Champagne, Makes Visit to Marine Simulation and Expertise Centre

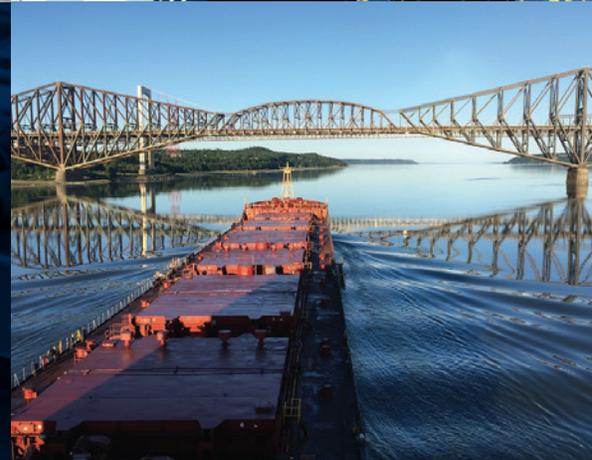
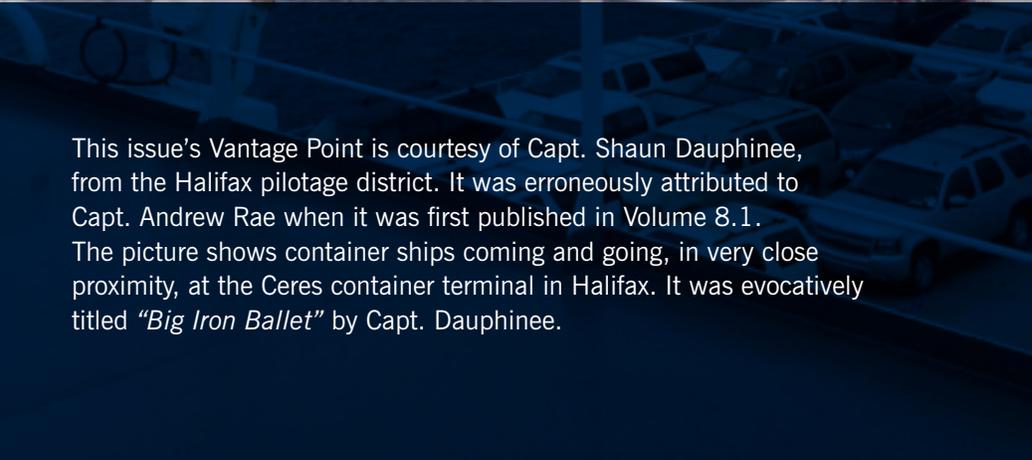
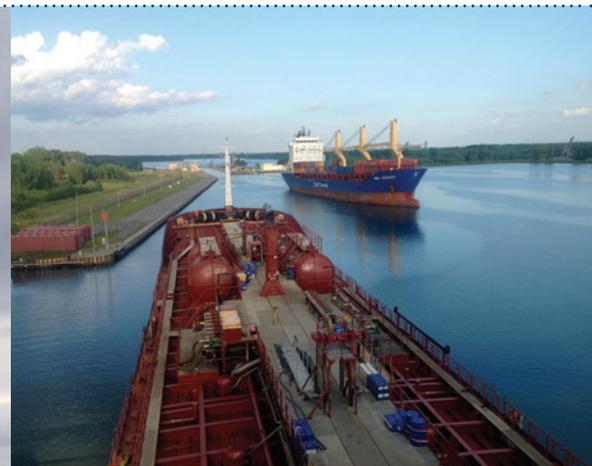
The Honourable François-Philippe Champagne, Canada's Minister of International Trade, visited the Corporation of Lower St. Lawrence Pilots' Marine Simulation and Expertise Centre located in Quebec City last August and participated in the simulation of a pilotage assignment near the Lavolette bridge in Trois-Rivières on the St. Lawrence River. On the picture, from left to right: Capt. Carl Robitaille, President of the Corporation of Lower St. Lawrence Pilots; IMPA and CMPA President, Capt. Simon Pelletier; Minister Champagne; Capt. Alain Arseneault, President of the Corporation of Mid St. Lawrence Pilots; and, Mr. Paul Racicot, Director, Marine Simulation and Expertise Centre.



CMPA and IMPA President at the European Maritime Pilots' 2017 General Meeting

The President of the Canadian Marine Pilots' Association and of the International Maritime Pilots' Association (IMPA), Capt. Simon Pelletier, was delighted to participate in the General Meeting of the European Maritime Pilots' Association (EMPA) last May in Bergen, Norway. Capt. Pelletier's remarks focused on some of the challenges facing pilotage at the international level, and on approaches to effectively meet these challenges.

FROM YOUR VANTAGE POINT



This issue's Vantage Point is courtesy of Capt. Shaun Dauphinee, from the Halifax pilotage district. It was erroneously attributed to Capt. Andrew Rae when it was first published in Volume 8.1. The picture shows container ships coming and going, in very close proximity, at the Ceres container terminal in Halifax. It was evocatively titled "*Big Iron Ballet*" by Capt. Dauphinee.

The photograph on the top right of the page is courtesy of Capt. Martin Mangan from the Upper St. Lawrence District and shows the *Mona Swan* waiting for the *BBC Hudson* to clear the Snell Lock. The photograph in the middle is courtesy of Capt. Simon Pelletier, from the Lower St. Lawrence District, and shows his Portable Pilot Unit (at the top, in the center), along with the vessel's own bridge equipment during an assignment at dusk. The photograph at the bottom is courtesy of Capt. Bernard Boissonneault and shows a container ship approaching the bridges in Quebec City.

The cover photograph is courtesy of Capt. Louis Rhéaume, from the Lower St. Lawrence pilotage district, and was taken during an assignment on the Saguenay River.

Marine pilots operate around the clock, coast to coast, at times in fair weather and in spectacular surroundings and, at other times, in conditions that are extremely challenging. We welcome all photographs that convey the experience of pilots and highlight the nature of their work.