



CANADIAN
MARINE
CAREERS
FOUNDATION

FONDATION
DES CARRIÈRES
MARITIMES
CANADIENNES

ANTICIPATED LABOUR SHORTAGES IN CANADA'S MARINE TRANSPORTATION SECTOR

Submission to the Standing Committee on Transport, Infrastructure and Communities

October 28, 2022

BACKGROUND

About the Canadian Marine Careers Foundation

The [Canadian Marine Careers Foundation](#) (CMCF), formerly known as the Canadian Marine Industry Foundation, was established in mid-2019 to help address workforce development challenges in the commercial marine sector as well as in the public sector where similar needs for both shipboard and shore side personnel exist.

Our partners include private sector employers such as the marine shipping companies, unions, pilots, marine colleges as well as key government departments that have maritime responsibilities including the Canadian Coast Guard, Transport Canada and the Transportation Safety Board.

The goal of the CMCF is to develop dynamic and innovative solutions to help build a diverse, inclusive and future-ready workforce for the Canadian marine sector.

Marine Industry Background

The Canadian marine sector carries goods and people **in every region** of the country with the least environmental impacts of all transport modes. In 2020, road transport accounted for 50% of Canada's merchandise trade (imports and exports combined), **23% moved by water**, 15% by air, and 12% by rail.¹

Canada has a vast network of private docks and public ports that support international trade, domestic industries and passenger transport. Approximately 200 Canadian registered vessels are active in domestic commercial activities, as well as supporting trade between Canada and the US.

The Canadian marine sector includes over 1,000 employers and employs **more than 100,000 skilled workers in both the private and public sectors**. During the pandemic, seafarers and shore personnel were designated essential workers and have continued their important work to ensure that Canada's supply chain remains resilient and responsive to deliver the goods that Canadians count on.

The marine sector receives little to no government funding assistance for awareness, training, internships, diversity programs etc. Competition for talent is fierce from other industries and professions that are well-resourced by private and government funding (i.e., through sector councils and other Employment and Social Development Canada programs for the past 30 years).

¹ [Final Report of The National Supply Chain Task Force 2022](#)

Marine Sector Workforce Outlook

The need for labour throughout the transportation supply chain is significant and must urgently be addressed by both industry and government. Marine is a unique industry with a common problem. Workforce rejuvenation is a top-three threat facing most business sectors with competition for workers at its highest levels in recent times with cases of marine vessels being idled due to a lack of crew.

In February 2021, Transport Canada completed a study entitled *Current and future gaps in seafarers in Canada*.² The study highlights the key factors affecting the marine labour market in Canada. Key findings included:

- There are approximately **28,000 seafarers in the marine sector**.
- Approximately **33% of the marine workforce is aged 55 or older**, which is higher than the Canadian average of 22%.
- The marine sector is facing a serious talent crunch with **43% of Canadian seafarers expected to retire within the next 10 years**. Retirement rates for key marine occupations are estimated to be higher than the average for other marine occupations, with 52% of engineering officers and 47% of deck officers expected to retire in the next 10 years.
- It is projected that there will be a **need to hire approximately 19,000 new workers** over the next ten years, which represents 68% of the estimated workforce.
- **The most critical occupations are the most difficult to fill**. There were approximately 1,200 vacant positions onboard commercial vessels and ferries.
- There is **significant competition to hire from a small pool of highly-skilled workers**. Competition for skilled seafarers continues to drive up wages, benefits and bonuses.
- **Low awareness and misconceptions make it challenging to attract new entrants**.
- **The cost of training and limited access to sea-time is a key barrier to entry**, The cost of a three-to-four-year program to become qualified to work on a vessel ranges from \$11,000 to \$20,000; financial support available to trainees is limited.

These figures do not include most public sector marine jobs or shoreside positions which, like many other sectors, are also facing aging demographic challenges.

MARINE LABOUR ISSUES

1. Improve Labour Market Data

A major challenge for the marine sector is the many gaps in current government statistics making it difficult to obtain and maintain up-to-date workforce data required to: (1) identify the true scope of the workforce problem; (2) support short-term and longer-term workforce planning and training requirements; (3) assess the level of workforce diversity and inclusion; (4) identify the barriers to entry for youth and underrepresented groups and, (5) to benchmark and track progress.

Obtaining up-to-date and standardized workforce data from government sources, companies, schools and unions has proven to be challenging due to the different forms in which data is being captured and reported or simply because data is not being collected.

² Current and Future Gaps in Seafarer Capacity in Canada – Summary, February 2021, Marine Policy, Transport Canada

2. Increase Marine Sector Awareness

For the most part, the marine industry operates efficiently and often quietly away from the public eye, not unlike a ship at sea. Consequently, awareness of the career opportunities within the industry is low.

For decades, the next generation has entered the marine sector mainly “by chance,” hearing about its attributes from a friend or family member or after being in another logistics-related industry. Most youth and those looking for a second career do not think of seafaring or the many related career paths within the industry. In fact, the CMCF’s National Youth Report ³, which surveyed young Canadians aged 14-29, found that the biggest barrier for the sector is a lack of knowledge on the diversity of jobs offered in the marine sector with 40% of respondents responding that they “have never heard anything about it”. A total of 67% of respondents believe the marine sector is hard to get into and 60% couldn’t name more than a few jobs.

It is important for the marine sector to partner with educational institutions and student-facing groups within the community to create more pathways to marine careers, including educational credits, awareness opportunities, and interactive experiences.

3. Improve Workforce Diversity

Other human resource realities facing marine, while not necessarily isolated to the sector, are no less challenging to its recruitment efforts. Statistics from Transport Canada’s study of *Current and Future Gaps in Seafarers in Canada* ⁴ (based on 2016 sample) show that marine’s current roster of seafarers is extremely male dominated (just five percent of seagoing staff are women); and is under-represented by First Nations workers (a number too low to measure). 17% of those working in the Water Transportation sector identified as immigrants.

While there are much higher percentages of women in shoreside positions, the number of diverse candidates and/or graduates from marine-related programs remains low. Employers want to diversify their workforces but would benefit from more tools and specific outreach and mentoring programs dedicated to attracting and retaining more workers from diverse and equity-deserving communities.

4. Increase Training and Skills Development

Building our future pipeline of workers is an urgent problem as the marine sector depends on an ongoing talent pool willing to undergo specific training at all levels, including entry level. Marine is a skill-intensive industry for shoreside and especially seagoing positions. For example, to become a Captain on a larger commercial ship can take 6 to 8 years or longer.

There are a limited number of marine training facilities or colleges in Canada and many prospective students would need to travel and pay for both program tuition and living expenses. As a result, marine training can be difficult to access for many communities, but also for workers already in the industry who are looking to upgrade their skills and licences.

Federal government departments and pilotage authorities also need to hire specially-trained mariners to fill their own maritime-related responsibilities. Hiring for these positions generally comes from the private sector’s chief mates and masters that have undergone years of ongoing education and experience. However, the federal government provides little support for training or trainees.

³ [Nation Youth Survey – Marine and the Next Generation](#), Canadian Marine Careers Foundation (March 2022)

⁴ *Current and Future Gaps in Seafarer Capacity in Canada – Summary*, February 2021, Marine Policy, Transport Canada

Specific areas where improvements can be made include:

- **Modernize workforce training delivery**

There is an urgent need to accelerate and expand the development and delivery of asynchronous courses/tutorials and workforce development solutions to help curtail labour shortages, improve sector resilience and stability by providing adequate career progression support and increase the accessibility of training opportunities. Access to online, asynchronous learning environments will help fill talent vacancies quickly and respect the individual worker's, and the employer's, need for demand-driven options, flexibility, affordability and practicality. Tutorials and online workforce development programs aim to make the training required more accessible, flexible and affordable to people that are interested in marine careers. Marine training institutions forecast that by implementing increased asynchronous training opportunities, there can be an elimination of up to 90 per cent of the required on-site training, as only exams would need to be completed on-site once the modules are completed. Increased asynchronous modality will ensure that any geographical barriers are overcome and that training is made available to remote areas of the country that are currently under served such as the indigenous communities in northern Ontario, Québec and the Canadian Arctic.

- **Increase capacity for Marine Emergency Duties (MED) training**

MED training is mandated by Transport Canada and a key requirement for the issuance of marine licenses and is a core and essential element of the mariner's development. Facilities for MED courses are limited across Canada and, in certain cases, have reached the limit of their ability to expand without additional investment. Increased availability and capacity for MED training is essential to deliver a much-needed solution to help current and future mariners prepare for real-world marine standards and can help combat a shrinking, yet very essential workforce. By improving the equipment used to deliver MED training, these facilities can continue to ensure that mariners receive the most current training available and support the overall safety of the marine industry.

- **Establish innovative virtual reality (VR) training solutions**

It is essential that marine training keep pace with emerging technologies and advancing industry expectations. VR is becoming a profoundly disruptive technology. In the maritime industry, particularly in areas such as bridge resource management, ship handling and assessment, VR has been slow to progress and even be adopted. Despite a slow introduction in industry, it is foreseeable that VR will soon be replacing a large portion of in-person full-mission simulator training. At present, non-VR training requires a substantial footprint for a large simulator, which typically requires 240 degrees of horizontal view. In addition, there are substantial electrical requirements to accommodate up to 20 computers and 16 monitors and projectors and annual maintenance agreements that can approach \$20,000 per simulator. The acquisition of new simulators is cost-prohibitive as there can be capital costs of up to one million dollars per simulator. Moreover, users accessing simulator training incur substantial costs including transportation to and from the facility, room and board during training and tuition costs which can cost up to \$4,000 per week of simulation training. The use of VR technology can radically change the delivery of simulation learning making it more accessible to numerous mariners across Canada regardless of location as well as being considerably more affordable to employers, mariners and training institutions.

- **Increase financial aid for on-the-job training**

Somewhat unique to marine is a knowledge and skill set requirement for every new candidate entering the sector, requiring even entry-level workers to possess minimum basic ship operations and safety training before even stepping foot on a vessel. These requirements increase per the level of expertise and proficiency associated with each position on board ship.

On-the-job training is an integral part of becoming a seafarer. As sea time is required to receive a Transport Canada accreditation, trainees need to complete several internships throughout their educational pathway to reach the threshold set by the regulator. Existing bursary and scholarship programs currently available to students pursuing marine education, whether for new candidates to the sector engaging in entry-level courses and apprenticeship training, or for current professionals pursuing career advancement through ongoing learning, are limited in number and dollar value.

To bridge the gap in organizational resources strained by the training of cadets and to help encourage businesses to take more trainees on board, financial assistance from government programs is necessary to help fund sea-time internships, thus helping the industry partially mitigate the cost of training.

Transitioning workers or those looking for a new career should be provided the opportunity to receive the equivalent of Employment Insurance (EI) benefits if they maintain a given average and a full-time student status in a recognized seafaring institution. This opportunity for future trainees to maintain a certain living standard and the possibility to make ends meet while they are doing the technical portion of their training is seen by the industry as a means to attract more trainees to the industry. The EI program could also be extended to current seafarers looking to upgrade their skills set.

5. Streamline Access to Foreign Workers

Provisions already built into the Canada Shipping Act allow the signing of bilateral agreements between Canada and foreign countries, providing for swift reciprocal recognition of certificates of competencies issued to mariners from those two countries. Since late 2019, Transport Canada has concluded bilateral agreements with Norway, France, Australia and, more recently, Ukraine and Georgia. As a result, mariners from these countries can work on a Canadian-flagged vessel with a work permit, without having to be a permanent resident. This has allowed critical shortages in more senior navigational officer and engineering positions to be filled.

However, more needs to be done by continuing to establish reciprocal agreements with more countries and ensuring the processing of seafarer work permits and the Canadian endorsement of their foreign certificates are prioritized and expedited. Lengthy delays increase the risk of losing potential workers due to the wait time.

RECOMMENDATIONS

Recommendation No. 1: Improve Labour Market Data. The marine industry and government agencies must partner to conduct a series of research surveys, based on a standardized methodology and data collection process, in order to report national workforce data across the marine sector for both seagoing and shore-based occupations.

Recommendation No 2: Increase Marine Sector Awareness. Government support is required to help increase awareness of the variety of marine career paths, high wages, and high job-match rates within the marine sector which are largely unknown to the general public, particularly young Canadians, their parents and educational providers.

Recommendation No. 3: Improve Workforce Diversity. Increase government financial assistance to help target and to attract marine workforce candidates from different geographic regions across Canada including indigenous peoples living in isolated communities, and women that may not be enticed to join a traditionally male-dominated field.

Recommendation No. 4: Increase Support for Training and Skills Development. Government must work with the sector to improve the availability, reach and funding opportunities for training

programs to help sustain a stream of new workers for the marine industry including Coast Guard, pilots and related professions.

Recommendation No. 5: Streamline Access to Foreign Workers. Allocate further resources from Transport Canada and Global Affairs to continue the recognition of more foreign credentials and that IRCC uses its new resources to expedite work permits of potential seafarers.

CONCLUSION AND DESIRED RESULTS

The Canadian Marine Careers Foundation respectfully submits that the above recommendations combine to offer dynamic and innovative solutions that aim to create workforce sustainability for one of Canada's most vital industries, which is already facing significant talent shortages.

Expected benefits and results include:

- Availability of labour market intelligence to better understand and anticipate future workforce training requirements based on future employment and skills requirements.
 - Identification of key barriers to entry, general perceptions and interest in working and training in the marine sector to better promote an inclusive workplace.
 - Development of more effective career promotion campaigns to attract youth to marine training and career opportunities and address workforce diversity challenges.
 - Increased level of outreach and direct interaction with target audiences / potential workforce candidates through participation at career days, school visits, industry sponsored events and presentations.
 - Increased number of internships / cadet placements on board vessels.
 - Increased number of licensed and unlicensed seafarers upgrading skill sets.
 - Increased level of publicity and awareness of all financial assistance programs available to support marine education and skills development leading to a higher level of workforce entrants in future years.
 - Tutorials and workforce development programs to make the training required more accessible, flexible and affordable to people that are interested in marine career.
 - Increased training availability for remote areas of the country that are currently under served such as the indigenous communities in northern Ontario, Québec and the Canadian Arctic.
 - Cost and time savings to employers, mariners and college for courses utilizing modern technologies.
 - Supporting the development of the domestic marine sector workforce, ultimately benefits other key sectors of the economy - agriculture, construction, manufacturing, natural resources and tourism - that rely heavily on having access to marine transportation for their supply chain requirements.
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