



Event Report

National Marine Workforce Development Strategy

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About the Authors

This report was written in co-ordination between the **Conference of Defence Associations Institute**, the **Royal Canadian Navy**, and the **Canadian Coast Guard**.

On the Cover

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HMCS VILLE DE QUÉBEC - OP HORIZON - 2025
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Introduction

While the National Shipbuilding Strategy (NSS) has driven remarkable industrial growth, its long-term success also relies on solving the critical human capital gap.

Canada's marine sector is vital to the national economy, not only as a direct contributor to GDP, but also for the industries and communities that depend on the efficient movement of passengers and cargo. Canada's marine sector is a substantial contributor to economic growth and job creation. In 2023, the marine economy generated over \$50 billion in GDP, including over \$9 billion for marine transportation and supporting activities. Further, the marine economy employed approximately 446,000 Canadians in 2023, representing over 2% of Canada's workforce. Despite its importance, the sector is facing a serious labour shortage that puts future growth and long-term sustainability at risk, in addition to the sovereignty, security, and prosperity of our nation.

To address this challenge, the CDA Institute, in collaboration with the Royal Canadian Navy and the Canadian Coast Guard, convened the National Marine Workforce Development Conference to discuss and address the recruitment, retention, and career advancement of skilled professionals in the marine sector. The conference welcomed leaders across government, industry, and academia on Thursday, October 16, 2025, at George Brown College Waterfront Campus in Toronto, Ontario. It represented a key step in bringing together stakeholders to express perspectives, identify solutions, and strengthen Canada's maritime workforce. Functionally, the Royal Canadian Navy is addressing its workforce shortages in a multifaceted approach, first as a combat-capable military force working to elevate the profile of the Canadian Armed Forces across Canada, and second, by partnering with stakeholders to raise awareness about the importance of Canada's marine sector, as well as the unique and rewarding careers in the seafaring profession. This report captures the most critical findings from the discussions held at the event, focusing on the key challenges and outlining a national priority framework to build a resilient Canadian marine workforce.

Marine Labour and Skills Shortages

The marine workforce is vital to diversifying trading relationships, improving economic competitiveness, securing our Arctic sovereignty, and modernizing defence capabilities in the pursuit of securing Canadian sovereignty and prosperity. However, the sector has a significant challenge ahead to meet the labour and skills demands.

The marine sector spans diverse labour markets, including seafaring, ports, shipbuilding, Navy and Coast Guard services, and ocean technologies, each with distinct workforce needs. Clearly defining these segments would improve labour market analysis, prioritization, and program design. Participants also stressed distinguishing between National Shipbuilding Strategy demands and those of operational fleets and commercial shipping to avoid misaligned solutions. Establishing clear baselines and measurable targets, such as training throughput, credential recognition, sea-time availability, and retention, would strengthen accountability and better align workforce development with sector-specific needs.

The Royal Canadian Navy employs over 10,000 sailors and officers (including regular force and reservists) and is required to grow by over 3,000 personnel to achieve their defence mandate for Canada. Although the Royal Canadian Navy's workforce is different from the marine economy's workforce, it competes for the same prospects to recruit future sailors for their fleet.

According to the Canadian Marine Careers Foundation's Canadian Seafarers Pathway Study, domestic commercial and public

vessel operators will require 8,300 new workers, more than 30% of its current workforce, to meet industry demand and replace retirees by 2029. These operators – running cargo and supply vessels, tugs and barges, ferries, sightseeing and tour boats, Canadian Coast Guard, government, science and safety-related vessels – are the cornerstone of the marine economy, carrying goods and passengers; connecting thousands of communities; and ensuring the safe and efficient operation of Canada's harbours, ports and waterways. At current enrolment and graduation rates, Canada's publicly funded marine training institutions are expected to meet only 40% of that demand. Additionally, thousands of onshore positions will be required in port and terminal operations, shipyards, and the broader ocean economy.

Given these pressures, the Commander of the Royal Canadian Navy, the Commissioner of the Canadian Coast Guard, and the Canadian Marine Careers Foundation (CMCF), along with industry stakeholders, have signalled the need for a national strategy to address the workforce development challenges of the marine sector. Participants agreed that this framework must include coordinated workforce planning that aligns policy and funding for awareness, recruitment, training, and retention initiatives, to ensure Canada remains a strong maritime nation.

Workforce Success in Canadian Shipyards

In shipyards across Canada, performance outcomes are not solely based on the age of the facility, the sophistication of technology, or the amount of capital invested. Rather, as consistently identified by conference participants, it is workforce management and recruitment that act as the biggest factors for success, regardless of region or shipyard type.

Irving Shipbuilding in Halifax, Nova Scotia offers a clear illustration of this dynamic.

Irving Shipbuilding has demonstrated strong workforce outcomes among Canadian shipyards. Their success is rooted in strategic decisions made approximately fifteen years ago, following the NSS announcement. The Province of Nova Scotia, Nova Scotia Community College, the City of Halifax, unions, and Irving aligned around building a sustainable long-term marine workforce. Irving recognized that workforce development required direct collaboration with unions and education institutions, and the need to treat the ecosystem as a collective, system-wide effort rather than an internal administrative function. The partnerships produced measurable improvements over the past five years in workforce size, quality indicators, and productivity. These outcomes offer a model for other shipyards and the broader marine sector facing similar challenges.

Challenges Facing the Marine Sector

Addressing these complex challenges will require coordinated changes across public education, workforce attraction, training,

occupational structures, and long-term investment in personnel development. Participants further explored structural barriers critical to marine recruitment, retention, and career progression. The consensus was that the Navy's training and development systems must be integrated into a broader marine workforce ecosystem rather than operating in isolation. The following section examines five critical challenges: recognition, visibility, training capacity, retention, and workforce mobility.

Recognition

A critical challenge identified by conference participants is the need for formal recognition of the marine sector as a national workforce priority, a nation-building priority. Despite its central role in supporting Canada's economic prosperity, international trade, and sovereignty, the sector has not consistently been treated, within federal and provincial policy frameworks, as a priority area for workforce development. A necessary first step in advancing a national marine workforce development strategy would therefore be for all levels of government to formally recognize the marine sector's strategic importance and align the legislative and policy tools under their authority to support its growth. Federal and provincial governments control many of the mechanisms that enable workforce development, including education policy, apprenticeship systems, training incentives, and labour mobility frameworks. Recognizing the marine sector as a priority within these systems would unlock access to targeted funding, training incentives, and workforce development programs that other high-demand industries already benefit from. Such recognition would signal a

coordinated national commitment to strengthening the talent pipeline required to support Canada's defence capabilities, sustain the marine transportation system, and advance the country's long-term economic and trade ambitions.

Improving Visibility

Conference participants identified low national visibility of the marine sector as a critical barrier to workforce recruitment and reconstitution. Canada's marine workforce is aging, yet pathways into the sector remain poorly understood by the public. Recent polls of young and adult Canadians have shown that as much as 47% of adult Canadians and 40% of young Canadians have not heard anything about marine sector careers. Additionally, fewer than 6% of applicants at Canadian Armed Forces recruiting centres express interest in the Royal Canadian Navy. Even in major port cities, the scale and significance of maritime industries, including commercial fleets, ports, shipyards, the Canadian Coast Guard, and Navy, remain largely invisible in public discourse and education systems. Participants emphasized that improving visibility requires a coordinated national approach that integrates Canada's identity as a maritime nation into provincial elementary and secondary school curricula, helping students better understand the role maritime capabilities play in national prosperity, security, and sovereignty.

Complementing this educational foundation, participants called on federal and provincial governments, in partnership with industry, to invest in coordinated national awareness campaigns and experiential marketing initiatives that highlight the diversity of marine careers across both the public and

private sectors. These initiatives should incorporate existing programs such as Sea Cadets, CMCF's Imagine Marine and Marine Month programs, Adopt a Ship, and Marine Career Expos. The Royal Canadian Navy and Canadian Coast Guard have a nationwide footprint, with 24 Naval Reserve Divisions and countless Coast Guard Auxiliary units, in addition to larger bases and infrastructure, which can be leveraged as a visible and accessible gateway to maritime service. Together, these efforts would significantly expand public awareness and help strengthen the long-term talent pipeline required to sustain Canada's marine sector.

The Canadian Coast Guard benefits from presence and visibility locally, where the workforce at bases and auxiliary units are often representative of the communities they serve, which supports employment pathways for Inuit and Indigenous peoples on the coasts and in the North.

The Royal Canadian Navy is mobilizing the Naval Reserve as the primary national presence and recruitment engine, much as it did during the Second World War. Created in 1923 to serve as the face of the Navy across Canada, the Naval Reserve began with 12 divisions and has since grown to 24, with plans to expand. However, strategic gaps remain; there is no naval presence in the High North, prompting exploration of establishing a division in Whitehorse, British Columbia, despite its maritime importance, has only two reserve units while additional divisions are being considered. The Prairie provinces, though geographically challenging, historically produced large numbers of naval recruits per capita. Ontario already has the highest concentration of Naval Reserve divisions and sailors, supplemented by

detachments in Kitchener-Waterloo and Oshawa alongside existing units in the Greater Toronto Area. Additional locations in Quebec are also under consideration. Going forward, Naval Reserve Divisions are intended to function not only as operational units but as visible, accessible entry points where the public can engage directly with the Navy.

Improving Training Capacity and Delivery

The public and private marine sectors are facing similar challenges in terms of a lack of training capacity and accessibility. Participants identified limited training capacity and rigid delivery models as a critical constraint affecting workforce growth across the marine sector. Canada has a small number of marine training institutions, and the requirement for in-person instruction, combined with the high costs associated with specialized simulators and a shortage of qualified instructors, creates significant barriers to expanding enrolment. Many students must also relocate to attend training, incurring substantial housing and living expenses in addition to tuition, while opportunities to complete the sea-time required for certification remain limited. These constraints affect civilian operators as well as federal fleets, including the Royal Canadian Navy and the Canadian Coast Guard, which must train and upskill personnel across a geographically dispersed national workforce. Addressing this challenge will require additional financial resources and stronger collaboration among governments, industry, and training institutions to modernize and expand Canada's marine training ecosystem. From a dual-use perspective, strategic partnerships between employers, the Royal Canadian Navy, the

Canadian Coast Guard, and marine institutes could enable shared use of simulators, facilities, and joint training, reducing duplication while expanding geographic access to development opportunities. At the same time, accreditation policies and targeted funding should support the development of micro-credentials and competency-based training programs that allow workers to acquire skills more rapidly through flexible, remote, or hybrid learning models. Participants also emphasized the need for enhanced government support for marine education through improved student financial assistance, investments to expand institutional capacity and modernize curricula, and funding for training vessel pilot programs to increase access to onboard placements. Finally, greater alignment between naval, civilian, and industry training standards, including recognizing civilian credentials within naval training pathways and ensuring naval qualifications retain relevance within the commercial sector, would reduce duplication, improve workforce mobility, and strengthen the resilience of Canada's national marine training infrastructure.

Retention

Retention emerged as a distinct and strategic challenge across the marine sector, particularly for the Canadian Coast Guard, where the loss of trained and certified personnel, especially at the post-qualification and mid-career stages, has direct consequences for operational readiness and the return on significant training investments. Attrition at these critical points not only disrupts crewing models but also places additional strain on training pipelines and remaining personnel, compounding existing workforce pressures. Addressing this issue

requires targeted retention strategies that support career longevity, work-life sustainability, and continuous professional development across both sea-going and shore-based roles. Participants noted that the Coast Guard's community-based employment model offers an important retention advantage, as locally rooted personnel, particularly in Indigenous and coastal communities, are more likely to remain in service long-term, reducing relocation pressures and strengthening regional stability. Across the broader public and private marine sector, unmanaged external mobility can accelerate attrition; therefore, strengthening internal career pathways, including structured transitions between sea-going and shore-based roles, is critical to retaining experienced personnel and sustaining workforce continuity. Finally, maximizing the return on training investments requires closer alignment between training capacity and retention outcomes, ensuring that investments in education and certification are matched by policies and career structures that incentivize long-term service.

Improving Workforce Mobility and Flexibility

Conference participants emphasized that Canada's marine workforce should be understood and managed as a single, interdependent ecosystem rather than as separate public and private labour markets. Improving workforce mobility and flexibility across this ecosystem is therefore essential to addressing labour shortages and strengthening long-term retention. Policies and workforce initiatives should support greater career fluidity by enabling workers to move more easily between sea and shore positions, between commercial industry and government fleets, and between different regions of the country as personal and professional circumstances change. This

could include formal partnerships between the public and private sectors that support job sharing, job shadowing, and joint training opportunities, as well as clearer pathways that allow personnel, particularly those trained in the Royal Canadian Navy, to transition their qualifications and experience into commercial maritime careers following their military service. Expanding such mobility would strengthen the overall talent pool and help retain skilled personnel within the broader marine economy. Participants also noted the importance of leveraging the Naval Reserve model, which already enables individuals to maintain civilian maritime careers while serving in the Royal Canadian Navy. Additionally, immigration policy represents an important lever to improve workforce mobility and capacity. Federal and provincial governments must prioritize permanent residency pathways for in-demand marine occupations, including shipbuilding and skilled trades in the marine sector, as well as seafaring roles such as marine engineers and navigation officers. At the same time, continued efforts to streamline security clearance, medical, and credential recognition processes would help integrate skilled immigrants into roles within the broader marine sector. Together, these measures would create a more flexible, resilient, and sustainable maritime workforce capable of meeting Canada's economic and security needs.

Conclusion

The discussions at the National Marine Workforce Development Conference underscored that Canada's marine labour challenges are not isolated problems within individual organizations, but systemic issues affecting the entire maritime ecosystem. Addressing insufficient policy recognition, low visibility, limited training capacity, retention, and constrained workforce mobility will require a coherent national framework that aligns government, industry, defence, and educational institutions around a shared marine workforce development strategy.

Federal and provincial governments must formally recognize the marine sector as a national priority and leverage the legislative, policy, and funding tools under their authority to support awareness, recruitment, training, and workforce mobility. Concurrently, employers across the commercial marine industry, the Royal Canadian Navy, and the Canadian Coast Guard must work collaboratively with training institutions to expand capacity, modernize training delivery, and ensure greater alignment between civilian education, industry certification, and naval qualifications. Canada's marine workforce must be developed as an integrated national system in which skills are portable, credentials are recognized across sectors, and maritime careers are visible, accessible, and adaptable to changing individual circumstances.

By embedding naval service, commercial shipping, shipbuilding, and marine research within a shared workforce ecosystem, Canada can build the resilient and highly skilled marine workforce required to sustain its economic prosperity, safeguard its sovereignty, and remain a strong maritime nation. Only through a strategic and collaborative investment, through public and private engagement, can Canada begin to build and sustain a skilled marine workforce capable of securing our sovereignty and economic potential for decades to come.