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IRVING SHIPBUILDING

WRITTEN SUBMISSION TO THE HOUSE OF COMMONS
STANDING COMMITTEE ON NATIONAL DEFENCE





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Introduction

The Halifax Shipyard thanks Members of the Standing Committee on National Defence for the opportunity to participate in its Review of the Impact of Canada's Procurement Process on the Canadian Armed Forces. As Canada's National Shipbuilder, the work at the Halifax Shipyard has a direct impact on the readiness of the Royal Canadian Navy and the Canadian Coast Guard.

At the heart of the National Shipbuilding Strategy (NSS) lies a central mission: enhance Canada's self-reliance in order to ensure the present and future preparedness of the Royal Canadian Naval and Canadian Coast Guard Fleets. To achieve this, the Government of Canada identified three core objectives for the NSS:

- 1) Renew the federal fleet in a timely and affordable manner.
- 2) Create and support a sustainable marine sector in Canada.
- 3) Generate economic benefits for Canada.

Since 2011, the Halifax Shipyard has made significant strides towards the ultimate goal of rebuilding our National Shipbuilding Industry. We have achieved this through the following four pillars:

- 1) **Building an Experienced and Knowledgeable Workforce:** Through training, mentorship, and skill development programs, we have empowered our shipbuilders with the expertise required to excel at their jobs.
- 2) **Building a Sustainable Canadian Marine Sector:** We have actively fostered partnerships and collaborations to create an industrial ecosystem that not only supports our operations but also fortifies the entire maritime industry within Canada.
- 3) **Building a Modern Shipyard:** We have invested in infrastructure and advanced shipbuilding processes to ensure that we optimize both quality and schedule for Canada.
- 4) **Building and Maintaining Ships:** The ultimate measure of our success lies in our ability to not only build but also maintain ships.

These four pillars represent the foundation of our progress.



Building an experienced and knowledgeable workforce

When Canada set out to build the Arctic and Offshore Patrol Ships, there was limited Canadian expertise in new ship construction. Canadian shipbuilding experience was being developed as the program progressed. Over the past decade, we have significantly increased the number of experienced Canadian Shipbuilders across all roles in our operation. During that same period, institutional knowledge and expertise have also increased significantly. This brings increased productivity, efficiency and less re-work throughout the program, demonstrating that we can deliver higher quality ships for Canada at a much faster rate than when we started.

With attrition below 2%, we have efforts underway to increase internal promotions. We have also instituted better training programs and engagement with staff about their career goals to ensure we retain our shipbuilders.

People Readiness at a Glance

Total Employment	2,402
Trades Employment and 2023 Compound Annual Growth Rate	1,376 (+23%)
Total Apprentices	399
Red Seals	709 (248 since 2018)
Average Age	39 years old
Average Service	6.9 years
Women, Visible Minorities and Veterans	21%
2023 YTD Attrition	1.83%

In partnership with the Nova Scotia Community College, we run the Pathways to Shipbuilding program. This program is designed to recruit, train, and retain people from groups traditionally under-represented in Canada's shipbuilding industry. The program is 2 years in duration with preparatory and diploma-based courses, tuition, books, materials and living allowances covered for all students. Upon graduation, our new shipbuilders are offered employment at the Halifax Shipyard.

To date, there have been five cohorts, including two cohorts with Women Unlimited, two Indigenous cohorts and one African Nova Scotian cohort. We will be launching a second African Nova Scotian cohort in spring 2024.



Building a sustainable Canadian marine sector

Significant progress has been made in rebuilding a sustainable marine sector in Canada. ISI's Value Proposition commitment is to invest a percentage of our revenue into the development of new marine sector technology and skills development. This goal is being accomplished every day at the Centre for Ocean Ventures and Entrepreneurship (COVE), which has now become internationally known as an innovation incubator in the ocean sector. As the founding partner, we are proud of how our investment of over \$10 Million has led to the creation of a thriving centre where over 50 small businesses collaborate every day to improve Canada's blue economy.

Work on the Arctic and Offshore Patrol Ship program has not only resulted in significant strides in rebuilding of Canada's marine sector, it has also provided our team with invaluable lessons to be applied to the Canadian Surface Combatant Program.

We now actively engage Canadian industry earlier in the contracting process so that we can understand Canadian capability on an ongoing basis. We've engaged more than 1,200 proponents through our portal, conducted over 500 surveys, hosted 55 interviews and had over 450 suppliers attend our Canadian Surface Combatant Industry Days. All the Canadian Provinces and one territory have been engaged in these efforts.

Our experience on the Arctic and Offshore Patrol Ship program has also allowed us to improve our contracting process now and for the future. Our refined approach enhances accountability for Irving Shipbuilding as well as for suppliers by providing clear requirements, planning, and management of the execution of tasks throughout the project's duration. This new approach allows us to limit unnecessary re-work during production.

The maturation of ISI's Supply Chain Management has also resulted in a complete integration with ISI's Industrial and Technological Benefits (ITB) team. The ITB policy was created with the intention of ensuring that major equipment purchases result in economic benefit for Canada. The ITB team has been fully staffed and senior leadership has supported the overarching commitment to match 100% of all our contract values in Canadian Content Value. For every dollar that is spent outside Canada, another is returned to the domestic economy. ISI continually works on the long-term strategic plan to execute on this commitment and to ensure that the Canadian Government and its citizens receive value for money. The economic benefits of this program will impact businesses and communities across the country and the project's spending in Canada over the period 2013 to 2025 is expected to add:

- Nearly \$11.8 billion to Canada's GDP;
- Nearly \$3.7 billion to government revenues across all levels of government;
- Between 2016 and 2025, the project is expected to boost employment by an average of 9,300 jobs annually across Canada.

Another lesson learned from the Arctic and Offshore Patrol Ship program is that many of our new partners are unfamiliar with Canada's ITB policy. As such, we mentor our subcontractors on the ITB process and guidelines. We insert the ITB policy at the outset of all discussions related to the Canadian



Surface Combatant program and our ITB Director is available to support our suppliers on how to achieve our collective obligations to increase business activity in Canada.

As construction for the CSC program approaches, we continue to ramp up our supply chain. For the first three ships we anticipate industry will be invited to participate in over 100 Requests For Information (RFI). Over 300 businesses have been invited to engage in RFI activity to date and over 200 of those businesses are Canadian. In May 2023, Irving Shipbuilding Inc. (ISI) and the Atlantic Canada Aerospace and Defence Association (ACADA) partnered to bring the internationally recognized MACH program to support Atlantic Canada SMBs. As a sponsor of MACH Atlantic, we partnered with three Arctic and Offshore Patrol Ship (AOPS) suppliers and have expanded the partnership to include an Indigenous-owned organization. In May 2023 we attended and sponsored the Canadian Council for Aboriginal Business (CCAB) East Coast Business Forum. We hosted the Irving Shipbuilding Indigenous Industry Day webinar in June 2023 where over 50 Indigenous businesses attended. Eight businesses have since registered in our supplier portal. In July 2023 ISI hosted five members of the Mohawk Council on a tour of the Halifax Shipyard. The Irving Shipbuilding Industry Day Webinar will take place in November 2023 with hundreds of businesses registered to attend.

Building a modern facility

Our workforce needs the tools and facilities necessary to build and maintain Canada's fleets. In full compliance with its 2011 contract with the Government of Canada, Irving Shipbuilding Inc. invested more than \$400 million to upgrade the Halifax Shipyard to build the Arctic and Offshore Patrol Ships and the originally envisioned Canadian Surface Combatant. This investment was made at no cost to the Federal Government.

Further enhancements to the shipyard are required. Since 2011, the world has become a more dangerous place. The scope and schedule of the Canadian Surface Combatant program has changed considerably due to an increasingly complex global threat environment and advancements in technology. Canada is investing in Canadian Surface Combatant infrastructure to enhance and accelerate construction in support of the Royal Canadian Navy. They want to make sure we have the tools necessary to build them at an accelerated pace.

Canada's recent decision to upgrade the Halifax Shipyard is not only logical, but also welcome news for the thousands of men and women working hard to rebuild Canada's Naval and Coast Guard Fleets.

Building and maintaining ships

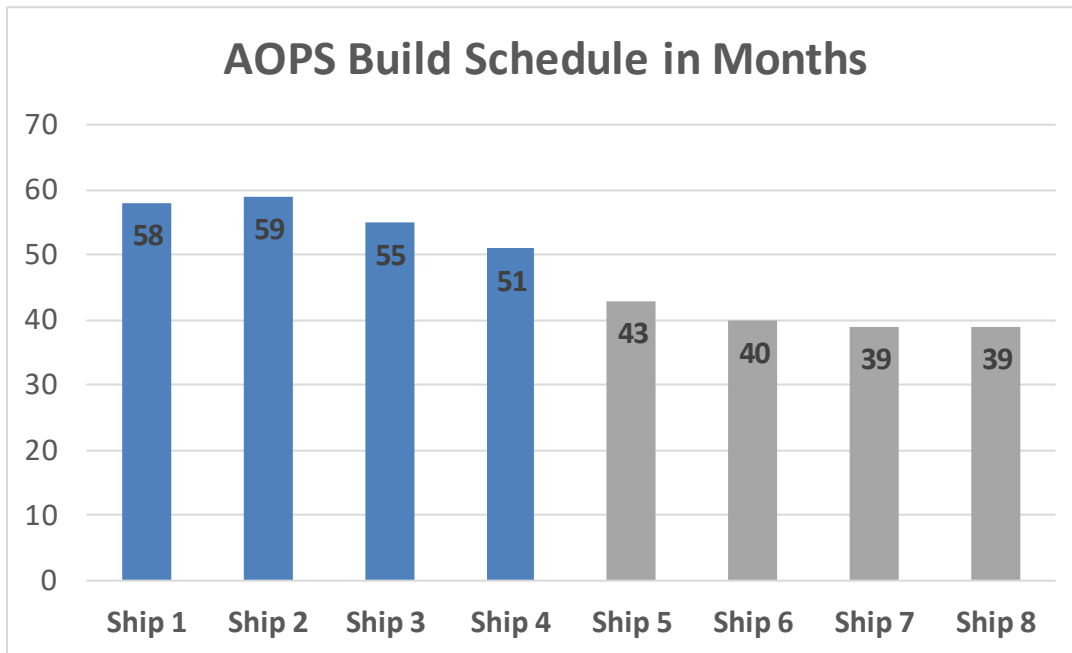
Rebuilding the Canadian Shipbuilding workforce and a sustainable marine sector has resulted in a marked improvement our ability to effectively and efficiently build ships. Arctic and Offshore Patrol Ship construction is well underway. So far we have delivered four ships and we have three more under construction at this moment with a fourth one starting next year. We have re-organized the shipyard to focus on safety, quality, schedule and cost. Our safety performance continues to be excellent. Our first-time quality continues to improve year over year. As a result, yard wide schedule and cost performance trends are improving dramatically. All ship repair and new construction work is ahead of schedule.



Safety: Our workforce is our most valuable asset, and the safety and health of that workforce is our top priority. In the midst of hiring a new workforce, while accelerating schedules on new ship construction, safety has improved significantly. We currently maintain safety records that are 50% to 80% better than US Shipbuilding comparators. Our recordable injury rate has improved by 13% and our lost time to injury rate has improved by 33%.

Quality: Building ships to military specifications is not easy. All work is checked to ensure they are up to Canada's requirements. Work that doesn't meet Canada's quality requirements has a significant impact on safety and schedule. When we have to redo a task or perform work out of its planned sequence it can double the risk of injury. Further, it takes more time which can negatively impact schedule. In 2020, our team met the first-time quality standard about 80% of the time. In 2021, that number increased to 92%. This year, we are proud to say that we increased that number again to 97% across all disciplines. Ship repair is seeing similar performance, with a 60% year-over-year improvement from 2020 to 2022 and an additional 23% improvement this year. Our workforce is learning to build quality vessels.

Schedule: AOPS 04 was launched at the end of November 2022 and delivered to Canada in August of 2023. The fourth ship of the class was delivered in a total of 51 months of construction and was the highest quality ship delivered in terms of schedule adherence and technical quality. All three AOPS 05 mega blocks were rolled out of the Module Hall over a single weekend, a first, and we are forecasting a December launch for a delivery to Canada late Summer 2024 which represents an 8-month build schedule reduction from ship 04. At the same time, construction on AOPS 06 progressed in the Assembly Hall and a keel laying ceremony was held in August on a newly completed and defect-free unit. Steel was cut for the first variant of the AOPS for the Canadian Coast Guard and while the ship is 40% different from the RCN variant, we are planning to deliver the ship to the Coast Guard in approximately the same build duration as AOPS 06. We effectively plan to deliver one Arctic and Offshore Patrol Ship every year until all are delivered.



Cost: When we do safe, quality work on schedule, the cost of the program improves. A reduction in program length, enabled by our ability to build ships better, safer and faster will generate program savings for Canada.

COVID pandemic: The latter stages of Ship 2 construction were affected by the COVID pandemic, Ship 3 was constructed entirely during the pandemic, and Ship 4 had early stages of construction affected.

Challenges

Working collaboratively, DND, PSPC, ISED-C and Irving Shipbuilding have achieved significant progress in the establishment of a healthy Canadian shipbuilding industry, one well-equipped to meet the unique demands of Canada's Navy and Coast Guard. However, while our collective efforts are commendable, our mission is far from complete. As we gear up for the construction of fifteen Canadian Surface Combatant ships who will form the backbone of the Royal Canadian Navy for the remainder of this century, it is imperative that we sustain the momentum we have painstakingly built. It is this very momentum that will feed our ability to deliver the vessels Canada needs on the schedule required. This is easier said than done as there are a number of challenges that need to be addressed.

Maintaining and extending the life of the Halifax-class Frigates

HMCS Halifax, the lead ship of the class, has been in service for more than 31 years. She was designed with a life expectancy of 25 years. Despite the fact that she has exceeded her life expectancy, HMCS Halifax and the other 11 ships of the class continue to be very capable vessels, in no small part due to the modernization program undertaken in the 2010s. They are the current workhorses of the Royal Canadian Navy, and they will need to continue to play that role until a suitable number of Canadian Surface Combatant vessels are available for operations. Our team is working closely with the Navy and the other two National Shipbuilding Strategy yards to find the efficiencies needed to properly maintain

and therefore extend the life of these important assets. As noted above, we have made great strides in improving our effectiveness. However, the ships are getting older. Obsolescence, fatigue, and corrosion will continue to present increasing challenges with every year of service. These challenges will only become more difficult as the ships get older. As these ships age, their required time in drydock will increase. The longer a ship is in drydock, the less available it is for RCN operations. This will create future capability gaps for the RCN as they will have fewer frigates ready for deployment.

The longer a ship is in dry dock, the less available it is for RCN operations. Should a ship need to be retired earlier than expected, Canada will face a capability gap until the new Canadian Surface Combatant vessels are ready. It is imperative that these ships last as long as possible.

Recommendation: Canada's current process for authorizing and approving work does not match the size and scope of work being performed. As demonstrated by our Arctic and Offshore Patrol Ship program, steps need to be taken in order to streamline this process to ensure the shipyard is able to plan and execute work more efficiently and at greater value to Canada.

Schedule improvements on the Arctic and Offshore Patrol Ship program are putting pressure on the Canadian Surface Combatant program

As stated above, schedule on the Arctic and Offshore Patrol Ship program, has improved significantly. This is a good thing. Our workforce is learning to work quickly and effectively which is preparing them for the larger and substantially more complex Canadian Surface Combatant. However, the accelerated progress on Arctic and Offshore Patrol Ships is impacting the Canadian Surface Combatant program. While the improved schedule on the Arctic and Offshore Patrol Ships showcases our workforce's efficiency, it also means we're completing tasks faster than expected. We must transition seamlessly to Canadian Surface Combatant construction to avoid losing the valuable expertise we are building, ensuring we preserve the productivity gains and remain equipped for the challenges of Canadian Surface Combatant construction.

Recommendation: Canada and the Halifax Shipyard should work together to ensure that there is a seamless transition between the end of Arctic and Offshore Patrol Ships construction and the commencement of Canadian Surface Combatant construction.

Canadian Surface Combatant design needs to mature faster before construction begins

One of the greatest lessons we learned from the Arctic and Offshore Patrol Ship program is the need to have a mature design before commencing construction of a new class of ship. Construction on AOPS 1 was started before Canada had a mature design, this created a number of challenges with the first few vessels in the class. As stated above, we have hit our stride on the Arctic and Offshore Patrol Ship program. We believe we could have done so earlier in the schedule if we had started with a mature design. The Canadian Surface Combatant will be a much more complex vessel than the Arctic and Offshore Patrol Ship, making it even more important to begin construction with a design which enables effective and efficient production.

Recommendation: Canada, the Navy and Industry need to work together to ensure design maturity on the Canadian Surface Combatant before construction commences.