# CANADIAN NAVAL REVIEW

VOLUME 20, NUMBER 3 (2025)


**Interview with Commodore Jason Armstrong**

**Closing the RCN's Mine Countermeasure Capability Gap**

**HMCS *Harry DeWolf*'s Transit of the Welland Canal**

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*Credit: Aviator Conor R.G. Munn, Canadian Armed Forces*

*HMCS **Max Bernays** and HMCS **Vancouver** have front row seats for the Fourth of July fireworks at Pearl Harbor, Hawaii, during RIMPAC 2024.*

# Contents

*Editorial*

# Fighting in the Next War: Preparing the Royal Canadian Navy

(Note: Editorials represent the opinion of the author, not *CNR*, the Editorial Board or sponsors.)

Canadian naval leaders are faced with the daunting task of preparing for war as the geopolitical environment becomes more threatening. Questions about Canada's ability to fight have been focused on questions pertaining to acquisition of new vessels such as the *River*-class destroyers and submarines. While acquiring the next fleet is important, it is also necessary to think about what operating a fleet in modern war will look like. What are some of the preparations that can be taken now so that, if conflict occurs, the Canadian response will not just be reactive?

Responding to damage or loss is something with which Canada has had experience, but those experiences were a long time ago. The last Canadian warship to take damage or sink because of battle was HMCS *Esquimalt* on 16 April 1945. It was torpedoed and sunk in the closing days of World War II. Royal Canadian Navy (RCN) vessels have since taken damage and suffered loss of life during peacetime operations – such as the explosion of the gear-box of HMCS *Kootenay* in 1969. Nine personnel were killed, over 50 were wounded and the ship badly damaged. This tragic event demonstrated that there were shortfalls with how damage control and fire fighting were handled in the RCN. There were also personnel issues that arose, including burial. At the time the families of those who lost their lives had only two options, burial at sea or interment in the UK where the ship had been towed. The sailor who was buried in Canada died from his injuries as he was transported back to Canada. All of these specific problems were addressed – in due course. Damage control and fire-fighting training was improved and the RCN's damage-control training centre for Maritime Forces Atlantic was renamed Damage Control Training Facility Kootenay to recognize the incident. The policy of interment of fallen Canadian Forces' personnel was also changed to allow the repatriation of those killed.

But the response and lessons of such incidents raise important questions that now face the navy. Is the RCN ready to fight and take losses in a future war? The security environment is becoming more dangerous, and there is a growing possibility of war with Russia in Europe or with China over Taiwan. Whether Canada becomes involved in either conflict would be left up to political leaders at the time but, assuming that Canada accepts its obligations under the terms of its membership in NATO, it is probable that a war in Europe would include Canadian participation. Direct participation in a war in Asia is less likely but cannot be ruled out.


Credit: Via Lookout Newspaper

*A funeral service for the nine deceased crew members of HMCS **Kootenay** is held with the damaged ship in the background at Devonport, UK, 27 October 1969. The ceremony was held on board HMCS **Saguenay**, sister ship that had served alongside **Kootenay** in the naval exercise.*

Today's RCN is training and operating with its allies to meet the possibility of war. Recent operations in European waters demonstrate that navy leaders are aware of the need to be able to fight in these waters. For example, Canadian participation in *Operation Dynamic Mongoose* since at least 2015 shows an understanding that the RCN needed to relearn the ability to detect and destroy hostile submarines.[1] Likewise, exercises with allied and friendly states in the South China Sea have allowed the RCN to build on its ability to operate with navies from Australia, Japan, South Korea and the US Navy in this region.

But beyond developing the ability to train and operate with other navies in times of conflict, what have the Canadian government and the RCN done to operate and conduct modern maritime war? While this is not an exhaustive list, here are some key considerations that need to be addressed and hopefully are being considered.

First what are the options in the case of damaged or lost vessels? One of the key issues in the decision-making chain for the replacement of the *Halifax*-class frigates with the *River*-class destroyers has been the use of the life-cycle costing method.[2] This includes costs associated with development, acquisition, operations, sustainment and disposal of the ships. This system of costing has been criticized by some as both unrealistic and unwieldy.[3] Specifically, the assumptions made for determining the costs of operations and sustainment are said to be impossible to make. But a close reading of the Parliamentary Budget Office (PBO) report on the costs of the frigate replacement program indicates that there are no allowances made for loss or damage of the ships throughout their life-cycle.[4] While this further demonstrates the problem of life-cycle costing, it raises the question of how this would be handled. Is there a branch of government that could move with the speed necessary to pay for large-scale repairs or the replacement of the vessels? It may be that in a war it is simply beyond Canada's ability to replace the vessels, given the length of time it takes to build a modern ship. What then is the strategy to allow Canada to operate with a reduced fleet? Would Canada be placed in the situation that Germany and Italy faced in the Second World War when a capital vessel that was lost could not be replaced, and this meant operations ultimately had to be scaled back to irrelevancy?

In terms of repair, one step that could be taken would be a reconsideration of the National Shipbuilding Strategy. There has already been a fundamental rethinking of the strategy with the inclusion of the third shipyard. Canada should start thinking about how it can repair ships that have received battle damage. What are the requirements to be able to repair damage and get the ships seaworthy as fast as possible? Consideration also must be given to the challenge of getting the vessels back to Canadian shipyards. In the event of war, the shipyards of allies and friends will be hard-pressed for their own requirements and, therefore, it is unlikely Canadian vessels could be given priority to be repaired in foreign shipyards. So how would a vessel that is badly damaged make its way back to Canada? This could be solved by reaching agreements with Canadian allies before any conflict occurs. Likewise, it would be prudent to enter into agreements now with those companies that provide heavy sealift such as the company that arranged for the return of USS *Cole* to the United States after it was damaged.[5]

Second, another issue that is being highlighted by the war in Ukraine is the need to ensure that the Canadian fleet has robust supply of ammunition and the means to resupply quickly. This may appear to be a mundane task, but it has been made clear by the difficulties of providing Ukraine with ammunition and weapons from Canada


*Credit: Timothy Choi*

*A Canadian Coast Guard ship is seen during maintenance in the* ***Seaspan Careen*** *floating drydock owned by Seaspan in North Vancouver, 12 December 2018.*

Credit: PA2 Patrick Montgomery, US Coast Guard

*The destroyer USS **Cole** is seen arriving at Pascagoula, Mississippi, in December 2000 onboard the heavy lift vessel **Blue Marlin** for further repairs following its attack by al Qaeda in Aden.*

that this capability has been allowed to languish in Canada. Some of the weapons needed are not made in Canada – such as the Harpoon missiles – and arrangements should be made to allow Canada to have access to new stocks as needed. The challenge will be that as Canada uses up its stocks, the Americans will also be using up theirs. On a more positive note, the decision to buy nine transport/refuelling aircraft in addition to the existing fleet of CC-177s will provide Canada with an added ability to deliver such cargo overseas when needed.

Third, another lesson that Canadian naval leaders have to relearn is how to fight in a nuclear war environment. This was a skill that was practised throughout the Cold War, and one that should be renewed. Russian President Vladimir Putin has issued very public threats to use nuclear weapons, something that has not been done by Soviet/Russian leaders since the Cuban Missile Crisis with one or two exceptions. Furthermore, some of the Russian weapon delivery systems appear to be directed to be used rather than as instruments of deterrence. The Poseidon torpedo system is perhaps the best known example of such a weapon, but the development of nuclear-armed hypersonic missiles seems more designed for war-fighting rather than war-deterring.[6] It would be prudent to ensure that Canadian warships retain the capability to ensure that if the worst happens and Canadian warships find themselves in a nuclear war zone, they are prepared.

Lastly, and returning to the lessons learned from the HMCS *Kootenay* tragedy, how prepared are the Canadian Forces to treat and evacuate mass casualties in a war zone and far from Canada? Probably, any Canadian actions would be taking place with allies, and they would undoubtedly do all that they could to assist. But serious problems could develop if allies are responding to their own casualties and are not able to offer assistance. The possibility also exists that if/when an attack is made on a Canadian warship, it would be operating great distances from any assistance. Furthermore, what are the plans and abilities of the Canadian Forces for repatriation of the fallen? It does not appear as if the plan relating to this has been updated in recent years.[7] The process of returning casualties suffered in the Afghanistan War to Canada required learning many hard lessons.[8] The logistical challenges of repatriating a large number of killed from a maritime location would be even more demanding. Again, there is a need to prepare before such an event rather than trying to complete this task as it happens. And if there is no other alternative than burial at sea, then the families of all service personnel must know of this possibility to prepare them.

Canadians do not like to think of war, but the world is becoming much more dangerous and increasing the likelihood that Canada will find itself again in war. Should this happen, the RCN will undoubtedly be at the forefront of any fighting. While the nature of the fighting is impossible to predict, there are issues that the RCN and the Canadian government can start to think about and prepare for. These are difficult, but if they are planned for now, the reaction when/if the time comes will be more effective, and at a time when there will be many different issues that will require attention.

Rob Huebert

**Notes**

1. NATO, Media Release, "Anti-Submarine Warfare Exercise 'Dynamic Mongoose' Starts Off Norwegian Coast," 4 May 2015.
2. Office of the Parliamentary Budget Officer, "The Life Cycle Cost of the Canadian Surface Combatants: A Fiscal Analysis," 27 October 2022.
3. Ian Brodie, "Lifecycle Costing for Defence Purchase is Nonsense, Makes us Dumb and Helps our Enemies," Presentation at Military Museum, 27 November 2024.
4. Office of the Parliamentary Budget Officer, "The Life Cycle Cost of the Canadian Surface Combatants."
5. The challenges faced by the Americans in transporting USS *Cole* to the United States are examined in R. Wasalaski, R. Anderson and G. Gant, "The Float-On/Float-Off Heavy Lift and Return Home of USS Cole," *Naval Engineers Journal*, Vol. 113, No. 3 (2008), pp. 101-130.
6. Silky Kaur, "One Nuclear-armed Poseidon Torpedo could Decimate a Coastal City. Russia Wants 30 of Them," *Bulletin of the Atomic Scientists*, 14 June 2023.
7. Canada, Department of National Defence, "Repatriation of Canadian War Dead," 17 December 2018.
8. CBC News, "Documentary on Repatriation of Fallen Canadian Soldiers Films in Edmonton," 25 July 2021.

# Interview with Commodore Jason Armstrong

## Director General Naval Force Development

On 28 October 2024, *CNR* Editor Ann Griffiths chatted with Commodore Jason Armstrong, Director General Naval Force Development. Commodore Armstrong also subsequently answered some follow-up questions. This interview has been edited for length and clarity.

**Dr. Ann Griffiths**

*Thank you for agreeing to chat with me. Before we get to the meat and potatoes, what exactly does the RCN Director General Naval Force Development (DGNFD) do? It's an impressive job title, but what do you do?*

**Commodore Armstrong**

The Naval Force Development scope is large – we're charged with thinking about the challenges and threats of today, and then looking forward to those into the future. Officially, Director General Naval Force Development is accountable for the strategic development of the 'next navy,' including project directorship, training and infrastructure requirements, operational and tactical doctrine, operational testing and evaluation, and doctrine development. The team is responsible for ensuring that the Royal Canadian Navy (RCN) has the tools it needs to train and fight today and in the future.

I am blessed to be working with professionals in the fields of development and maintenance of our war-fighting capabilities, the procurement of equipment for the navy and its sailors, the development of our concept of employment, infrastructure and training, and our long-term strategy.

**AG**

*My first questions relate to technology. I hear a lot about what other navies are doing but not much about the RCN. I'm not seeing an effort in Canada/Department of National Defence (DND) for rapid adoption of new capabilities. What is NFD/RCN doing?*

**Commodore Armstrong**

Apparently we need to do a better job of getting our message out. Canada/the RCN has a history of operating uncrewed aerial vessels (UAVs), uncrewed autonomous systems (UAS) and uncrewed surface vessels (USVs). In fact we've been doing it for a long time. For example, Canada employed Scan Eagle, an uncrewed aerial surveillance system from 2012-2014. We are now working on the ISTAR UAS project, an airborne platform that can be operated from the *Halifax*-class frigates, and we acquired the Puma maritime mini unmanned aircraft system which can be operated off the Maritime Coastal Defence Vessels (MCDVs).

*Credit: CADSI via RCN*

*A photo taken of Commodore Armstrong during an industry engagement event co-hosted by the RCN and the Canadian Association of Defence and Security Industries in November 2024.*

The RCN is always examining new capabilities. We are currently engaged in a number of procurement projects to introduce remote and autonomous systems. Earlier this year, the RCN received 60 UAVs for both shipboard and shore use. Additionally, two projects are underway to procure larger, more capable, long-duration military UAVs, with delivery expected in late 2025 or early 2026. As well, the recent *Our North, Strong and Free* defence policy allocated funding for underwater domain awareness projects. Two such projects are the Underwater Environmental Awareness (UEA) and Rapidly Deployable Fully Autonomous Sensors (RDFAS) projects, which aim to procure autonomous underwater vehicles and sensors to ensure domain awareness in Canada's waters, as well as during expeditionary operations.

While it is essential for us to use these systems, we must also be able to counter their use by adversaries. Ultimately, we expect uncrewed systems to dominate the operational theatre in the next decade, necessitating the evolution of our systems to address threats in all domains – air, surface, sub-surface and land when our ships are alongside. Our current detection systems are designed for large, metallic, fast-moving objects. By contrast, uncrewed systems are often small, slow-moving and constructed from materials like plastic and cardboard, which can exploit detection gaps. To address this, we've developed a comprehensive strategy to protect our ships from these threats, from dockside to the operational theatre.

**AG**

*The asymmetry of cost for some weapons is interesting. Missiles, torpedoes and ships are very expensive and yet, as*

*we've seen in the Black Sea, an expensive ship can be taken out of action by an inexpensive jury-rigged uncrewed system. How can the RCN deal with the fact that they may end up using their limited supply of very expensive weaponry to counter thousand-dollar drones?*

### Commodore Armstrong

The RCN is acutely aware of the cost imbalance between uncrewed systems – cheap, plentiful and expendable – and its own traditional defence systems. While current defence systems will continue to play a role in naval warfare, the RCN must address the obvious vulnerabilities that these inexpensive systems exploit. In cooperation with allies, we are exploring ways to augment our defence systems to ensure that the cost of defending our ships remains proportional to the cost that our adversaries face in attacking them.

We have explored low-cost missiles and munitions, electromagnetic attacks (eg., jamming to disarm approaching systems), and are collaborating with our allies on technologies such as Directed Energy Weapons, including High Energy Lasers and High-Powered Microwave systems. The advancements being made by industry in this area are very promising, and we are working closely with our industry partners to address and close this cost imbalance.

### AG

*Was the RCN involved in the September 2024 Robotic Experimentation and Prototyping Using Maritime Uncrewed Systems (REPMUS) exercise?*

### Commodore Armstrong

The RCN has been involved in organizing and executing REPMUS since its inception. REPMUS is the primary robotic experimentation event run by NATO's Joint Capability Group Maritime Uncrewed Systems (JCGMUS), of which Canada is a member. It is an annual event that brings together military and commercial interests for joint experimentation and tactics development. The RCN contributes a staff officer who provides support to exercise staff and collaborates with participating Canadian companies and organizations to ensure Canada's experimentation goals are met. During REPMUS 2024, two Canadian companies – Kraken Robotics and Jasco Systems – brought developmental systems to the exercise to test physical capabilities, refine operating parameters and enhance system interoperability.

### AG

*There are a variety of agencies and organizations involved in naval technology development – for example, the DND IDEaS program and the new NATO DIANA office that just opened in Halifax. Can you tell me a bit about these programs?*

### Commodore Armstrong

The RCN is an active member of DND's Innovation for Defence Excellence and Security (IDEaS) program which is led by Defence Research and Development Canada (DRDC). The IDEaS program supports innovation from conception to early development. As subject matter experts, we've been consultants on multiple concepts such as land-to-sea transportation with low greenhouse gas emissions, persistent maritime surface sensor systems, and the We Sea You: Digital Tracking and Accounting System on navy vessels. The RCN is also one of the few organizations which works in the classified space under the IDEaS program, specifically the It's Not Just Noise initiative.

The RCN participates in the Innovation, Science and Economic Development Canada (ISED) Innovations Solutions Canada (ISC) program. Over the past several years, the RCN has achieved success through ISC, including the introduction of Single Hand SNAP Sea Connectors into the fleet. Currently, there are two projects which have completed their trials and are moving towards procurement: an Artificial Intelligence- (AI) driven anti-collision


Credit: Timothy Choi

*A model of Textron's Aerosonde 4.7 HQ Uncrewed Aerial Vehicle (UAV) is seen at the CANSEC 2024 defence trade show. It has been pitched as one of the contenders for the RCN's ISTAR Uncrewed Aerial System (UAS) project.*

decision aid capability; and a maritime domain awareness tool. Additionally, two other projects are progressing through experimental and trial phases, with engagement from the RCN: a target drone; and a software adaptation for commercial drones.

These successes and ongoing projects are shared publicly, particularly with industry, as we collaborate to enhance RCN capabilities. However, owing to commercial sensitivities, especially with small and medium enterprises, we are careful not to disclose information that could disadvantage the developers.

Despite the successes, the nature of innovation means that not all projects meet requirements at the end of their development phase. These are not considered failures but rather part of the innovation process, which we must continue to embrace.

When new innovative products are ready to be procured and trialed, this is often referred to as 'buy and try.' This process allows units which are engaged in operational activities to purchase lower-cost items that can assist them in their tasks. These units can test the products, and if they meet a broader fleet need, they can be added to the list of approved items that can be more rapidly procured. Many of these trials are conducted at the tactical level, enabling operators to advocate for what they need. Ultimately, this approach allows for speed and flexibility in acquiring lower-cost innovative solutions.

As you mentioned, the NATO Defence Innovation Accelerator for the North Atlantic (DIANA) has been set up in Halifax and is expected to be fully operational in 2025. With DND integrated into DIANA, we are well-positioned to take advantage of the opportunities the program will offer, especially given its proximity to the RCN in Halifax, which will facilitate relationship building and collaboration.

These are the specific innovation programs that NFD is involved in on behalf of the broader RCN. We don't operate in isolation; in fact, we collaborate closely with other innovation sections within various groups throughout DND, Canadian Armed Forces (CAF) and the RCN, including with organizations like DRDC, the Royal Canadian Air Force, the Canadian Army, Canadian Special Operations Forces Command, Director General Maritime Equipment Program Management, Digital Navy and the Naval Training Group.

**AG**

*I understand that Canada is trying to join the second pillar of the AUKUS agreement – not the submarine pillar but the new military technology pillar. How is that going? What are the priority programs for Canada's involvement in AUKUS Pillar 2 and how can Canada contribute?*

Credit: Aviator Gregory Cole, Canadian Armed Forces

*Sailor First Class Justin Bower, a Naval Electronic Sensor Operator, helps recover HMCS **Charlottetown**'s Sparrow Unmanned Aerial System during proficiency training as the ship conducts operational patrols in the Mediterranean Sea while deployed on **Operation Reassurance** on 9 July 2024.*

**Commodore Armstrong**

Consultations with AUKUS members are in their early stages, and we do not yet have a timeline to share. But Canada has a longstanding history of bilateral and multilateral cooperation with Australia, the UK and the United States in the research, development and use of advanced capabilities.

What can we offer? Well, we've been working with our allies on quantum computing, and uncrewed and autonomous systems so we can bring that to the table. By formalizing collaboration with AUKUS members on shared priorities, we can leverage the cutting-edge innovation that our defence industry brings to the table. Further collaboration with AUKUS partners will develop advanced joint capabilities, ensuring continued interoperability and enhancing collective defence.

**AG**

*How does RCN/NFD see the use of Artificial Intelligence (AI) affecting operations? How is the RCN utilizing, or planning to utilize, AI, if at all?*

**Commodore Armstrong**

We can see AI being useful in many aspects – the spectrum of potential for AI is enormous from project administration to enhancing operations at sea. We now have AI at National Defence Headquarters and this allows us to use it on ships as well, although the full capabilities on ships are still being determined.

What we already know is that ashore AI can be useful in terms of project administration, document drafting, and enhancing our Naval Training System by developing/revising training strategies, developing/revising course

materials and testing trainees. It can also be extremely useful in keeping track of personnel and maintenance schedules.

In terms of operations, AI enables a ship to take data and analyse it – for example data relating to ship systems, physical conditions of the operating environment, logistics and/or maintenance. This could enable preventive or corrective action. And in terms of war-fighting, AI allows ships to process information rapidly to assist in decision-making, targeting and defence.

Key focus areas include digital- and AI-enabled solutions such as increased automation for *River*-class destroyers, the Canadian Patrol Submarine (CPS) Project, underwater warfare rapid processing and uncrewed systems, RCN ISTAR's expedited operations and data management.

**AG**

*What lessons are you identifying from Russia's invasion of Ukraine in terms of naval vulnerability, capability and flexibility? Are the maritime lessons from Ukraine and the conflict(s) in the Middle East being worked into Canadian Force Development considerations?*

**Commodore Armstrong**

We're closely monitoring this conflict, as well as various others worldwide, to gain insights into emerging operational capabilities. Ukraine's success in the Black Sea highlights vulnerabilities not only relating to uncrewed and counter-uncrewed systems but also in electromagnetic operations and traditional kinetic attacks – areas in which we are also making advancements.

Russian naval failures in the Black Sea underscore the critical importance of personnel readiness, fundamental skills and professional discipline within military forces. Key incidents, such as the sinking of *Moskva* and the difficulties in countering Ukrainian drones and missiles, reveal that unprepared crews can affect defences, even with the most advanced equipment, platforms and weapons. These real-world setbacks highlight gaps in basic training, adaptability and preparedness of Russian sailors, all contributing to operational lapses and low morale.

The broader lesson for militaries is clear: effective naval power depends not only on advanced capabilities, but also on well-trained, cohesive, committed professionals capable of adapting to high-stakes, complex and evolving modern warfare environments. This serves as a reminder that training, basic skills and the highest degree of leadership remain crucial – and we remain committed to that.

**AG**

*Given the importance of private industry in developing the capabilities (and personnel) necessary for tomorrow's RCN, as well as for supporting RCN missions, what sort of collaboration, if any, is occurring?*

**Commodore Armstrong**

The RCN has made a deliberate effort to increase collaboration with the defence industry, particularly in Canada. Our people regularly attend industry engagements in Canada, and globally, with the goal of understanding a range of perspectives, and what we might be able to do to enable Canada's capacity to contribute. Getting out and interacting with industry, including First Nations and Inuit businesses, makes us smart buyers as we learn what the state of the art is, and what's in the realm of the possible. It also enables the development of a supply chain that is positioned to enable Canada's long-term objectives amid the specter of a rules-based international order under continued threat. We are very interested in engaging with all corners of Canada's defence industrial base and beyond. In the end, we can't deliver our program without the support of industry, so it's very much a team effort.


Credit: Kraken Robotics

*Canadian sonar company Kraken Robotics integrated its mine detection sonar into the Uncrewed Underwater Vehicles of four other NATO navies as part of the REPMUS 2024 exercise.*

**AG**

*What threats are you seeing emerging today that haven't been considerations in the past but will be in the next 10 years? What capabilities will be necessary to meet these threats?*

**Commodore Armstrong**

We are only beginning to see the potential of uncrewed systems in the operational theatre. These capabilities have rapidly evolved, including what they can carry, how far they can travel, and how long they can remain operational. Their level of automation has increased exponentially, allowing them to navigate complex terrain, defend against attacks, and adapt missions or strategies autonomously. This impressive self-coordination makes them challenging to defend against and has changed the nature of warfare. Additionally, we are observing the emergence of long-range hypersonic and anti-ship ballistic missiles, enhanced capabilities to manipulate and control the electromagnetic environment, and the development and use of Directed Energy Weapons.

NATO has recently begun studying what is referred to as Seabed Warfare. The destruction of the Nord Stream undersea pipeline in 2022 highlighted the vulnerability of critical undersea infrastructure. Damage to these systems could have a crippling effect on our national economy.

And most importantly there is the Canadian Patrol Submarine Project. Submarines will be a key capability in protecting Canada's undersea interests. The ability to detect, deter and, if necessary, destroy threats to national undersea interests primarily depends on a submarine fleet. Adversary submarines pose a significant threat to Canada and anti-submarine warfare is more important than ever to the defence of North America and beyond.

**AG**

*Let's talk about technology in terms of RCN ships. The Arctic and Offshore Patrol Ships (AOPS)/Harry DeWolf-class are very lightly armed. If Canada is forced into conflict, can the AOPS be 'up-gunned' with uncrewed systems so they are useful in conflict? And will they be able to defend themselves against uncrewed systems?*

**Commodore Armstrong**

The *Harry DeWolf*-class is a flexible and technologically advanced class of ships, capable of conducting missions in Canadian coastal waters, including the Arctic, and deploying globally to support government objectives abroad. But you have to remember that our main current war-fighting capability is the frigates. The *Halifax*-class has been modernized and the ships are our war-fighters.

We have only begun to explore the full potential of the *Harry DeWolf*-class. We continue to investigate ways to augment its capabilities to meet threats. As part of our strategy, we are ensuring that all ships have the capability to counter uncrewed systems. Some of the systems we are procuring are easily transferable between different ships. We are enhancing our Force Protection Component on all ships and purchasing equipment that can be rapidly set up on the upper decks or on accompanying small boats on various missions. These systems are based on dismounted soldier systems and adapted to our needs, ensuring that any ship requiring the capability can be quickly equipped.

Credit: IDEaS, Department of National Defence

*Vancouver's AIM Defence won first place in the 2024 DND IDEaS counter-UAS challenge. The Fractl:1 laser successfully engaged over 30 drones at up to 1.5 kilometres away.*

**AG**

*When a traditional ship, such as Canada's new destroyers, takes 10 years to design and 20 years to build, the technology on board could be outdated before the ship is even launched. Can the technology of Ship 1 be expected to be effective and relevant by Ship 15? How can the fleet be structured to manage technological changes? Is the force development/procurement process agile enough to keep pace with technological changes?*

**Commodore Armstrong**

We're confident that the *River*-class destroyers will have the capability to adapt to any mission to which they are assigned. They'll be able to conduct a broad range of tasks, including regional engagements, delivery of humanitarian aid, search and rescue, law and sovereignty enforcement, and medium-intensity operations such as counter-piracy, counter-terrorism, interdiction and embargo operations. Ultimately, they will deliver decisive combat power at sea and in support of land operations as needed.

The *River*-class will be equipped with the sensors and weapon systems to defend themselves and enable a task group to operate against a full range of maritime threats in the air, surface, undersea and information warfare dimensions. Additionally, they will be interoperable with our allies, allowing Canada to make a contribution to NATO and other coalition efforts as circumstances demand.

Credit: Cpl David Veldman, Canadian Armed Forces

*Sailor First Class Raymond Kwan, Naval Combat Information Operator, works at a console aboard HMCS **Harry DeWolf** during a proficiency sail on 4 November 2020. The sinking of the Russian cruiser **Moskva** by Ukraine demonstrates the importance of a well-trained crew, not just sensors and weapons.*

**AG**

*Admiral Topshee has stated that the River-class destroyers will be upgraded in future flights, how will that be accomplished? What will have to be deleted from the current design to make room?*

**Commodore Armstrong**

The *River*-class project is equipping the RCN with modern equipment, sensors and weapons necessary to counter a full range of maritime threats. As technologies evolve, both during the project's life-cycle and once the ships are in service, Canada will continuously explore opportunities to integrate new technologies. This approach ensures that we remain ready to face emerging threats.

**AG**

*I know that the RCN does not make such decisions – the government does – but given that many analysts predict the time-frame for a major conflict to be within the next 3-5 years, is the RCN looking at ways to acquire hulls (probably of the less complex Tier 2 type) to meet probable urgent demand? In other words, is the RCN investigating ways of quickly acquiring surface ships from elsewhere (as other countries are doing) while the River-class destroyers are being built, and to supplement them if necessary?*

**Commodore Armstrong**

We have capabilities. As I said earlier, the *Halifax*-class frigates have recently been modernized and are very capable platforms. And the submarines still have some operational life left – they'll be upgraded to stay in the fleet until 2035.

The RCN is undergoing its largest fleet recapitalization since the Second World War. The missions the RCN is expected to execute are driven by government defence policy, such as *Strong, Secure, Engaged* and *Our North, Strong and Free*. We continuously evaluate the types of platforms, capabilities and quantities needed to meet these obligations. It's about achieving the right balance or mix of tools for the job in the appropriate quantities. We're currently collaborating with the defence industry to acquire platforms like the *River*-class and submarines as quickly as possible.

**AG**

*I have two quick questions to follow up on this. First, it sounds like the answer is No, the RCN is not investigating ways of quickly acquiring ships while it waits for the River-class to become operational? Second, I notice that you don't mention the AOPS in terms of assets to use in case of conflict.*

**Commodore Armstrong**

I can't comment about acquiring Tier 2 ships. All I can say is we are looking forward to obtaining the *River*-class destroyers. And we are looking at how to augment the AOPS. As well, there has been discussion about replacing the MCDVs with the Canadian Multi-mission Corvette. This project has been discussed, and is on the RCN books, but as yet it doesn't have policy coverage. We continue to engage with the defence industry and welcome their ideas and suggestions about systems and platforms.

**AG**

*Australia conducted a very comprehensive and independent study of its surface fleet and came out with a series of recommendations. What is Canada's plan for a future fleet-mix study? Is there one in progress? At what stage is it?*

**Commodore Armstrong**

The RCN is in the latter stages of completing a Fleet Mix Study. It's being undertaken by Director of Naval Strategy and Assistant Deputy Minister (ADM) of DRDC's Maritime Operational Research Team with the purpose to examine scenarios and evaluate different mixes of fleet platforms and readiness to quantify the right balance for both the surface and submarine fleets. Preliminary results show that the RCN is on track with its current fleet intentions to be properly positioned to meet the requirements of Canada's defence policy aims. We expect to see the final report in the first half of 2025.

**AG**

*Recruitment and retention continue to be concerns. Are personnel shortages affecting decisions about technology, capabilities and platforms? Obviously new ships and submarines need crews, and even 'uncrewed' systems still need personnel for operations and maintenance.*

**Commodore Armstrong**

The RCN, like the rest of the CAF, has faced challenges in recruiting, training and retaining Canadian talent. This issue has the potential to negatively impact our operations and capabilities. Crewing and personnel are other uses for AI – i.e., looking at optimal crew sizes, and developing simulators and training programs for the new ships.

While we've been working to address personnel challenges through various stages – from recruitment to employment


Credit: Hanwha Ocean

*Commander of the RCN, Vice-Admiral Angus Topshee, visits the Hanwha shipyards in South Korea on 10 November 2024. South Korea's shipyards have become a potential source for additional capacity that can support the shipbuilding requirements of other countries.*

and retention – there is no quick fix. We have strategies and initiatives to attract new sailors to the navy, such as the Naval Experience Program which aims to reduce the time it takes to transform civilians into sailors while allowing them to experience life in the navy before choosing a trade. There are no strings attached; after a one-year term of service, participants can choose to continue serving with the navy, either full- or part-time, or leave if it isn't a good fit for them. The program also allows the navy to assess the suitability of new recruits. To continue meeting our operational obligations, we have to attract and retain the best Canadians to a life of naval service. These people will underpin our security and prosperity and this rightly remains our highest priority.

**AG**

*Assuming that Canada goes ahead with the purchase of 12 submarines, how the heck will the RCN find enough crew for them?*

**Commodore Armstrong**

We have no shortage of volunteers for submarine service, and the opportunity to serve aboard our submarines remains a popular posting aspiration. We already have a plan in place to crew the new submarines, and the Naval Experience Program will also enable this effort. New sailors, having had the opportunity to be exposed to our submarines, will no doubt place them on their list of opportunities to pursue during their career in the navy.

**AG**

*When looking at global strategic trends, which potential shocks do you think are likely to cause the greatest challenges?*

**Commodore Armstrong**

The need to build ships and field a diverse range of capabilities in facing a wide range of emerging threats is constantly growing, leading to an increased demand for shipbuilding, innovation and high-tech component manufacturing. Canada faces the challenge of balancing the development of our national capability with our capacity in this area. Our shipbuilders are re-emerging as global industry leaders, as evidenced by the recent Icebreaker Collaboration Effort (ICE Pact) agreement with the United States and Finland. However, some of our allies and partners have larger shipyards that can build ships faster and at a lower cost. These are realities that we must balance as we continue to work with industry alongside the threats that are before us.

As AI continues to be developed and deployed in tactical units, the demand for data transmission will exceed the current capabilities of our warships. Significant efforts are being made by Canada and our Five Eyes allies to develop secure, high-volume communication technology. This includes space-based solutions and innovative methods of using radio waves to transmit more data within the same bandwidth while being less detectable by adversaries.

**AG**

*Aside from more money and more people, what would be on your wish list in order for NFD to do its job better?*

**Commodore Armstrong**

On my wish list would be increased and stronger relationships within government and with external actors. Relationships and relationship building have been key to the RCN in executing its Force Development program. Within DND, the RCN needs to ensure that all of our partners are aware of and understand our requirements, and how they must play a part in the way ahead. Take the submarine project for example: a great deal of engagement was conducted across DND and beyond as that project progressed through the Identification Phase.

NFD has worked hard to engage with other government departments – such as Canadian Coast Guard, Finance, Global Affairs, Innovation, Science and Economic Development, Public Service and Procurement, and Treasury Board – ensuring that they understand our requirements, what we are attempting to do and why. We find it useful to ensure that there is a face to a project and a person who those in the other departments can reach out to engage with the RCN.

Additionally, we have initiatives to engage with Canada's defence industrial base in a more deliberate manner. It is important to the RCN that industry and those working internally to the government have an understanding of how each other operate and what is important from a project perspective to advance the RCN's program. Lastly, and perhaps most importantly, we need to engage with the Canadian public.

**AG**

*Commodore Armstrong this has been very illuminating. Thank you for taking the time out of your busy schedule to answer my many questions.*

# Closing the RCN's Mine Countermeasure Capability Gap

**Alec Rembowski**

Since their first use in 14th century China, sea mines have played a constant role in maritime operations both as an offensive and a defensive weapon. As these mines provide a relatively cheap but effective way to limit the mobility of ships,[1] there has been a consistent necessity for vessels with naval mine countermeasure (NMC) capabilities. Canada's current solution to sea mines rests with the *Kingston*-class Maritime Coastal Defence Vessels (MCDVs), a multi-role minor war vessel with the primary mission of coastal surveillance and patrols.

Despite mine countermeasures assigned as their initial role, the capabilities of the *Kingston*-class as minesweepers have disappeared in recent decades. With new technological innovations in sea mine warfare, the Department of National Defence (DND) is moving forward with a project to reinvigorate Canada's counter-mine capability. This will be executed through the Remote Minehunting and Disposal System (RMDS) project that, as of December 2023, is in the implementation phase to replace Canada's current mine countermeasure technology.[2] This is in conjunction with the proposed Multi-Mission Corvette (CMC) project to replace Canada's aging MCDVs with the Vard Marine's *Vigilance* Offshore Patrol Vessels (OPVs). However, are the RMDS and OPV projects enough to secure Canadian maritime interests from sea mines? This article will argue that without a dedicated class of ships designed to deal with mines, the RMDS project will not succeed just as the MCDVs did not maximize and maintain their mine countermeasure capability.

*Credit: Jiao Yu and Liu Ji, via PericleseofAthens on Wikimedia Commons*

*An illustration in the Ming Dynasty Chinese military treatise* ***Huolongjing*** *dating from the 14th century shows a naval mine where the fuse is lit from the surface before burning its way down to the submerged explosives.*

## *Canada's Counter-mine Capabilities*

In the summer of 1918, Canada had to contend with German sea mines off its coast when U-boats laid them near the entrance of Halifax Harbour.[3] Realizing the potential threat posed by enemy sea mines, by the onset of the Second World War in 1939 Canada had two new minesweepers stationed on each coast. These ships became a vital part of Canada's port security system. The development of counter-mine capabilities was essential to prevent the Germans from successfully mining Halifax Harbour, which would have had catastrophic effects on the country's sustainment operations to the Allied forces fighting in Europe. Canada also utilized its sea mine capabilities to participate in offensive operations. For example, in June 1944, 16 Canadian minesweepers took part in counter-mine operations during *Operation Neptune* as part of the Allied Normandy landings.[4]

Throughout the Cold War, Canada struggled to maintain a counter-mine capability. Conceptualized near the end of the Cold War, the *Kingston*-class MCDVs were introduced and built in accordance with recommendations in the 1987 Defence White Paper.[5] The MCDVs were designed to address two of the most apparent shortfalls of the RCN at the time – lack of general-purpose patrol and minesweeping capabilities. The RCN had limited capacity to keep Canadian waterways and harbours clear of mines. The *Bay*-class minesweepers had long since been obsolete and were in the process of being paid off. While the RCN waited for the MCDVs to be built, two offshore drill-rig supply vessels were converted into minesweepers.[6] All 12 MCDVs were launched by 1998 (the last *Bay*-class minesweeper was paid off in 1998).[7] The *Kingston*-class was fitted for, but did not necessarily carry, three counter-mine


Credit: Jan Eenling

*HMCS **Kingston**, a Maritime Coastal Defence Vessel, sails with NATO vessels during BALTOPS 2021, a major exercise in the Baltic Sea that includes mine countermeasures.*

systems that could be added or changed for mission-specific functions. These systems included: the deep-sea mechanical minesweeping system; the route survey system; and a remotely operated vehicle (ROV) mine inspection system.[8]

The MCDVs were a compromise build, designed to fulfill both minesweeping and general patrol capabilities. Consequently, their design falls short of an ideal minesweeping vessel. The *Kingston*-class utilizes two azimuth thrusters which is ideal for a minesweeper. Where most ship propulsion systems consist of fixed propeller and rudder, the azimuth thrusters are propellers that are placed in pods that can rotate 360° making the ship more manoeuverable. However, while the vessel's propulsion system is designed to reduce its acoustic signature to defend against acoustic mines, its top speed of 15 knots makes it a slow patrol ship which is problematic for Canada's long coastlines.[9] In addition to this, the hull is made of steel, instead of wood or fiberglass which is the ideal design to counter magnetic mines.[10] Additionally only three of the MCDVs were supplied with complete degaussing systems, which are intended to reduce the magnetic signature of the vessel.[11]

The compromise design of the MCDVs has hindered the ability of the vessels to achieve their function as a minesweeper and a patrol vessel. With the Cold War ending before all the MCDVs came into service, their minesweeping capability no longer seemed important and was allowed to atrophy, and the necessary equipment was no longer available.[12] However, despite these deficits, several *Kingston*-class vessels have deployed to Europe on *Operation Reassurance* as part of Standing NATO Mine Countermeasures Groups 1 and 2, following Russia's invasion of Ukraine in 2022.[13]

### *Remote Mine-hunting and Disposal System*

On 8 December 2022, the then-Minister of National Defence Anita Anand announced that two contracts had been awarded to procure and maintain new mine hunting and disposal systems.[14] The contracts collectively were valued at $57.9 million and as of December 2023 were expected to be delivered in 2024, becoming fully operational by 2025. Currently there is no update if the project has been delivered and Kraken Robotics did not mention the Remote Mine-hunting and Disposal System (RMDS) project in its filed financial results of Q2 2024, ending on 30 June 2024.[15] This project is intended to develop and sustain a "modular, stand-off counter-mine capability" for the RCN to enable a "full spectrum of naval mine-hunting operations and contribute to underwater domain awareness," with the ability to detect, classify and destroy sea mines.[16]

The RDMS project is supposed to deliver one system per coast, including an Automated Underwater Vehicle (AUV) sub-system, Mine Disposal sub-system, and a

Transportable Command Centre.[17] The AUV sub-system will utilize two types of systems: a "man portable" AUV (12-45 kg); and a lightweight "deep water" AUV (up to 300kg).[18] The Mine Disposal sub-system consists of Explosive Mine Disposal Vehicles enabling the RCN not only to locate sea mines and underwater improvised explosive devices (UIEDs) but also destroy them. The RMDS is primarily supposed to be utilized on the MCDVs,[19] however with the Transportable Command Centre, the system could be placed on any Canadian vessel.

While the RMDS project apparently promises to enable the RCN to regain the ability to conduct naval mine countermeasure operations, the feasibility of it being employed is questionable based on the current state of the MCDVs. With a design life of 25 years, the *Kingston*-class vessels entered their end-of-life period in 2020. These vessels are now being routinely rotated in and out of service due to continuing engine issues. A proposed $100 million refit was cancelled in 2006, due to the limited capabilities of the platform.[20]

Addressing Canada's struggling patrol capabilities, the 2016 RCN document *Leadmark 2050: Canada in the New Maritime World* called for a fleet of 12 new coastal patrol vessels.[21] However, instead of replacing the MCDVs, this initiative was divided by Public Service and Procurement Canada as part of the National Shipbuilding Strategy (NSS) between six new RCN and two Canadian Coast Guard (CCG) Arctic and Offshore Patrol Ships (AOPS), as well as 16 new Multi-Purpose Vessels (MPVs) for the CCG.[22] It has been argued that adding the RMDS package on 'vessels of opportunity,' such as the AOPS and MPVs, is the best way for the RCN to regain a naval mine countermeasure capability.[23] However, these ships would face similar issues that the MCDVs currently face with their compromised dual-purpose design. This includes not being able to use Dynamic Positioning (DP) systems which allow them to use their thrusters to hold the ship in place relative to the ocean floor. DP systems enable minesweeper ships to use tools like the RMDS to neutralize mine threats. Without pairing the RMDS project with a specifically designed minesweeper, the project's potential will never be realized.

In addition to a failure to deliver and sustain a dedicated mine countermeasure-capable platform, the RCN has

*Credit: Master Sailor Dan Ward, Canadian Armed Forces Combat Camera*

*Crew members aboard the MCDV HMCS **Brandon** prepare to lower an underwater drone used to conduct scans of the ocean floor near Juneau, Alaska, during Exercise Arctic Edge 2022 on 8 March 2022.*

Credit: Royal Canadian Navy

*A Clearance Diver from Fleet Diving Unit (Atlantic) prepares to complete an exercise in July 2023.*

faced considerable challenges at retaining knowledge and experience in its counter-mine capability. Historically, mine-hunting was consolidated within Fleet Diving Units and the Naval Reserve who manned the MCDVs.[24] However, the recruitment and retention crisis within the RCN and the adoption of the 'One Navy' concept in 2017, which unified the employment of reservists and regular force members on both the *Halifax*-class frigates and the MCDVs, resulted in Canada's shipborne counter-mine knowledge and experience being mostly lost, creating a competency gap. This is exacerbated by the shortage of qualified technicians causing the prioritization of maintaining the serviceability of the frigates over the MCDVs.[25] Without enough personnel and inadequate training opportunities due to the prioritization of the frigates, the RCN is unprepared to deal with a mine threat even if it did have sufficient seaborne platforms and equipment.

## *Replacing the* Kingston*-class*

In April 2024, *Canadian Defence Review* reported that DND had proposed a new project called the Multi-Mission Corvette (CMC) project to replace the MCDVs.[26] Surprisingly, there was no reference to a CMC project in Canada's updated defence policy *Our North Strong and Free* and, as of 31 October 2024, the CMC project does not appear on the National Shipbuilding Strategy's website. However, several Canadian defence companies, including Vard Marine, Ontario Shipyards, Thales Canada, SH Defence and Fincantieri have partnered to form Team Vigilance.[27] It was through Team Vigilance that Vard Marine proposed the *Vigilance* Offshore Patrol Vessel (OPV) at SENSEC 2023. Vard's Vice-President of Business Development Derek Buxton stated, "[w]hile it can perform all of the domestic missions that the MCDV is designed to perform, the *Vigilance* OPVs are also capable of transoceanic deployment in a very safe and comfortable way." He continued by stating, "[i]t is a more 'sea kindly' vessel with an extended range," emphasizing the patrol capabilities of the *Vigilance* OPVs.[28] The *Vigilance* OPVs promise to be capable of a range of missions including intelligence, surveillance, reconnaissance, sub-sea and critical infrastructure protection, route survey and mine countermeasures, naval boarding party and maritime interdiction operations, law enforcement, fisheries protection and border security.[29]

While it would be great to see a replacement for the aging MCDVs, the proposed *Vigilance* OPVs have several similar negative, and perhaps even more detrimental, design features for naval mine countermeasure operations than the *Kingston*-class. It appears that Team Vigilance's OPVs, are tailored towards improving upon the MCDV

general patrol mission set with their new design. However, this design will hinder the OPVs in counter-mine operations. While no formal specs have been released of the *Vigilance* OPVs design, two YouTube videos released in May 2023 and June 2024 by Team Vigilance indicate that their *Vigilance* OPVs appear without azimuth thrusters and DP systems.[30] This would greatly hinder the manoeuverability in counter-mine operations. Interestingly, the *Vigilance* OPV design appears very different between the May 2023 and June 2024 release with the second video emphasizing more modular capabilities. There is also no indication that the *Vigilance* OPVs would not be made of steel like the MCDVs. It appears that the *Vigilance* OPVs are as much of a compromise build as the MCDVs, and the design features are tailored towards Canada's need for general-purpose patrol capabilities. If the Canadian government pursues the CMC Project and selects the *Vigilance* OPVs, they will not strengthen the RCN's ability to address sea-mine threats; in fact, in some respects, they may hinder it with inadequate shipborne capabilities.

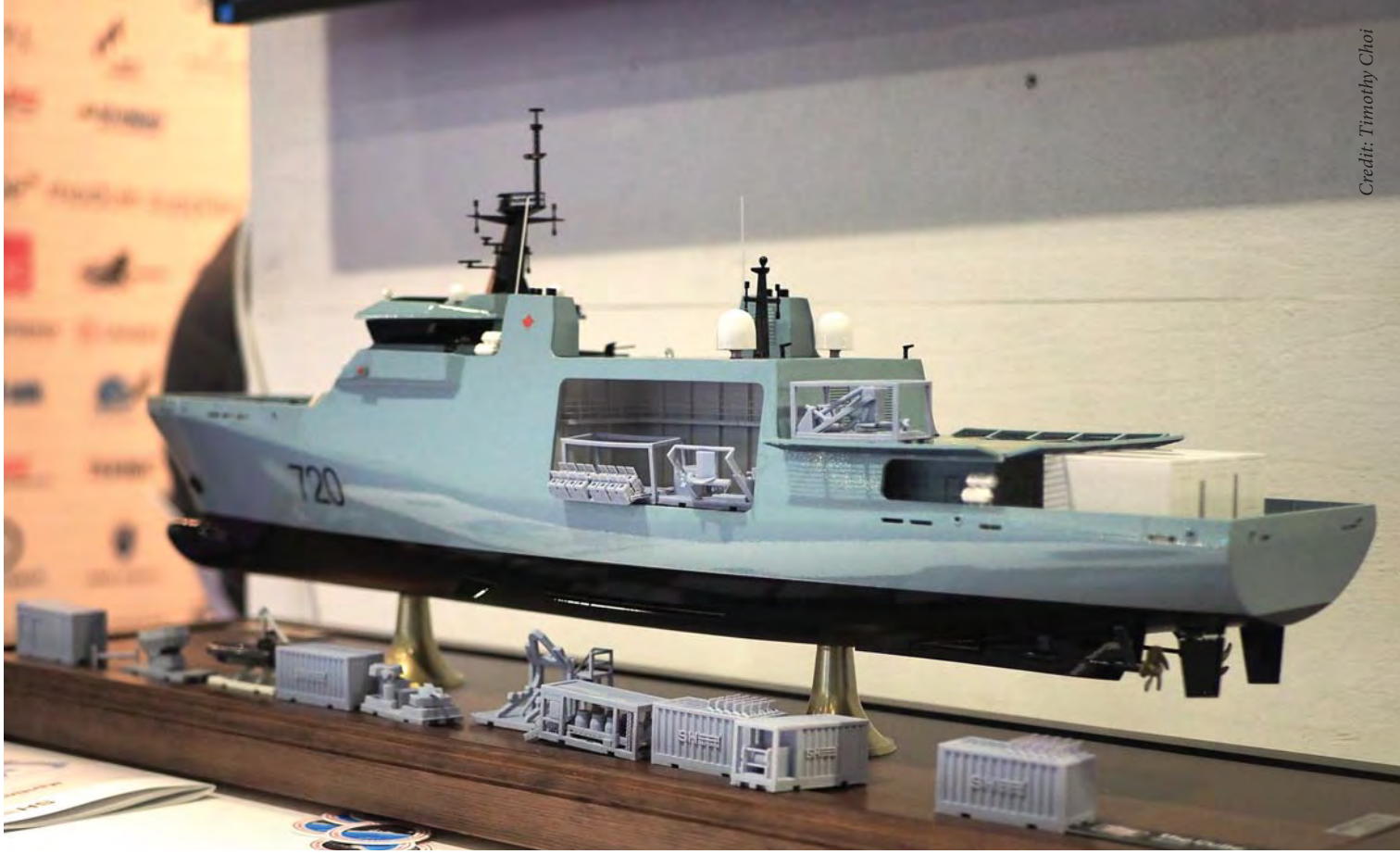
### *A Changing World, Full of Sea Mines*

This discussion about sea mines and having a counter-mine capability might not have been relevant even as little as five years ago. But things have changed. For example, as an arena affected by the conflict between Russia and Ukraine, the Black Sea has been mined, which makes commercial ship transits more challenging. As well, China is reportedly in possession of thousands of sea mines that could be used in the South China Sea and around Taiwan – and Taiwan has considered the use of mines to protect itself from invasion. The changing international environment means that sea lines of communication (SLOCs) are at greater risk of being targeted by state, and even non-state, adversaries than they have been in decades. The Red Sea crisis, in which the Houthis in Yemen are currently disrupting ship traffic ostensibly because of Israeli actions in Gaza, demonstrates how non-state adversaries can disrupt SLOCs and international trade through the Bab-el-Mandeb Strait and Suez Canal. It is reasonable to assume that sea mines and UIEDs could be employed to further disrupt trade in the region.

The question is if Canada will gain the capability to address this threat. The compromise design of the MCDVs means that they have never been effective in a counter-mine role. Proposals of ships to replace the MCDVs seem to suffer from the same compromises that reduced the emphasis on mine countermeasures. In 2022, contracts were awarded to procure and maintain new mine-hunting


Credit: Timothy Choi

*A model of Heddle Shipyards in the process of building the prospective Canadian Multi-Mission Corvettes shown at the CANSEC 2024 defence trade show.*




Credit: Timothy Choi

*A model of the Canadian Multi-Mission Corvette design proposed by Team Vigilance shown at the Defence and Security Equipment International (DSEI) 2023 trade show.*

and disposal systems, however they are still being used on ships not designed for MCM operations. We are still waiting to see the effectiveness of these new programs, and whether the capability to counter sea mines can be rebuilt.

**Notes**

1. During *Operation Desert Storm* in the Gulf War in the early 1990s, two Iraqi sea mines costing approximately $1,500 and $10,000 USD inflicted a combined $21.6 million worth of damage to USS *Princeton* and USS *Tripoli* operating in the Persian Gulf. United States Government Accountability Office, National Security and International Affairs Division, "Navy Mine Warfare: Budget Realignment can Help Improve Countermine Capabilities," GAO/NSIAD-96-104 (March 1996), p. 2.
2. Government of Canada, Department of National Defence (DND), "Remote Mine-hunting and Disposal System," 1 December 2023.
3. Government of Canada, Canadian War Museum, "East Coast Sea Battles," no date.
4. Richard Woodbury, "When the Americans Landed at Omaha Beach on D-Day, They had Help from Halifax," CBC News, 6 June 2023.
5. Government of Canada, DND, *Challenge and Commitment: A Defence Policy for Canada*, June 1987, dn-nd/D2-73-1987, p. 43.
6. The idea of converting a civilian vessel for military use is not new. It was recently conducted when the Royal Canadian Navy (RCN) received a commercial container ship that had been converted into the auxiliary oiler replenishment ship MV *Asterix*, as a stopgap while the RCN awaits its *Protecteur*-class Joint Support Ships.
7. Government of Canada, DND, "Kingston class," no date.
8. DND, "Kingston-class"; and "MDA Extends Canadian Navy's Kingston-class Vessels Operational Support," *Naval Technology*, 18 May 2012.
9. Naval Association of Canada, "Kingston-Class Patrol Ships," Briefing Notes, no date, pp. 1-2.
10. *Ibid*., p. 1.
11. Lieutenant-Commander Nicole Robichaud. "Technology Will Eliminate the Royal Canadian Navy's Mine Countermeasures Vulnerabilities," Canadian Forces College, 2018, p. 2.
12. Naval Association of Canada, "Kingston Class Patrol Ships," p. 1.
13. DND, Media Release, "Her Majesty's Canadian Ships Kingston and Summerside depart for Operation Reassurance," 26 June 2022; and DND, Media Release, "Royal Canadian Navy Ships Join Standing NATO Mine Countermeasures in Europe," 3 July 2023.
14. DND, Media Release, "Minister Anand Announces Remote Mine-hunting and Disposal System Contract Award to Increase Safety for Royal Canadian Navy Ships and Crews," 8 December 2022.
15. Kraken Robotics, "Kraken Robotics Reports Strong Q2 2024 Financial Results," Aberdeen & Grampian Chamber of Commerce, 27 August 2024.
16. DND, "Remote Mine-hunting and Disposal System," 1 December 2023.
17. *Ibid*.
18. *Ibid*.
19. DND, "Minister Anand Announces Remote Mine-hunting and Disposal System Contract."
20. Stephen Priestley, "The Kingston Class: 'Mid-Life' or Move Over for the MCDV? Reviewing Navy Plans for the Future of the MCDVs," *Canadian American Strategic Preview*, June 2006.
21. Royal Canadian Navy, *Leadmark 2050: Canada in a New Maritime World*, 13 May 2016, p. 58.
22. Naval Association of Canada, "Kingston Class Patrol Ships," pp. 2-3; and Government of Canada, Public Services and Procurement Canada, Media Release, "Renewing Canadian Coast Guard Fleet and Delivering Important Services for Canadians," 22 May 2019.
23. Robichaud, "Technology Will Eliminate the Royal Canadian Navy's Mine Countermeasures Vulnerabilities," pp. 9-10.
24. Coastal Maritime Operations Group Five (CMOG5), *Naval Mine Countermeasures (NMCM) Review*, 13 October 2017. Cited in Robichaud, "Technology Will Eliminate the Royal Canadian Navy's Mine Countermeasures Vulnerabilities," p. 3.
25. Royal Canadian Navy, "The State of the Royal Canadian Navy," YouTube video, 27 November 2023.
26. Peter Diekmeyer, "Replacing the Kingston-Class," *Canadian Defence Review*, April 2024, pp. 120-121.
27. Team Vigilance, "Team Vigilance," released 16 May 2024.
28. Quoted in James Careless, "Taking Offshore Patrol Vessels to the Next Level," *Canadian Defence Review*, 29 December 2023.
29. *Ibid*.
30. Vard Marine Inc., "Vigilance Offshore Patrol Vessel," YouTube video, released 31 May 2023; and Vard Marine Inc., "Vigilance Next Generation Naval Vessel," YouTube video, released 11 June 2024.

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# HMCS *Harry DeWolf*'s Transit of the Welland Canal

**Roger Litwiller**

*Credit: Roger Litwiller Collection, courtesy Roger Litwiller*

*HMCS **Harry DeWolf** alongside Pier 8 in Hamilton, Ontario, on 21 October 2024.*

With three oceans and the longest inland passage bordering Canada, the Royal Canadian Navy (RCN) is very familiar with operating in salt and fresh water. And every once in a while a unique opportunity arises for RCN sailors. On 22 October 2024, HMCS *Harry DeWolf* (HDW) claimed another first for an Arctic and Offshore Patrol Ship (AOPS), transiting the historic and economically important Welland Canal passing from Lake Ontario to Lake Erie.

HDW was on a Great Lakes Deployment supporting the highly successful Marine Careers Expo. The program was a Canadian government-led cooperation among the RCN, Canadian Coast Guard, the Marine Careers Foundation and allied agencies to promote careers in the marine sector and increase public awareness.

The expo travelled from St. John's, Newfoundland, along the St. Lawrence into the Great Lakes, with Windsor the last of eight communities visited. I was invited aboard HDW during its stop in Kingston, Ontario, through the Stakeholder Engagement Office Central, for a tour of the ship and luncheon with the Command team.

It was at this time that I had the good fortune to meet Commander Jon Nicholson, Commanding Officer, HMCS *Harry DeWolf*. During the interesting conversation with the group, the transit through the canal was discussed as was how the AOPS were designed to fit inside the locks on the seaway as compared to the Coast Guard versions which will have the extended bridge wings. I pointed out that this will be the first transit of an AOPS and suggested that 'a historian' should be aboard to record this event. Once the chuckles subsided, Commander Nicholson stated "let's see what we can do."

I joined HDW in Hamilton on the morning of 21 October at Pier 8. It was a magnificent early morning sight because alongside HDW at Pier 9 was Vice-Admiral Harry DeWolf's historic command HMCS *Haida*, the ceremonial flagship of the RCN and last *Tribal*-class destroyer.

After being shown to the Haida Cabin in HDW, I was invited to join Commander Nicholson in his cabin. He welcomed me aboard and explained our itinerary for the next two days. Knowing how busy the schedule for his ship was going to be with this deployment, he had scheduled several 'sea days' for rest. While in port the ship's company had been very active with public and outreach tours, working with local Naval Reserve Divisions (NRD), cadet corps and even hosting several formal receptions including citizenship ceremonies. The day on Lake Ontario was a chance for the ship's company to rest and recharge before the expected full day transiting through the canal the next day.

After I thanked Nicholson for this generous opportunity, I offered to work for my passage. Based on crewing arrangements, I expected to be assigned a cleaning station and I offered an interesting RCN history chat for the sailors if time was available.

The pre-sail briefing in the operations room followed, at which I was introduced to the ship's company. Many of the sailors introduced themselves and I was very pleased that quite a few knew my work on RCN history.

HDW closed up for leaving harbour, and a shore party from HMCS *Star* arrived to assist with lines. Local tugs *Omni Coastal* and *Ocean Gulf* secured fore and aft to ensure HDW cleared the protruding stage that some land-based engineer decided would be a stunning architectural feature on the end of a pier in a narrow channel.

By 1000, HDW was clear, tugs released and sailing past several Lakers and Salties in Hamilton Harbour towards the Burlington Bay Canal. For many of HDW's sailors this was their first deployment to the Great Lakes and for all but five, their first transit of the Welland Canal. HDW's sailors came on deck to watch as their ship passed under the Burlington Bay Skyway Bridge for the Queen Elizabeth Way (QEW) Highway and the Canal Lift Bridge.

Once in Lake Ontario our pilot departed and the off-watch sailors stood down to catch up on rest. I took full advantage of the day to wander the ship and get to know my new shipmates. I enjoyed many conversations regarding personal time in the RCN, experiences with their recent *Operation Nanook* deployment and how excited they are with the AOPS and the capabilities this class of ships is delivering to the RCN. From wardroom to sailors in the Naval Experience Program, HDW is a 'Happy Ship.'

As a retired Paramedic, a visit to Sick Bay was a must. There I had an interesting conversation about the medical and humanitarian capabilities of the class, including a recent exercise in submarine rescue. Needless to say, a few stories were told among the three of us.

The AOPS are multi-mission platforms, capable of providing serious ocean real-estate to conduct the business of the navy. During my travels in the two days, I managed over 13,000 steps and climbed 122 stories within the confines of the 103 metres (338 feet) of the ship.

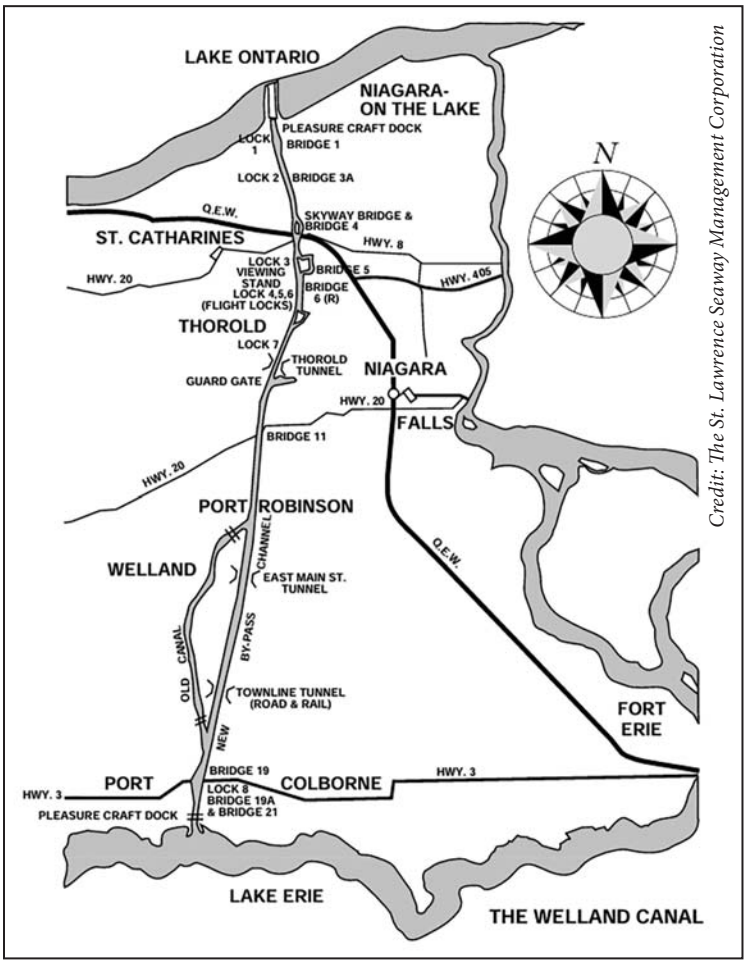
At supper I joined Commander Nicholson in the scullery, as it was his turn for duty, before we sat down for a delicious meal from the cooks. In the evening I provided an open talk to the ship's company in the wardroom on an

*Credit: Roger Litwiller Collection, courtesy Roger Litwiller*

*HMCS **Harry DeWolf** enters the Burlington Ship Canal and passes beneath the lift bridge and Skyway bridges. 21 October 2024.*

Credit: Roger Litwiller Collection, courtesy Roger Litwiller

*A day spent sailing the western end of Lake Ontario allowed **Harry DeWolf**'s ship's company some respite after a hectic schedule ashore with the Naval Marine Expo. HDW recovering port side RHIB in Lake Ontario on 21 October 2024.*




Credit: The St. Lawrence Seaway Management Corporation

*A map of the Welland Canal, as printed in a 2003 publication by The St. Lawrence Seaway Management Corporation.*

RCN hero, Surgeon Captain Dr. Charles Best, RCNVR, co-creator of Insulin, blood serum and Heparin, which have saved millions of lives. Serving in the RCN during the Second World War, he pioneered sea-sickness pills, survival suits, RCN pattern lifejackets and perhaps his greatest experiments in night vision leading to red lighting, still in use today.

The next morning a golden sunrise broke over Lake Ontario as HDW's sailors were already preparing for the transit through the Welland Canal. Fenders, mooring lines were brought out and watches closed up. Captain Jason Church, pilot Great Lakes Pilotage Authority, joined HDW and course was set for the channel entrance at Port Weller.

Commander Nicholson was as excited as his sailors, for this was his first transit of the canal as well. Following his discussions with Captain Church, Nicholson took his position to direct HDW into Lock 1 just after 0800.

The canal consists of eight locks over the 43.4 km (27 mile) route, providing a total lift of 99.5 metres (326.5 feet) over the Niagara Escarpment. The first seven locks are 233.5 m long and 24.4 m wide (766 ft x 80 ft) with an average lift of 14.2 m (46.5 ft) each. The final lock at Port Colborne is a Seaway Control Lock to adjust the water height with Lake Erie.[1]

Credit: Roger Litwiller Collection, courtesy Roger Litwiller

*HMCS **Harry DeWolf** approaches the Welland Canal Channel at Port Weller from Lake Ontario on 22 October 2024.*

With a beam of 19 metres (62 feet), HDW had room to spare, unlike the Lakers working with inches of clearance. They must intentionally 'rub' the wall to enter the locks. Commander Nicholson assured the pilot that his ship would have none of that.

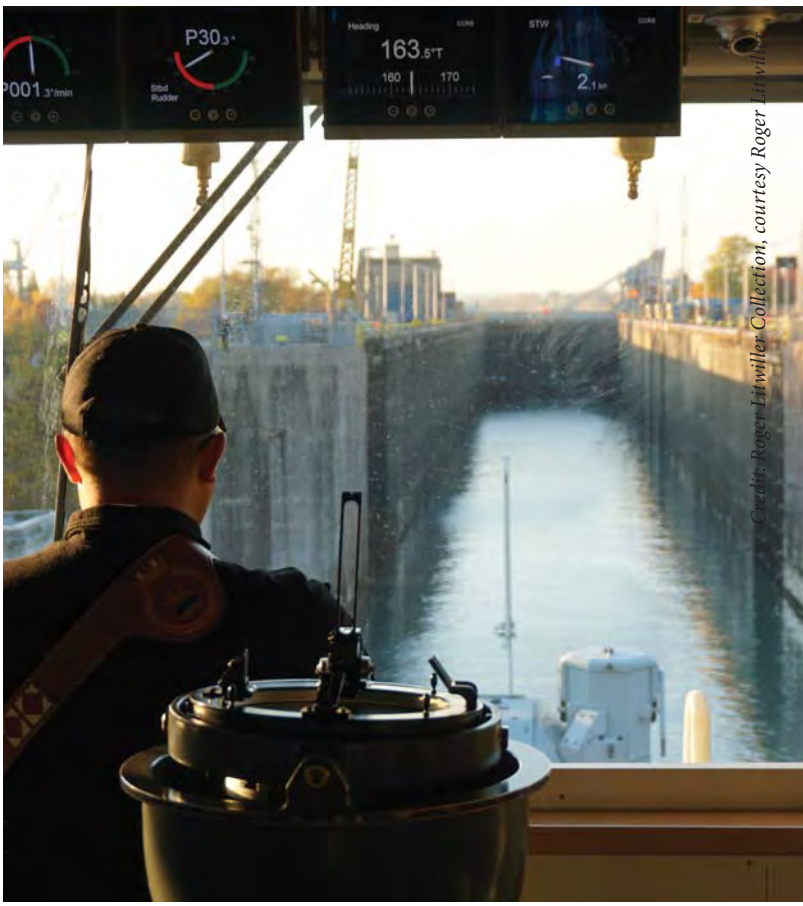
With the lower gates closed, the Hands Free Mooring System was engaged to secure HDW in the lock. Three large pads on each side of the lock utilize a vacuum system to hold the ship centred. With HDW's narrower beam it took a bit of time to engage the mooring system equally on both sides of the ship. Once secured, our pilot, Captain Church, radioed Seaway Control in St. Catharines requesting a slow fill. Each lock can be filled to capacity (94 million litres/about 21 million imperial gallons) within 11 minutes.[2]

Above Lock 1 we passed Ontario Shipyard's Port Weller site where CCGS *Terry Fox* is occupying one of the two large graving docks undergoing a $135 million Vessel Life Extension contract.[3]

Designed for both up and down bound traffic to transit simultaneously, HDW had to go on the wall above Lock 2 waiting for MV *Kom* (Valetta) to clear Lock 2 and pass. Commander Nicholson demonstrated the manoeuvrability of the AOPS, easily holding his ship with bow thrusters, rudders and engines along the wall.

Lock 3 is the location of the Welland Canal Visitors Centre and a large public viewing platform is a favourite place for ship watchers. As the viewing platform was full, it was clear that HDW's transit had led to considerable public interest. All along the canal, people gathered to watch this unique ship. Judging from the many posts to social media from the public, HDW did not disappoint.

While folks ashore were enjoying our passing, I was posting live videos, photos and commentary from the ship as we reached each lock, providing our shipboard view of the transit and answering questions. By the end of the day, I had reached over 1.2 million 'hits' on Facebook, X (formerly Twitter), Instagram and LinkedIn.




Credit: Roger Litwiller Collection, courtesy Roger Litwiller

*Commander Jon Nicholson, Commanding Officer, HMCS **Harry DeWolf** keeps a close eye on his ship as he guides it into the first lock on 22 October 2024.*


*Master Seaman Justin Washuk calls to his sister, waving excitedly from Lock 2 on the Welland Canal on 22 October 2024. Never under-estimate the importance of sailors and family connections.*

A very pleasant surprise was that several family members of the ship's company reached out through direct messaging to me, saying how proud they were of their sailor and how happy they were to follow the transit in real time. With each message I was able to locate the sailor and send a photo from their station and for one sailor we managed to arrange a quick video chat with his family.

The next series of locks are considered an engineering marvel. Locks 4, 5 and 6 are called the Twin Flight Locks, three pairs of locks to allow simultaneous up and down bound traffic. Each lock opens into the next lock. This is the highest single series of lifts in the canal at 42.6 m (134 ft) in a span of just 1,250 metres (0.8 mile).[4]

Once inside Lock 4, the extraordinary high gate to the next lock stood before us. With water flowing over the top, it created a waterfall nearly as high as the ship. The lifts in Locks 4 and 5 were reasonably quick. HDW was held in Lock 5 while one of the Hands Free Mooring System pads was being changed out in Lock 6. Once we entered the lock, the system could not secure to the hull on the starboard side. With the port side pads secured, HDW was drawn exceptionally close to the lock wall. Actually, it was uncomfortably close for Commander Nicholson and every sailor who has painted a ship. A sharp eye was kept as Lock 6 filled. Fortunately the mooring system is designed to work securing one side of a ship and no scraping sounds were heard as HDW was lifted.

Leaving Lock 6, the final lock of the Twin Flight Locks, we could easily see the real height the ship had climbed; with Lake Ontario now well below us. Following a short run to Lock 7, HDW had completed the lift to the height of the Niagara Escarpment, bypassing the natural world wonder of Niagara Falls.

The remaining 27.8 km (17.2 miles) of the canal is a relatively straight passage through to Port Colborne, including the latest alteration to the canal, a 14.6 km (9 mile) bypass of the City of Welland, completed in 1973. The sun was beginning to set as HDW neared Lock 8, the control lock at Port Colborne.

As noted, Lock 8 is a Seaway Control Lock. At 350 m (1,148 ft), it is long and designed for ships to enter either gate and remain underway as the average lift is between 0.3 to 1.2 metres (1 to 4 ft), equalizing the water height between the canal and Lake Erie.

Darkness had enveloped HDW as the ship passed serenely through the still water of the final lock. As the last vantage point for ship watchers, the large viewing area was filled with spectators, some who had been 'chasing' the ship all day.

Passing under the final lift bridge in Port Colborne, HDW entered Lake Erie. Captain Church's pilot boat followed


*Hands Free Mooring units are installed in Locks 1 to 7. Utilizing suction, these units attach to the ship's hull and hold the vessel securely in the lock, alleviating the time required to secure a ship with lines.*


Credit: Roger Litwiller Collection, courtesy Roger Litwiller

*HMCS **Harry DeWolf** is held close to the Lock 6 wall by the Hands Free Mooring System on 22 October 2024.*

and he disembarked when we were clear of the channel. The entire transit of the Welland Canal took just under 12 hours.

My time in HMCS *Harry DeWolf* also came to an end. I boarded the port side multi-role rescue boat and was whisked away to Sugarloaf Marina. Demonstrating their expert seamanship, the boat's coxswain and partner discharged me within feet of my waiting ride.


Credit: Roger Litwiller Collection, courtesy Roger

*Historian Roger Litwiller with Commander Jon Nicholson in HMCS **Harry DeWolf** on 22 October 2024. Keeping with the modified crewing arrangements in the **Harry DeWolf**-class, everyone takes a turn cleaning and maintaining their ship. Roger joined the Commanding Officer for his turn to work the supper scullery duties.*

My most sincere thank you to Commander Jon Nicholson and the entire ship's company in HMCS *Harry DeWolf* for the honour of joining them on their historic first transit of a Royal Canadian Navy Arctic and Offshore Patrol Ship through the Welland Canal! It was a privilege to be welcomed into HDW and spend time with such dedicated, professional Canadian sailors over the two days. It was also a bit ironic to provide an RCN history talk to these women and men while they were making history themselves.

**Notes**

1. Great Lakes St. Lawrence Seaway System, Media Resources, "The Welland Canal Section of the St. Lawrence Seaway," no date.
2. Great Lakes St. Lawrence Seaway System, "The St. Lawrence Seaway: A Vital Waterway."
3. See Nick Blenkey, "Port Weller Dry Docks Wins Heavy Icebreaker Life Extension Contract," *Marine Log*, 1 November 2022.
4. Great Lakes St. Lawrence Seaway System, Media Resources, "The Welland Canal Section of the St. Lawrence Seaway."

*Roger Litwiller is a historian, writer, researcher and lecturer on Canada's naval and maritime heritage. His books include **White Ensign Flying** and **Warships of the Bay of Quinte**.*

*Opinion*

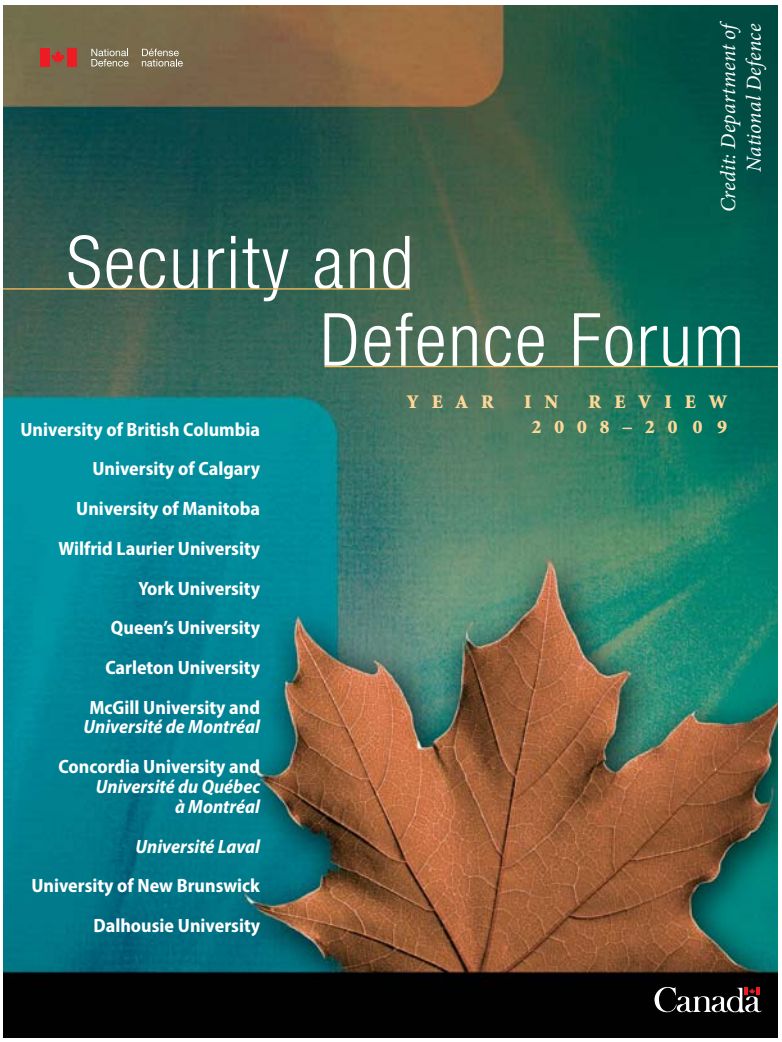
# The Death of Public Awareness?

**Marc Milner**

The Canadian Armed Forces (CAF), along with Canada's defence and security generally, seem to be in free fall. The government makes promises it has no intention of keeping and masks inaction with bold statements of intent, while our byzantine – and highly politicized – procurement process moves at a glacial pace. Critical decisions are delayed, costs skyrocket and the results are frequently compromises poorly suited to the needs of the CAF. At least in the 'Decade of Darkness' of the 1990s, when American political analyst Francis Fukuyama declared that we had reached the "end of history," a golden post-Cold War era of universal peace and prosperity and democracy,[1] a few well-intended Canadians in blue helmets could and did make a difference. The current defence debacle is occurring in a very different, and very much more dangerous, era. Now the Orcs are coming.

The focal point of this latest defence fiasco is Justin Trudeau's government, now eight years in power. The Liberal Party of Canada has traditionally been cool to military expenditure and the armed forces, but Justin Trudeau's situation is unique. Throughout much of the 20th century Liberal Prime Ministers like Wilfrid Laurier, William Lyon Mackenzie King, Lester Pearson and even Justin's father Pierre could not escape a groundswell of popular support for military action when international crises loomed. Canada's longstanding militia tradition coupled with hundreds of thousands of veterans from two great wars meant that Canadians generally understood the cost of military unpreparedness. For successive Liberal governments this constituency, traditionally Conservative in its politics, was too important to ignore: it had to be placated.

That political constituency is now gone from Canada's political discourse. Not only have the veterans died off, but the militia as a national military mobilization base is largely moribund. In the 1960s the danger of Mutually Assured Destruction shifted the focus from mobilization in depth – and therefore a need for reserve forces – to immediate deterrence based on standing armed forces. In the process, Canada concentrated its military effort on professional armed forces and based them either overseas or – with some exceptions – in the Canadian hinterland, in Bagotville (Quebec), Cold Lake (Alberta), Gagetown (New Brunswick), Shilo (Manitoba), Petawawa (Ontario). Out of sight and out of mind. By 1990, when the CBC used images of American soldiers as the backdrop of its news coverage of the Oka crisis, no one in urban Canada even knew what a Canadian soldier looked like.




*The front cover of the Security and Defence Forum's 2009 annual report, including a list of all participating Canadian universities.*

A thin thread of public awareness of Canadian defence and security issues was kept alive during this slow decline by the Department of National Defence (DND) through efforts of the Directorate of Public Policy. When the shift to professional forces led to the abandonment of reserve officer training programs at Canadian universities in the late 1960s, DND put money into Military and Strategic Studies (MSS) programs on campuses across the country. MSS funded research, education, publishing and public outreach on defence and security issues. In the Decade of Darkness the MSS morphed into the Security and Defence Forum (SDF) of the Directorate of Public Policy. By 2010 the SDF, which cost DND a paltry $1.5 million per year, supported 14 research and teaching centres from Halifax to Vancouver. Most of these taught Political Science, three focused on History. All of them had a mandate to grow the next generation of Canadian scholars in the field of

security and defence, and to educate Canadians about the challenges and obligations of Canada's role in the world. One of the great strengths of the SDF program was that the centres were given freedom to critique government policy, which made some people in Ottawa uncomfortable.

DND killed the SDF in 2012. At the final meeting in Ottawa, the Assistant Deputy Minister (ADM) Public Policy told the SDF directors (including me) that they were essentially a bunch of freeloaders, padding CVs on the public purse and squandering taxpayers' money. It was the most scandalous performance by a senior civil servant I have ever witnessed. We were told, explicitly, that the SDF was worse than useless, and that if DND needed advice it could buy it off the street – presumably from the Canadian equivalent of belt-way bandits. Those were the Stephen Harper years, after all: research and scholarship were for losers. As historian Jack Granatstein commented at the time, DND pulled the plug on its only friend in the country to save the equivalent of what it spent annually on paper clips. The amount was so piddling that no senior officer would go to bat for the SDF (we tried). I distinctly recall telling the ADM Public Policy at that final SDF meeting that within 10 years DND would regret killing the only program dedicated to telling Canadians what the Canadian Armed Forces did and why it mattered. In the dozen years since the end of the SDF most of the former centres of expertise have either collapsed or drifted away from defence and security issues – Calgary being the notable exception. Seems I was right.

The demise of the SDF can't be laid at Justin Trudeau's door. But the action of Harper's government swept away the last remnants of what little forum remained for public discourse on defence and security issues in Canada. The end of the SDF, and the virtual extinction of any constituency that is knowledgeable and supportive of defence and security issues (let alone a population that is historically literate), has created a permissive environment for the neglect and ignorance that has marred the last decade of defence policy, planning and procurement. Trudeau is well aware, at least intuitively, that there is no defence constituency in Canada. He is, in fact, the first Prime Minister in Canadian history to have a completely free hand in formulating a military response to a major global crisis. The government can do whatever it wants, as the recent promise to increase defence spending while stripping away billions of dollars from the defence budget indicates!

The implications of this sad state of affairs for the renewal of the Canadian Armed Forces and their development into a modern combat-capable force are chilling. A recent Nanos poll (released in October 2024) claimed overwhelming support among Canadians for acquiring a dozen modern submarines. Anyone who has tracked Canadian procurement over the last 50 years has seen this before: public support a mile wide – and an inch deep. It does not translate into seats in the House and, in any event, the bean counters and the highly politicized procurement process have not gotten their hands on the submarine project yet. Indeed, the long-term impact of an electorate uninformed and uneducated about defence and security issues, and the general lack of expertise across Canada to fill that void, puts even existing plans for the Royal Canadian Navy's combat fleet in jeopardy. As I argued in this journal a decade ago,[2] the navy in particular is a ward of the state. Navies are enormously costly to build and in Canada – like in France in the 18th century – that money is largely spent far from the seat of political power and far from the population base of the country. This is no less true in a democracy than it was in absolutist France: naval procurement buys no votes in the Greater Toronto Area.


Credit: Royal Canadian Navy

*Visitors line up to visit Royal Canadian Navy ships, including HMCS **Max Bernays** at its commissioning ceremony, during Fleet Week Vancouver 2024 in May 2024. Similar events are considerably more challenging in places away from the coasts such as Toronto.*

In France everything depended upon who had the ear of the King. The situation for Canada's armed forces is now no different. And in this age of 'irresponsible' government – when Ministers of the Crown are generally not held responsible for what they do or say, and cannot be shamed into action or resignation – it is hard to know how to prompt the government to act. We can only hope that when the Orcs arrive to test us in the Arctic, the Elves arrive in time.

**Notes**

1. See Francis Fukuyama, *The End of History and the Last Man* (New York: The Free Press, 1992).
2. Marc Milner, "Reflections on Canada, the State, the Nation and the Navy," in *Canadian Naval Review*, Vol. 11, No. 2 (2015).

# Making Waves

(Note: These commentaries represent the opinion of the authors, not of *CNR*, the Editorial Board or sponsors.)

## *The Arctic Council: Caught in the Middle*

Bill Featherstone

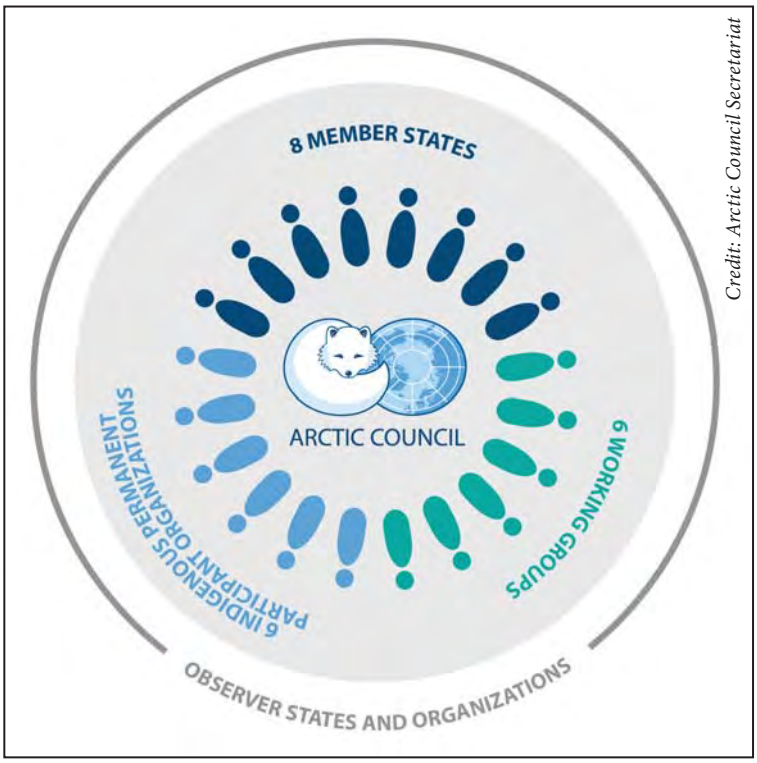
Russian aggression in Eastern Europe and military expansion in the Arctic have caused considerable angst for the Arctic Council (AC), for which there still is no clear solution in sight. The AC had been steadfast in its policy of not having an opinion about military security/geopolitics and ensuring its mandate remains sustainable development and protection of Arctic ecosystems. Without a doubt, the February 2022 invasion of Ukraine exacerbated divisions in the council and it finds itself caught in the middle of raging geopolitics it cannot avoid. This commentary will focus in particular on concerns related to the politicization of Russian Indigenous groups and the fact that the council is increasingly being dragged into geopolitics.

Before getting into that, a little context and history. The Arctic Council was established in 1996 in Ottawa by declaration at a conference of Arctic states, although its roots reach back to a 1991 conference in Finland addressing Arctic environmental protection. The council is made up of a group of Arctic States, Permanent Participant Indigenous groups and currently 13 no-voice-and-no-vote Interested Parties (observers).

There are eight decision-making Arctic States (A8): five Arctic coastal states (A5) (Canada, United States, Denmark (Greenland), Norway and Russia); and Sweden, Finland and Iceland. Before the February 2022 invasion of Ukraine by Russia, three of these states were not North Atlantic Treaty Organization (NATO) members – Russia, Sweden and Finland. Sweden and Finland joined NATO after the 2022 invasion of Ukraine.

### *Indigenous Groups and the Council*

There are six Indigenous groups from across all Arctic regions that are Permanent Participants (PP) on the council. They are the Aleut International Association (AIA), the Arctic Athabaskan Council (AAC), the Gwich'in Council International (GCI), the Inuit Circumpolar Council (ICC), Russian Association of Indigenous Peoples of the North (RAIPON), and the Saami Council (SC). They all have voice, but no vote. However, they must be consulted on all decisions put before the Arctic Council before ratification.




Credit: Arctic Council Secretariat

*A diagram of the structure of the Arctic Council.*

These Permanent Participants co-exist in adjacent countries, and do not formally recognize international boundaries. This wasn't a problem until the Russian invasion(s) of Ukraine (2014, 2022). Of the six groups, the AIA, ICC and the SC have some minority populations within Russia. The RAIPON population, the largest (250,000), is entirely in Russia. RAIPON originally challenged extraction projects in Russia and listed itself as a non-governmental organization (NGO) in receipt of foreign funding. Because of this, the Russian Ministry of Justice stated that RAIPON policies were in conflict with Russian law. After much negotiation, RAIPON capitulated to government requirements and was reinstated in March 2013 with a completely changed leadership that promotes Kremlin policies. (The original leaders have all either been ousted or left the organization and Russia.[1]) The re-invented group has been given some status and token membership within the PP. In my view this was ostensibly to legitimize Russian activity with the AC. RAIPON now makes attempts to show support towards Russian Indigenous People, but only if it can be of benefit to the Russian agenda.

RAIPON openly supported the invasion of Ukraine in February 2022, accusing the Ukrainian leadership of violating the rights of Russian-speaking people in Ukraine.[2] Some of the other PP minority Russian Indigenous groups have either remained neutral or provided only token support to Russian activity, so as to not fall out of favour with Russian President Vladimir Putin.

### *Caught up in Geopolitics*

The mandate of the Arctic Council is to be apolitical, there is to be no discussion about political matters, particularly military security. As noted earlier, the mandate is to address two key areas of concern: sustainable development; and the protection of fragile Arctic ecosystems.

This is a noble and worthy position for the council to hold, however, the current geopolitical strategic situation within the Arctic puts it in a difficult situation and demands a different or modified mandate. Although it may appear provocative, a clear and written statement from the AC about what are and what are not acceptable activities – for example, military infrastructure and expansion etc. – needs to be said. Obviously, Russia and RAIPON would object to any such wording, but that is precisely the point, to expose the hypocrisy of their actions.

Russian priorities in the Arctic are no longer in step with those of the other states. For the last several decades Russia has continuously increased its Arctic military presence in terms of infrastructure, completely unchallenged by the council or the West in general. As well, the initial Russian invasion of Ukraine (Crimea) in 2014 hardly raised a blip anywhere, particularly in the Arctic Council. But are there two Russias?[3] One Russia appears to remain committed to cooperative research in the Arctic, while the other increases its military presence there. Should the West treat them differently?

After the second Russian invasion of Ukraine in February 2022, many aspects of the Arctic Council changed, as did the geopolitical aspects of Arctic security itself. Russia assumed the two-year rotational chair of the council in 2021. It should not be lost on anyone that during this same period, Moscow must have been planning for the second invasion of Ukraine. A trusted partner? Hardly. It appears that Russia, feeling emboldened by the lack of any international action as a result of the first invasion (Crimea 2014), just assumed a role-over into the rest of Ukraine would not attract any more attention than the first one. It also appears Moscow felt similarly towards the Arctic Council – the council did nothing the first time, why would it care now?

Credit: Arctic Council Secretariat, Linnea Nordström

*The flags of the eight Arctic Council member states and six Indigenous Permanent Participant organizations.*

Since the invasion of 2022, however, there has been heightened global concern regarding Arctic regions, to put it mildly.[4] In March 2022, one month after the invasion of Ukraine, the Arctic Council announced an unprecedented pause in all meetings, specifically indicating that the remaining A7 condemned Russia's unprovoked invasion of Ukraine and would not be travelling to Russia for any meeting of the AC and would be pausing all operations.[5] Russia does appear to have cooperated with the transition of the AC chair over to Norway in May 2023, but this did not occur without serious concerns about what the future holds for the council.

### *Conclusion*

The future of the Arctic Council remains uncertain. It appears as if Russia desires to continue with its 'Two Russias' policy. It seems still to have a notion of the Arctic as an exceptional region of peace and cooperation, while continuing systematically to build and develop its Arctic military capabilities. How one state can have such opposing views is quite beyond explanation. How other AC members respond remains to be seen. Without a doubt, there is now a more active presence of NATO in some modified form throughout the Arctic.

Of note, on 28 February 2024, the Arctic Council announced the gradual resumption of official working groups in a virtual format. Russia and RAIPON are part of these working groups. If this work can continue and progress is achieved, this may be a good start. However, diplomatic meetings of senior level Arctic officials have remained on pause until certain parameters of cooperation between the Arctic States and Permanent Participants can be achieved. What that will entail is an open question, but any return to the status quo cannot be an option and must be made clear.

The Arctic Council will likely endure in some form. The environment and sustainable development in the Arctic continue to be concerns, now exacerbated by global

Credit: Indigenous Peoples Secretariat

*An October 2023 photo of the representatives of the Norwegian Chairship of the Arctic Council and the six Permanent Participants, a meeting which facilitiated discussions on the resumption of Arctic Council activities at the working group level.*

geopolitical tensions. However, it's unlikely that Russia will be able to participate in a high-level capacity in any meaningful way for some time.

**Notes**

1. By March 2022 many of these former RAIPON leaders became part of the International Committee of Indigenous Peoples of Russia (ICIPR), which operates outside of Russia, and does not have an affiliation with the Arctic Council.
2. Unlike RAIPON, the International Committee of Indigenous Peoples of Russia (ICIPR) issued a scathing statement about the Russian invasion of Ukraine. The statements says, in part:
   "We – the undersigned representatives of the Indigenous peoples of the North, Siberia and the Far East living outside of Russia against our will – are outraged by the war President Putin has unleashed against Ukraine. At the moment, the entire population of Ukraine is in grave danger. Old people, women and children are dying. Cities and towns of an independent country are being destroyed because their inhabitants did not want to obey the will of a dictator and a tyrant.
   "As representatives of Indigenous peoples, we express solidarity with the people of Ukraine in their struggle for freedom and are extremely concerned about ensuring the rights of Indigenous peoples during the war on Ukrainian territory, including the Crimean Peninsula that remains illegally occupied by Russia.
   "As representatives of Indigenous peoples, We are outraged by statements of the Russian Association of Indigenous Peoples of the North (RAIPON) on March 1, 2022, and the statement of civil society leaders on March 2, 2022, in support of the decisions of President Putin. Such public statements can only be considered as direct support for the military aggression against the Ukrainian people, and their signatories are accomplices of the murderers of civilians in Ukraine...." From the ICIPR website (icipr.international), Statement by ICIPR issued 11 March 2022. See also NAADSN Policy Primer, 21 July 2023, p. 21.
3. Troy Bouffard, Andrea Charron and James Fergusson, "A Tale of Two Russias?" in P. Whitney Lackenbauer and Suzanne Lalonde (eds), *Breaking the Ice Curtain? Russia, Canada, and Arctic Security in a Changing Circumpolar World*, Canadian Global Affairs Institute, 2018, pp. 61-73.
4. Another body that focuses on the Arctic has also been affected. On 18 September 2023, Russia officially withdrew from the Barents Euro-Arctic Council (BEAC) because the Finnish presidency failed to confirm the transfer of presidency over to Russia. The BEAC activities, in concordance with the Arctic Council, have been on hold since March 2022. BEAC member countries are Denmark, Finland, Iceland, Norway, Sweden, European Commission, Russia.
5. Joint statement on Arctic Council cooperation following Russia's invasion of Ukraine in February 2022, 3 March 2022:
   "Canada, the Kingdom of Denmark, Finland, Iceland, Norway, Sweden, and the United States condemn Russia's unprovoked invasion of Ukraine and note the grave impediments to international cooperation, including in the Arctic, that Russia's actions have caused. ...
   "The core principles of sovereignty and territorial integrity, based on international law, have long underpinned the work of the Arctic Council, a forum which Russia currently chairs. In light of Russia's flagrant violation of these principles, our representatives will not travel to Russia for meetings of the Arctic Council. Additionally, our states are temporarily pausing participation in all meetings of the Council and its subsidiary bodies, pending consideration of the necessary modalities that can allow us to continue the Council's important work in view of the current circumstances..." Government of Canada, Global Affairs Canada.

## *Amphibious is Not a Four-Letter Word*

**Major (Ret'd) Les Mader**[1]

Over the past 21 years *Canadian Army Journal*, *Canadian Military Journal* and *Canadian Naval Review* (*CNR*) have published articles by at least 17 authors that have discussed various aspects of a Canadian amphibious capability. Initially, these articles focused on expeditionary operations, including the government-mandated Standing Contingency Task Force (SCTF), with the occasional one looking at the creation of Canadian maritime Special Operations Forces. Recently, they have turned to the development of a basic or intermediate Arctic amphibious capability.

Anecdotally, the response to these articles has ranged from mild agreement to visceral rejection. The latter reaction is problematic, as military discussions that are skewed by strong emotions rarely lead to good results. Some of the arguments used to reject the benefits of Canada having amphibious capabilities have not contributed to thoughtful analysis.

Therefore, this commentary seeks to address some of these negative comments in order to provide a more balanced view of the topic. Four arguments against a Canadian amphibious capability will be presented here, each followed by a discussion that attempts to counter their reasoning.

*Amphibious operations have no pertinence to Canada's strategic situation and thus time spent discussing the creation of such a capability is wasted.*

Given its extraordinarily long coastline and immense trans-oceanic political, commercial, interpersonal and military connections, it is somewhat surprising that Canada has never had a permanent amphibious capability. There are at least three reasons why it would be justified in developing one.

The first is the conduct of non-combatant evacuations. The ability to carry out such operations has been a defence

policy requirement throughout the decades. Since 1949 Canada's military has been called upon to plan evacuation operations at least 14 times, with warships actually setting sail for nine of them and army units being alerted for deployment on two occasions.[2] Having an amphibious capability would give the government and the Canadian Armed Forces (CAF) more options when planning such operations.

The second justification for a Canadian amphibious capability is the fact that climate change is opening up Canada's Arctic to intrusive, international commercial exploitation and maritime traffic. This fact led to Colonel (Retired) Brian Wentzell's visionary article "Arctic Amphibious Capabilities for Canada?" published in *CNR* in 2019.[3] This article argued for the creation of a basic Canadian Arctic amphibious capability employing existing helicopters, in-service ships (mainly Arctic and Offshore Patrol Ships) and a landing force built around the 3rd Battalion, Royal 22e Régiment (3 R22eR). Such a ship-based force could assert Canadian sovereignty by deploying to a crisis area and maintaining a presence there for a lengthy period of time to contain/confront intruders. It could also respond to humanitarian and/or environmental disasters.

The third justification is the fact that surprises are an inherent part of life. They appear quickly and force governments to order actions that had not been foreseen. The classic example of this is the CAF deployment of a joint force to East Timor in 1999. This mission included a 3 R22eR infantry company conducting an amphibious landing from an Australian ship as part of a New Zealand infantry battalion.[4]

Thus, geography, Canadian willingness to travel to world trouble spots, climate change and the likelihood of unexpected events all push Canada to have amphibious forces that can be deployed when necessary.

*Amphibious operations are not government policy and thus are not relevant to the CAF/navy/army.*

This is a longstanding argument. In fact, a past editor of a Canadian professional military journal used it to reject at least one amphibious manuscript that had been submitted. He then had to turn around and ask for it back when the 2005 defence policy of the Paul Martin government announced the creation of the SCTF. This announcement and the subsequent abandonment of any amphibious requirement by the Stephen Harper government make clear that governments can, and will, change defence policy as they wish. Therefore, a wise CAF leadership would not close its mind to investigating the feasibility, implications and costs of such military capabilities simply because they are not part of today's defence mandate.

*Amphibious operations are so massive and so complex that Canada will never have all the resources required to conduct them. Thus, discussing the creation of any such capability is pointless.*

*Credit: Pte Brendan Gamache, Canadian Armed Forces*

*Canadian Armed Forces Rangers embark the landing craft to be transported onboard HMCS **Harry Dewolf** for a tour of the ship during **Operation Nanook** on 19 September 2023 in Pangnirtung, Nunavut.*

Credit: Sailor First Class Kendric Grasby, MARPAC Imaging Services

*In Esquimalt, BC, Canadian sailors train in 2022 using the RCN's new sea-to-shore connector, a modular, self-propelled barge designed to support the future Joint Support Ships.*

This argument has at least two significant weaknesses. First, it assumes that all amphibious operations are conducted using what could be called the 'American approach,' which involves deploying massive resources in order to be able to fight one's way ashore against fierce resistance, as occurred at Iwo Jima and Normandy. Such an assumption ignores the possibility of employing the 'British approach,' which "envisages *an operation mounted against little or no resistance on the beachhead* [italics in original text], and depends upon … good intelligence, imaginative deception measures, and strategic manoeuvring to ensure a virtually unopposed landing."[5] The British used this approach to liberate the Falkland Islands during the 1982 Anglo-Argentine Falklands War.[6]

Second, the argument ignores the possibility that the 'British approach' can actually lead to immense strategic successes, even when undertaken using marginal amphibious forces. Proof of this possibility is afforded by the strategic victories that the Irish Free State's forces obtained using it to conduct a series of hastily-improvised amphibious landings in July and August 1922 during the Irish Civil War.[7] These forces employed only an ex-British gun boat, a few commandeered civilian vessels and several groups of hundreds of soldiers, that included a mix of the Free State's best shock troops and raw recruits.[8] Luckily for them, surprise and their enemy's ineptitude and numerical weakness meant that their bold improvisation was not punished by bloody failure. Thus, although these Free State successes certainly do not guarantee victory for similar forces in other circumstances, they confirm that many factors affect the results of amphibious operations beyond the attacker's possession of overwhelming resources.

Therefore, we cannot exclude the possibility that small Canadian amphibious forces could achieve the government's strategic objectives using the 'British approach' during presence operations in the Canadian Arctic and non-combatant evacuations. Only the lack of such forces guarantees that they will not succeed.

*The CAF/navy/army have so many day-to-day problems that there is no time to think about future capabilities.*

This comment assumes that no one has the time to think beyond the CAF's immediate problems and forgets that thinking costs nothing. Anticipatory analysis is certainly far less expensive financially and operationally than constantly improvising during crises.

Clearly, the CAF cannot afford to expend significant resources investigating all possible future capabilities. Any that would require huge investments to achieve marginal operational benefits deserve minimal attention. However, there is value in thinking beyond the immediate issues of the day to consider those possible capabilities that address core CAF missions and which can be mainly achieved by adapting/augmenting existing units, equipment and personnel. Such analysis would certainly reduce the operational risks inherent in hasty crisis improvisation. Additionally, analysis of worthwhile topics is a valuable and, perhaps, a priority activity for Canada's professional military journals, alongside education.

## *Conclusions*

It is my hope that the above discussion makes clear that amphibious operations have a relevance to Canada and the CAF that cannot be ignored. However, despite what has been written here, I accept that there are good reasons

Credit: Sgt. Nicolas Aiohortua, US Marine Corps

*Republic of Korea and US Marines conduct a simulated amphibious assault during Exercise Ssang Yong 23 in March 2023 at Hwajin-Ri Beach, South Korea.*

why Canada might choose not to create a permanent amphibious capability. Such choices will almost certainly be driven by a clear-eyed, hard-hearted cost/benefit analysis by the government and CAF leadership about where finite funds and personnel should be invested. The conclusions of such analysis can, however, change over time as circumstances evolve.

Thus, there is great value in the CAF, and those who are interested in its future, investigating the benefits and implications of possessing an amphibious force. It is therefore hoped that the CAF and the readership of Canada's various professional military journals will analyze this topic now in order to identify and address some of the issues that a decision to develop amphibious forces would entail.

**Notes**

1. The author wishes to thank Guy Lavoie for his editorial input.
2. Major Les Mader, "Reviving the Princes: Some Thoughts on a Canadian Standing Contingency Task Force," *Canadian Military Journal*, Vol. 7, No. 2 (Summer 2006), p. 58.
3. Brian K. Wentzell, "Arctic Amphibious Capabilities for Canada?" *Canadian Naval Review*, Vol. 15, No. 2 (2019), pp. 34-37.
4. Major Les R. Mader, "Avoiding a Future Dieppe: Improving Canadian Army Amphibious Operations Planning," *Canadian Army Journal*, Vol. 8, No. 3 (Fall 2005), p. 37.
5. Colonel M.H.H. Evans, *Amphibious Operations: The Projection of Sea Power Ashore* (London, UK: Brassey's, 1990), p. 10.
6. *Ibid*.
7. Peter Cottrell, *The Irish Civil War 1922-23* (Botley, Oxford, UK: Osprey Publishing, 2008), pp. 12, 48, 50-52, 55 and 56.
8. *Ibid*., pp. 24, 50-5.

## *Addressing Illegal Oil Bunkering in the Gulf of Guinea: Canada's Role?*

Emmanuel Akinbobola

Illegal oil bunkering, the unauthorized siphoning and theft of oil from pipelines, storage facilities and vessels, is a significant issue in many places. It happens on land as people or organized crime groups siphon oil out of pipelines and into illegal refineries. In addition to the billions of dollars of revenue lost to oil companies and governments,[1] this can be dangerous, and significant loss of life has occurred on occasion. In Nigeria in 2022 an explosion of oil diverted from a pipeline caused 100 deaths, and in 2019 in Mexico, more than 20 people were killed after pipeline exploded while they were siphoning fuel from it.[2] Both of these incidents resulted in environmental destruction and highlight the broader dangers and impacts of illegal oil activities.

But this commentary will focus on bunkering at sea in the Gulf of Guinea.[3] This region, on the West coast of Africa, is a hotspot for oil theft, potentially causing severe economic and environmental damage. For a few years, piracy was a concern in this region but increasingly oil bunkering is seen as less risky with a higher payoff than piracy. Illegal oil bunkering can significantly undermine the economies of countries in the Gulf of Guinea. The problem is most acute in Nigeria, Africa's largest oil producer, which loses billions annually, disrupting national development efforts and depriving the government of critical revenues for infrastructure and public services. Additionally, the illegal oil trade fuels corruption and illicit activities, creating further instability.[4] Oil bunkering activities lead to frequent spills, which have disastrous effects on the environment. These spills pollute coastal waters, destroy marine life and damage ecosystems vital to local communities. The contamination of drinking water and the destruction of fisheries further exacerbate poverty, leading to a vicious cycle of environmental degradation and socio-economic hardship.

In addition to lost revenue, potential loss of life and environmental consequences, oil transferred at sea, particularly through illegal means, poses significant challenges relating to clean-up costs. Many of the ships involved are not properly insured – or not insured at all – leaving a void in liability and financial responsibility in the event of spills or accidents. Addressing these insurance gaps is crucial to managing the risks associated with maritime oil transfers. For example, despite international sanctions, Russia continues to export significant quantities of oil via 'dark' tankers. These operations often involve complex


*A map of the Gulf of Guinea region.*

and opaque networks, raising concerns about the legality and environmental impact of these activities.[5]

### *Canada's Role?*

Canada, through its foreign policy and the Royal Canadian Navy (RCN), could play a pivotal role in addressing this issue. This commentary explores Canada's strategic interests in maritime security, and the RCN's potential contributions to help address the impacts of illegal oil bunkering.

Canada's foreign policy emphasizes the importance of peacekeeping, security and economic development, particularly in regions like Africa. The interconnectedness of global maritime security highlights Canada's vested interest in addressing illegal activities at sea. Securing maritime borders in the Gulf of Guinea aligns with Canada's broader security and development objectives.

Maritime security is critical for maintaining regional stability in Africa. Illegal oil bunkering threatens both stability and security and undermines international trade, which in turn affects global energy markets. Canada's involvement in maritime initiatives reflects its commitment to helping African states secure their waters, which is essential for protecting economic assets like oil resources. However, in the updated defence strategy, *Our North, Strong and Free: A Renewed Vision for Canada's Defence*, providing the support to combat this issue is not clearly stated.[6] By collaborating on naval policy interoperability to combat illegal oil bunkering, Canada could support the economic development of African states. A stable and secure maritime environment encourages investment, enhances economic resilience, and promotes long-term prosperity. Canada's efforts to combat oil theft could also contribute to the global energy market's stability

The RCN plays a vital role in Canada's international security operations. Although the RCN has not been directly involved in large-scale efforts to combat oil bunkering, its broader operations in Africa highlight its capacity to contribute to maritime security in the Gulf of Guinea.

Starting in 2017, the RCN conducted *Operation Projection - West Africa*, which involved deploying Maritime Coastal Defence Vessels (MCDVs) to Africa. The RCN missions in African waters have primarily focused on surveillance and monitoring, which are crucial for detecting and deterring illegal activities at sea. The RCN's experience in patrolling international waters makes it well-suited to assist in combating oil theft in the Gulf of Guinea through both direct patrols and intelligence gathering.[7] The RCN ships have also participated in joint multinational maritime exercises, for example Obangame Express, in the Gulf of Guinea.[8]

A key aspect of the RCN's mission in Africa is building the capacity of local navies and coast guards. By providing training and resources, the RCN strengthens the ability of African states to safeguard their maritime domains. These initiatives ensure that local forces can take a leading role in protecting their waters from illegal activities, including oil bunkering.[9]

Addressing illegal oil bunkering at sea presents a range of challenges, including jurisdictional complexities, corruption and limited enforcement capacity. However, Canada is uniquely positioned to contribute to both immediate solutions and long-term strategies. For instance, regular deployments of RCN vessels to the Gulf of Guinea, as was the case in *Operation Projection - West Africa*, or modeled on the European Union Naval Force (EU NAVFOR)'s *Operation Atalanta* off the East Coast of Africa, could serve as a deterrent to illegal activities. Strengthening diplomatic ties with African states through joint training exercises, information-sharing and legal support exercises and training could also help address the root causes of oil theft or illegal transfers of oil at sea. Additionally, reducing economic disparities and strengthening governance are vital steps in curbing illegal oil bunkering. Canada should support programs that foster economic development and tackle corruption, alongside initiatives that strengthen legal and enforcement mechanisms.

### *Conclusion*

Illegal oil bunkering threatens both Africa's regional stability and the global energy market. It could also have serious environmental implications which could in turn result in mass population movements. All of these factors would affect Canada. Through its strategic engagement and the efforts of the Royal Canadian Navy, Canada could play a critical role in addressing this issue. It could do this by integrating an Environment and Climate Change Canada (ECCC) initiative in RCN operations, such as

Credit: Corporal Jaclyn Buell, Canadian Armed Forces

*Members of the Togo military conduct a clearing exercise aboard HMCS* ***Moncton*** *off the coast of Ghana, as part of Exercise Obangame Express on 12 March 2022.*

*Operation Driftnet*,[10] with the Department of Fisheries and Ocean (DFO). And by contributing to maritime security in the Gulf of Guinea, Canada could support African development and promote international peace and security. Unfortunately, Africa does not play a major role in Canadian foreign policy and, as of 2024, the RCN is no longer conducting *Operation Projection - West Africa*.

**Notes**

1. Officials estimate that Nigeria loses an average of 200,000 barrels of oil per day, more than 10% of production, to illegal tapping or vandalizing of pipelines. "Illegal Oil Refinery Blast that Killed more than 100 a 'National Disaster,' says Nigeria's President," CBC News, 24 April 2022.
2. See "At Least 20 Killed in Mexico Pipeline Explosion: Authorities Suspect Blast that Injured Dozens More Caused by Fuel Thieves," CBC News, 19 January 2019; and *ibid*.
3. "Why are Gulf of Guinea Pirates Shifting to Illegal Oil Bunkering?" *Maritime Executive*, 4 December 2022.
4. Report of the UN Secretary General to UN Security Council, "Situation of Piracy and Armed Robbery at Sea in the Gulf of Guinea and Its Underlying Causes," United Nations, 1 November 2022.
5. Brendan Cole, "Russia's Shadow Fleet Poses Threat to Other Countries: Report," *Newsweek*, 14 October 2024.
6. Government of Canada, Department of National Defence, *Our North, Strong and Free: A Renewed Vision for Canada's Defence*, May 2024.
7. US Embassy and Consulate in Nigeria, "Exercise Obangame Express 2023 Kicks Off in Lagos," Media Release, 24 January 2023.
8. For a list of RCN deployments to West Africa, See Rob Huebert and Chris W.J. Roberts, "The RCN and Maritime Security," *Canadian Naval Review*, Vol. 19, No. 3 (2024), p. 7.
9. US Embassy and Consulate in Nigeria, "Exercise Obangame Express 2023 Kicks Off in Lagos."
10. *Operation Driftnet* "aims to support legitimate fish harvesters and to stop drift-netting and other illegal fishing practices." Government of Canada.

## *Canada is Not a Gun, But a Butter Country*

**Roger Cyr**

The 'Guns or Butter' model is a simple economics concept that describes the trade-off governments face in spending on national defence or on domestic programs. The model is meant to highlight the spending constraints faced by governments – they must choose between the two. Canada has chosen the butter route. The federal budget for 2024, all 430 pages of it, makes it clear that it is all about social domestic programs and not guns.[1] A sum of $8.1 billion for new equipment and infrastructure has been earmarked for the defence budget. But this sum is to be shared by National Defence, Communications Security Establishment and Global Affairs.

Yet, the intent for the navy is to spend at least $80 billion for 15 new frigates and $20 billion for new submarines. That is only the major ship construction planned over the next 30 years. These amounts are in today's Canadian dollars. Given inflation and cost increases, the end amount will likely be more than $200 billion. At $8 billion per year, it would take 30 years to pay for these. There will also be major costs to replace the aging Maritime Coastal Defence Vessels. Now, which federal social program or service will need to be abandoned or reduced to pay for this?

The frigates and submarines are the major cost for naval ship requirements, but there are also major capital costs for the army and the air force. The NATO condition is for member states to spend 2% of their Gross Domestic Product (GDP) on defence. Canada is now at about 1.4% of GDP for defence, and even with the planned ship construction for the navy, the 2% goal will not be achieved by the end of 2024. This begs the questions; why is Canada a member of NATO since it cannot meet its obligations, and why does Canada need to be a member of a European defence organization? Instead, Canada's limited defence spending should be focused on North American defence.

The North Atlantic Treaty Organization (NATO) is an alliance of 32 states – 30 European states and the United States and Canada. Established in the aftermath of World War II, NATO is a collective defence system: its member states agree to defend each other against attacks by third parties. During the Cold War, NATO operated as a check on the threat posed by the Warsaw Pact. The alliance has remained in place after the dissolution the Warsaw Pact, even though the threat to European members had dissipated.

Nonetheless, NATO has remained a peacemaker. The NATO Implementation Force (IFOR) was a NATO-led multinational peace enforcement force in Bosnia and Herzegovina. NATO was responsible to the United Nations (UN) for carrying out the Dayton Peace Accords. Several NATO member states contributed to the force, including Canada. Non-NATO states also contributed military personnel, including Australia, Austria, Bangladesh, the Czech Republic, Egypt, Estonia, Finland, Hungary, Latvia, Lithuania, Malaysia, Morocco, New Zealand, Pakistan, Poland, Romania, Slovakia, Sweden, Russia and Ukraine. Once the IFOR mandate expired, it was replaced by the Stabilisation Force (SFOR), with basically the same participants, and with a similar mandate. It was followed by the Kosovo Force (KFOR), since Kosovo was facing a grave humanitarian crisis, again both NATO and non-NATO states participated.

Given the success of the Implementation Force, in 2002 NATO created the Partnership for Peace (PfP) program for non-NATO states as a measure to promote peace. The program provides PfP members an opportunity to be granted further assistance from NATO without having to commit to becoming full members of NATO.

The program is aimed at creating trust and cooperation between member states and non-aligned states – 18 states are now members. The program contains six areas of


Credit: Aviator Zachary Cole, Canadian Armed Forces

*Military members from various countries salute aboard a French warship during the Standing NATO Maritime Group 2 Change of Command Ceremony while HMCS **Charlottetown** is alongside at Toulon Naval Base, France, during **Operation Reassurance** on 1 July 2024.*

Credit: Master Corporal Gary Clavé

*RCAF CF-18s from 3 Wing Bagotville arrive at Thule Air Base (now Pituffik Space Base), Greenland, during North American Aerospace Defense Command's Arctic air defence exercise, Amalgam Dart, 20 March 2021.*

cooperation, which aim to build relationships with partners through military-to-military cooperation on training, exercises, disaster planning and response, science and environmental issues, professionalization, policy planning and relations with civilian government.

Since NATO was created to protect European countries from an invasion of the Warsaw Pact, which has now been dissolved, and since Canada does not meet the alliance's defence requirements, Canada should simply resign as a member of NATO. Instead, Canada should join the NATO PfP program and be available to assist any state facing threats or invasions.

Canada is a partner with the United States in the North American Aerospace Defense Command (NORAD). It is a combined organization that provides aerospace warning, air sovereignty and protection for Canada and the continental United States. Maybe there is a need to create a similar combined organization with the United States that would provide sea warning, sea sovereignty and protection for both countries. Canada should negotiate a bilateral North American defence agreement with the USA for the protection and defence of the territory. This agreement should include maritime defence and a commitment by Canada to maintain a substantial naval force.

Given the Russian invasion of Ukraine, European NATO members are concerned with the urgency and threat on their steps. However, this urgency or threat is irrelevant for Canada, since the invasion is from Russia alone and not the Warsaw Pact states. Most of the former pact members are now either NATO members, PfP members, or are in the queue to join NATO. The NATO alliance has now become pointless to Canada given the phasing out of the Warsaw Pact.

It should be remembered that in the past whenever there was a critical need for action to resolve conflict, Canada participated with all its might, these included WW I, WW II, Korea, Cyprus, the Balkans, and many other peace endeavours. Canadians will always stand for peace and harmony in the world and will readily contribute to any such endeavour. Instead of being a NATO member, Canada should join the Partnership for Peace program and continue its efforts to participate in any worthy program that entails providing peace in the world. It should also put in place a bilateral agreement with the United States for the defence of North America. This agreement would include the existing NORAD, plus a commitment by Canada to maintain a substantial naval force.

**Notes**

1. Canada, Department of Finance, *Fairness for Every Generation: Budget 2024*, 16 April 2024.

*A View from the West*

# The North Pacific: Islands, SLOCs and Deep Blue Water

**Daniel Baart***

Credit: NORAD

*On 24 July 2024, Canadian and American fighter aircraft from NORAD intercepted two Russian Tu-95 and two Chinese H-6 aircraft operating in the Alaskan Air Defense Identification Zone.*

The strategic landscape of the Pacific is shifting. China's growing naval power and its military coordination with Russia are pushing strategic competition eastward, past the First Island Chain, and northward, towards the confined seas of Northeast Asia, the Aleutians and the Bering Sea, and into the North Pacific. Chinese and Russian activity in those waters shows their clear interest in expanding the geographic scope of their naval operations and their challenge to the region.

Canada's *Our North, Strong and Free* (*ONSAF*) defence policy of 2024 refers to these areas as the "western flank" of NATO.[1] This seems to view Canada's defence presence in the Pacific through the lens of Euro-Atlantic interests but the overall point, that Canada and its partners face an evolving security environment to the West, is accurate. These changes will undoubtedly have an impact on the Royal Canadian Navy's (RCN) future operations in the region.

## *Mutually Beneficial Confrontation with the West*

Both Beijing and Moscow are clearly interested in presenting a unified front against the United States and its allies, and increasingly have the tools to do so. The People's Liberation Army Navy (PLAN) battle force has at least a 40-ship advantage over the US Navy, which is significantly more dispersed geographically than the PLAN.[2] The Russian Federation Navy's (RFN) Pacific Fleet, meanwhile, operates growing numbers of new nuclear-powered submarines. The diminution of Russia's other strategic assets, like its bomber force, means that these submarines are now Moscow's most capable means of power projection.

Russia's naval posture in the Pacific reflects its interest in expanding its naval threat to the United States, and its bases in the Far East provide the RFN with direct access to the open seas where it can mount this challenge. Beijing and Moscow have leveraged their shared enmity with the West to enhance cooperation, which has led their navies and air forces to expand their areas of operation while also providing better protection to their sea lines of communication (SLOCs) to Russia's Northern Sea Route (NSR) in the Arctic.

The timing of this phase of Sino-Russian coordination has been convenient; China's quest to become a superpower, which began in the 1990s with efforts to secure influence in East Asia, entered a new, globalized phase in the mid-2010s. This has been accompanied by a geographic shift, as Chinese concerns about its SLOCs to the Middle East and Africa have been alleviated, to some degree. While it would be impossible to eliminate every threat to this route – which carries most of China's oil imports – various factors, including growing energy trade with Russia and diversification of supply routes to the North, the growth of the PLAN, and China's fortified positions in the South China Sea, all help reduce reliance on a single supply axis. This improves China's ability to protect its seaborne trade and adapt supply chains in the event of conflict. Thus China has been able to shift its focus northward to include more activity with Russia, which is animated by long-standing grievances against the United States/the West.

## *Corks in Bottles*

All is not solved, however, as China's SLOCs to the North are just as challenging as the routes to the South. Not only is Northeast Asia home to the potentially hostile navies of both Japan and South Korea, the region is also littered with islands and narrow straits that restrict naval

movements. The most prominent of these formations is the First Island Chain which, for much of recent history, has been regarded as extending from Australia to the southern reaches of Japan.

This is a narrow definition of the concept, which was originally promulgated by the US Joint Chiefs of Staff (JCS) in 1948 during another era of increasing Sino-Soviet cooperation.[3] This early concept of the 'chain' was more expansive, and stretched from Australia, through the Philippines, the Japanese archipelago, through the Kurils, Kamchatka, and across the Aleutians to North America. The JCS reasoned that forces stationed in these islands could extend US power throughout the region and, in the paraphrased words of US Chief of Naval Operations Admiral Ernest King, act as "corks" to "bottle up" an enemy and force the relocation of their adjacent SLOCs.[4]

Indeed, islands are again gaining in strategic importance amidst China's accelerating naval forays into the Western Pacific and attempts to exert influence over these passages. Examples occurred in summer 2024, when both of the PLAN's active carriers conducted flight operations in the Philippine Sea and transited around Japan's Nanei islands in the process. These transits were partially intended as a demonstration of China's growing naval prowess, and China's neighbours have responded in kind. Japan continues to install new radar and missile sites throughout that chain, while also augmenting its Amphibious Rapid Deployment Brigade to respond to contingencies involving islands, including in the East China Sea. The need for greater air power in these areas was also part of the justification to transform Japan's *Izumo*-class helicopter carriers into light aircraft carriers to operate the F-35B, Japan's first aircraft carriers since the Second World War.

Credit: Ensign Bridget Boyle, US Coast Guard

*On 30 August 2021, the US Coast Guard Cutter **Bertholf** spotted and established radio contact with a Chinese People's Liberation Army Navy task force in the US Exclusive Economic Zone off Alaska.*

Russian forces to the North are similarly bound by islands, while also benefiting from the defences that they provide. RFN forces based at Vladivostok must transit narrow straits to exit the Sea of Japan. The shores of these passages, apart from those far to the North, are held by the Japanese and South Koreans, whereas Russia maintains its own barrier in the Kuril Islands around its naval bastion in the Sea of Okhotsk, where lurk its missile submarines. Those islands host Russian anti-ship missile batteries and air-defence systems with sufficient range to cover the whole of the Kuril chain, as well as the approaches to Japan's island of Hokkaido.

US forces, anchored at Okinawa in the Nanseis, are also becoming more island-focused. The US Marine Corps recently created a Marine Expeditionary Force to focus on the First Island Chain, while new Marine Littoral Regiments were established to contest islands and establish remote bases for shore-based weapons and sensors.[5] In September 2024, the United States responded to increasing Chinese and Russian patrols in the Aleutians and the Bering Strait by deploying US Army soldiers and HIMARS rocket systems to Shemya Island, near the extreme western point of the Aleutian chain, just 1,000 km from the Russian submarine base at Petropavlovsk.[6]

Parallels between the modern day and the conduct of the Second World War in the region are becoming apparent as the balance of naval power shifts westward. American and Japanese experience in defending and seizing islands, the use of those islands as 'unsinkable aircraft carriers' and staging areas for further assaults, and the use of submarines to strangle enemy supply lines will all undoubtedly be factors in future conflict, and states around the region are preparing for that eventuality.

## *First Rocks, Then SLOCS*

Northeast Asia's massive reliance on seaborne trade remains one of its primary strategic liabilities. Japan and South Korea each receive upwards of 96% of their total energy from seaborne imports, while China, with a more complex energy mix, relies on ships for about 68% of oil, in addition to large quantities of coal and natural gas.[7] The capacity of overland gas pipelines between Russia and China is being expanded, but the vast majority of Russian crude oil destined for Chinese markets is carried on ships. Such efforts have reduced Beijing's reliance on its potentially vulnerable southern SLOCs, but these northern routes, through areas like the Sea of Japan and through to the Russian Arctic, are similarly fraught.

While China and Russia would seek to protect trade flows via the Northern Sea Route and the Malacca Strait in the

Credit: Spc. Luke Steward, US Army

*A HIMARS missile launcher was set up at Eareckson Air Station on Shemya Island, Alaska, during an exercise on 13 September 2020.*

event of conflict, US partners in East Asia would likely shift their trade eastward, with routes moving into the open Pacific. Efforts to supply allies in the region would spur more trans-Pacific trade, as energy, food and materiel would be funneled through North American ports and disruption of these routes would likely be a high priority for an adversary.

It is important to note that disruption does not require destruction, and SLOCs can be affected by the mere threat of attack. It is unlikely that an adversary would risk its valuable submarines in attacks on commercial vessels when those submarines carry missiles capable of striking land targets up to 2,500 km away. For this reason Russian naval doctrine prioritizes attacks on landward supply hubs, rather than commercial vessels at sea, as a means of degrading an enemy's war-fighting potential.[8] This includes the Strait of Juan de Fuca and its environs, where the major ports closest to Northeast Asia are located, and where significant US naval power is based in complexes in Puget Sound, and where Canada's Pacific Fleet is based at Esquimalt.

Cruise missile ranges make it possible for a submarine hiding somewhere within nearly six million square kilometres of the North Pacific to strike targets along this critical waterway. This underscores the importance of distant lines of defence, including island chains, as vessels that manage to penetrate these barriers could have free range throughout the Pacific. Robust and constant anti-submarine patrols, both at sea and in the air, will be critical to monitoring submarines and other threats in the region, particularly in the deeper water.

It is by no means assured that an adversary would be capable of breaching the First Island Chain, although it is becoming increasingly clear that operations within the East Asian littorals would be highly dangerous for surface vessels. This increases the need for robust seagoing capabilities that can detect threats at extended range and remain on station for prolonged periods with the assistance of replenishment forces. It also increases the need for a host of capable surveillance platforms – like submarines and long-range crewed and uncrewed aerial platforms – to help maintain situational awareness and bolster Canada's regional presence in concert with allies and partners.

The RCN has maintained a regular and enduring presence in the waters throughout Southeast and East Asia in recent years and made progress in furthering defence relations with partners and delivering the promises made in the *Indo-Pacific Strategy* and *ONSAF*. However, the evolving maritime environment and the shifting balance of naval power will likely mean that the RCN will operate in more familiar climes of the North Pacific, in areas much closer to Canada's coasts.

**Notes**

* The views and opinions contained in this article are those of the author, and do not necessarily represent the views of the Department of National Defence/Canadian Armed Forces or the Government of Canada.

1. Canada, Department of National Defence, *Our North Strong and Free: A Renewed Vision for Canada's Defence*, Ottawa, 2024.
2. US estimates in August 2024 put the PLAN battle force at 328 vessels, versus 289 for the US Navy. Congressional Research Service, "China Naval Modernization: Implications for U.S. Navy Capabilities: Background and Issues for Congress," 16 August 2024.
3. Andrew S. Erickson and Joel Wuthnow, "Barriers, Springboards and Benchmarks: China Conceptualizes the Pacific 'Island Chains,'" *The China Quarterly*, Vol. 225 (2016).
4. *Ibid*.
5. "New in 2024: Marines build 3rd Littoral Regiment to Fight Peer Threats," *Marine Times*, 1 January 2024.
6. "US Deploys Soldiers, Rocket Systems to Alaska Island as Russian Military Activity Ramps Up in Region," CBS News, 18 September 2024.
7. Statistics derived from the US Energy Information Agency and the Energy Institute *Statistical Review of World Energy 2024*.
8. Central Intelligence Agency, "The Role of Interdiction at Sea in Soviet Naval Operations," National Foreign Assessment Center, May 1978, Declassified June 2017, pp. i-ii, 2-3; and President of the Russian Federation, "Fundamentals of the State Policy of the Russian Federation in the Field of Naval Operations for the Period until 2030," translated by the Russian Maritime Studies Institute, US Naval War College (Moscow, 20 July 2017), p. 12.

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*Dollars and Sense:*

# Canadian Defence Spending is Finally Increasing

**Dave Perry**


Credit: Boeing

*In 2023, Canada signed the Foreign Military Sales agreement with the United States to acquire up to 16 P-8A Poseidon aircraft to replace the CP-140 Auroras.*

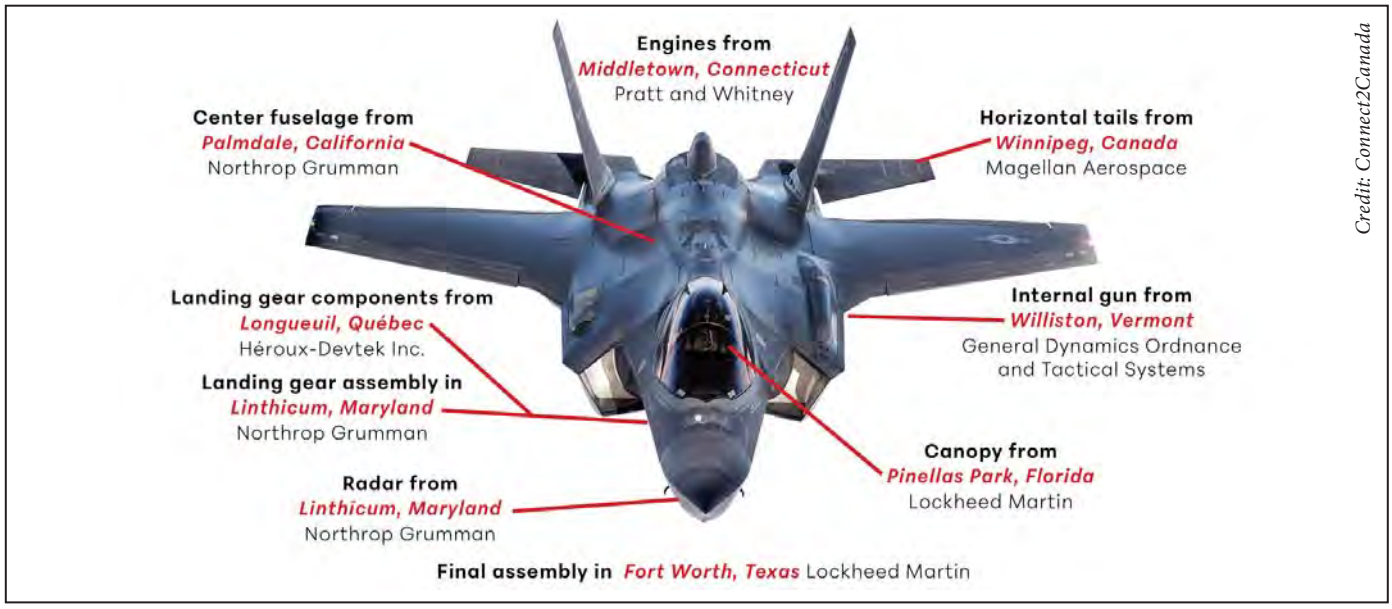
Dating back to the release of *Strong, Secure Engaged* in 2017, followed by the NORAD modernization plan and now *Our North, Strong and Free*, along with a smattering of smaller budget announcements, the government of Justin Trudeau has made progressively larger funding commitments to the Department of National Defence (DND). Based on the nature of how the government of Canada now operates, all of these commitments have had varying degrees of back-end loading to that spending. Presently, when the government announces a new policy like *Our North, Strong and Free* that only represents the firing of the starter's pistol when it comes to the race of converting the policy decision underpinning the policy into actual expenditures. In some circumstances, funding decisions to provide the money to enact the policy have to be secured after the policy is released. Similarly, even once funding is secured, expenditure authority – the actual ability to access and use the funds for their intended purpose – has to be obtained from the relevant authority. That comes from either the Treasury Board of Canada or the Minister of National Defence, although for smaller value items, sometimes the Deputy Minister can provide that approval.

In a unique feature of the last several years, DND has often needed to secure expenditure authority to access funds that have been provided as what is essentially seed money. This means that DND has to secure authority for funding to conduct option analysis activity that helps move projects to the point when they are ready to enter the definition or implementation phases when they require expenditure authority. Securing that seed funding is often a multi-month process. The process of securing expenditure authority for projects is roughly six months from the Minister of National Defence and upwards of a year when required from the Treasury Board.[1] All of this means that for many of the initiatives that might be announced in a new defence policy, if everything goes perfectly from the day a new policy is released, much of the spending is multiple years away from happening. Perhaps these dynamics will change once the results of the government's procurement review are enacted, but at the time of writing, no public results from that process have been released.

These dynamics, along with wider implementation delays and the impacts of the pandemic, have created a situation


Credit: MonaGhiz, MARLANT Public Affairs

*Minister of National Defence Bill Blair and Commander of the RCN Vice-Admiral Angus Topshee unveil the name of the Canadian Surface Combatant, the **River**-class destroyers, at Irving Shipbuilding on 28 June 2024. A build contract is expected for 2025, marking a major increase in capital spending.*




*In 2023, Canada also finalized the Foreign Military Sales agreement with the United States to acquire 88 CF-35A fighters. As this and other major capital projects move into their implementation phase, Canada's actual defence spending will increase dramatically.*

in which for several years now, Canadian defence has perennially been on the cusp of a significant spending increase. In 2017, for instance, in nominal dollars the plan was for spending to increase from roughly $20 billion in 2017/2018 to about $30 billion by 2023/2024. That magnitude of overall defence spending increase has finally arrived. The total Estimates for 2023/2024 ended up at $30.3 billion, although we don't yet know how much of that allocated funding was actually spent. So far, in 2024/2025 defence spending is tracking to a significant increase over the previous year, with the allocated funds as of the publication of Supplementary Estimates B for 2024/2025 on 18 November 2024 standing at $34.6 billion.

A significant reason for this increase is that DND is now finally starting to ramp up spending on capital expenditures. As of Supplementary Estimates B, the allocation of capital funds was just under $9 billion. In 2022/2023, two fiscal years ago, the total allocation of funds was $5.9 billion, of which $4.9 billion was actually spent at year's end. On a nominal basis, that's a roughly 50% increase in allocated funding in just two years.

And the current, funded plans – i.e., without considering what might happen if the government does actually follow through with the funding to support spending 2% of Gross Domestic Product (GDP) on defence by 2032 – show that spending is planned to increase dramatically next year. Budget 2024 provided a spending forecast that shows spending increasing from a little under $34 billion to roughly $44 billion by next fiscal year. That would represent a nominal spending increase of 31%. For context, that would exceed by a considerable margin the largest year-over-year nominal spending increase at DND over the last two decades. Looking back at actual spending results, the largest annual increase achieved was 23%. In fact, including that year, there were only four years in total when the defence budget increased by double digits year over year.

If the plan outlined in Budget 2024 comes to fruition, it will provide the largest year-over-year spending increase in a generation. The fact that allocations of capital funding have risen so significantly gives some credence to spending increasing as planned next year. Since the 2017 release of *Strong, Secure, Engaged* capital investments have always been on the verge of increasing dramatically, but have never quite managed to arrive at the predicted actual increase. Thanks largely to the majority of the Royal Canadian Air Force's major 2017 projects moving into contract and assuming actual construction of the *River*-class destroyers starts in 2025, the capital investment announced in 2017 is finally getting underway.

There is a key lesson to take away from this journey when thinking about Canada increasing defence spending to 2% of GDP by 2032. It takes years to move files through all the bureaucratic procedural gates needed to get to the point of making actual expenditures. It has taken seven years for the real money from *Strong, Secure, Engaged* to start to flow. Until and unless the government comes forward with a transformational package of procurement reforms, we can expect it to take about as much time for the investment promised in *Our North, Strong and Free* to get moving. If we consider that there are eight years to 2032, that leaves less than a year to produce a concrete plan (and the money) beyond the high-level direction to 'explore' new capabilities to reach 2% of GDP spending on defence by 2032. Time is ticking.

**Notes**

1. Royal Canadian Navy (RCN) Canadian Association of Defence and Security Industries (CADSI) Industry Engagement, Held under Chatham House Rule, Ottawa, 15 November 2024.

*Dave Perry is the President and CEO of the Canadian Global Affairs Institute, the host of the Defence Deconstructed podcast and a co-director of the Triple Helix MINDS Collaborative Network.*

# *Warship Developments:*
# Frigates

**Doug Thomas**

Frigates are often the most numerous surface combatants in medium-size navies. During World War II, they were 1,500-2,000 tons displacement and about 90 metres in length; now they can be four times that tonnage, 150 metres long, and are powerful multi-purpose vessels. They are now the size of light cruisers of 80 years ago, and are in many ways just as powerful as those predecessors

This article will take a quick look at some of the frigates that are being built today.

## *UK Frigates*

There are currently eight frigates under construction for the Royal Navy (RN), all in Scottish shipyards. Five are Type 26 frigates which are named after British cities. First steel was cut for the fifth of the class – the future HMS *Sheffield* – on 28 November 2024. The first of class, HMS *Glasgow*, should be commissioned in 2028. The genesis of the Type 26 was the British Global Combat Ship Program, designed to replace older RN vessels with a fresh modern design which might appeal to other countries as well.

The RN's Type 26s are anti-submarine warfare (ASW) specialists with very low acoustic signatures and other enhancements to improve their ability to detect and prosecute submarine contacts. They are replacing eight Type 23 frigates built in the 1990s. The Type 26 is the basis for the Australian *Hunter*-class frigates and the Canadian *River*-class destroyers. Updates on those projects will be discussed later in this column.

Also under construction in Scottish shipyards are Type 31 *Inspiration*-class frigates, all named after famous ships and submarines in recent British history. Construction of the future HMS *Formidable*, the third of an eventual five ships, recently commenced in Rosyth, Scotland, alongside HM Ships *Venturer* and *Active*. The World War II *Formidable* was an aircraft carrier which earned 10 battle honours. The 21st century successor will perform a broad range of tasks including maritime security patrols, disaster relief support, sea-borne commando raids and convoy escort.[1]

The first-of-class, the future HMS *Venturer*, will be delivered to the RN in 2025 and all five by 2028. These ships are considerably larger than the frigates they replace, but due to automation and other advances, their complement will be much smaller: perhaps 120 rather than 180-200. This, together with construction savings on a less-complex design derived from the Danish *Iver Huitfeldt*-class frigate and *Absalon*-class Flexible Support Ships, will provide huge cost savings over their life span. Five more ships of this type will be built at the same shipyard: three for Poland and two for Indonesia.


Credit: Royal Navy

*The first Type 26 frigate, HMS* ***Glasgow****, is seen on a submersible barge in preparation for its launch in 2023.*

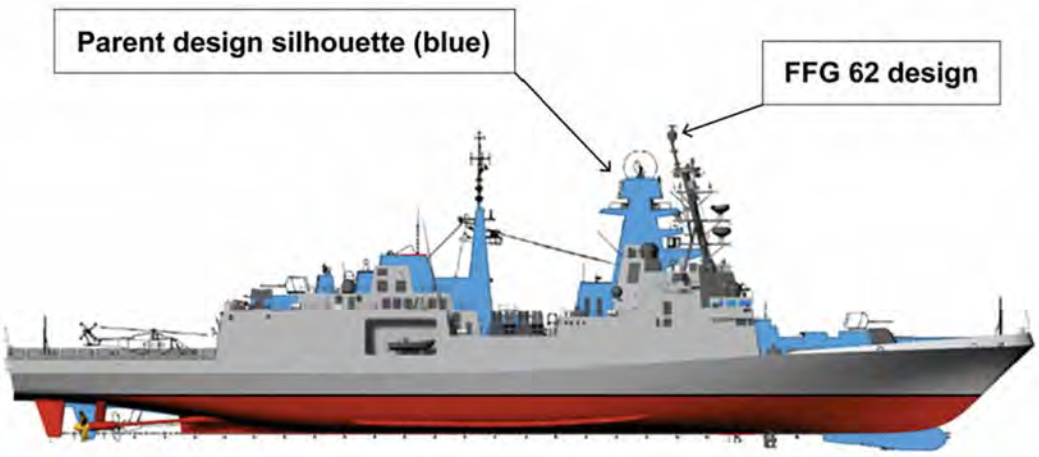
## *Australia's* Hunter-*class*

Australia's Type 26 frigate – the *Hunter*-class – is being whittled-down in numbers from an initial nine to six vessels, and will be an ASW vessel with good general-purpose capabilities. It will be equipped with a version of the US Navy's Aegis anti-aircraft warfare (AAW) system which will help provide compatibility with American naval forces operating in the Western Pacific. In conjunction with the Australia-United Kingdom-United States (AUKUS) plan to equip the Royal Australian Navy (RAN) with nuclear-powered submarines, a study of Australian future defence requirements has recommended a doubling of the surface fleet, revision of the surface force mix by reducing the ASW component, adding 11 new general-purpose frigates to replace the existing six *ANZAC*-class frigates, and a very interesting plan to procure six heavily-armed large optionally crewed surface vessels (LOSVs) capable of being operated remotely – that is to say with minimal or no crew. Australia would piggy-back on the concept being developed for the US Navy. A similar idea is being developed for the British and Dutch Navies. (More on this concept in future Warship Developments columns.)

## *Canada's* River-*Class Destroyers*

There is little new to say about Canada's Type 26 derivative. The first three vessels have been ordered and steel has been cut to begin construction of the first ship, the future HMCS *Fraser*. That is certainly good news!

***Illustration of FFG 62 Design Changes from Parent Design***




*Credit: United States Congressional Research Service*

*Source: Navy. | GAO-24-106546*

- Hull lengthened 23.6 feet to accommodate larger generators and future growth.
- Bow design modified to remove sonar dome and enclosure deck for stability.
- Generator rating increased to support transit speed and future growth.
- Propeller changed for improved acoustic performance.
- Displacement increased by ~500 tons for margins and future growth.
- Topside modified to accommodate U.S. Navy warfare systems.

*Note: The parent design silhouette in the figure above is based on the **Bergamini**-class European Multi-Mission Frigate.*

*A graphic contained in a Congressional Research Service report on the **Constellation**-class frigates shows their differences compared to the original FREMM design.*

## *US Navy* Constellation-*Class Frigates*

The US Navy (USN) has paid off its *Perry*-class frigates and has no medium-size, blue-water escort vessels for the first time in over 80 years. There remains a need for a blue-water frigate, available in significant numbers, which could perform general-purpose roles at a cost well below that of the *Arleigh Burke*-class Aegis destroyers which tend to be deployed with carrier battle groups. The Littoral Combat Ships do not have the sea-keeping capability to take on the open ocean tasks of the *Perry*-class ships, such as ASW and convoy escort. Accordingly, the USN intends to procure 20 *Constellation*-class frigates. The class is based on the French/Italian European multi-purpose frigate (FREMM) design, which is similar in size to the UK's Type 26. A total of 18 FREMM frigates have been built or are being built for service with the French and Italian Navies.

The first six USN ships have been ordered and names have been selected. The first three ships – *Constellation*, *Congress* and *Chesapeake* – incidentally are the names of three of the first six frigates ordered for the post-Revolution navy in 1794.

The US Navy has specified that the ship should be able to:

- destroy surface ships over the horizon;
- detect enemy submarines;
- defend convoy ships;
- employ active and passive electronic warfare systems; and
- defend against swarming small boat attacks.[2]

Thus far construction has been slow due to a shortage of trained shipyard workers and other problems, and costs have increased considerably.

## *Conclusion*

I find it interesting that the USN did not consider the British design when it was shopping for an off-the-shelf foreign design to meet its operational requirement for a moderate size and cost surface combatant. Perhaps the USN thought it would be too expensive? To this seaman's eye, the Type 26 appears to be the more seaworthy design, whereas the French and Italian Navies generally favour a lower freeboard which may be better suited to the Mediterranean and warm waters. Unfortunately, operations may well be conducted in cold climates and less-than-pacific waters.

I believe the Type 26 vessels are fine ships: the design is very flexible, and they should acquit themselves well in any likely operation. They are well-equipped for offence and defence in this increasingly complex and dangerous world. I hope Canada will build all 15 to the same basic design: it is much easier to train personnel and provide effective ship's companies if all of our major surface combatants are the same.

**Notes**

1. United Kingdom, Royal Navy, "Equipment/Ships: Inspiration Class," no date.
2. See "Constellation-class Frigate," Wikipedia.

# Book Reviews

*Warriors and Warships: Conflict on the Great Lakes and the Legacy of Point Frederick*, by Robert D. Banks, Toronto: Dundurn Press: 2023, 260 pages, $59.99 (hardcover), ISBN 978-1-45-975066-1

### Reviewed by Nicholas Glesby

Lieutenant-Colonel (retired) Robert D. Banks, a former Royal Canadian Air Force (RCAF) pilot and surgeon, has painstakingly pored over archival documents, photographs, computer-generated models, maps, artifacts and previous scholarship to assemble a historic narrative of maritime conflict on Lake Ontario. The primary focus is the development of Kingston Harbour and Point Frederick (now the site of the Royal Military College of Canada (RMC) and the historic Fort Frederick) between 1615 and 1876.

In chronological order of events, Banks begins with Samuel de Champlain, in 1615 the first European colonist to reach Kingston, before moving on to the first record of naval conflict on Lake Ontario between the French and Haudenosaunee in 1687. After being burned down and abandoned, Point Frederick was revived in 1783 by the British who sought a suitable location for a new dockyard – providing both access to the St. Lawrence River and the ability to patrol the rest of Lake Ontario. Eight chapters are spent on Point Frederick's defining role in the War of 1812, followed by the naval yard's transition to an ordnance depot for the Royal Navy and Army after the rebellion in Upper Canada. The book ends in 1876 when RMC is established.

Banks uses meticulous and impressively thorough research to narrate this history, refreshingly using people and ships as perspectives. He focuses little on naval strategy and tactics. This is not necessarily a criticism, as *Warriors and Warships* strictly follows its central thesis. Given the absence of discussion about tactics and strategy of naval conflict on Lake Ontario, however, future scholars may want to consider them as a research topic, since the British viewed the lake as "a natural ditch" for defence against the United States.[1]

I have three minor issues with the book. First, with the large number of historical figures being discussed, it is sometimes unclear who exactly the person is and what their role is, requiring frequent consultation of the appendices. Second, Banks sometimes falls into a trap; he is an expert of the material and eager to tell his narrative, but does not provide context that a overview for each chapter would achieve. Third, the final reflections could benefit from considering the 'so what' – in other words, why is this history relevant now? For example, what will greater acknowledgement of the legacy of the Royal Navy on Lake Ontario achieve and for whom? These points do not take away from Banks' friendly writing style nor research skills in synthesizing what is a complex history.

Historical reflections written in an approachable manner and devoid of technical jargon, such as *Warriors and Warships*, are essential in Canada today. Military history is often written in a way that makes it inaccessible to non-military enthusiasts. As Canada currently finds itself navigating a precarious geopolitical environment, a better understanding of our shared military history is increasingly important for government, academia, industry and society writ large. Kingston Harbour is now home to Canadian Olympic training for competitive sailing (with its challenging wind conditions), but how many Canadians know there were major naval battles on Lake Ontario? This book shares some of Canada's lesser-known military history.

This book is very clearly a labour of love for Banks, given that he is not a historian by formal training.[2] *Warriors and Warships* is well-researched, informative and suitable for anyone interested in maritime conflict, especially during the War of 1812. This thought-provoking work is recommended.

**Notes**

1. See "(G 41) Craig to Lord Castlereagh," in Richard A. Preston (ed.), *Kingston before the War of 1812* (Toronto: Champlain Society, 1959), p. 264.
2. See "Lieutenant-Colonel Robert Douglas 'Bob' Banks CD, MD, BEng," Royal Military College of Canada, 8 August 2023.

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*On Contested Shores: The Evolving Role of Amphibious Operations in the History of Warfare*, edited by Timothy Heck and B.A. Friedman, Quantico, Virginia: Marine Corps University Press, 2020, 430 pages, ISBN 978-1-7320031-4-9

### Reviewed by Colonel (Ret'd) Brian K. Wentzell

This edited book presents a critique of the practice of the US government to deploy the US Marine Corps as a land-based army, instead of the US Army, in current, recent and historic hostilities around the world. The authors express their concerns about this practice through review of amphibious operations in warfare by various states in the years 1555 through 2020. It is fascinating history that reveals the ancient and continuing importance of soldiers striking from the sea.

All of the chapters of the book explore specific amphibious operations by the military services of particular states. The weapons and tactics employed varied through the ages, and they were employed by soldiers with differing degrees of training, experience and technology. The

soldiers came from the sea in ships, smaller vessels and more recently by aircraft. It was the intent of the authors to illustrate the breadth of employment of sea soldiers throughout history and to anticipate their continued employment in the future. They have achieved their purpose.

As a Canadian reviewer, I have one criticism. The raid on Dieppe, France, is mentioned only once in the book. In the chapter "The Reich Strikes Back," Jeffrey Schultz records the German victory over the allied forces in the Dodecanese Islands in the Aegean Sea in November 1943. He quotes an un-named correspondent who reported, "the loss of Leros has taught us a bitter lesson. It is a disaster as big as Dieppe (France)." There is no other mention of the Dieppe raid in the book, despite the importance of the lessons learned from that debacle in preparation for *Operation Overlord* in Normandy in June 1944. This omission mars the subsequent discussion of D-Day.

Despite my criticism, the book is a useful one-volume history of the employment of soldiers from the sea through history.

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*After Jutland: The Naval War in Northern European Waters June 1916-November 1918*, by James Goldrick, South Yorkshire, UK: Pen and Sword Publishing, 2018, 332 pages, photos, maps, ISBN 978-1-5267-4298-8

**Reviewed by Chris Buckham**

The prevalent assumption amongst a significant number of casual World War 1 enthusiasts is that following the inconclusive Battle of Jutland, the German High Seas Fleet maintained a very limited presence on the high seas for the duration of the war, the Royal Navy (RN) continued, for the most part unchallenged, preserving the stranglehold on Germany, and there was little if any activity in the Baltic. Of course, this is far from the truth and Admiral Goldrick's work goes a long way in dismissing those misconceptions. His narrative illustrates the experiences of the major Northern Theatre Battle Fleets (RN, German and Russian) as they undertake operations from the Gulf of Finland to the edge of the North Sea. While it is true that a second major fleet action along the lines of Jutland did not materialize, Goldrick makes it clear that significant actions were very much the norm right up until the end of the war.

The author is a professional navy man, and that expertise comes through in his analysis and discussion of the engagements and operational challenges/successes of the different navies. Additionally, and just as significantly, he expands the scope of his narrative to include detailed reviews on the technological developments of the adversaries as the war progressed. These include, but are not limited to, mine warfare, naval air capabilities, gunnery and submarine development. His observations and explanations on the impact of these areas on offensive and defensive operations are succinct and insightful.

Navies operate in an international environment, free from the restraints of trench warfare, etc. As such, they cannot help but interact with assets of non-combatant states and these interactions can have far-reaching effects well beyond their immediate boundaries. Goldrick incorporates his thoughts on the impact of these international engagements on the course of the war itself. The declaration of unrestricted submarine warfare by the Germans in 1917, for example, was directly responsible for leading the United States into the war.

A particular strength of this book is the section that the author refers to as 'Reflections.' In this section, he includes a series of conclusions on the overall conduct of the naval war by each of the main protagonists. His observations are telling and prescient. He is critical of the method by which the German Navy was utilized, suggesting that its strengths were not fully recognized specifically in the areas of surface raiders, submarine warfare (not unrestricted however), and operational doctrine in the use of mixed-use flotillas and scouting groups. Nevertheless, the author also recognizes the limitations imposed on the fleet by external factors such as the effect of the submarine service on personnel and the deterioration of the ships themselves as the war progressed due to (presumably) the impact of the blockade on engineering supplies.

The British, for their part, missed significant opportunities regarding mine warfare and the advent of naval aviation. Additionally, Britain failed to pursue more aggressively a coordinated effort with the Russians that may have squeezed the German ability to respond on two naval fronts concurrently. Goldrick also makes note of the Russian reluctance to engage in the western regions of the Baltic Sea. Surely here was a missed opportunity to interdict the flow of resources, particularly iron ore, from Sweden to Germany.

This was a very enjoyable book to read; educational, relevant and featuring a good balance of technical insight as well as flowing narrative. It is strongly recommended for the casual historian as well as the dedicated researcher.

*2025 Canadian Naval Memorial Trust*

# Essay Competition

*Canadian Naval Review* will be hosting the CNMT's annual essay competition again in 2025. There will be a prize of $1,000 for the best essay, provided by the **Canadian Naval Memorial Trust**. The winning essay will be published in *CNR*. (Other non-winning essays will also be considered for publication, subject to editorial review.)

Essays submitted to the contest should relate to the following topics:

- Canadian maritime security;
- Canadian naval policy;
- Canadian naval issues;
- Canadian naval operations;
- History/historical operations of the Canadian Navy;
- Global maritime issues (such as piracy, smuggling, fishing, environment);
- Canadian oceans policy and issues;
- Arctic maritime issues;
- Maritime transport and shipping.

If you have any questions about a particular topic, contact **cnrcoord@icloud.com**.

## *Contest Guidelines and Judging*

- Submissions for the 2025 *CNR* essay competition must be received by **Friday, 30 May 2025**, at **cnrcoord@icloud.com**.
- Submissions are not to exceed 3,000 words (excluding references). Longer submissions will be penalized in the adjudication process.
- **Submissions cannot have been published elsewhere.**
- The use of generative Artificial Intelligence tools or apps in submissions, including ChatGPT and other AI writing assistants, is prohibited.
- All submissions must be in electronic format and any accompanying photographs, images, or other graphics and tables must also be included as a separate file.

The essays will be assessed by a panel of judges on the basis of a number of criteria including readability, breadth, importance, accessibility and relevance. The decision of the judges is final. All authors will be notified of the judges' decision within two months of the submission deadline.


The first Joint Support Ship, HMCS ***Protecteur***, is moved onto the Seaspan Careen floating drydock ahead of its naming ceremony and launch in North Vancouver on 10 December 2024.

*Credit: Seaspan*