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The Royal Canadian Navy: Facing Rough Seas

by Dr. Rob Huebert
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► Executive Summary

Recently the Royal Canadian Navy (RCN) has received significant media attention, much of it negative. This has been caused by a series of mishaps that have highlighted some of the very serious challenges that the Navy is facing. The fire aboard HMCS Protecteur, which ultimately resulted in the retirement of both of the Canadian replenishment vessels, along with two of the three remaining Destroyers, have brought a significant amount of negative attention to the RCN.

There are serious questions being asked about the future direction that the Navy will move in as difficult decisions are made (or not made) about its future. But not all is as bleak as the media reports indicate. The mid-life refit of the Halifax-class frigates is proceeding on schedule and in some instances ahead of schedule. Construction has finally begun on the Canadian Arctic Offshore Patrol Ships.

The purpose of this paper is to consider and assess some of the major challenges that are now facing the Royal Canadian Navy. Is the Navy really sinking or is it only facing rough seas? While space limits make it impossible to consider all of the institutional, strategic, operational and tactical issues and challenges now facing the RCN, it is possible to examine how the Royal Canadian Navy has been able to respond to the need to rebuild. What can be learnt by the actions of the Canadian government and the Canadian Forces as they respond to the current need to rebuild most of the existing fleet?





Recently the Royal Canadian Navy (RCN) has received significant media attention, much of it negative.¹ This has been caused by a series of mishaps that have highlighted some of the very serious challenges that the Navy is facing. There has been the fire aboard HMCS *Protecteur*², which ultimately resulted in the retirement of both of the Canadian replenishment vessels.³ There was also a collision at sea that resulted in significant damage to HMCS *Algonquin*⁴, which in turn brought attention to the retirement of two of its three remaining destroyers. There have been other reports underlining the fact that the Canadian Navy is about to face a major challenge in rebuilding itself as several very large, complicated and expensive procurement projects need to proceed. There are serious questions being asked about what future direction that the Navy will move into as difficult decisions are made (or not made) about its future. But not all is as bleak as the media reports indicate. The mid-life refit of the *Halifax*-class frigates is proceeding on schedule and in some instances ahead of schedule.⁵ Construction has finally begun on the Canadian Arctic Offshore Patrol Ships (AOPS).⁶ The Navy has received the first of its long awaited maritime helicopters replacing its 50 year old Sea Kings.⁷ Regardless, the Navy is facing a very challenging future from forces that in many instances go beyond its control.

The purpose of this paper is to consider and assess some of the major challenges that are now facing the Royal Canadian Navy. Is the Navy really sinking or is it only facing rough seas? While space limits make it impossible to consider all of the institutional, strategic, operational and tactical issues and challenges now facing the RCN, it is possible to examine how the Royal Canadian Navy has been able to respond to the need to rebuild. What can be learnt by the actions of the Canadian government and the Canadian Forces as they respond to the current need to rebuild most of the existing fleet?

The Canadian Navy emerged from meager beginnings in 1910 but has grown into a very professional force in the modern era.⁸ Most of the Canadian public has little understanding of

¹ Scott Gilmore, "The Sinking of the Canadian Navy," *Maclean's* (August 4, 2015)

[<http://www.macleans.ca/news/canada/the-sinking-of-the-canadian-navy/>]; and Ken Hansen, "Ship cuts send RCN naval ranking tumbling according to their own system," *Canadian Naval Review*, BroadSides Discussion Forum (October 2, 2014) [<http://www.navalreview.ca/2014/10/ship-cuts-send-rcn-naval-ranking-tumbling-according-to-their-own-system/>].

² James Cudmore, CBC, "HMCS *Protecteur* crew fought engine fire for 11 hours," (March 26, 2014)

[<http://www.cbc.ca/news/politics/hmcs-protecteur-crew-fought-engine-fire-for-11-hours-1.2586636>].

³ Global News, "Canadian Navy to retire four aging ships," (September 19, 2014)

[<http://globalnews.ca/news/1572175/canadian-navy-to-retire-four-aging-ships/>].

⁴ CBC, "2 Canadian Warships collide en route to Hawaii," (August 31, 2013) [<http://www.cbc.ca/news/canada/2-canadian-warships-collide-en-route-to-hawaii-1.1309679>].

⁵ David Pugliese, "Modernization of Halifax-class frigates a success, says government," *Ottawa Citizen* (November 24, 2014) [<http://ottawacitizen.com/news/national/defence-watch/modernization-of-halifax-class-frigates-a-success-says-government/>].

⁶ CNW, "Ships Start Now - Irving Shipbuilding Begins Construction of First Arctic Offshore Patrol Ship (AOPS) for Canada," (September 1, 2015) [<http://www.newswire.ca/news-releases/ships-start-now-irving-shipbuilding-begins-construction-of-first-arctic-offshore-patrol-ship-aops-for-canada-523785271.html>].

⁷ CBC, "CH-148 Cyclones delivered to Halifax airbase," (June 19, 2015) [<http://www.cbc.ca/news/canada/nova-scotia/ch-148-cyclones-delivered-to-halifax-airbase-1.3119737>].

⁸ For one of the best reviews of the navies transformation see Marc Milner, *Canada's Navy, 2nd edition: the First Century* (Toronto: University of Toronto Press, 2010).



the modern Navy. There is only a small number of Canadians who appreciate the significant role it played in the battle of the Atlantic during World War Two. The RCN emerged at the end of that conflict as one of the larger navies of the world. It played a role in the development of NATO's maritime strategy and preparations for a possible conflict with the Soviet Union during the Cold War.⁹ Few Canadians are aware that at the end of the Cold War, the RCN went through a redevelopment that ultimately resulted in the creation of a very modern and capable maritime force. The refit and modernization of the *Iroquois*-class destroyers; the construction of the *Halifax*-class frigates; and the purchase of the *Victoria*-class submarines meant that the Navy was able to maintain a very qualified force that was asked by successive Liberal and Conservative governments to engage upon a highly energetic and robust series of international deployments. Throughout the 1990s and into the 2000s, the Navy's performance was extensive and excellent but for the most part out of the public's eye. The RCN's performance since the 1990s may have created expectations it can no longer meet. The core problem that has now arisen is that many of the platforms used by the Navy are worn out and are in need of replacing. However, modern seapower is both expensive and technologically challenging to build or acquire.¹⁰ Thus there has always been a tendency in Canada (and most other western states) to defer on new ship construction. For the Canadian Navy, this has created the core problem that has received so much recent attention.

The Nature of the Problem

The specific problem facing the Royal Canadian Navy is the ability to maintain the operation of its vessels and to rebuild its fleet. The biggest element of the problem has been its inability to enact ship building policy in a timely fashion.¹¹ For the first time a Canadian government has recognized and acted upon the need to develop a much more rational long term ship building strategy. But this has not solved the problem that the RCN is now facing in the immediate time frame. Having a strategic ship building plan does not necessarily mean that the ships will be built as needed.

While it goes beyond the scope of this paper to provide a detailed examination and assessment of all of the Department of National Defence's efforts to rebuild the RCN, three of the most immediate programs that the Navy needs will be examined. These are; 1) the replacement programme for the Auxiliary Oil Replenishment (AOR) (*Protecteur*-class); 2) the acquisition of the Arctic Offshore Patrol Ship (AOPS) (*Harry DeWolf*-class); and 3) the mid-life modernization programme for the Multi-role patrol frigate (FFH) (*Halifax*-class) *Halifax*-Class Modernization (HCM)/Frigate Life Extension (FELEX). This allows for the consideration of the replacement of an existing capability; the acquisition of a new capability; and the extension of an existing capability. If successfully executed, these three programs will play the pivotal role in

⁹ Joel Sokolsky, "Canada and the NATO Alliance," *Conflict Quarterly* Vol 4, no 2 (Spring 1984): 12.

¹⁰ See for example Mark V. Arena, "Why Has the Cost of Navy Ships Risen? A Macroscopic Examination of the Trends in U.S. Naval Ship Costs over the Past Several Decades," *RAND Report MG-484* (Santa Monica, Calif.: RAND, 2006); Ronald O'Rourke, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress* (Washington, D.C.: Congressional Research Service, 16 August 2006); and John Birkler, "Differences between Military and Commercial Shipbuilding: Implications for the United Kingdom's Ministry of Defence," *RAND Europe Report MG-236* (Santa Monica, Calif.: RAND, 2005).

¹¹ See Milner for the best overview of this ongoing challenge of rebuilding the Navy over its century long history.



building the future Navy. Excluded from this study are the near retirement of an existing capability the Area Air Defence Destroyer (DDG) (*Iroquois*-class); eventual retirement of the core element of the fleet (FFH *Halifax*-class) and its replacement; replacement of an existing capability and maintenance – the long-range patrol *Victoria*-class submarine (SSK); and replacement of air capability – ship borne maritime helicopter (CH-124 Sea King to CH-148 Cyclone). By looking at the three programs that have been selected, it is possible to consider one that is incomplete; one that is successful in introducing a new capability but marginally successful in implementation; and one that has been successful. Contrary to the dire warnings presented in many of the media reports the Navy has not “sunk” but is actually in the initial stages of a significant regrowth. But while it is not sinking, there are significant challenges. Therefore, it is now necessary to examine what is happening within the RCN.

1. Replacement program for the Auxiliary Oil Replenishment (AOR) (*Protecteur*-class):

The two ships of the *Protecteur* class were commissioned in 1969 and 1970.¹² The Navy began to consider the replacement of these vessels in the early to mid-1990s. At this time, consideration was given as to whether or not the replacement vessels should be direct replacements or whether the new vessels should be of a different type. In 1994 the decision was made to examine the development of a ship that not only could continue to resupply naval ships at sea but could also have a sealift capability, transport troops, and operate in the Arctic.¹³ The effort to integrate a wide range of capabilities is very much in keeping with Canadian naval practices to get as much as possible out of its vessels. The Martin Government then announced on 16 April 2004 that it planned to replace the existing fleet of AORs (which then included a third smaller AOR – HMCS *Provider*) with three new Joint Support Ships (JSS). Two international consortiums that included Canadian ship-yards were selected to bid on the project. Ultimately, both put in bids that were considered substantially over the budget of \$2.1 billion that was put in place by the Stephen Harper’s Conservatives. This resulted in the government rejecting both submissions and starting the project over in 2008.¹⁴ In July 2010, the government re-launched the process. It reduced the number of ships to two (with an option for a third), and focused much of the ship’s capabilities on its replenishment duties and much less on the troop transport role.¹⁵ On 2 June 2013 the government announced that it had selected an existing design by ThyssenKrupp Marine Systems to build a modified form of the *Berlin*-class at Vancouver Shipyards, to be named the *Queenstown*-class.¹⁶ The government stated that it expected the building of the first ship to take place in the 2016/2017 timeframe with expected delivery in 2019, with the second being delivered sometime after that.¹⁷ Both the *Protecteur* and *Preserver* were taken out of

¹² Ken MacPherson and Ron Barrie, *The Ships of Canada’s Naval Forces, 1910-2002* (St. Catharines, ON: Vanwell, 2002): 280-282.

¹³ Murray Brewster, “Failed navy supply bid costs Harper government up to \$8 million,” Canadian Press, (January 20 2014) [<http://globalnews.ca/news/1095187/failed-navy-supply-ship-bid-costs-harper-government-up-to-8-million/>].

¹⁴ Henning Jacobsen, “The RCN’s Joint Support Ship Disaster,” *Vanguard* (August 12, 2015) [<http://www.vanguardcanada.com/2015/08/12/the-joint-support-ship-debacle/>].

¹⁵ Canadian American Strategic Review, “Canadian shipbuilding – JSS Project/AOR Replacement – JSS Morphs into MOTS AOR Replacement,” (November 2010) [<http://www.casr.ca/doc-acan-jss-aor.htm>].

¹⁶ National Defence and the Canadian Armed Forces, Joint Support Design Decision Background, (June 2, 2013) [<http://www.forces.gc.ca/en/news/article.page?doc=joint-support-ship-design-decision/hie8w9bu>].

¹⁷ Ibid.



service in 2015.¹⁸ Thus, the process to replace the AOR started when the vessels were 25 years old, but then continued without success until they were over 40 years old. When the ships were 46 and 45 years old, the Navy was forced to retire them without construction having started on their replacement.

To meet the immediate shortfall created by the retirement of the two AORs and the time lag resulting from the *Queenstown*-class' delays, the government has taken two steps. First, it has arranged two Mutual Logistical Support Arrangement (MLSA) with Chile and Spain to utilize support vessels from those navies to carry out the duties of the two retired AORs. Second, the Canadian Government has approved the conversion of a container vessel into an interim AOR.

The Canadian and Chilean governments reached a \$6 million, 40 day deal in which the AO-52 *Almirante Montt*, a former American navy oil tanker, provided service for the Canadian Navy on the West Coast in the summer of 2015.¹⁹ In 2016 the Spanish Navy will provide the SPS *Patiño* (A14) to support the Canadian East Coast fleet from January to March 2016 with a second vessel for the fall of 2016 once the MLSA is finalized.²⁰ The main focus of these vessels will be to allow the Royal Canadian Navy on both coasts to retain its proficiency in the challenging task of replenishment at sea.

The second step being taken is to transform a commercial container vessel into a resupply vessel. Chantier Davie yard in Lévis Quebec and Aecon fabrication in Pictou Nova Scotia have begun work on transforming the 23,800 ton MV *Aserix* in the fall of 2015 into an interim AOR.²¹ The vessel was purchased for \$20 million, with conversion costs expected to be \$250-300 million. When completed, the vessel will then be chartered to the Canadian government for \$75 million a year for up to five years.²² The federal government had sought proposals for the provision of At-Sea Support service in December 2014. Six months later a decision was made to award the contract to Davie.²³ On 30 November 2015, the new Liberal government signed the agreement to proceed with Project Resolve. There has been some criticism of the agreement from Irving Shipyards, but this was quickly challenged by the Shipbuilding Association of Canada and has seemingly ended.²⁴

¹⁸ David Pugliese, "The Royal Navy issues details on retirement of ships," *Ottawa Citizen* (September 19, 2014) [<http://ottawacitizen.com/news/national/defence-watch/the-royal-canadian-navy-issues-details-on-retirements-of-ships/>].

¹⁹ Canada, Embassy of Canada in Chile, *The Chilean's navy oil tanker in Canada to support Pacific Fleet* (September 18, 2015) [<http://www.canadainternational.gc.ca/chile-chili/highlights-faits/2015/2015-07-PetroleroDeArmada.aspx?lang=eng>]; and David Pugliese, "Canada's Navy 'Rents' Chilean Resupply Ship," *DefenceNews* (July 11, 2015) [<http://www.defensenews.com/story/defense/naval/ships/2015/07/11/canada-renting-resupply-ships-from-chile-spain/29869123/>].

²⁰ David Pugliese, "Royal Canadian Navy prepares for Spanish supply ship Patino in late January on East Coast," *Ottawa Citizen* (December 9, 2015) [<http://ottawacitizen.com/news/national/defence-watch/royal-canadian-navy-prepares-for-spanish-supply-ship-patino-in-late-january-on-east-coast/>].

²¹ Jon Rosamond, "Canada turns to Asterix for stop gap at-sea support," *IHJ Jane's Navy International* (October 4, 2015) [<http://www.janes.com/article/55006/canada-turns-to-asterix-for-stop-gap-at-sea-support/>].

²² *Ibid.*

²³ Canada, *Equipping the Navy with an Interim Auxiliary Replenishment Capacity – Statement for Minister of Public Services and Procurement Jundy M. Foote and Minister of National Defence Harjit Sign Sajjan* (November 30, 2015)

²⁴ David Pugliese, "Shipbuilding Association fires back at Claims from "certain Shipyards" they could supply a RCN interim supply ship," *Ottawa Citizen* (November 23, 2015) [<http://ottawacitizen.com/news/national/defence->



Three observations arise from this overall process to acquire new AORs. First, there is the issue of the planned function of these vessels. As their design morphed and evolved, there were significant differences that would have changed the focus of the Navy. Had the Government found the necessary funding to build three large vessels that contained both a robust replenishment as well as a troop deployment capability, this would have allowed the government to use them in a very different role than the AORs had been used. What would have been the overall impact on the Navy? It would have given the government an improved ability to operate an expeditionary capability, but if future governments did that, would it have meant that they would not be available for the more traditional naval commitments that require the presence of tankers? Thus, their final design will have an important impact on the future abilities of the Navy.

The second set of questions revolves around the cost factor. When the government refused to accept bids that were deemed to be too costly and over budget, it faced criticism that it was asking the companies to do too much without enough funding. The government's response was that the companies were not up to the task of providing a design that was affordable.²⁵ There are currently concerns from the Parliamentary Budgetary Office (PBO) that the current project costs will continue to escalate beyond current expectations.²⁶ If this happens what will then happen to the project? According to the government, it is applying a detailed and sophisticated means to ensure that it has both a realistic process and one that delivers the best value possible to Canadians. It is possible therefore, that the government was performing its due diligence and that the delay in the construction is the main cost of this action.

The manner by which both the Harper and Trudeau governments have acted to acquire interim AORs highlights an interesting third point. The government has shown considerable flexibility in "renting" the Chilean and Spanish vessels and in reaching an agreement to lease a conversion from a Canadian yard. These processes have been accomplished in a very quick fashion and in a manner that substantially reduces the risk faced by the government. The Royal Canadian Navy has experience operating with both navies, so there is already operational experience shared by the three services. In terms of the interim AOR Davie Shipyard assumes the initial risk for buying and converting the *Asterix* into the interim AOR. The government only then will lease for a five year period with the possibility of a renewal. These are innovative approaches. But at the same time, the current government has also made clear that it still intends to proceed with the purchasing of two *Queenstown*-class JSS.²⁷ Thus the interim AOR will not replace these vessels nor will Canada depend on its friends and allies indefinitely. Ultimately, this does demonstrate that the Government can move quickly on naval procurement decisions to at least find "quick"

watch/shipbuilding-association-of-canada-fires-back-at-claims-from-certain-shipyards-they-could-supply-a-rcn-interim-supply-ship].

²⁵ Jacobsen, "The RCN's Joint Support Ship Disaster."

²⁶ Office of the Parliamentary Budget Officer, *Feasibility of Budget for Acquisition of Two Joint Support Ships* Ottawa, Canada (February 28, 2013) [http://www.pbo-dpb.gc.ca/web/default/files/files/files/JSS_EN.pdf]. The PBO's cost estimates were based upon parametric modelling (see the PBO Report itself for a description of the approach). Early on in the JSS project, DND also used parametric modelling of equal calibre to that used by the PBO. The difference between the PBO and DND estimates is due to the fact that the latter's are based on known / actual costs supplied by the builder.

²⁷ Canada, *Equipping the Navy with an Interim Auxiliary Replenishment Capacity*.



solutions to immediate problems. On the other hand the long time period that has elapsed since the Canadian Government decided to replace its AORs has shown that it will also move very slowly.

2. The Acquisition of the Arctic Offshore Patrol Ship (AOPS) (*Harry DeWolf*-class):

The decision of the Harper government to acquire the AOPS will give the Royal Canadian Navy a capability to operate in the Arctic – something it only briefly was able to do for a short period in the 1950s.²⁸ This process is an interesting one in that it is initiated from the political leadership and not from the Navy itself. But even this factor has not mitigated the difficulties the Navy has faced in the development of this new class of warship. The idea for the project was announced by Harper in December 2005 during the 2006 federal election campaign. He promised that if elected, he would build three armed icebreakers that would be operated by the Navy and not the Coast Guard.²⁹ Subsequent to his victory, the idea of three armed icebreakers was transformed to six to eight Arctic Offshore Patrol vessels and a refueling berth in the Arctic, both announced in July 2007.³⁰ While now designed to also function with a patrol capability in ice-free water, they will retain a polar class 5 classification. In October 2010 it was announced that Irving Shipbuilding in Halifax would build the vessels under the terms of the Canadian ship building strategy, but a final contract was not signed until January 2015.³¹ Irving Shipbuilding is to be paid \$2.3 billion to construct five, with a possible sixth vessel if costs do not unexpectedly escalate. The steel for the first ship was first cut in September 2015.

The decision to build this new class of vessels raises a number of questions. First, how did the decision-making process proceed? The decision to acquire vessels is somewhat unique in that it was clearly initiated by Canadian political leaders and not from within the Navy. The only other comparable examples that comes close was the Mulroney decision to pursue nuclear powered submarines instead of conventionally powered submarines as the replacement for the *Oberon*-class.³² It is not yet publicly known how the Navy senior leadership adjusted to this decision to receive the AOPS. Were they in favor; were they opposed? How long did it take the Navy to respond to this decision to build an entirely new capability that had not been on projected new capital plans? What assessments were made as to the impact that this decision was to have on their other capital projects?

The timeline of the decision process also raises a number of questions. Here is a program that has the support of the Prime Minister, yet takes from July 2007 to September 2015 – a period of

²⁸ Macpherson and Barrie, p.283.

²⁹ CBC, “Harper brushes off US Criticism of Arctic Plan,” (January 26, 2006) [<http://www.cbc.ca/news/canada/harper-brushes-off-u-s-criticism-of-arctic-plan-1.611471>].

³⁰ National Defence and the Canadian Forces, Speaking Noted for the Honorable Gordon J O’Connor, PC MP Minister of National Defence, (July 9 2007) [<http://www.webcitation.org/query?url=http%3A%2F%2Fwww.forces.gc.ca%2Fsite%2Fnews-nouvelles%2Fview-news-afficher-nouvelles-eng.asp%3Fid%3D2403&date=2009-09-05>].

³¹ CBC, “Irving reaches shipbuilding deal with federal government,” (January 16, 2015) [<http://www.cbc.ca/news/canada/nova-scotia/irving-reaches-shipbuilding-deal-with-federal-government-1.2912429>].

³² Julie Ferguson, *Through a Canadian Periscope: The Story of the Canadian Submarine Service* 2nd edition (Toronto: Dundurn, 2014): 343-353.



over eight years – to actually start the construction of the vessels. Government sources suggest that the construction of the five to six vessels will not be completed until 2022.³³ Assuming that is correct the gestation and ultimate development of the program will be 16 years. This sounds like a long time and may be, but the question arises as to how long it has taken Canadian government's to begin thinking about acquiring a new capability and then actually acquiring it in other cases. The decision to gain strategic airlift proceeded very fast. But the procurement of the CC-177 was likely an exceptional situation.

The third factor that will warrant closer attention will be the costs associated with the construction of the vessels. The number of AOPS has already been reduced from eight to six, and will likely be only five in the end. It has also had some of the originally planned capability reduced in an attempt to control costs. Yet as the PBO has noted, these vessels which will not have some of the more complicated weapon systems associated with other warships will still face cost escalation.³⁴ Will it be possible to keep within these limits, or will escalating costs further reduce the number of vessels to be built? What are the impacts of operating a fleet of six, five, or perhaps even less ships?

3. The mid-life modernization programme for the Multi-role patrol frigate (FFH) (*Halifax-class*) *Halifax-class* Modernization (HCM)/Frigate Life Extension (FELEX):

The *Halifax-class* frigates are the backbone of the Canadian Navy. Construction of the twelve members of the class began in March 1987 and was completed by 1996.³⁵ They have seen extensive service since joining the fleet and it was recognized quite early on that there would either be a need to begin replacement planning or to provide them with a mid-life refit.³⁶ While there had been some discussion that it would be more cost effective to build a new replacement class, Navy officials ultimately came to the conclusion that a mid-life extension would be the more practical solution.³⁷ By 2002 the Navy began to prepare for the project. On 5 July 2007 the government announced that the refit would take place and allotted \$3.1 billion – which was subsequently increased to \$4.3 billion.³⁸ In the spring 2008 the Government awarded a series of

³³ CBC, "Irving reaches shipbuilding deal with federal government," (January 16, 2015) [<http://www.cbc.ca/news/canada/nova-scotia/irving-reaches-shipbuilding-deal-with-federal-government-1.2912429>];

James Cudmore, CBC, "Canada's Navy is to get 5 or 6 Arctic Ships, not 8," (January 16, 2015) [<http://www.cbc.ca/news/politics/canada-s-navy-to-get-5-or-6-arctic-ships-not-8-1.2913159>].

³⁴ Office of the Parliamentary Budget Officer, *Budget Analysis for the Acquisition of a Class of Arctic/offshore Patrol Ships* Ottawa, (October 28, 2014); p

5, [http://www.pbo-dpb.gc.ca/web/default/files/files/files/AOPS_EN.pdf].

³⁵ MacPherson and Barrie: 291-297.

³⁶ As noted by one official, "The ships were originally designed to be extensively modernized at mid-life, as a 'systems' approach to addressing obsolescence of the combat system over the life of the class. The ships are due to be replaced by the Canadian Surface Combatant when they reach the end of their operational lives. Both projects have been factored within DND's future funding envelopes, although Perry's work demonstrates that affordability of the DSP as a whole will remain a key DND (and not just an RCN) problem." (Anonymous source).

³⁷ Doug Thomas, "Life Extension Refits," *Canadian Naval Review*, Vol 8, no 2 (Summer 2012), [<http://www.navalreview.ca/wp-content/uploads/public/vol8num2/vol8num2art11.pdf>].

³⁸ National Defence and the Canadian Armed Forces, *Halifax-class Modernization (HCM)/Frigate Life Extension FELEX* – Background (November 24, 2014) [<http://www.forces.gc.ca/en/news/article.page?doc=halifax-class-modernization-hcm-frigate-life-extension-felex/hkm9bebo>].



contracts, and the first vessel Halifax went into dock on 2010.³⁹ By December 2014 the first four frigates had completed the process.⁴⁰ The program is on budget and some of the vessels are finishing their refit ahead of schedule. It is anticipated that all 12 will be completed on schedule by 2018 and will allow the frigates to remain in service until 2030.⁴¹

This program is clearly a success. It is important to note that the total funds being allocated are higher than that for either the AOPS or replenishment. The total \$4.3 billion cost of the refit is roughly equivalent to the costs of the other two combined. This demonstrates both the cost and complexity of this program. At the same time the decision-making process of the refit has been much faster and did not face the delays of the two other programmes. Clearly there is a need to examine more closely how these were handled.

The refit is occurring at the same time as the efforts to build both the AOPS and JSS. Is there a capacity issue at play? It may be that the Navy, government and industry was simply overwhelmed by attempting to deal with such a wide-range of programmes. It is also possible that at some point either the government and/or the Navy had to make decisions as to which program was to be given the highest priority. If so, that could partly explain the different levels of success that each different program experienced. However, if this is the case, there is no public record of such a decision. But the important point that emerges is that the *Halifax*-class refit is becoming a very important success story. Perhaps equally important is that very few people seem to be aware of this.

This brief review of three of the five most important procurement programs that will determine the future of the Canadian Navy reveals several important findings. First the Navy is facing serious problems in the short term. But it appears that the very worst of its challenges may be over. With the modernized frigates now turning to service; the *Harry DeWolf* started and expected for 2018⁴², Project Resolve started and expected to be providing Canada with an interim AOR by 2017⁴³, and the *Victoria*-class submarines also returning to operations⁴⁴, the fleet's capacity is returning. However, the full sea combat logistics that will be provided by *Queenstown*-class AOR and the force level air defence that had been provided by the *Iroquois*-class are still missing. The Navy will not be returning to its full abilities of the 1990s until the two new AORs and the Future Surface Combatants are completed. The AORs are not expected for service until 2021⁴⁵ and the Future Surface Combatants are not expected until the mid-

³⁹ Government of Canada, News Release – Archived - The Government of Canada Announces Refit of Navy Frigates, (April 21, 2008) [<http://news.gc.ca/web/article-en.do?mthd=tp&nid=393239>].

⁴⁰ David Pugliese, “Modernization of Halifax-class frigates a success, says government,” *Ottawa Citizen* (November 24, 2014) [<http://ottawacitizen.com/news/national/defence-watch/modernization-of-halifax-class-frigates-a-success-says-government>].

⁴¹ Defence Industry, “Modernizing Canada’s Halifax Class Frigates,” *Defence Industry Daily*, (May 26, 2014) [<http://www.defenseindustrydaily.com/modernizing-canadas-halifax-class-frigates-05062/>].

⁴² Royal Canadian Navy, “Arctic/Offshore Patrol Vessels,” (July 7, 2015) [<http://www.navy-marine.forces.gc.ca/en/fleet-units/aops-home.page>].

⁴³ Canada, *Equipping the Navy with an Interim Auxiliary Replenishment Capacity*.

⁴⁴ Royal Canadian Navy, *Royal Canadian Navy Submarines: Fleet Status* (October 12, 2015) [<http://www.navy-marine.forces.gc.ca/en/news-operations/news-media-submarine-fleet-status.page>]; and CTV News, *Royal Canadian Navy’s Victoria-class submarines finally make their debut* (March 4, 2015) [<http://www.ctvnews.ca/canada/royal-canadian-navy-s-victoria-class-submarines-finally-make-their-debut-1.2258720>].

⁴⁵ Canada, *Equipping the Navy with an Interim Auxiliary Replenishment Capacity*.



2020s⁴⁶ and are facing reports of rapidly increasing costs that may reduce the number that are received.⁴⁷

The RCN will face significant limitations in its operations because of the loss of its replenishment vessels and it will continue to be unable to operate in the Arctic. Individually, these are challenges that can be overcome. The real problem comes when one starts to think of the cumulative effects of these individual issues. Given the costs associated with the delayed programmes, it is possible to understand how overwhelming these problems will be as even more programmes become necessary. But not all of the news is bad. The review of the frigate mid-life extension demonstrated that it is possible in the Navy to craft, fund and implement a large scale program in a timely fashion. But the question remains, why do the problems exist in the programs that are not proceeding as well?

There are three core problems that the Navy faces that have created its current challenge and that will play a major role in the solutions that are ultimately achieved. First is the ongoing political-military dyad that exists in all western democratic states. How does the political leadership understand the need and costs of seapower? Second, what has been the impact of the War in Afghanistan on Canadian security policy, and specifically its procurement policy? Third, what is the cost of modern seapower for a country such as Canada? These are not isolated factors and are interrelated at numerous levels. Nevertheless it is possible to deconstruct the core elements of each to determine their impacts on the development of the problems now faced by the Canadian Navy.

At the political level there is a confounding set of variables at work. The former government under Prime Minister Harper has repeatedly stated that it strongly supports the building and maintenance of a powerful Canadian military. As explained by their principle defence policy statement – the *Canada First Defence Strategy*⁴⁸ – the ultimate objective of the Harper Government is to build a modern and combat capable force. This includes a Navy that is able to operate worldwide and fight with the world's strongest navies i.e. the United States Navy and other NATO allies. Harper has also gone on record as stating his acceptance that Canada is a maritime nation and that Canadian economic security is dependent on maritime security.⁴⁹ He has contrasted his commitment to the Canadian forces with that of the preceding Liberal administration with references to the decade of darkness of the Chretien's government's cuts in defense spending. Officially he has maintained that as a direct result his Government has increased defense spending substantially.⁵⁰ But work by scholars such as David Perry has suggested that this has not been the case and that defense expenditures for all branches of the

⁴⁶ David Pugliese, "Firms to Compete for Canadian Ship Program," *DefenceNews* (May 10, 2015) [<http://www.defensenews.com/story/defense/naval/ships/2015/05/10/firms-to-compete-for-canadian-ship-program/70896816/>].

⁴⁷ James Cudmore, "Costs to build navy's new warships more than doubles to \$30 billion," *CBCNews* (December 2, 2015) [<http://www.cbc.ca/news/politics/nsps-naval-ship-procurement-costs-1.3345435>].

⁴⁸ National Defence and the Canadian Armed Forces, *Canada First Defence Strategy – Complete Document* (May 2008) [<http://www.forces.gc.ca/en/about/canada-first-defence-strategy.page>].

⁴⁹ Prime Minister of Canada, Stephen Harper, "PM Delivers Remarks at the Unveiling of the Royal Canadian Navy Monument on Richmond Landing," Ottawa, (May 3, 2012) [<http://pm.gc.ca/eng/news/2012/05/03/pm-delivers-remarks-unveiling-royal-canadian-navy-monument-richmond-landing>].

⁵⁰ Jeffery Collins, "Reviving and Revising the Canada First Defence Strategy," *C2C Journal* (November 30, 2014) [<http://www.c2cjournal.ca/2014/11/reviving-and-revising-the-canada-first-defence-strategy/>].



Canadian Forces under the Harper government have not been nearly as substantial as they claim it to be.⁵¹

There is a second issue that is also being created by the specifics of Harper's governing actions. One of the hallmarks of the Conservative government has been a much more substantial control and centralization of government policy. As a result, the Navy has not been able to develop an independent maritime strategy as it has been able to do in the past. Canadian naval leaders played a critical role in the creation of the *Canada First Defence Strategy*. But what it has not been allowed to do is develop a follow-up strategy to its own service specific strategy - *Leadmark: The Navy's Strategy for 2020*⁵². *Leadmark* was the Canadian navy's efforts to develop and explain to Canadians why Canada needed a Navy, and to determine what type of Navy is needed. *Leadmark* followed a series of efforts of the Canadian Navy to have its leaders engage on the issue of what it was doing; why it was doing it; and what it needs in order to be able to do it. There are suggestions that it has continued to internally develop a successor documents to *Leadmark* but has been unable to publicly disseminate the results of this policy to the greater public and political decision makers. This is not to suggest that *Leadmark* was able to convince all Canadians and relevant decision makers about the relevancy of the Canadian Navy, but at a minimal the process required the senior leadership of the Navy to think long and hard regarding its strategic direction. Is it possible that in the absence of such a process and document that the Navy has been less successful in pushing its agenda? However, in order to answer this question with any satisfaction it is necessary to be able to determine the full impact of *Leadmark*, and secondly whether not the Navy has still gone through the process and has only not been allowed to publicly discuss this. But it seems intuitive that a more open process would be more vigorous and allow for a better overall strategy.

There has been a second cost associated with the Harper's government efforts to control its messaging. Whereas mishaps and particularly those that occur in public locations that cannot be hidden, are immediately known, the Navy faces challenges in conveying its success stories. Since the development of the government's communications policy in 2006, Canadian Navy officials (as with all other government officials) are more limited in what they can tell the public.⁵³ It is not surprising that Canadians have come to the conclusion that the Navy is in a state of crisis. Most Canadians have only heard of the tragic fire that occurred on HMCS *Chitcoutim*⁵⁴, and the grounding of HMCS *Corner Brook*⁵⁵: they have not heard of the more recent successes of the three submarines that are now back in full service.⁵⁶ But the limitations placed on the Navy is a political decision, and one made by the duly elected government leadership that must be obeyed. But it ultimately prevents the Navy from being able to discuss its understanding of seapower or its successes, and to be able to acknowledge its failures. What

⁵¹ Dave Perry, "A Primer on Recent Canadian Defence Trends and Implications," *The School of Public Policy SPP Research Papers* vol. 8, issue 15 (April 2015) [<http://policyschool.ucalgary.ca/sites/default/files/research/canadian-defence-budgeting-perry.pdf>].

⁵² National Defence, *Leadmark: The Navy's Strategy for 2020* (Ottawa: Directorate of Maritime Strategy, June 2001).

⁵³ Treasury Board of Canada Secretariat, Communications Policy of the Government of Canada (September 23, 2014) [<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=12316>].

⁵⁴ BBC, "Nine hurt on Stricken Submarine," (October 6, 2004) [http://news.bbc.co.uk/2/hi/uk_news/scotland/3717906.stm].

⁵⁵ CBC, "HMCS Corner Brook collision damage extensive," (February 13, 2012) [<http://www.cbc.ca/news/canada/nova-scotia/hmcs-corner-brook-collision-damage-extensive-1.1249573>].

⁵⁶ Royal Canadian Navy, "Royal Canadian Submarines: Fleet Status", (February 2, 2015) [<http://www.navy-marine.forces.gc.ca/en/news-operations/news-media-submarine-fleet-status.page>].



then is the impact on Navy's ability to "sell" its projects if the general public has only a negative view of it?

The Canadian involvement in the Afghanistan war has also had an impact on the Navy. While there is a growing tendency of the Canadian public and decision makers to want to put the war behind its collective memory, the reality is that this conflict consumed the Canadian military in a manner that has yet to be fully understood and appreciated.⁵⁷ The Canadian commitment was extensive and it cost Canada substantially in both human lives and well-being and in economic terms. Thus, the total economic cost of the Canadian commitment has never been fully determined. In all probability the war was much more expensive than has been publicly accounted for. The Office of the Parliamentary Budget Officer in 2008 has stated that there is not publically available information on the exact deployment of capital assets:

The exact deployment (total number, type and residual dollar value of equipment) of capital assets in theatre by the Canadian Forces in Afghanistan is unavailable in the publicly available Estimates documents. The PBO has not yet obtained the details of the deployment of capital equipment from DND.⁵⁸

This may explain how an increase in governmental defence expenditures has not resulted in an equivalent rise in new capital programs. The PBO report makes it clear that there have been significant costs to CF capital programs. These can be identified though: 1) accelerated depreciation of existing capital assets and new capital assets; 2) premature retirement of capital assets; and 3) forecasted operational requirement (UOR) procurement.⁵⁹ The PBO Report specifically highlighted the substantial costs that the new equipment was having:

In addition, there has been an accelerated procurement of new capital assets specifically for the Afghanistan mission. This procurement would not have happened except for the Afghanistan mission. The expenditure on account of this accelerated procurement, although not fully incremental to the Afghanistan mission, is already having a materially significant fiscal impact.⁶⁰

Ultimately this points to a substantial increase in capital expenditures that are directly related to the mission. Unfortunately, what is not known is what have been the capital programs that were not directly needed for the war that were deferred, reduced or cancelled. These decisions have not been made public.

The Navy has probably borne these opportunity costs more heavily than the Air Force and the Army because of the manner in which the conflict was engaged. Equally important is how the

⁵⁷ There is no definitive understanding of the costs of the conflict. Some preliminary examinations have indicated that the cost of the war became so consuming that it was clear that by 2008 it was consuming an increasing amount of funds that were supposed to be used on new equipment beyond that immediately needed for the war. Furthermore, the cost of caring for the veterans of the war will last for decades and run into the billions – David Perry, "Canada's Seven Billion Dollar War: The Cost of Canadian Forces Operations in Afghanistan," *International Journal* vol. 63 no 3 (2008): 722; and David McDonough, "Afghanistan and Renewing Canadian Leadership: Panacea or Hubris?," *International Journal* vol. 64, no. 3 (2009):647-648.

⁵⁸ Office of the Parliamentary Budget Officer, *Fiscal Impact of the Canadian Mission on Afghanistan* Ottawa, (October 9, 2008):15 [http://www.pbo-dpb.gc.ca/web/default/files/files/files/Publications/Afghanistan_Fiscal_Impact_FINAL_E_WEB.pdf].

⁵⁹ *Ibid.* 14-15; 39-46.

⁶⁰ *Ibid.*14.



war is being remembered. It is increasingly remembered as a land and air force engagement only. This is understandable because of the nature of the casualties suffered and the manner in which the land forces were at the forefront of the fighting. But the initial stages of the Canadian participation in the conflict were primarily through naval operations.⁶¹ Operation Apollo was maintained at such a high level of intensity that towards its completion, the commander of the multinational taskforce Commodore Roger Girouard, publically stated that the Navy was exhausted and needed to have a period to reset.⁶² But as the Navy headed into this period, the Canadian involvement in the Afghanistan war increased. As it did, the Canadian government's focus was on providing the forces bearing the brunt of the fighting new equipment. Thus, much of the increase of the new spending was taken up by equipment provided to both the Army and Air Force, quite possibly at the expense of the Navy.

The third issue that is making the Royal Canadian Navy position even more problematic are the increasingly exorbitant costs associated with modern seapower. In his classic study, Philip Pugh demonstrated that innovation in seapower has always dramatically increased the costs of producing a modern fighting ship.⁶³ This, of course, then means that as the costs of maintaining modern seapower continue to rise, its leaders also need to deal with the costs of increasing airpower, thus further increasing the competition for scarce resources.⁶⁴

While it is impossible within the confines of this assessment to delve deeply into the core challenges facing a country such as Canada, the following observations can be made. First, the construction of a modern warship is always built on the assumption that it must be a self-contained entity. It needs to be able to move, sustain itself, and fight as an autonomous unit. To build such a capability is always expensive. Second, the cost of new technologies is very expensive. Weapons, communications, and other such requirements are not cheap. Third, and this is one of the most confounding challenges facing the Royal Canadian Navy, the number of shipyards that can build a successful warship have become smaller and smaller. This is both within Canada and beyond. There are no realistic economies of scale if Canada attempts to build them at home, or even to buy them from abroad. Because the construction of any warship is so specialized and tends to be specific to the country that is building them, the most that a country can hope to achieve is to apply some form of rationalization for the ship yard that is building them. The best example of such efforts are the American construction of its aircraft carriers and submarines. The U.S. Navy had come to the conclusion that it was best to keep the shipyards that build these vessels in business by building only one or two at a time instead of building a larger number at the same time that results in periods where the ship yard remains idle.

⁶¹ Richard Gimblett, *Operation Apollo: The Golden Age of the Canadian Navy in the war against Terrorism* (Ottawa: Magic Light Publishing, 2004).

⁶² Chris Wattie, "Exhausted sailors to begin journal home: it will take navy a year to recover from mission, commander says," *National Post* (June 14, 2003).

⁶³ Philip Pugh, *The Cost of Seapower: The Influence of Money on Naval Affairs from 1815 to the Present Day*, (London: Conway Maritime Press, 1986): 378-388.

⁶⁴ There has always been an argument that navies of all times have always demanded technologies that are always expensive for their respective time period, and that this is not necessarily an issue peculiar to the current time period. But several analysts have contended that the increasingly expensive technological elements are now acting to reduce the number of ships any one navy can afford. See Robert Rubel, "Connecting the Dots, Capital Ships, the Littoral, Command of the Sea, and the World Order," *Naval War College Review* vol. 68, no.4 (Autumn 2015)46-63; and Geoffrey Till, *Seapower: a Guide for the 21st Century*, Revised and Updated Third Edition (Oxon: Routledge, 2013) 99-102.



The Harper government has been the first government that has recognized the scope of this problem. In June 2010 after an examination of the problem it introduced the first official Canadian National Ship Building Strategy.⁶⁵ Its main component was to select two of Canada's leading shipyards and then to allow them to remain in business by providing them over an extended period the ongoing contracts to build Canada's combatant and non-combatant vessels for its Navy and Coast Guard. In theory this is to pick the best companies and then guarantee that they will be provided with an ongoing series of contracts. This will then allow them to build up the expertise to construct the new Canadian fleet while introducing a more rational ongoing process to the country's ship building. Instead of the past practise of building classes of vessels in large numbers which results in a large number of vessels needing to be replaced in a compressed time frame, it is hoped that the strategy will mean that ships can be replaced on a continual basis. This should avoid the core problem that the Navy now faces with the need to replace an increasingly large number of ships. The problem however, is that this is the first time that such a strategy has been attempted and it is too soon to know if it will be followed for certain by successive governments, or if it will work. However, the fact that both the replacements for AOR, and the building of the AOPS, has been placed within the context of the Strategy means that if given time, it could work. The greatest problem is that it is too soon to know if they will remain committed to it. It is therefore reassuring that the new Trudeau Liberal government has publically stated that it does.⁶⁶ In addition, during the federal election campaign, the Liberal Party publicly stated its support for ensuring that the RCN receive significant resources to ensure that it is able to continue to rebuild itself.⁶⁷ All of this suggests that it may be possible to see a bipartisan agreement similar to the United States. If so, the mass building of individual classes of vessels may be a thing of the past, with its concurrent problems that this has continually created.

Conclusion

The Royal Canadian Navy is facing a very difficult situation in the current environment as it deals with the problem of rebuilding itself. The delays and challenges that it now faces in a number of important procurement projects means that in the short-term it is now operating with a number of key elements missing. It is possible that the situation is not as dire as it currently appears, however. The process which was decided to provide the frigate with a mid-life extension refits suggest that it is possible for the Navy and government to reach a decision in a timely fashion. However, the challenges faced by both the AOR replacement and the building of the AOPS also point to significant challenges that can act to seriously undermine these processes. Nevertheless, the recent headlines are overly sensational. The Navy is facing serious shortfalls, but as this assessment shows, there are steps in place to address this short-term problem. *If* properly implemented, the ship building strategy will mitigate many of the problems listed in most of the media reports.

⁶⁵ Public works and Government Services Canada, National Shipbuilding Procurement Strategy (NSPS) (July 14, 2015), [<http://www.tpsgc-pwgsc.gc.ca/app-acq/sam-mps/snacn-nsps-eng.html>].

⁶⁶ Office of the Prime Minister, *Minister of National Defence Mandate Letter* ND [<http://pm.gc.ca/eng/minister-national-defence-mandate-letter>]. The letter specifically stated that in order to ensure that Canadian armed forces have the equipment that they needed the minister will be... "working with the Minister of Public Services and Procurement to invest in strengthening the Navy, while meeting the commitments that were made as part of the National Shipbuilding Procurement Strategy."

⁶⁷ Liberal Party of Canada, Real Change: A new Plan to Strengthen the Economy and Create Jobs with Navy Investment. (ND) [<https://www.liberal.ca/files/2015/09/A-new-plan-to-strengthen-the-economy-and-create-jobs-with-navy-investment.pdf>].



But will it be properly implemented? There are two problems facing the program. This study makes it clear that Canada's political leaders are central to Canadian seapower regardless how much or how little they understand the concept. The Canadian political process can move rapidly as demonstrated by the decisions to extend and update the capabilities of the frigates. Likewise, when Canadian leaders do not make a decision or do not like the options presented to them, projects can languish, as was the case with the AOR replacement. Canadian leaders also play the decisive role in the formulation of the shape and nature of Canadian seapower. When Stephen Harper decided that Canada needed naval assets in the Arctic, he was able to take decisions that may give Canada a three ocean navy. But this also means that if there is a change in government it is equally possible that these same decisions could be changed or even abandoned. It is also possible that even after the program is launched, the government may decide not to adequately fund it. The power of political decision-makers was clearly shown when the newly elected government of Jean Chretien in 1993 canceled the contract that the Mulroney government had signed to buy replacement maritime helicopters. The costs of this decision were huge and set back Canada's effort to gain replacements.⁶⁸ The Sea Kings – which are still in service – are over 50 years old and are only now starting to be replaced. Prior to the last election senior members of the NDP have publicly criticized the AOPS as “slush-breakers”.⁶⁹ It is entirely possible that had the NDP come to power in the 2015 federal election, its leader could have decided to cancel the program. If this was to occur not only would it mean that Canada would not be getting this new capability for operating in the Arctic, but it would seriously jeopardize the Canadian National Ship Building Strategy. Thus it would be highly unlikely that Irving Shipyards in Halifax could sustain itself without the AOPS contract.

There is also a second equally serious problem that the decision-making process reveals. Almost all of the criticism and concern of the media has been focused on the RCN's current inability to do what it has been doing. There has been almost no discussion of why it does what it does. Canada has its Navy to serve its national interest and to provide for its national security. How that is to be achieved and with what tools is the issue that has always challenged naval planners. Canadian naval minds in the recent past have attempted to address this issue through the development of a public and open document that outlined why Canada needs a navy. Known as *Leadmark*, the document attempted to ask what it is that Canada needs a navy for and what is the best fit of equipment. Following the terrorist attacks in September 2001, an “updated” document entitled *Securing Canada's Ocean Frontiers: Charting the Course from Leadmark* was produced.⁷⁰ This document built on *Leadmark* and offered a few minor adjustment but still made the public case for a robust Canadian Navy. Subsequent to this, a new document was developed towards the end of the 2000s. Known as *Horizon 2050* original drafts were focused on the issue of developing and building the next fleet. However, after extensive rewrites and consultations with a number of academic experts, the document was rewritten but never publicly released. Therefore questions remain as to what were its recommendations regarding the “next fleet” and did it make any suggestions as to how this was to be done?

⁶⁸ Aaron Plamondon, *The Politics of Procurement: Military Acquisition and the Sea King Helicopter* (Vancouver: UBC Press, 2010).

⁶⁹ CBC, “Canada should do more to protect Arctic Sovereignty: Layton,” (August 8, 2007) [<http://www.cbc.ca/news/canada/north/canada-should-do-more-to-protect-arctic-sovereignty-layton-1.690482>].

⁷⁰ National Defence, Directorate of Maritime Strategy, *Securing Canada's Ocean Frontiers: Charting the Course from Leadmark*, (Ottawa: Directorate of Maritime Strategy, May 2005) [http://publications.gc.ca/collections/collection_2008/nd-dn/D2-164-2005E.pdf].



It is also uncertain as to how much consideration has remained with retaining the original intention of the JSS to have some capability to operate in the Arctic.⁷¹ One of the most significant challenges of operating the Royal Canadian Navy in this region is created by the vast distances that exist without any real infrastructure. Canadian arctic seapower is best served with a system approach in which multiple assets have the ability to support each other in the region. As important as the addition of the AOPS will be, if they could call upon the new JSS to support their action, the ability of the Navy to operate in this region is significantly enhanced. But it appears that the new replacement vessels will only have the ability to go up to the ice-edge and not into the ice-cover. The question then arises as to how much the decision to build the Navy is being driven by economic factor as opposed as being driven by an overall strategy as to what these forces are for. It very well may be that there is an overall strategy that has informed all of this process, but if there is, it is not being shared openly.

The Navy is not sinking, but it will continue to face rough seas. If the national ship building strategy is given the time and funding to succeed, it is possible to see a future where this may be the last time that the Navy faces its recurring nightmare of replacing a large number of classes of vessels at the same time. But this can only happen if there is political support for the funds that are necessary to pay for what will continue to be an escalating cost of modern Canadian seapower. But what is not understood is how decisions between the Navy and government leaders are made. There are simply too many unknowns to have confidence in how this story will ultimately end.

⁷¹ Canadian American Strategic Review, “Canadian shipbuilding – JSS Project/AOR Replacement – JSS Morphs into MOTS AOR Replacement,” (November 2010) [<http://www.casr.ca/doc-acan-jss-aor.htm>].

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