



# THE NATIONAL SHIPBUILDING PROCUREMENT STRATEGY: AN UPDATE

**Eric Lerhe** | February 2013

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## ABOUT THE AUTHOR

Commodore (Ret'd) Eric Lerhe joined the Canadian Forces in 1967 and was commissioned in 1972.

From 1973 until 1983 he served in the HMCS RESTIGOUCHE, YUKON, FRASER and ANNAPOLIS. He was promoted to Commander on 1 January 1986 and assumed command of HMCS NIPIGON in September 1987 and then HMCS SAGUENAY on 6 January 1989.

During the 1990's he served as Director Maritime Force Development and Director NATO Policy in NDHQ. He earned his MA at Dalhousie in 1996 and was promoted to Commodore and appointed Commander Canadian Fleet Pacific in January 2001.

In that role he was a Task Group Commander in the Persian Gulf during the War on Terror in 2002. His achievements included the capture of four al Qaeda members and making significant improvements in coalition C41 interoperability. Cmdre Lerhe retired from the CF in September 2003 and commenced his doctoral studies at Dalhousie. He graduated in 2012.

The opinions expressed in this paper are those of the author and do not necessarily reflect the views of the Canadian International Council, its Senate or its Board of Directors, or the views of the Canadian Defence & Foreign Affairs Institute.

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## EXECUTIVE SUMMARY

Barely a year old, there are already claims that the \$35 billion National Shipbuilding Procurement Strategy is in trouble as a result of contractual, financial, and design difficulties. This paper analyzes the state of the various shipbuilding projects within it, assesses the seriousness of the reported problems, and examines the government's options.

The paper confirmed that there are initial problems of project delay and that the final result may well be slightly fewer vessels of which some may not fully meet the original stated operational requirement. This is the inevitable result of tight defence dollars that force difficult capability tradeoffs. Moreover, these problems are by no means unique to the shipbuilding strategy and have marked defence purchases for decades.

The paper also argues that the new ship procurement strategy is more likely to overcome these problems than any other option. The data collected also demonstrates that buying offshore is by no means cheaper or faster. Further, by breaking the traditional 'boom and bust' Canadian shipbuilding cycle, there is a very strong likelihood that the two selected shipyards will have the years needed to develop the expertise and manufacturing efficiencies needed to turn out on-time, capable warships.

## SOMMAIRE

La stratégie nationale d'acquisition de vaisseaux, d'une valeur de 35 milliards de dollars, est à peine vieille d'un an et déjà on la prétend en difficulté par suite de difficultés contractuelles, financières et de conception. Cette étude analyse l'état des différents projets de construction navale qu'elle contient, évalue la gravité des problèmes qui font l'objet de rapports et examine les options du gouvernement.

L'étude a confirmé qu'il y a des problèmes initiaux de retard de projets et que le résultat final pourrait bien être moins de vaisseaux, dont certains pourraient ne pas répondre entièrement au besoin opérationnel énoncé à l'origine. C'est le résultat inévitable des restrictions financières imposées à la défense, qui nécessitent des compromis difficiles en terme de capacité. De plus ces problèmes ne sont pas exclusifs à la stratégie de construction navale et ils ont marqué les achats de la défense pendant des décennies.

L'étude affirme également que la nouvelle stratégie d'acquisition de bateaux a plus de chances de surmonter ces problèmes que toute autre option. Les données recueillies démontrent également que l'achat à l'étranger n'est pas du tout moins cher ou plus rapide. De plus, en brisant le cycle traditionnel d'« expansion et de récession » de la construction navale canadienne, il y a une très forte possibilité que les deux chantiers maritimes choisis auront les années qu'il leur faut pour développer l'expertise et les efficacités de fabrication dont ils ont besoin pour produire à temps des vaisseaux de guerre capables.

Celebrated at its launch barely a year ago as the “largest procurement contract in Canadian history,” there are already claims the National Shipbuilding Procurement Strategy (NSPS) is in trouble as a result of contractual, financial, and design difficulties.<sup>1</sup> Therefore, now is a good time to analyze the state of the various shipbuilding projects within the strategy, assess the reported problems, and, if they are as serious as has been made out, examine the government’s options.

Before doing so, however, we need to review the actual goals of the NSPS. These go well beyond replacing the aging 29 Naval and Coast Guard ships the strategy had as its immediate goal. There is also frequent mention of the need to abandon the wasteful ‘boom and bust’ approach that has marked past Canadian government shipbuilding efforts.<sup>2</sup> Here the Canadian Patrol Frigate project is the most salient as it involved a multibillion dollar government effort to establish a warship design and construction capability in Canada that was soon allowed to wither away after the 12th and last frigate was delivered.<sup>3</sup>

There were other, more immediate reasons for a ‘made in Canada’ shipbuilding strategy. David Pugliese has argued both Canadian industry and at least one government department were in a “feud” with DND over the C-17 and C-130J airlifter purchases.<sup>4</sup> While delivered with commendable speed, these multi-billion dollar purchases produced little to no long term Canadian jobs and nothing of substance for its aviation industry sector it was claimed.<sup>5</sup> The Conservative government itself seems to have sensed that having its ships built overseas and thus denying Canadian industry \$1 billion a year in business and Canadian labor some 15,000 jobs (both direct and indirect) for 20 years was unsellable politically.<sup>6</sup> In its Budget 2011, the government then argued the NSPS also served the larger goal of introducing a broader industrial strategy that would “bolster economic growth,” support industry, and maximize Canadian jobs.<sup>7</sup> In addition, no opposition party has argued against it, and the strategy enjoys wide media and academic support.<sup>8</sup>

Finally, there was little in our existing procurement model that would argue for continuing past practices. In fact Dan Ross, DND’s Associate Deputy Minister Materiel whose group was responsible for creating much of the new model, argued the simultaneous failures of the first Joint Supply Ship Project and the Coast Guard’s Mid-Shore Patrol Vessel in 2009, he termed the results “shipwrecks,” drove the need for the current shipbuilding strategy.<sup>9</sup> That earlier JSS project saw the two competing firms submit unaffordable bids as they felt the government’s extensive specifications were not matched by what it was willing to pay.<sup>10</sup> The sense was that the government had set the budget, production schedule, and ship capabilities in isolation. While there are

1 McLeod, Paul, “Our Ships Have Come In,” *Chronicle Herald*, 20 Oct. 2011, p. A1. See also Lee Berthiaume, “Watchdog Eyes \$35 B Shipbuilding Strategy,” *Ottawa Citizen* 2012, [, \(accessed 8 Jul 2012\).](http://www.ottawa.citizen.com/story.html?id=70402662sponsor=); Herein, he outlines the negotiation, budget and delay problems within the NSPS. One must also note that the Government of Canada Shipbuilding Consultation that framed the NSPS began in Jul, 2009.

2 Canada, “NSPS Status Update,” PWGSC, <http://www.tpsgc-pwgsc.gc.ca/app-acq/sam-mps/maj-update-eng.html>, (accessed 22 Oct 2012).

3 While the overall skills languished, a significant number of Canadian firms did, however, use the CPF experience to develop and then create a very solid worldwide export market for their products. See an extensive list of these at: CADSI Canadian Association of Defence and Security Industries. “Sovereignty, Security and Prosperity—Government Ships—Designed, Built and Supported by Canadian Industry: The Report of the CADSI Marine Industries Working Group.” 2009, Appendix A.

4 David Pugliese, “Industry Canada, DND Feud over How to Spend \$3 Billion,” *Ottawa Citizen*, 26 Mar 2009, [, \(accessed 26 Mar 2009\).](http://www.ottawa.citizen.com/story.html?id=1428557sponsor=)

5 As a result of earlier government investment the Globe and Mail has argued Montréal had become the third-largest aerospace cluster in the world after Seattle and Toulouse. See Claude Lajeunesse, “Investing in Aerospace Is No ‘Corporate Handout’,” *Globe and Mail*, 14 Jul 2008. Without access to large government contracts, industry has argued that that it and its jobs may be at risk.

6 Job and financial data from: Canadian Association of Defence and Security Industries. “Sovereignty, Security and Prosperity—Government Ships—Designed, Built and Supported by Canadian Industry: The Report of the CADSI Marine Industries Working Group.” 30. A study by the Conference Board of Canada produced similar results. See Conference Board of Canada. “Canada’s National Shipbuilding Procurement Strategy: Potential Impact on Nova Scotia and Other Regions.” 2011, [www.greaterhalifax.com/site.../CB0C%20-%20EIA%20Final.pdf](http://www.greaterhalifax.com/site.../CB0C%20-%20EIA%20Final.pdf), (accessed 27 Oct 2011).

7 As quoted in Paul Herring, “[the] Case for Canadian Defence Industrial Policy,” paper presented at the Conference: New Paradigms for Defence Procurement and Industrial Policy?, Queens University, Kingston Ontario, 27 Feb 2012 2012, <http://www.queensu.ca/dms/Ship2012/presentations2012.htm> (accessed 28 Oct 2012), slide 2.

8 See Colin Kenny, “Build Canada’s Ships in Canada,” *Ottawa Citizen*, 8 Aug 2008. The Federal NDP’s support is outlined in Paul McLeod, “Our Ships Have Come in—‘What a Great Day for Nova Scotia, for Halifax!’,” *Chronicle Herald*, 20 Oct 2011.

9 As quoted by Richard Bray, “National Shipbuilding Procurement Strategy,” *Frontline Defence*, no. 6 (2011), 26.

10 John Ivison, “Tories \$35-Billion Ship Project Hits a Snag,” *National Post*, 19 Oct 2011, <http://news.nationalpost.com/2100/10/19/35b-tory-ship-project-hits-snag> (accessed 23 Oct 2012).

undoubtedly two sides to the story, there was broad agreement that both sides had lost much of the expertise needed to accurately cost ship design options and, more critically, there was little dialogue between the two sides to overcome differing estimates.<sup>11</sup> Unsurprisingly, defence commentators have argued these types of skills and a more productive data exchange can only come from the extended exposure a long-term strategy will provide.<sup>12</sup>

The NSPS then appeared to provide that potential with the Irving shipyard in Halifax winning the right to build of the Arctic/Offshore Patrol Ships (AOPS) and the Canadian Surface Combatants (CSC) that will replace the current destroyer and frigate fleet. Seaspan Shipyards in Vancouver and Victoria will build the re-born Joint Support Ship as well as the Canadian Coast Guard's science vessels and the Polar Icebreaker.<sup>13</sup> These ship projects have begun and in most cases, the government and industry are now deeply into a mutual process of resolving cost versus delivery schedule and capability conflicts.

### ARCTIC OFFSHORE PATROL SHIPS

This \$3.07 billion project was originally intended to deliver 6 to 8 patrol vessels capable of operation in medium first year ice (ice that is 70–120 cm thick—a level significantly beyond the critics' claims of "slush breaking"). Its design has its origins in the successful Norwegian SVALBARD design, and while it would be armed, only a 25 mm cannon is planned. The vessel would have a basic command and control capability and would operate naval helicopters. There was also the very optimistic assumption initially that construction would commence in 2013, with the first ship delivered sometime in 2015.<sup>14</sup>

This summer it was announced that the AOPS schedule was significantly delayed with the Irving shipyard president indicating that construction would begin in 2015 and from this one would expect delivery in 2017.<sup>15</sup> While a final build contract has not been signed, a preliminary design contract has been agreed providing Irving with the funds for their in-house review of the 5,800 ton design. This allows the firm to study the design, and then do a detailed costing of the work needed to actually build it.<sup>16</sup> When complete, this should then allow both the government and the shipyard to conduct informed negotiations over the final build contract. Already, however, there are indications the funding will not allow 8 AOPS and a more realistic expectation would be for 6 vessels. Similarly, cost containment appears to have resulted in lowering its top speed from 20 to 17 knots.

### COAST GUARD SCIENCE VESSELS

These are the first NSPS vessels to be built at the Seaspan Shipyard facilities, and include three 2,030 ton fisheries science vessels for \$279 million and a single 2,600 ton oceanographic science vessel for \$108 million. Design work for each of the new science vessels began in 2010, and while final build contracts are still being negotiated there is some optimism these will be let soon with construction on two of the vessels beginning in late 2013 according to Seaspan's president.<sup>17</sup> As a result, these vessels could be delivered in 2015.

11 Ibid. See also DND's Associate Deputy Minister Dan Ross' similar views on the inexperience problem at Bob Beaudoin, "Growing Expertise: DND's Project Management Challenge," *Vanguard*, July August (2009), 26.

12 Ian Parker, "Strategic Approach to NSPS: Combat Systems Integrator, Best Value?," *Frontline Defence*, 3(2012), 42.

13 Also in February 2012 the government signed umbrella agreements with both shipyards. These purportedly set out the "working relationships and administrative arrangements under which the government will negotiate fair and reasonable individual contracts."

14 David Pugliese, "Ships Ahoy—the RCN Forges Ahead with NSPS," *Esprit de Corps*, 19, no. 1 (2012), 9.

15 Remo Zaccagna, "Work on Federal Ship Deal May Start in 2015," *Chronicle Herald*, 20 Oct 2012, C1.

16 From an interview with Vice Adm. Paul Madison at Chris McLean, "Royal Canadian Navy Recapitalized and Revitalized," *Frontline Defence*, no. 6 (2011), 9.

17 Gordon Hamilton, "Seaspan Launches \$200-Million Shipyard Upgrade," *Vancouver Sun*, 20 Oct 2012.

## JOINT SUPPORT SHIP

This could be the second major project for the Seaspan yards but, as Sharon Hobson has pointed out, the Polar Class Icebreaker is also competing for the same time slot in their schedule.<sup>18</sup> The need is pressing as the Navy seeks to replace its 40-year-old PROTECTOR class replenishment ships and the Coast Guard its equally aged LOUIS ST. LAURENT heavy icebreaker.

Initially, two foreign designs were in competition for the JSS project. At this moment only the 20,000 ton German BERLIN class remains after collaboration with the Spanish firm was terminated. It has been suggested that initially both designs were withdrawn after the foreign firms balked at the price being offered and the conditions demanded by the Canadian procurement system.<sup>19</sup> Thankfully, at the re-launch of the JSS project, the government had funded a purely Canadian design from BMT Fleet Technology (BMT) in part to validate the capabilities the Navy demanded. As a result, the government will soon be in a position to compare the BMT and BERLIN designs, and a design decision is expected in 2013. Seaspan has recently indicated that it would not be ready to start building “the largest vessels” (whether this referred to the JSS or the icebreaker or both was not made clear) until 2016.<sup>20</sup> This suggests the first of two Joint Support Ships should not be expected before 2018, six years after the failed 2004 JSS project promised delivery.

While the current project maintains there are provisions for a third JSS, no one interviewed for this paper believes that anymore than two will be delivered for the \$2.6 billion offered. In fact, since the failed 2004 JSS project there has been a steady diminishing of the expected numbers of ships and their operational capability. The current statement of requirements for the vessels call for less than half of the fuel cargo of the replenishment ships it will replace. Dedicated spaces for Army vehicles have vanished as well along with the means (landing craft) to get them quickly to shore. However, Ian Mack, DND’s Director General for large ship and land projects, has stated the design will allow some of these joint support abilities to be added later.<sup>21</sup> Still retained, but possibly at risk, is a very modest in-ice capability that would allow JSS to refuel other government ships in the Arctic.

## POLAR CLASS ICEBREAKER

While two 16,000 ton icebreakers are desired, this \$720 million project will only provide one, and all indications are this project is no further advanced in its preparations than the JSS. As a result, a government stated desire for ship delivery in 2017 is suspect.<sup>22</sup> The design contract was only let in February 2012 and contract negotiations for the actual ship build have yet to commence. As was just noted, Seaspan will not be able to start work on this ship or the JSS until 2016. Earlier, the Coast Guard indicated two years would be required for the construction.

## CANADIAN SURFACE COMBATANT

This \$26 billion project will replace the existing destroyer and frigate fleet. The construction of these warships was always intended to follow the Arctic/Offshore Patrol Ship to allow shipyard skill building on the more basic patrol ship.<sup>23</sup> As a result construction is not expected to begin before 2020 and it is not, therefore, surprising that there is no approved design or any suggestion of a foreign model that might suit.

18 Sharon Hobson, “Design Flaw: The Long Path from NSPS to Ships,” *Canadian Naval Review*, 8, no. 2 (2012), 40.

19 Ivison, “Tories \$35-Billion Ship Project Hits a Snag.” See also Peter Cairns, “NSPS Components,” *Frontline Defence*, no. 6 (2011), 25.

20 Hamilton, “Seaspan Launches \$200-Million Shipyard Upgrade.”

21 Pugliese, “Ships Ahoy—the RCN Forges Ahead with NSPS,” 45.

22 Michel Vermette, “Canadian Coast Guard Fleet Renewal” paper presented at the Conference: New Paradigms for Defence Procurement and Industrial Policy?, Queens University, Kingston Ontario, 27 Feb 2012 2012, <http://www.queensu.ca/dms/Ship2012/presentations2012.htm> (accessed 28 Oct 2012). See particularly his slide 17.

23 McLean, “Royal Canadian Navy Recapitalized and Revitalized,” 10.

The Navy's ability to settle on a design will not be assisted by the fact that the \$26 billion notionally assigned to the project has little probability of being enough to replace the 15 destroyers and frigates with like vessels.<sup>24</sup> Moreover, with building likely to occur between 2021 and 2030 inflation is likely to erode a large part of the purchasing power of the \$26 billion assigned.

Meanwhile, by 2021 the three Tribal Class destroyers that provide the Navy's command and air defence capability will be 50 years old. While the Navy intends to maintain them until the first three CSC arrive, one must assume the ability to maintain those aging systems in fighting form will be doubtful indeed. If one is willing to spend enough money much can be done to extend the life of older ships as the just-retired 50-year-old carrier USS ENTERPRISE has demonstrated. Moreover, the Canadian Patrol Frigates are currently undergoing a significant midlife upgrade that should extend their lives and capability until the last of the CSC are delivered.

### RISKS

Almost all of the NSPS projects are suffering from inadequate funding (it is claimed), late delivery and capability reduction even before full contracts are in place. But is this unusual, and is it a serious problem? Certainly, and sadly, these problems are familiar ones in the world of Canadian defence procurement. The problems are longstanding and stretch from the days of \$20,000 German Iltis jeeps magically costing Canada \$60,000 each,<sup>25</sup> to the extended delays of the Maritime Helicopter Project, to the this summer's sudden withdrawal of the government's request for proposals for the Medium Support Vehicle.<sup>26</sup> The F-35 program has, so far, escaped cancellation, but the number of aircraft expected from the \$9 billion allocated has dropped from 80, to 65, and other less sophisticated aircraft are now being considered as well.

While one can rail against the apparent incompetence of our procurement officials for these overruns, delays and shortfalls, many of these problems are to be expected. Jeeps cost more when you insist they come with the first five years of spare parts, offsetting Canadian industrial benefits, and the setting up of Canadian repair facilities. The Medium Support Vehicles' purported rising costs reflect hard-won Afghanistan experience where ever more armor is required to meet the escalating roadside bomb threat.<sup>27</sup> It would be more bizarre if DND did not respond to this kind of changing operational requirement. As a result, DND has always had to manage the choice of accepting later delivery, lower capability, or fewer items when project dollars become tight. Other options are to seek more money from the government and, when dealing with ships, there is a regular call to buy cheaper offshore versions, notwithstanding the just-discussed uproar that can be expected from Canadian industry and its workers.

### OPTIONS

For the next few years a successful appeal to the Harper government for more funds to meet major ship project funding shortfall is unlikely. The equanimity with which the government has accepted reduced F-35 numbers and fewer JSS attests. While the government has slightly reduced the pace at which it intends to reduce Canada's deficit, defence spending will go down by some 10% at least, and recent reports have revealed that the Prime Minister has directed defence to surrender even more dollars from its administrative activities.<sup>28</sup> Projects within

24 See Blair Watson, "Are the Economics Workable? CFDS Cracks Appearing?," *Frontline Defence*, no. 1 (2011), 28–29. He estimates the Canada First Defence Strategy has allocated \$8 to 11 billion below what is required to complete the plan for major fleet replacements. Dave Perry assesses that the Canadian Surface Combatant project may be \$14 billion short of the amount actually needed to replace the 15 existing destroyers and frigates. See Dave Perry, "The Navy after the Canada First Defence Strategy," *Canadian Naval Review*, 8, no. 3 (2012), 1–2.

25 Rob Day, "Project Management Undone," *Frontline Defence*, no. 4 (2012), 48.

26 Richard Bray, "MSVS SMP: Will the Rubber Ever Meet the Road?," *Frontline*, no. 4 (2012), 16.

27 Ibid.

28 Perry, "The Navy after the Canada First Defence Strategy," 1–2. See also -, "Defence Cuts Weren't Deep Enough: Stephen Harper in Leaked Letter to Peter Mackay," *National Post*, 24 Oct 2012.



the National Shipbuilding Procurement Strategy may have some initial insulation from further cuts as a result of both long-term promises and immediate contracts. On the other hand, planning for more funding for ships seems very unwise.

Backing away from NSPS contracts to pursue reportedly cheaper foreign options will also be difficult for the same legal and political reasons. To do so for reasons of saving money is particularly suspect despite the claims. Recently one author has asserted that the offshore 'off the shelf' option for ships would be "far and away the cheapest (and fastest) approach."<sup>29</sup> Another has claimed that a made-in-Canada ship involves a 20% cost premium.<sup>30</sup> Neither critic accompanies these claims with evidence. Neither do they mention the detailed studies done on the topic—likely because the one conducted by DND's audit arm concluded that the built-in-Canada Canadian Patrol Frigate ultimately cost only 7% more (roughly \$28 million per ship) on average than seven other similarly sized foreign warships.<sup>31</sup> That 7% "at home" premium also created over 7,000 person-years of Canadian employment and established at least 12 Canadian companies that are still in business and exporting complex marine systems to such demanding customers as the United States, Israeli and Royal Navy today.<sup>32</sup> That same audit also considered the Canadian frigate the combat superior of every one of the foreign frigates studied save the one that it was 'only' the combat equal to.<sup>33</sup> It also quoted *Forecast International*, a US publication which conducts an annual assessment of warship capability, which concluded:

After a very shaky start, mainly due to the long gap in Canadian warship construction, the Halifax class frigates have matured into fine warships. The lead ship of the class has been the subject of unstinting praise from the US Navy, following visits to American naval bases. HMCS Halifax is also regarded as being a very satisfactory and a well-conceived design by the British Royal Navy Directorate of Navy Construction.<sup>34</sup>

More recently, a study commissioned by Industry Canada questioned similar doubtful claims of cheaper foreign shipyards and estimated that their products normally resulted in a 25% increase in in-service support costs after they were delivered.<sup>35</sup> These costs, by the way, are not insignificant and can easily equal 60% or more of the purchase cost. In addition, foreign firms have also been front and center recently in their readiness to demand more than was budgeted during both the earlier and current JSS projects while also disputing elements of our procurement processes.

The other response to inadequate or declining funding is to cut the number of units, and, as seen, this is already underway. As a result we are likely to see 2, not 3 JSS replenishment ships; 1, not 2 Polar Icebreakers, and 6, not 8 Arctic patrol ships. It is also difficult to predict the operational results of these reductions today. What is clear, however, is that ships traditionally spend 25% of their time in long term (that is more than 12 months) maintenance. As a result, the Canadian Arctic could be without a heavy icebreaker 1 in 4 years, and both the Atlantic and Pacific Fleet could be without a replenishment ship for similar periods. While one can rely on coalition or NATO assets to help out during international operations, these will not be available for purely Canadian activities, and the fleet's ability to remain at sea continuously will drop from 30 days to less than 10 when JSS are not available.

<sup>29</sup> Ian Yeates, LCDR, "NSPS: A Blunder for the Ages?," *Canadian Naval Review*, 8, no. 2 (2012).

<sup>30</sup> Ugurhan Berkok as quoted by Ivison, "Tories \$35-Billion Ship Project Hits a Snag."

<sup>31</sup> Canada. *Chief of Review Services Report on Canadian Patrol Frigate Cost and Capability Comparison*. DND, (7050-11-11 (CRS) ), 1999, [http://www.forces.gc.ca/crs/pdfs/cpf\\_cost\\_e.pdf](http://www.forces.gc.ca/crs/pdfs/cpf_cost_e.pdf) (accessed 29 Jul 2008), 10.

<sup>32</sup> Canadian Association of Defence and Security Industries. "Sovereignty, Security and Prosperity—Government Ships—Designed, Built and Supported by Canadian Industry: The Report of the CADSI Marine Industries Working Group." 31.

<sup>33</sup> Canada. *Chief of Review Services Report on Canadian Patrol Frigate Cost and Capability Comparison*. 5, 8. The study includes a parallel assessment done by the USA Center for Strategic Strategies and Operations analysis which came to a similar conclusion.

<sup>34</sup> *Ibid.*, 6.

<sup>35</sup> Mott MacDonald. *Economic Analysis of National Shipbuilding Procurement Practices*. Industry Canada, (255079/03B 16 March 2009), 2009, S-1, 4-2, 21.

Capabilities are the next thing cut in tight money situations, and that process is also underway within the National Shipbuilding Procurement Strategy. The Joint Support Ship is now “Joint” in name only, and its increasingly important in-ice capability may be at risk. The Navy will, however, retain the ability to replenish its ships and thus conduct long-duration operations even with the potentially reduced fuel load carried in the JSS. The Arctic/Offshore Patrol ship has had its speed reduced but will still be an effective surveillance and enforcement tool throughout the lengthening Arctic navigation season. Most significantly however, the Canadian Forces has accepted all these reductions to the original operational requirement without loud protest. Given the public opposition to its earlier rigid approach to the stealth requirement and the F-35 this may be wise.

Traditionally, the last option to meeting short project dollars was to delay the project in the hope that better times would come or other projects would complete and leave financial room in the defence budget for the problematic one. This is now a most dangerous gambit for a wide range of reasons. While Seaspan and Irving have both argued for the current delays, this viewpoint will likely soon change. The former has committed \$200 million to upgrading its shipyard, and the latter has received a \$260 million forgivable loan from the Nova Scotia government to do the same.<sup>36</sup> They are also hiring workers, and when they are ready to build, they will want the facilities and the workers fully employed while also expecting on-time payments for their work. Any delay suggested by government will likely be intolerable for them in a few years.

Even more problematic may be the financial underpinnings of the Canada First Defence Strategy. Under the accrual accounting rules in play, funding is no longer provided in a concentrated flow during the 6 to 8 years of the traditional project. Rather the funding is committed in today's dollars for the 20 to 30 year life of the ship, aircraft, or vehicle.<sup>37</sup> There is, as result, no “room” that will open up when other projects complete. In essence, the CFDS has filled every available financial space for the next 20 years with a project. Delaying the ship project in the hope of finding spare money later is a virtual impossibility under these rules.

Meanwhile, a projects' budget will be eroded by inflation. Here one must recognize that defence equipment inflation is currently running at between 4 and 7% a year, not the 2% we see in our grocery purchases.<sup>38</sup> Thus under current accounting rules, the purchasing power of a project's budgeted dollars can erode by up to 30–50 percent over the 10 years of a project delivery.<sup>39</sup> Project delay then brings even further erosion.

There is also operational risk in accepting further delays in replacing our 40 year or older destroyers, supply ships, and our single large icebreaker. Maintaining them at frontline status will be increasingly costly as some spare parts and the unique skills to maintain them will start disappearing as they enter their fifth decade. Meanwhile, accelerating maintenance costs for 40 to 50 year old ships will increase at precisely the most awkward moment for DND and, potentially, the Coast Guard according to Dave Perry's assessments. He has argued the impact of the recent federal government cuts is likely to fall most heavily on the operations and maintenance budgets that sustain all of DND's equipment.<sup>40</sup> This is partially as a result of the difficulty of producing immediate savings from capital projects that now spread over 20 years and longer. Cuts today produce very modest immediate savings as the real money is in the out years. The additional perceived political difficulty of cutting personnel levels again leaves cuts to operational and maintenance cuts as the only options left. Meanwhile, vessels, like our current supply ships are hitting legal and environmental restrictions as a result of their single hulled construction.<sup>41</sup> The United States has granted our replenishment ships a temporary exemption to the international rules that require double bottoms for oil carrying vessels, but it is an open question of how long the US, and even more worryingly, the Europeans will continue to accept these vessels in their waters. Even replenishment ships must refuel somewhere.

36 Hamilton, “Seaspan Launches \$200-Million Shipyard Upgrade.” See also Zaccagna, “Work on Federal Ship Deal May Start in 2015.”

37 Dan Ross, DND's Associate Deputy Minister Matériel, explains this well at: Beaudoin, “Growing Expertise: DND's Project Management Challenge,” 25.

38 Henry Ergas. “Building the Fleet of the Future.” In *Naval Gazing: the Future of Australia's Naval Shipbuilding and Repair Sector*, edited by Australian Strategic Policy Institute, 12-15, 2010.

39 A 30 percent reduction relates to a 4% rate of inflation. Purchasing power would be reduced by 50% if the inflation rate for equipment was 7%.

40 Perry, “The Navy after the Canada First Defence Strategy,” 1–2.

41 Ivison, “Tories \$35-Billion Ship Project Hits a Snag.”

## CONCLUSION

This paper has presented a somewhat gloomy review of the shipbuilding strategy in suggesting money will continue to be tight and that the only practical response to this will be fewer ships or lower quality or both. Yet this should not be considered the inevitable result. Rather there is every indication from past building programs in Canada and elsewhere that per-unit building costs fall as the shipyard gains experience and has a better appreciation of the risk. That previously noted DND report on the Canadian Patrol Frigate outlined that the marginal costs of production “declined steadily for the CPF, from \$480M for the first ship to \$424M for the last ship.”<sup>42</sup> The move from ‘boom and bust’ to a continuous shipbuilding model was very much designed to achieve just that kind of learning curve.

While there are problems, and here the danger of project slippage is the most worrisome, it is far too early to conclude there is a need to rework or cancel the strategy. Moreover it has been shown that there are few better options. Foreign building does not offer significant savings and there are few in-Canada defence acquisitions that offer a better model. Rather, some argue the NSPS should serve as the model for defence procurement.<sup>43</sup>

There are additional strong arguments for the shipbuilding strategy. It continues to operate without the normal political efforts to steer projects to favored regions. For the first time ever a single Secretariat provides industry with a single point of contact within government, and the strategy has structured the shipyard selection process so that the firms or their host provinces are on the hook for infrastructure upgrades and worker training and not the federal government.<sup>44</sup> The real benefit, however, will come from the ongoing nature of the strategy. As expertise is steadily built up, both the government and the firms will benefit from stable work and steady deliveries that in turn will deliver more accurate defence costing and effective ships.

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42 Canada. *Chief of Review Services Report on Canadian Patrol Frigate Cost and Capability Comparison*. 11.

43 See Bray, “National Shipbuilding Procurement Strategy,” 26.; See also Richard Littlemore, “Safe Harbor,” *Report on Business*, (2012), 38. He notes the NSPS has “been held up as a model of bureaucratic rectitude and political restraint.”

44 See Bray, “National Shipbuilding Procurement Strategy,” 26.; and Cairns, “NSPS Components,” 26.

## STRATEGIC STUDIES WORKING GROUP

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