

Canadian  
Forces  
College

Collège  
des  
Forces  
Canadiennes



## VALUABLE RISK MANAGEMENT LESSONS: MID-SHORE PATROL VESSEL PROJECT

LCdr Chris Chalmers

**JCSP 44**

**SERVICE PAPER**

### Disclaimer

Opinions expressed remain those of the author and do not represent Department of National Defence or Canadian Forces policy. This paper may not be used without written permission.

© Her Majesty the Queen in Right of Canada, as represented by the Minister of National Defence, 2018.

**PCEMI 44**

**ÉTUDE MILITAIRE**

### Avertissement

Les opinions exprimées n'engagent que leurs auteurs et ne reflètent aucunement des politiques du Ministère de la Défense nationale ou des Forces canadiennes. Ce papier ne peut être reproduit sans autorisation écrite.

© Sa Majesté la Reine du Chef du Canada, représentée par le ministre de la Défense nationale, 2018.

SERVICE PAPER - ÉTUDE MILITAIRE

**VALUABLE RISK MANAGEMENT LESSONS:  
MID-SHORE PATROL VESSEL PROJECT**

LCdr Chris Chalmers

*“This paper was written by a student attending the Canadian Forces College in fulfilment of one of the requirements of the Course of Studies. The paper is a scholastic document, and thus contains facts and opinions, which the author alone considered appropriate and correct for the subject. It does not necessarily reflect the policy or the opinion of any agency, including the Government of Canada and the Canadian Department of National Defence. This paper may not be released, quoted or copied, except with the express permission of the Canadian Department of National Defence.”*

Word Count: 2622

*“La présente étude a été rédigée par un stagiaire du Collège des Forces canadiennes pour satisfaire à l'une des exigences du cours. L'étude est un document qui se rapporte au cours et contient donc des faits et des opinions que seul l'auteur considère appropriés et convenables au sujet. Elle ne reflète pas nécessairement la politique ou l'opinion d'un organisme quelconque, y compris le gouvernement du Canada et le ministère de la Défense nationale du Canada. Il est défendu de diffuser, de citer ou de reproduire cette étude sans la permission expresse du ministère de la Défense nationale.”*

Compte de mots: 2622

## **VALUABLE RISK MANAGEMENT LESSONS: MID-SHORE PATROL VESSEL PROJECT**

### **AIM**

1. The Department of National Defence (DND) is not the only department that faces significant procurement challenges. A unique opportunity exists in comparing Arctic Offshore Patrol Ship (AOPS) and Mid-shore Patrol Vessel (MSPV) projects as both projects were ongoing simultaneously, though in different phases, and both have the same prime contractor, Irving Shipyards in Halifax. The purpose of this paper is to examine the Canadian Coast Guard (CCG) MSPV construction project and compare its risk management register with that of the ongoing AOPS in order to propose improvements to the DND process.

### **INTRODUCTION**

2. Canada has a centralized ship procurement contract process that is established under the Defence Production Act.<sup>1</sup> However, despite having a single Department, Public Services and Procurement Canada, largely responsible for ship contracting and procurement processes, there exist significant differences in how the Department of National Defence (DND) and the Department of Fisheries and Oceans Canada (DFO) manage risk in their respective ship procurement projects. Further, while there is a National Shipbuilding Strategy, it has not changed

---

<sup>1</sup> Government of Canada. *Defence Production Act, R.S.C., 1985.*

departmental responsibilities for project risk management on behalf of the Government and, while the AOPS is part of the program, the MSPV was not.<sup>2</sup>

3. The MSPV project began in earnest with its inclusion in the 2007 Federal Budget.<sup>3</sup> However, due to a number of political and contractual reasons, it was not until August, 2009, when the final contract was awarded to Irving Shipyards in Halifax to construct twelve MSPV for the Canadian Coast Guard (CCG).<sup>4</sup> By contrast, the AOPS project was announced by Prime Minister Harper 9 July 2007 for the construction of six to eight ships.<sup>5</sup> Similarly, due to a number of political and contractual reasons, AOPS was also delayed and the final contract was awarded to Irving Shipyards in October 2011.<sup>6</sup>

4. Through a detailed examination of the MSPV and AOPS risk registers, which provide the framework used by DFO and DND to oversee project risks and mitigation strategies, it will be demonstrated that the CCG process provides a more thorough and consistent presentation of project risk. The information included in this report was obtained through Access to Information from the Government of Canada and is therefore both unclassified and redacted. The period

---

<sup>2</sup> "About the National Shipbuilding Strategy." 2018. <https://www.tpsgc-pwgsc.gc.ca/app-acq/amd-dp/mer-sea/sncn-nss/apropos-about-eng.html> (accessed January 26, 2018).

<sup>3</sup> Government of Canada, *Budget 2007: Aspire To A Stronger, Safer, Better Canada*. 2007. <https://www.budget.gc.ca/2007/pdf/bp2007e.pdf> (accessed January 26, 2018).

<sup>4</sup> "Vessel Procurement - Mid-Shore Patrol Vessel - Vessel Procurement." 2018. <http://www.ccg-gcc.gc.ca/vessel-procurement/mid-shore-patrol-vessel> (accessed January 26, 2018).

<sup>5</sup> "Armed Naval Icebreakers – the Arctic/Offshore Patrol Ships." 2007. <http://www.casr.ca/doc-dnd-icebreaker.htm> (accessed January 26, 2018).

<sup>6</sup> Woods, "Two Winners And One Big Loser In Contest To Build Military Ships | Toronto Star." 2011. [https://www.thestar.com/news/canada/2011/10/19/two\\_winners\\_and\\_one\\_big\\_loser\\_in\\_contest\\_to\\_build\\_military\\_ships.html](https://www.thestar.com/news/canada/2011/10/19/two_winners_and_one_big_loser_in_contest_to_build_military_ships.html) (accessed January 26, 2018).

selected for this analysis is 2012 to 2014, as it represents the most current information publicly available on both projects.

## DISCUSSION

5. The definition project risk is not always commonly understood. As Mochal and Mochal argue, risks exist in the future as conditions or events that exist outside of the control of the project team but will have a negative impact on the project should they manifest. Different from this are issues, which the authors claim are current impediments to a project that must be resolved.<sup>7</sup> Project management specialist Roland Wanner similarly differentiates risk as potential threats and problems as inevitable.<sup>8</sup> Therefore, when risk registers are discussed, it is in the context of future challenges dealt through a process of identification.

6. In the case of the MSPV project, the risk register shares the above definitions of risk. Of the active risks amongst the 73 listed in the February 2013 risk register, only potential threats to the project are identified.<sup>9</sup> For example:

---

<sup>7</sup> Tom Mochal and Jeff Mochal. *Lessons in project management*. (Berkeley, CA: Apress. 2003), 75-76.

<sup>8</sup> Wanner, *Project Risk Management*. (Middleton, DE: Amazon. 2015), 45.

<sup>9</sup> Department of Fisheries and Oceans and Canadian Coast Guard, "MSPV Risk Management Meeting, Monday, February 11, 2013, Record of Discussion," Access to Information Request Number (A) 2016-01025-ACD-FINAL – Records Dealing with Risk Management and Risk Register for the Mid-Shore Patrol Vessel (February 2017), 1-2.

| 1. BASIC RISK INFORMATION |  |                      |  |            |               |      |
|---------------------------|--|----------------------|--|------------|---------------|------|
| Risk #                    | Title                                    | PCRA Category        | Risk Description   | DPI        | Date Reported | Risk |
| 73                        | Meeting the test and trials requirements | Project Requirements | There is a risk that the Contractor will have difficulty meeting all operational requirements of the TSOR. | DPM /Fleet | 24-Jul-12     | 3    |

Figure 1.0: Extracted from MSPV Risk Register, 11 Feb 2013.<sup>10</sup>

7. The AOPS project diverges from the MSPV project at this early stage. Firstly, there is no risk register in a formal sense. For the period under examination, 2013, DND was unable to find a risk register and broadening the period to 2010 to 2014 similarly did not produce one from either Associate Deputy Minister (Materiel) (ADM(Mat)) or the DND Access to Information office. However, DND was able to provide a catalogue of briefing notes, internal letters and presentations, which do detail AOPS project risks and could be considered to represent the spirit of a risk register. While it may be argued that AOPS was still a nascent project in 2014, in a definition phase, whilst MSPV was midway through delivery, common industry practice dictates that a risk register be created at the beginning of a project and not two years after contract award.<sup>11</sup>

<sup>10</sup> Department of Fisheries and Oceans and Canadian Coast Guard, "MSPV Risk Management Meeting, Monday, February 11, 2013, Record of Discussion," Access to Information Request Number (A) 2016-01025-ACD-FINAL – Records Dealing with Risk Management and Risk Register for the Mid-Shore Patrol Vessel (February 2017), 1-2.

<sup>11</sup> Tom Mochal and Jeff Mochal. *Lessons in project management*. (Berkeley, CA: Apress. 2003), 167.

8. A second particularity of the AOPS project is the definition of risk used in the documentation. There are times when the use of the term risk conforms to the definition presented earlier and used by MSPV. Conversely, in other documents the term risk is used synonymously with Mochal and Mochal's definition of an *issue*. For example, in the risk matrix presented by the AOPS project to the Major Capital Project Interdepartmental Oversight Committee (MCP OIC), both current and unavoidable problems are defined as risks as well as potential threats to the project. Specifically, severe staffing shortages are identified as preventing the project from advancing in the same table that discusses the possibility of cost-overruns due to design.<sup>12</sup> Throughout the AOPS project documentation examined, risks and *issues* are often classified together as risks while in other instances they are aggregated under the titles *challenges*, *concerns* or *issues*.<sup>13, 14</sup> This issue of definition and consistency creates compounding challenges in the AOPS documentation when mitigations are developed.

---

<sup>12</sup> Department of National Defence, "Annex B: Risk to Arctic/Offshore Patrol Ship Project C.001216: Major Capital Project – Interdepartmental Oversight Committee (MCP –IOC), 26 April 2013," Access to Information Request Number (A) 2013-02046-0295 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project (February 2017), 7.

<sup>13</sup> Department of National Defence, "Arctic/Offshore Patrol Ship (AOPS): Investment Plan Change Proposal, 21 Aug 14," Access to Information Request Number (A) 2014-01732-0042 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project (February 2017), 1-16.

<sup>14</sup> Department of National Defence, "Annex B: Risk to Arctic/Offshore Patrol Ship Project C.001216: Major Capital Project – Interdepartmental Oversight Committee (MCP –IOC), 26 April 2013," Access to Information Request Number (A) 2013-02046-0295 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project (February 2017), 7.

| <i>Risk Area</i>         | <i>Description</i>  | <i>Assessment</i> | <i>Risk Response</i>  |
|--------------------------|---|-------------------|---|
| PMO HR Issues            | With the new directive of restrictive hiring, PMO AOPS may not be able to achieve project outcomes. | <b>High</b>       | This risk has been triggered as GoC has imposed restrictions in hiring new personnel.<br><br>This risk will be mitigated by:<br>1. resource re-balancing efforts within DND to explore how more resources may be allocated to AOPS<br>2. make greater use of DELMS personnel<br>3. potentially borrow personnel from other Projects<br>4. hiring of contractors (THS)<br>5. make use of external agencies (NETE, MEPM, etc)<br>6. work closely with HR to explore hiring options  |
| Cost of Ship Acquisition | There is a risk that the cost to build the minimum of six ships could exceed the funds allocated.   | <b>High</b>       | The design requirements have already been reduced to a more affordable design. This risk will further be mitigated by:<br>1. explore cost tradeoffs with ISI during the Definition Contract<br>2. fully use and understand the open book reporting mechanisms of the NSPS umbrella agreement<br>3. seek additional funding due to schedule slippage and other costing pressure via IPCP<br>4. seek rewording of Project mandate to change to "up to eight ships" from "six to eight ships"<br>5. third party review of the Defn Contract and Implementation estimates<br>6. explore design to cost option |

Figure 2.0: Extracted from Annex B to Arctic/Offshore Patrol Ship Project C.001216: MCP – IOC, 26 April 2013.<sup>15</sup>

9. When risks are anticipated, Wanner argues they can be managed in four ways: avoidance, reduction, delegation, or assumption.<sup>16</sup> Avoidance is the elimination of the cause of a potential risk. Risks can be reduced by taking actions to diminish the probability that a risk may occur. Risks can also be delegated to another authority, which may be more able to manage that

<sup>15</sup> Department of National Defence, "Annex B: Risk to Arctic/Offshore Patrol Ship Project C.001216: Major Capital Project – Interdepartmental Oversight Committee (MCP –IOC), 26 April 2013," Access to Information Request Number (A) 2013-02046-0295 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project (February 2017), 7.

<sup>16</sup> Wanner, *Project Risk Management*. (Middleton, DE: Amazon. 2015), 91.



risk, such as an insurance company. Finally, when a risk is borne, the project assumes the likelihood and the consequences if it occurs within its resources and responsibilities.<sup>17</sup> In other words, project leaders must take the list of identified risks and develop contingency responses in order to protect the project until its completion. Unfortunately, when risks are confused with manifested problems, *issues*, these same responses obviously cannot apply.

10. In the case of MSPV, risks and *issues* are not mixed in the risk register. This has the advantage of enabling the four risk response categories to be applied to each identified risk, as they are deemed appropriate. In the case of AOPS, the documentation clearly lists responses associated with both risks and *issues*. However, as an *issue* is understandably a 100% probable and current threat to a project it cannot be avoided or stopped before it starts. Further, while an *issue* could be borne its assumption would either put the project at significant risk or it would simply not be an *issue* worthy of tracking and control. If it is the former, Wanner contends that these become facts that must be confronted and integrated into the overall project plan and not the risk plan.<sup>18</sup> Lastly, *issues* can be delegated. If a risk was not prevented from manifesting into an *issue*, the ideal situation for any project would be that the problem is assumed by another organization. This would either naturally follow that the risk had already been delegated outside of the project or that the issue could be resolved by an outside organization better positioned or resourced to eliminate it. Regrettably, the AOPS project budget shortfalls illustrate some significant limitations to delegating *issues*, in that budget increases are not automatic.

---

<sup>17</sup> *Ibid.*

<sup>18</sup> *Ibid.*, 45.

11. As with nearly all other government projects, the AOPS project operates under a federally controlled budget enveloped. The same is true of the MSPV. The budget amounts are allocated to these projects by the government and additional funds therefore must be requested and are not guaranteed. In August 2014, the AOPS project briefed that it had a budget shortfall of \$455.3 million, which had grown from the shortage reported in November 2009 of \$250 million.<sup>19</sup> The total approved budget for AOPS was set in 2009 by the government at \$3.1 billion.<sup>20</sup> This cost-overrun is clearly an *issue* and not a risk. This is further supported by the fact the AOPS project writes, “Without top-up, project will be unable to enter into contract that is currently being negotiated.”<sup>21, 22</sup> Further, the resolution proposed to this issue is that the project will request additional funds. This solution falls into the category of delegating an *issue*. Beyond why a budget increase was only now being requested five years after the cost-overrun was known is unclear. However, as Wanner writes, the risks associated with this solution working or not must necessarily be included in the risk assessment framework.<sup>23</sup> Put simply, while the AOPS project articulated the *issue* and found a solution, they neglected to holistically evaluate the risk factors stemming from their solution and the project plan was therefore under-prepared.

---

<sup>19</sup> Department of National Defence, “Arctic/Offshore Patrol Ship (AOPS): Investment Plan Change Proposal, 21 Aug 14,” Access to Information Request Number (A) 2014-01732-0042 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project (February 2017), 5-7.

<sup>20</sup> “Armed Naval Icebreakers – the Arctic/Offshore Patrol Ships.” 2007. <http://www.casr.ca/doc-dnd-icebreaker.htm> (accessed January 26, 2018).

<sup>21</sup> Department of National Defence, “Arctic/Offshore Patrol Ship (AOPS): Investment Plan Change Proposal, 21 Aug 14,” Access to Information Request Number (A) 2014-01732-0042 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project (February 2017), 11.

<sup>22</sup> Department of National Defence, “Briefing Note for the Deputy Minister: Budget Assessment of Arctic Offshore Patrol Ship Project,” Access to Information Request Number (A) 2014-01732-0042 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project (February 2017).

<sup>23</sup> Wanner, *Project Risk Management*. (Middleton, DE: Amazon. 2015), 45.

12. Scheduling risk was given high importance in the MSPV and AOPS projects. For MSPV, the identified scheduling risks were focused on potential production delays caused by inclement weather, materiel shortages and concerns over quality of the MSPV systems, which created additional sea-trial requirements and delayed CCG acceptance of the ships. These concerns are consistent from February 2012 to April 2014, when CCG finally closes the scheduling risk entirely and ceases to track it due to years of consistent delivery from Irving.<sup>24, 25, 26</sup> An example from the MSPV risk register is provided below.

| Risk # | Title                    | PCRA Category | Risk Description  | OPI | Date Reported | Risk | Actions   | Rationale for Closing | Risk Status | Last Update |
|--------|--------------------------|---------------|---|-----|---------------|------|---|-----------------------|-------------|-------------|
| 64     | Contractor Design Delays | Business      | Risk that delays in the design schedule due to Contractor or their sub-contractors could impact the delivery of the 1st vessel in Fall 2011 | PM  | 02-Jun-10     | 6    | Contractor actively engaged with Class. PM monitoring progress between Contractor and Class |                       | OPEN        | 02-Jun-10   |

Figure 3.0: Extracted from MSPV Risk Register, n.d. July 2010.<sup>27</sup>

13. By combing through the various documents available for AOPS, it is clear that schedule risk was similarly important but more detailed. Scheduling risk is included in the breakdown of each phase and subcomponent of AOPS delivery and the risks included potential materiel delays, lack of contractor experience, facility delays and contractor workforce shortages.<sup>28, 29</sup> This level

<sup>24</sup> Department of Fisheries and Oceans and Canadian Coast Guard, "Mid-shore Patrol Vessel Project Steering Committee, March 2, 2012," Access to Information Request Number (A) 2016-01025-ACD-FINAL – Records Dealing with Risk Management and Risk Register for the Mid-Shore Patrol Vessel (February 2017), 25.

<sup>25</sup> Department of Fisheries and Oceans and Canadian Coast Guard, "Mid-shore Patrol Vessel (MSPV) Project Steering Committee Meeting, Friday March 2, 2012: Record of Discussion," Access to Information Request Number (A) 2016-01025-ACD-FINAL – Records Dealing with Risk Management and Risk Register for the Mid-Shore Patrol Vessel (February 2017), 2.

<sup>26</sup> *Ibid.*, 1.

<sup>27</sup> Department of Fisheries and Oceans and Canadian Coast Guard, "Basic Risk Information, July 2010," Access to Information Request Number (A) 2016-01025-ACD-FINAL – Records Dealing with Risk Management and Risk Register for the Mid-Shore Patrol Vessel (February 2017), 1.

<sup>28</sup> Department of National Defence, "Arctic/Offshore Patrol Ship (AOPS): Project #C.001216, 23 Sep 2014," Access to Information Request Number (A) 2014-01732-0042 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project (February 2017), 4-10.

of assessment is significantly more detailed than that of the MSPV project. However, despite the volume of listed risks and the probabilities assigned them, there are no risk responses included in the documentation. In the absence of a formal risk register, it could be surmised that mitigations may have been inappropriate for the prepared documents. However, due to their absence, there is no evidence that the AOPS project developed risk responses associated with their identified scheduling risks or that it meets the basic requirements of project risk management.

14. The importance of quality risk is another similarity between the two projects. Both the MSPV and AOPS projects list concerns over the products and services received by Irving. In addition to the related concern of scheduling risk, the MSPV project listed an overall.<sup>30</sup> The success of this particular risk response is challenged by the current electrical problems plaguing the ship class.<sup>31</sup>

15. In terms of quality risk, the AOPS project lists risks associated with lack of contractor and contractor workforce experience.<sup>32</sup> This is mentioned regarding the design phase in the 3D imaging as well as how construction errors may impact scheduling. Additionally, it appears the AOPS project keenly concerned with trade-offs of capabilities in order to reduce costs.

---

<sup>29</sup> Department of National Defence, "Arctic/Offshore Patrol Ship (AOPS): Project #C.001216: Annual SRB, 11 December 2013," Access to Information Request Number (A) 2013-02046-1142 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project (February 2017), 4-10.

<sup>30</sup> Department of Fisheries and Oceans and Canadian Coast Guard, "Basic Risk Information, August 2010," Access to Information Request Number (A) 2016-01025-ACD-FINAL – Records Dealing with Risk Management and Risk Register for the Mid-Shore Patrol Vessel (February 2017), 1.

<sup>31</sup> David Pugliese. "Irving Acknowledges Problems With Canadian Coast Guard Ships But Claims They Are All Minor". Ottawa Citizen, 2016. <http://ottawacitizen.com/news/national/defence-watch/irving-acknowledges-problems-with-canadian-coast-guard-ships-but-claims-they-are-all-minor>.

<sup>32</sup> Department of National Defence, "Arctic/Offshore Patrol Ship (AOPS): Project #C.001216, 23 Sep 2014," Access to Information Request Number (A) 2014-01732-0042 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project (February 2017), 4-10.

Documents reveal that Irving proposed \$60.7 million in capability reductions in order to reduce overall costs but DND only accepted \$4.6 million of these proposals due to potential impacts to important vessel capabilities.<sup>33</sup> The primary concern listed in the DND documents of the period are that reductions in ship capabilities result in minimal cost savings at significant operational loss while reductions in the number of overall ships created potential risks to the National Shipbuilding Strategy itself.<sup>34</sup> While it is outside of the analysis timeline of this paper, it is interesting to note that the AOPS project budget was increased in 2015 to \$3.4 billion from \$3.1 billion but that the overall number of ships was reduced down to four or five.<sup>35</sup>

16. The final paramount risk discussed in the MSPV risk register is training and fleet integration risk. The MSPV project lists these risks as delays in training manual delivery from the contractor, the fact that the MSPV has at least twice the top speed of all other CCG vessels and the need to communicate to crews that some MSPV systems will be maintained by the contract. Further, the risk responses for these items are all communication and liaison based; with union representatives, CCG crews and Irving.<sup>36</sup> This approach appears to be very inclusive and holistic. It places the MSPV project team at the centre of the MSPV but as delivery of a system and its interconnectedness not simply a ship. Perhaps this is by virtue of the CCG's culture or organizational differences but it is significant that a ship project team would liaise directly with all of these stakeholders as the champion and face of their project versus simply representing a

---

<sup>33</sup> Department of National Defence, "Arctic/Offshore Patrol Ship (AOPS): Investment Plan Change Proposal, 21 Aug 14," Access to Information Request Number (A) 2014-01732-0042 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project (February 2017), 16.

<sup>34</sup> *Ibid.*, 1-16.

<sup>35</sup> Cudmore, James. "Arctic Offshore Patrol Ships Deal: Fewer Ships, More Money". *CBC News*, 2015. <http://www.cbc.ca/news/politics/canada-s-navy-to-get-5-or-6-arctic-ships-not-8-1.2913159>.

<sup>36</sup> Department of Fisheries and Oceans and Canadian Coast Guard, "Basic Risk Information, July 2010," Access to Information Request Number (A) 2016-01025-ACD-FINAL – Records Dealing with Risk Management and Risk Register for the Mid-Shore Patrol Vessel (February 2017), 1-3.

link in a chain-of-command. Unfortunately, a full comparison with AOPS of this risk factor is limited due to the early stages of the AOPS project between 2012 and 2014; their project risks had not yet evolved to include many aspects of training and fleet integration risk. There are some aspects that are mentioned, however. The documents do point to considerations over the AOPS 25mm gun being a potential risk as it will be a class orphan but the implications are left unexplored and impacts unassessed.<sup>37</sup> There is also mention in January 2013 that crewing considerations had been delegated to Director Maritime Personnel.<sup>38</sup> Again, however, this subject is mentioned but not detailed.

## CONCLUSION

17. While this is a historical examination of both the MSPV and AOPS projects, it has revealed significant differences between how DND and DFO managed ship procurement risk. Despite sharing a centralized shipbuilding contracting process in Canada, led by Public Services and Procurement Canada, these departmental differences remain. In comparing the risk management models for the AOPS and MSPV projects, both of which shared Irving Shipyards as their prime contractor, it is clear that these differences are well illustrated primarily in the lack of a formal risk register in the AOPS project from 2012 to 2014. While risks were considered and often given a probability of occurrence by DND, there was a near consistent lack of risk response development for those risks identified. Again, this stands in direct contrast with the formal risk

---

<sup>37</sup> Department of National Defence, “Arctic/Offshore Patrol Ship (AOPS): Project #C.001216: Annual SRB, 11 December 2013,” Access to Information Request Number (A) 2013-02046-1142 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project (February 2017), 3-14.

<sup>38</sup> Department of National Defence, “FW: BN – ADM ISC [NSPS]” Access to Information Request Number (A) 2014-01732-0042 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project (February 2017), 2-3.

register that existed for the MSPV project during the same period, which methodically tracked risks throughout the period and updated the risks in the register overtime.

18. Another significant difference was of definitions. The lack of consistent definition of risk by the AOPS project confused risks with *issues* and likely contributed to the inconsistency of mitigation strategies presented, when they were present. Such basic errors undermine the perception of the project team's professionalism and competence.

19. Finally, scheduling, quality and crew and fleet integration risks were examined in both projects. As all of these risks were included into a single document, maintained for years, the MSPV project provides an important model of risk integration into an overall project management. The AOPS project also provides an excellent example of risk assessment detail, in many cases, but the lack of risk responses ultimately diminishes its usefulness in meaningfully insulating a project from risk. This can be partially explained by the relative immaturity of the AOPS project, having started several years after MSPV and that it was still in the first phase. Nonetheless, a risk register should exist from the outset of a project in order for risks to be continuously assessed and planned for throughout a project's existence. The MSPV project role as a system integration team was also novel and presents a fascinating subject for further research.

## RECOMMENDATION

20. It is recommended that a formal risk register be implemented for all DND ship building projects, as per industry standards. Further, it is recommended that a clear differentiation between risks and *issues* be emphasized on DND projects in order to maximize the utility of risk responses and minimize confusion. This should also include an emphasis on the outcomes of risk delegation and the need to continue to develop and analyze the risks associated with the delegation. Lastly, it is recommended that DND explore further information and learning opportunities with DFO, specifically CCG, with regard to their ongoing ship construction lessons learned.



## BIBLIOGRAPHY

- Canada. Department of Fisheries and Oceans and Canadian Coast Guard, “Basic Risk Information, July 2010,” Access to Information Request Number (A) 2016-01025-ACD-FINAL – Records Dealing with Risk Management and Risk Register for the Mid-Shore Patrol Vessel. February 2017.
- Canada. Department of Fisheries and Oceans and Canadian Coast Guard, “Mid-shore Patrol Vessel Project Steering Committee, March 2, 2012,” Access to Information Request Number (A) 2016-01025-ACD-FINAL – Records Dealing with Risk Management and Risk Register for the Mid-Shore Patrol Vessel. February 2017.
- Canada. Department of Fisheries and Oceans and Canadian Coast Guard, “Mid-shore Patrol Vessel (MSPV) Project Steering Committee Meeting, Friday March 2, 2012: Record of Discussion,” Access to Information Request Number (A) 2016-01025-ACD-FINAL – Records Dealing with Risk Management and Risk Register for the Mid-Shore Patrol Vessel. February 2017.
- Canada. Department of Fisheries and Oceans and Canadian Coast Guard, “MSPV Risk Management Meeting, Monday, February 11, 2013, Record of Discussion,” Access to Information Request Number (A) 2016-01025-ACD-FINAL – Records Dealing with Risk Management and Risk Register for the Mid-Shore Patrol Vessel. February 2017.
- Canada. Department of Fisheries and Oceans and Canadian Coast Guard, “RE: Report to TBS,” Access to Information Request Number (A) 2016-01025-ACD-FINAL – Records Dealing with Risk Management and Risk Register for the Mid-Shore Patrol Vessel. February 2017.
- Canada. Department of National Defence, “Annex B: Risk to Arctic/Offshore Patrol Ship Project C.001216: Major Capital Project – Interdepartmental Oversight Committee (MCP –IOC), 26 April 2013,” Access to Information Request Number (A) 2013-02046-0295 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project. February 2017.
- Canada. Department of National Defence, “Arctic/Offshore Patrol Ship (AOPS): Investment Plan Change Proposal, 21 Aug 14,” Access to Information Request Number (A) 2014-01732-0042 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project. February 2017.
- Canada. Department of National Defence, “Arctic/Offshore Patrol Ship (AOPS): Project #C.001216: Annual SRB, 11 December 2013,” Access to Information Request Number (A) 2013-02046-1142 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project. February 2017.

Canada. Department of National Defence, "FW: BN – ADM ISC [NSPS]" Access to Information Request Number (A) 2014-01732-0042 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project. February 2017.

Canada. Department of National Defence, "Briefing Note for the Deputy Minister: Budget Assessment of Arctic Offshore Patrol Ship Project," Access to Information Request Number (A) 2014-01732-0042 – Records Dealing with Risk Management and Risk Register for the Arctic Offshore Patrol Ship Project. February 2017.

"Canadas Continued Search For Mid-Shore Patrol Vessels". *Defense Industry Daily*, 2009.

Cudmore, James. "Arctic Offshore Patrol Ships Deal: Fewer Ships, More Money". *CBC News*, 2015.

"Department Of National Defence / Canadian Forces News Release: Armed Naval Icebreakers – the Arctic/Offshore Patrol Ships".

Government of Canada. *Budget 2007: Aspire To A Stronger, Safer, Better Canada*. Ottawa, ON.: Government of Canada, 2007.

Government of Canada. *Defence Production Act, R.S.C., 1985, C. D-1*. Ottawa, Ontario: Government of Canada, 2017.

Mochal, Tom, and Jeff Mochal. *Lessons in project management*. Berkeley, CA: Apress, 2003.

Pugliese, David. "Irving Acknowledges Problems With Canadian Coast Guard Ships But Claims They Are All Minor". *Ottawa Citizen*, 2016.

Wanner, Roland. *Project Risk Management*. 2nd ed. Middletown: Amazon Distribution, 2015.

Woods, Allan. "Two Winners And One Big Loser In Contest To Build Military Ships | Toronto Star". *Thestar.Com*, 2011.