

Canadian  
Forces  
College

Collège  
des  
Forces  
Canadiennes



**DELIVERING ON *STRONG SECURE ENGAGED*:  
DEFENCE PROCUREMENT REFORMS TO INCREASE EFFICIENCY**

Lieutenant-Commander M.E. Schofield

**JCSP 45**

**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, 2019.

**PCEMI 45**

**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, 2019.



CANADIAN FORCES COLLEGE – COLLÈGE DES FORCES CANADIENNES

JCSP 45 – PCEMI 45

2018 – 2019

DS545 COMPONENT CAPABILITIES

**SERVICE PAPER FOR DGMEPM  
DELIVERING ON *STRONG SECURE ENGAGED*:  
DEFENCE PROCUREMENT REFORMS TO INCREASE EFFICIENCY**

By Lieutenant-Commander M.E. Schofield

*“This paper was written by a candidate 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: 2426

*“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.”*

Nombre de mots : 2426

**SERVICE PAPER FOR DGMEPM**  
**DELIVERING ON *STRONG SECURE ENGAGED*: DEFENCE PROCUREMENT**  
**REFORMS TO INCREASE EFFICIENCY**

**AIM**

1. In order for the Royal Canadian Navy (RCN) to meet its mandate under *Strong Secure Engaged*, the RCN must be aggressive in finding efficiencies in the procurement cycle for the capital program. This service paper investigates how the defence procurement process could deliver RCN capability quicker and at a lower cost.

**INTRODUCTION**

2. Canada has had a long tortured history of military procurement. Even before confederation, procurement was “more a political process than a military one.”<sup>1</sup> Canada’s entry into arms development was the procurement of the Ross rifle. In 1902, Defence Minister Robert Borden failed to convince British arms makers to assist the Canadian government in setting up the infrastructure to manufacture the Enfield rifle in Canada; instead Borden gave Sir Charles Ross the contract, along with 25 acres of land in the Prime Minister’s riding. Ross failed to produce the number of rifles promised and the rifles performed terribly in the Battle of Ypres. Yet Ross was still paid in full.<sup>2</sup>

3. The procurement process remains overly politicized to this day, which results in overpriced, substandard equipment not delivered in a timely manner. Canada has been able to invest modestly in the military without compromising the security of the nation due to Canada’s close proximity to the USA, coupled with US military global dominance.<sup>3</sup> Canada has also prioritized investment in Canadian defence industry over building military capability for the Canadian Armed Forces. Canada’s extensive bureaucracy and governance structure for major capital projects ensures investment in Canada; however this structure serves to “complicate the trade-off between defence and socio-political objectives and lengthen the procurement cycle.”<sup>4</sup> Shortly following the release of *Canada First Defence Strategy* in 2008, which included significant increases in capital investments, major capital projects became “‘jammed up’ ...as a result of the existing protracted defence capital equipment procurement process.”<sup>5</sup> If the RCN is

---

<sup>1</sup> Plamondon, Aaron, *The Politics of Procurement: Military Acquisition in Canada and the Sea King Helicopter* (Vancouver: UBC Press, 2010), 28.

<sup>2</sup> Ibid.

<sup>3</sup> Markowski, Stefan, Peter Hall, and Robert Wylie, *Defence Procurement and Industry Policy: A small country perspective* (New York: Routledge, 2009), 158.

<sup>4</sup> Ibid., 213.

<sup>5</sup> Fetterly, Eglin Ross, “Arming Canada: Defence Procurement for the 21<sup>st</sup> Century,” (Doctorate thesis, Royal Military College of Canada, 2011), 26.

to deliver on the largest investment into the Navy in Canada's history,<sup>6</sup> strategic and narrowly targeted decisions about what parts of the defence industry should be developed in Canada are needed, along with smarter and more flexible contracting vehicles; DND also needs a stronger defence procurement policy that reduces bureaucracy yet increases transparency to government.

## DISCUSSION

4. In order to analyze defence spending policy, it's important to understand several different types of procurement. First, Military-Off-the-Shelf (MOTS)/Commercial-Off-the-Shelf(COTS) systems include all equipment procured from a commercial vendor or through a Foreign Military Sale (FMS). In a naval context this would include most weapon, communication, sensor, machinery, propulsion and auxiliary systems. Second are platform systems, which are the ships and submarines upon which the MOTS/COTS systems reside. Finally, integration systems link all the peripheral MOTS/COTS systems together and permit the application of Canadian Naval doctrine. Within the RCN, these are the Integrated Platform Management System, Combat Management System and C2 networks; however there will likely be more in the future. These are unique, specialized systems and offer the greatest opportunity for defence industry development within Canada.

### Investing in the Defence Industry

5. Canada needs to be strategic and targeted in how it invests in the defence industry. Military procurement costs per unit have been increasing steadily over the past century.<sup>7</sup> Although military procurement makes up a large portion of any nation's military budget, it "absorbs a larger proportion of resources allocated to defence by the smaller military powers."<sup>8</sup> Cost reduction is possible when buyers "take advantage of quantity discounts offered by sellers when they consolidate their requirements into larger deals."<sup>9</sup> However, this approach may require importing of MOTS/COTS equipment from other nations but this will likely lead to reduction of costs and avoid "much of the technical risk."<sup>10</sup> Australian Defence explains that their "major capital equipment projects have suffered schedule delays because of constraints on the availability of sufficient skilled Defence industry workers,"<sup>11</sup> which is partly why their "Government has decided that military-off-the-shelf and commercial-off-the-shelf solutions to

---

<sup>6</sup> Department of National Defence, *STRONG SECURE ENGAGED: Canada's Defence Policy* (Ottawa: Minister of National Defence, 2017), 33.

<sup>7</sup> Burgess, Kevin, and Peter Antill, *Emerging Strategies in Defense Acquisitions and Military Procurement* (Hershey: ICI Global, 2017), 24.

<sup>8</sup> Markowski, *Defence Procurement and Industry Policy: A small country ...*, 46.

<sup>9</sup> *Ibid.*, 47.

<sup>10</sup> *Ibid.*, 55.

<sup>11</sup> Australian Government Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030* (Australia: Commonwealth of Australia, 2009), 127.

Defence's capability requirements will be the benchmark." Canada should follow Australia's lead and consider MOTS/COTS procurement first unless there is a compelling need to develop these capability within Canada.

6. The Canadian government must be strategic in what aspects of the small Canadian defence industry it supports. 660 Canadian defence firms, employing 60,000 employees, generate approximately \$10B in sales, 43% of which are within Canada.<sup>12</sup> Almost all growth between 2014 and 2016 within the marine defence sector has been in shipbuilding and platform systems. An over focus on investment in platform systems takes money and focus away from the areas of industry that Canada could be a world leader in. Further, it is highly unlikely that Canada will export platform systems after they are developed; however, this would not be true with niche markets in which Canadian industry has demonstrated excellence.

7. Excessive focus on platform-enabled capability development neglects potential investment in truly unique marine systems that have the potential to benefit Canada both in terms of exports and Canadian defence capability. In the past, naval capability has been platform-enabled, however integration is becoming the "driver of technical complexity of weapons systems: they [are becoming] network-centric rather than platform-enabled."<sup>13</sup> RCN will need a uniquely Canadian solution, delivered by Canadian industry, for the technological problem of system integration. This has been the strategy within Australia where they have focused on "acquisition opportunities, including off-the-shelf purchases and international programs, to contain costs and free-up local industry capacity for priority tasks."<sup>14</sup>

8. Public Service and Procurement Canada (PSPC) has tried to develop a defence procurement policy to identify what defence industries within Canada the government should support. Tom Jenkins' 2013 report for Public Works Government Service Canada (PWGSC) identified key industrial capabilities (KICs) the government should support to "enable Canada's defence-related industries to better meet the operational requirements of the Canadian Forces while generating sustainable economic growth."<sup>15</sup> PSPC subsequently formalized the recommendations in the *Defence Procurement Strategy (DPS)*, identifying 16 major KICs in the *Industrial and Technological Benefits Policy: Value Proposition Guide*.<sup>16</sup>

---

<sup>12</sup> State of Canada's Defence Industry 2018, "Innovation, Science and Economic Development Canada," last accessed 10 October 2018. [https://www.ic.gc.ca/eic/site/ad-ad.nsf/eng/h\\_ad03978.html](https://www.ic.gc.ca/eic/site/ad-ad.nsf/eng/h_ad03978.html)

<sup>13</sup> Markowski, *Defence Procurement and Industry Policy: A small country ...*, 54.

<sup>14</sup> Stone, Craig, *Prioritizing Defence Industry Capabilities: Lessons for Canada from Australia* (Canadian Defence and Foreign Affairs Institute, 2014), 11.

<sup>15</sup> Public Works and Government Services Canada, *Canada First: Leveraging Procurement through Key Industrial Capabilities* (Ottawa: PWGSC, 2013), ix.

<sup>16</sup> Public Service and Procurement Canada, *Industrial and Technological Benefits Policy: Value Proposition Guide* (Ottawa: PSPC, 2018), 19.

9. For the RCN, these KICs are much too broad, including categories such as ‘Marine Ship-Borne Mission and Platform Systems’ and ‘Shipbuilding, Design and Engineering Services.’ Almost all RCN capabilities could be encompassed within one of these categories, which results in a dilution of the effectiveness of identifying the key industry capabilities in the first place. The KICs should be more narrowly defined and primarily focused on integration systems or systems that can only be provided by Canadian Industry.

10. DPS requires three departments, PSPC, Innovation Science and Economic Development Canada (ISED), and DND, to evaluate procurement contracts for their ‘Value Proposition’ or the “appropriate balance between capability, cost and benefit to Canada.”<sup>17</sup> Additional time is required to coordinate between departments with differing priorities. Schedule delay is not the only side effect of the DPS; project costs also “increase... the more offsets [value proposition] are bargained for because the contractor will simply build the higher costs into the bid.”<sup>18</sup> In order to invest in Canadian Defence industry without compromising capability or schedule, the DPS should focus primarily on integration systems and other niche capability streams rather than MOTS/COTS<sup>19</sup> systems and even potentially platform systems.

### **Smart Contracting**

11. DND must reinvent the way it develops contracts with its Canadian defence industry partners. Current contracting practices will continue to be useful for procurement of MOTS/COTS systems, however integration systems will continue to increase in complexity and contracts associated with them will need to adapt. Closer integration with industry both prior to entering contracts and through the entire life-cycles is needed. Modularity will likely be a cornerstone of future development, enabling evolutionary acquisition that develops capability as threats and technology change.

12. Early and close engagement with industry is essential to ensure timely delivery of capability of integration systems. The RCN needs industry input right at the outset so that it can “better match the development of new capabilities with industry’s ability to deliver them.”<sup>20</sup> The RCN must also consider the entire lifecycle as part of the contract, since often times, “because of intellectual property held by the supplier, the government has little choice but to go to the

---

<sup>17</sup> Ibid., 3.

<sup>18</sup> Markowski, *Defence Procurement and Industry Policy: A small country ...*, 220.

<sup>19</sup> Maritime Satellite Communication Unit (MSCU) project in the RCN is a good example. The MSCU system was provided by Harris via a sole source contract. During the initial discussions with Harris through a RFP, ADM(Mat) received cost estimates identical to costs being paid by the US Navy. During contract negotiations, PSPC and ISED requested Harris increase their Value Proposition, failure to do so would result in a 15% penalty. The result was Harris increased their per unit cost by 15% in the final contract.

<sup>20</sup> Australian Government Department of Defence, 2016 Defence Industry Policy Statement (Australia: Commonwealth of Australia, 2016), 19.

Original Equipment Supplier.”<sup>21</sup> Although competition is often seen as the best means to drive down costs, this is not always pertinent in defence procurement, as the defence market consists of one buyer with few and sometimes one seller.<sup>22</sup> It is often difficult to create a fair competition with so few competent or interested competitors; Burgess argues that “governments should spend less time looking for ways to increase the incidence of competitive procurement, and put more effort into consideration of the efforts needed for cost-effective procurement on a sole-source basis.”<sup>23</sup> Partnerships with industry may be the solution.

13. Early engagement with industry will help the RCN identify what is possible, allowing modular and then evolutionary acquisition from there. The current procurement system attempts to identify and specify all requirements prior to negotiating the contract, which can create specifications that industry cannot meet adding more schedule delays. Further, foreign policy can change quickly as a result of a natural disaster or international unrest, underlining the need for a defence procurement process that can adapt quickly. However, “the paradox is that it can take years to effect substantive changes in defence capabilities, whereas shifts in foreign policy can be made relatively quickly in order to adapt to changes in relationship with other states.”<sup>24</sup> Too often Navies are trying to buy capability which is unavailable, when instead they should take what’s available and work on the solution afterwards.

14. The US Army procurement of the Stryker armored vehicle and the UK procurement of the Future Rapid Effect System (FRES) exemplify two procurement approaches with two different outcomes. In 1999, the US Army identified the need to rapidly deploy troops anywhere in the world. Their equipment was either too heavy or not sufficiently protected. Although no solution met all of their requirements, they proceeded with an Interim Armored Vehicle and later bolted on modules to meet mission specific criteria.<sup>25</sup> Compare this approach to the British, who during the same time period had a similar requirement identified in their *1998 Strategic Defense Review*. They delayed procurement as the contractor and defense could not come to terms between what was achievable and the requirements. In 2009, well into the Iraq War, the UK still did not have capability due to a “sorry story of indecision, constantly changing requirements and delay.”<sup>26</sup> Sometimes modifying what is available is better than waiting for a solution that may never come.

15. Closely linked but slightly different from a modular design is the evolutionary acquisition model proposed by former Air Comptroller Col. Elgin Fetterly. Such a model may be useful for

---

<sup>21</sup> Burgess, *Emerging Strategies in Defense Acquisitions...*, 26.

<sup>22</sup> Ibid.,23.

<sup>23</sup> Ibid.

<sup>24</sup> Fetterly, “Arming Canada...”, 27.

<sup>25</sup> Lucev, Josip, “Convergence in Military Procurement Practice: Responses to Asymmetry.” *Politicka misao* 48, no.5 (2011): 161.

<sup>26</sup> Ibid., 162.



integration systems, where development throughout the entire lifecycle of the product is expected and required. Managing these types of projects can be challenging as they involve complex development activities increasing technical risk and changing requirements.<sup>27</sup> The evolutionary acquisition procurement model allows the incremental integration “of maturing technologies into weapon systems, instead of contracting for a weapon system based on immature technologies for delivery in a decade or more in the future.”<sup>28</sup> The evolutionary procurement model allows delivery of an incomplete solution thereby allowing a more rapid delivery of some capability and development into the future.

## Defence Procurement Policy

16. A contracting centre of excellence within DND could leverage the unique and specialized contracting mechanisms identified above. The centre of contracting excellence could also absorb the responsibilities currently held by PSPC. The elimination of a separate department in the acquisition cycle would reduce bureaucracy, and potentially reduce procurement timelines. DND would accept greater responsibility, and to better balance their accountability, more transparent and comprehensive reporting of military procurement to parliament would be required.

17. Many of Canada’s allies subsume procurement responsibility into defence.<sup>29</sup> Canada’s current defence procurement process is “arguably, [one of] the most complex all-of-government procurement policy frameworks.”<sup>30</sup> Subsuming responsibility for procurement into DND would simplify the process and create synergies between priorities. “DND is the largest federal department, with the highest level of federal capital spending and the largest pool of capital assets,”<sup>31</sup> and Markowski argues that PSPC does not have the required specialization or knowledge to administer as contracting authority for DND.<sup>32</sup> Military procurement is very often so specialized as to negate the “potential for achieving economies of scope in government wide procurement, thus, undermining or diluting the benefit of engaging PWGSC [now referred to as PSPC].”<sup>33</sup> PSPC has limited ability to add value to the procurement process and adds significant bureaucratic overhead calling into question whether they are best suited to support implementation of the government’s *Strong Secure Engaged* defence policy.

17. DND and the RCN must be accountable to government for delivering on *Strong Secure Engaged*. As Fetterly argues, the capital procurement program’s effectiveness is directly linked

---

<sup>27</sup> Burgess, *Emerging Strategies in Defense Acquisitions...*, 34.

<sup>28</sup> Fetterly, “Arming Canada...”, 85.

<sup>29</sup> Stone, *Prioritising Defence Industry Capabilities: Lessons for Canada...*, 24.

<sup>30</sup> Markowski, *Defence Procurement and Industry Policy: A small country ...*, 161.

<sup>31</sup> Siebert, John. “Beyond the Cold War: It’s time for Canadian military procurement processes to be updated, argues a Canadian Forces Colonel.” *The Ploughshares Monitor* (Autumn 2012): 8.

<sup>32</sup> Markowski, *Defence Procurement and Industry Policy: A small country ...*, 194.

<sup>33</sup> *Ibid.*, 212.

to the department's ability to deliver on its mandate and thus "failure to manage the program effectively from an institutional perspective is a serious shortcoming."<sup>34</sup> Instead of managing individual major capital projects as silos, Fetterly suggests a portfolio management approach where the department would ensure "that each investment is considered as part of the overall organizational objectives and not as an independent initiative."<sup>35</sup> A portfolio management approach would align priorities within DND and simplify reporting to government. Instead of government needing to assess the effectiveness of the capital program by looking at multiple projects, they would be provided a consolidated capability management plan incorporating sustainment of current capabilities alongside implementation of future capabilities.

18. Australia has implemented a similar process where Defence regularly reports to government through the Defence Portfolio Statements (PBS).<sup>36</sup> The PBS has distinct performance outcomes that defence reports against, identifying risks and challenges. The PBS also "promulgates quantitative performance targets for the assets responsible for generating each military output."<sup>37</sup> Defence can communicate the roadmap for each capability stream and the minister in turn reports to all of parliament. The reporting serves to ensure government is not surprised by issues as they arise. Further, the reporting provides Australia long term consistency in the government's approach to defence policy even as political parties in power change.<sup>38</sup> Consistency of defence policy between governments may be the most important factor influencing the ability to deliver capability to the RCN over the long term.

## CONCLUSION

19. DND and the RCN will need to re-evaluate defence procurement policy in order to meet obligations under *Strong Secure Engaged*. The defence procurement policy should ally with industry for integration systems and streamline the process for procurement of MOTS/COTS systems. Innovative contracting practices that allow an evolutionary development cycle will ensure timely delivery of capability and reduce technical risks as technology matures. Finally, procurement authorities should reside within DND and DND should provide government with regular and comprehensive reporting on each of its capability streams. These initiatives would give DND and the RCN a better ability to deliver capability efficiently.

---

<sup>34</sup> Fetterly, "Arming Canada...", 94.

<sup>35</sup> Ibid.

<sup>36</sup> Markowski, *Defence Procurement and Industry Policy: A small country ...*, 195.

<sup>37</sup> Ibid.

<sup>38</sup> Stone, *Prioritizing Defence Industry Capabilities: Lessons for Canada...*, 3.

## BIBLIOGRAPHY

- Australia. Department of Defence. 2016 Defence Industry Policy Statement. Australia: Commonwealth of Australia, 2016.
- Australia. Department of Defence. Defending Australia in the Asia Pacific Century: Force 2030. Australia: Commonwealth of Australia, 2009.
- Burgess, Kevin, and Peter Antill. Emerging Strategies in Defense Acquisitions and Military Procurement. Hershey: ICI Global, 2017.
- Caldwell, Nigel, and Mickey Howard. "Contracting for complex performance in markets of few buyers and sellers: The case of military procurement." *International Journal of Operations & Production Management* 34, no.2 (2014).
- Canada. Department of National Defence. STRONG SECURE ENGAGED: Canada's Defence Policy. Ottawa: Minister of National Defence, 2017.
- Canada. Public Service and Procurement Canada. Industrial and Technological Benefits Policy: Value Proposition Guide. Ottawa: PSPC, 2018.
- Canada. Public Works and Government Services Canada. Canada First: Leveraging Procurement through Key Industrial Capabilities. Ottawa: PWGSC, 2013.
- Fetterly, Eglin Ross. "Arming Canada: Defence Procurement for the 21st Century," Doctorate thesis, Royal Military College of Canada, 2011.
- Lucev, Josip. "Convergence in Military Procurement Practice: Responses to Asymmetry." *Politicka misao* 48, no.5 (2011).
- Markowski, Stefan, Peter Hall, and Robert Wylie. Defence Procurement and Industry Policy: A small country perspective. New York: Routledge, 2009.
- Plamondon, Aaron. The Politics of Procurement: Military Acquisition in Canada and the Sea King Helicopter. Vancouver: UBC Press, 2010.
- Siebert, John. "Beyond the Cold War: It's time for Canadian military procurement processes to be updated, argues a Canadian Forces Colonel." *The Ploughshares Monitor* (Autumn 2012).

State of Canada's Defence Industry 2018. "Innovation, Science and Economic Development Canada," Last accessed 10 October 2018. [https://www.ic.gc.ca/eic/site/ad-ad.nsf/eng/h\\_ad03978.html](https://www.ic.gc.ca/eic/site/ad-ad.nsf/eng/h_ad03978.html)

Stone, Craig. *Prioritizing Defence Industry Capabilities: Lessons for Canada from Australia*. Canadian Defence and Foreign Affairs Institute, 2014.

Whiting, Steven. "Streamlining Naval Project Procurements: Utilizing Collaborative Communications Between Stakeholders." Thesis, Royal Roads University, 2006.