



CDFAI

CANADIAN DEFENCE & FOREIGN AFFAIRS INSTITUTE

Prioritizing Defence Industry Capabilities: Lessons for Canada from Australia

by Craig Stone
January, 2014



**THE SCHOOL
OF PUBLIC POLICY**

POLICY PAPER

Prioritizing Defence Industry Capabilities: Lessons for Canada from Australia

by Craig Stone

Canadian Forces College

January, 2014



Prepared for the Canadian Defence & Foreign Affairs Institute
1600, 530 – 8th Avenue S.W., Calgary, AB T2P 3S8
www.cdfai.org

©2014 Canadian Defence & Foreign Affairs Institute
ISBN: 978-1-927573-22-8

► Executive Summary

A number of Canadian acquisition announcements over the past few years have generated significant debate about a variety of issues like whether or not Canada should have a separate procurement agency, whether or not industrial and regional benefits are appropriate and whether or not Canadian companies should be given preference over international companies. In discussions about improving our procurement process Australia is often used as an example because the nations are generally considered to be similar in size with respect to GDP, population and military. This study examines Australia's approach to establishing a defence industry policy with a set of Priority Industry Capabilities and how that policy connects with military procurement in order to identify those lessons that might be useful for Canada as it seeks to improve its own procurement process and its relationship with the defence industry. The study looks at some important background information on the Australian experience and then looks more specifically at the most recent articulation of policies in Australia. Although Australia is not without its own challenges, there are a number of lessons that stand out for Canada. This study discusses the lessons for Canada and recommends that government spends the time and effort required to connect a series of related policy documents that provides industry and others with an articulation of what the government of the day intends to do and what their priorities are moving forward. It also recommends a holistic review of the entire procurement process to determine what is working well and what actually needs fixing would be useful.



► Résumé

Ces dernières années, des annonces d'acquisitions canadiennes ont suscité la controverse et soulevé plusieurs questions. Le Canada doit-il se doter de son propre organisme d'approvisionnement? Les retombées sur le secteur et les régions sont-elles suffisantes? Les entreprises canadiennes doivent-elles avoir préséance sur les entreprises étrangères? Tels sont certains des sujets qui ont alimenté le débat. L'Australie est souvent citée en exemple lors des discussions sur l'amélioration de notre processus d'approvisionnement, car la taille de son PIB, de sa population et de son secteur militaire est comparable à la nôtre. Dans la présente étude, nous examinons la stratégie de l'Australie relative à la création d'une politique pour l'industrie de défense, assortie d'un ensemble de capacités militaires prioritaires, et nous explorons la façon dont cette politique intègre les approvisionnements militaires. Nous espérons ainsi tirer des leçons utiles pour le Canada, qui cherche à améliorer son propre processus d'approvisionnement et ses relations avec l'industrie militaire. Dans ce document, nous commençons par fournir certains renseignements généraux importants sur l'expérience australienne, puis nous nous penchons sur les politiques élaborées récemment en Australie. Il est certain que l'Australie n'est pas au bout de ses peines, mais nous pouvons déjà tirer un enseignement de son approche. Plus loin dans l'étude, nous discutons de ces leçons pour le Canada et nous recommandons que le gouvernement consacre temps et efforts à relier le contenu d'un ensemble de documents de politique connexes, de manière à fournir aux intervenants de l'industrie et d'ailleurs une idée des intentions et des priorités du gouvernement en place. Nous proposons également un examen global de l'ensemble du processus d'approvisionnement, afin de déterminer les secteurs qui donnent satisfaction et ceux qui doivent être améliorés.





The main strength of this latest stage in the evolution of defence industry policy is its comprehensive catalogue and description of the range of practical, funded programs in place to foster the development of the Australian defence industry base

- Robert Wylie¹

The Canadian government's decision and subsequent acquisition announcements over the past few years have generated significant debate about whether or not Canada should have a separate procurement agency, whether or not industrial and regional benefits are appropriate and whether or not Canadian companies should be given preference over international companies to name just three issues out of the many that have been raised by the media, government officials and industry. Much of this debate is connected to the 2008 release of the *Canada First Defence Strategy* (CFDS) and the significant increase in funding specifically identified within the strategy for military procurement. More importantly, since the release of the CFDS, a number of the military procurement projects identified in the strategy have not proceeded as planned and could be considered political liabilities for the government. They are problematic in terms of the industry's ability to meet the requirements based on the funding available and/or problematic in terms of industry concerns about the process being unfair and biased to one solution. This set of conditions has created an environment where serious consideration is now being given to changing how procurement is done in Canada.

Wylie's quote above was made in reference to Australia's most recent defence industry policy statement *Building Defence Capability: A Policy for a Smarter and More Agile Defence Industrial Base*.² Wylie's statement captures two issues that have been consistently lacking in the relationship between Canada's defence industry and military procurement. First, the statement implies that there is a comprehensive catalogue and description of funded programs to foster the development of Australian defence industry. This is something that has never been done in Canada, although some might argue that the CFDS does provide a list of large procurement projects. Second, the statement implies that this is the latest stage in the evolution of defence industry policy which in and of itself implies that Australia has had previous defence industry policy statements. Again, a defence industry policy statement is something that has not been done in Canada.

Australia is often used as an example for how Canada might improve both its procurement process and its relationship with industry because the nations are generally considered to be similar in size with respect to GDP, population and military. This paper will examine Australia's approach to establishing a defence industry policy and how that policy connects with military procurement in order to identify lessons that might be useful for Canada as it seeks to improve its procurement process and its relationship with the defence industry. The study will begin with a brief look at some important background information on the Australian experience and then

¹ Robert Wylie, "Defence Industry Policy 2010: The Combat Iteration," *Security Challenges* 6, no.3 (Spring 2010): 59.

² Australia, Department of Defence, *Building Defence Capability: A Policy for a Smarter and More Agile Defence Industrial Base* (Canberra: Defence Publishing Service, 2010).



look more specifically at the most recent articulation of defence policy and defence industrial policy. Next, the study will identify some of the concerns about the policy that have been raised by industry and others. Finally the study will discuss what lessons Canada can take from the Australian experience beginning with an examination of the most recent government and industry initiatives that are attempting to resolve the procurement challenges in Canada.

BACKGROUND ISSUES TO AUSTRALIA'S DEFENCE INDUSTRIAL POLICY

Although the intention of this paper is to look at the most recent articulation of defence industrial policy, it is important to note that Australia has been issuing defence and defence industry policy papers on a fairly consistent basis since before 2000. For example, since 2000 Australia has issued three industrial policy papers, four defence policy papers, and conducted two formal procurement reviews.³ In that same period Canada has issued one policy paper in 2005, the Liberal Government's *Canada's International Policy Statement: A Role of Pride and Influence in the World*, which included a chapter on defence. This was the first policy statement since 1994 and a year after its release the government was replaced by the electorate. Since then, the Conservative Government has not issued a defence policy statement, although many consider the *Canada First Defence Strategy* the next best thing.

With respect to defence industrial policy, Canada has not issued a separate defence industrial policy statement. Canada has traditionally included comments on defence industry issues as part of its defence policy and this has varied from a few paragraphs to a few pages.⁴ More specifically, a review of Canada's defence policy statements would indicate that Canada devotes attention to the defence industry within its defence policy statements only when the government of the day plans to make significant investments in defence. This lack of a specific defence industrial policy is at odds with many of our traditional Allies, particularly since the end of the Cold War and the significant restructuring and consolidation of national defence industries that has occurred.⁵ It is in this context that an examination of Australia's approach to this issue is useful. Both Canada and Australia have similar problems in terms of scale and scope for their defence industries, but Australia has taken what appears to be a much more proactive and transparent approach.

The starting point for any discussion on Australia's defence industrial policy is the connection that Australia has made between its defence policy, its defence industrial policy and the Australian Defence Force (ADF) capability requirements.⁶ In addition, the process of developing

³ Australia issued defence policy papers in 2000, 2007, and 2009; defence industrial policies in 2000, 2007 and 2010; procurement reviews in 2003 and 2008. In discussing the 2007 defence industry policy, Robert Wylie indicated it was Australia's "tenth attempt to promulgate an effective policy in the last two decades." See Robert Wylie, "A Defence Policy for Australian Industry: Are We There Yet?" *Security Challenges* 3, no. 2 (June 2007): 53.

⁴ For example, *Defence in the 70s*, the defence white paper issued in 1971 has two paragraphs that make tangential references to the defence industry with "the main economic benefits of defence activities have been scientific, technological and industrial[.]" and "Defence Industrial Research Program and programs of the Department of Industry, Trade and Commerce play an important role in maintaining a viable defence industrial base." See Canada, Department of National Defence, *Defence in the 70s: White Paper on Defence* (Ottawa: Queens Printer, 1971), 14.

⁵ Of note, the three Canadian Ministers of the Crown most directly involved with procurement (Defence, Public Works and Industry) requested the Canadian Association of Defence and Security Industries (CADSI) conduct a study on their behalf in order to obtain industry's views on how to improve the procurement process. Although the Association has released parts of the study on its website, there has not been a formal public response from government that indicates which if any of the recommendations will be acted upon.

⁶ In the most fundamental context the starting point for any discussion on a defence industry should be a definitional discussion about what a defence industry is and what a defence industrial base is. This paper will avoid that discussion primarily because the meaning of defence industry is rather ambiguous. The literature has multiple



policy during the past decade has also included significant public input and this has helped the government of the day move forward with implementing its policies. More importantly, although the political party in power has changed the overall approach to defence has not. There is consistency in policy between what the Liberal Party issued in 2007, what the Labour Party issued in 2009, 2010 and most recently in 2013.

The 2007 policy statement *Australia's National Security: A Defence Update 2007* indicated that it was important for Australian industry to “continue to make a significant contribution to delivering the Defence Capability Plan (DCP) in a timely and cost-effective way.”⁷ The same document indicated that “Australia’s defence industry is crucial to our national security and it underpins the Defence organisation’s ability to perform its mission.”⁸ The actual defence industrial policy *Defence and Industry Policy Statement 2007* had essentially the same wording and also articulated an intention to connect the defence industry policy to “the Government’s broader approach to Australian industry that seeks to create sustainable prosperity for the nation.”⁹

Three additional issues are important from the 2007 defence industry policy statement. First, there was a clear connection to the 2003 procurement review when the government indicated that “a central plank of the procurement reforms is the close involvement of industry prior to project approval to assist in refining costs, identifying risks and clarifying capability requirements.”¹⁰ By this statement the government was acknowledging its belief that defence procurement was the only concrete way to shape Australia’s defence industrial base.

Second, the 2007 policy statement identified Priority Industry Capabilities (PICs) and connected those capabilities to the classified *Defence Planning Guidance* and the public version of the *Defence Capability Plan*.¹¹ This connection was to be achieved by including the requirement for a *Defence Industry Self-Reliance Plan*, – a classified document that would complement the *Defence Capability Plan*. Figure 1 shows the relationship between the internal classified documents and the external public documents.

The relationships that are shown in Figure 1 are an evolution and refinement of the previous *Defence Needs of Australian Industry* policy documents that were released beginning in 1997.¹² In the initial policy documents there was a much broader indication from government to industry of what capabilities the ADF would be looking for in the future. At that time the articulation of specific industry capabilities and the notion of taking a strategic approach to

definitions and a good discussion of the issues is provided by Todd Sandler and Keith Hartley, *The Economics of Defense* (Cambridge: Cambridge University Press, 1995), 182-3. The issue is also discussed by Hall, Markowski and Wylie in Chapters 1 and 3 of *Defence Procurement and Industry Policy: A Small Country Perspective* (New York: Routledge, 2010).

⁷ Australia, Department of Defence, *Australia's National Security: A Defence Update 2007* (Canberra: Defence Publishing Service, 2007), 60.

⁸ *Australia's National Security: A Defence Update 2007*, 60.

⁹ Australia, Department of Defence, *Defence and Industry Policy Statement 2007* (Canberra: Defence Publishing Service, March 2007), 1.

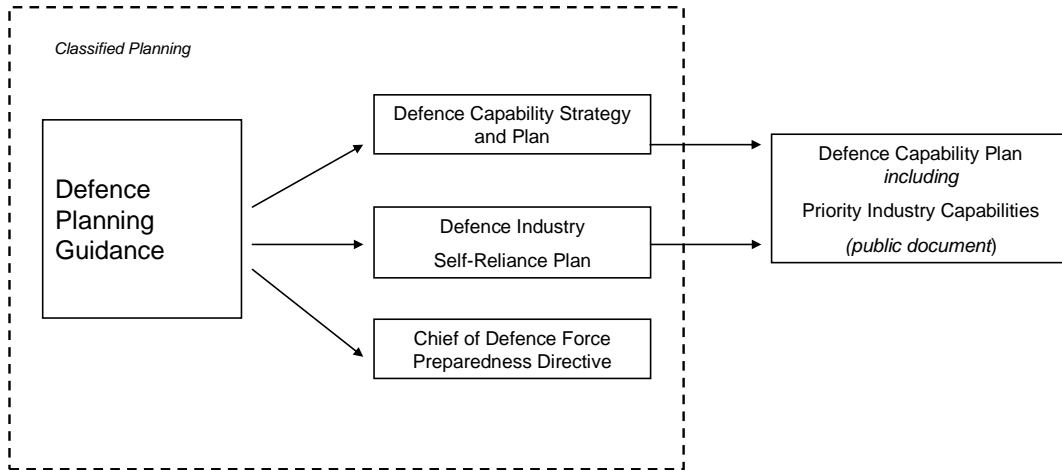
¹⁰ *Defence and Industry Policy Statement 2007*, 2.

¹¹ Australia, Department of Defence, *Defence Capability Plan (Public Version) 2012* (Canberra: Defence Publishing Service, April 2012).

¹² See for example Australia, Department of Defence, *Defence and Industry Strategic Policy Statement*, (Canberra: Defence Publishing Service, June 1998) and Australia, Department of Defence, *Defence Needs of Australian Industry 2000*, (Canberra: Defence Publishing Service, June 2000).



defence industrial policy was a relatively new concept for Australia. The 1998 policy statement focused on integrating industry with the capability development process and Australian governments have continued throughout the last decade to improve on the connections between industry and the capability development process for the ADF. For example, Robert Wylie indicates that “Developing defence policy for Australian industry is an iterative process. The latest iteration, released in 2010, builds on the previous 2007 iteration’s attempt to formulate a strategy-led industry policy.”¹³



Source: Australia. Department of Defence. *Defence and Industry Policy Statement 2007* Canberra: Defence Publishing Service, March 2007

Figure 1: The Relationship between Industry Priorities and Capability Planning

Third, in addition to connecting industry with defence capability, the government has also connected industry requirements to the procurement process and the Defence Material Organisation (DMO). DMO was created in 2000 when the government of the day combined the capital acquisition organization and the logistics organization into a single entity. The 2000 defence policy indicated that the creation of a single entity “will enable an effective whole-of-life approach to be taken to defence material and simplifies Defence’s interaction with industry.”¹⁴

What is clear from reviewing the history of Australia’s approach to defence procurement and its defence industry is that governments have made a conscious effort over the past decade to ensure that there is consistency and coherence in the approach. The most recent set of policy documents released between 2007 and 2012 continue this approach with an intention to further improve the process. The issue for this study is to determine what Canada can learn from the Australian experience and the current set of policy documents.

¹³ Wylie, “Defence Industry Policy 2010: The Combet Iteration, 59.

¹⁴ Australia, Department of Defence, *Defence 2000: Our Future Defence Force* (Canberra; Defence Publishing Service, 2000), 105. Note that after the procurement review of 2003, the DMO became a Prescribed Agency under Australian Financial Management and Accountability legislation, meaning that although it remains a part of the defence department, it is separately accountable to the Minister for its budget and performance.



AUSTRALIA'S DEFENCE INDUSTRIAL POLICY IN 2012

The current 2010 defence industrial policy, *Building Defence Capability: A Policy for a Smarter and More Agile Defence Industrial Base*, is based on the 2009 defence policy for Australia, *Defending Australia in the Asia Pacific Century: Force 2030* (Defence White Paper 2009). Both of these documents make reference to the 2008 procurement and sustainment review *Going to the Next Level: the Report of the Procurement and Sustainment Review*, and the defence industry policy also makes reference to the strategic reform program that was launched in conjunction with the 2009 defence policy, *The Strategic Reform Program: Delivering Force 2030*.¹⁵

The defence policy statement provides the government's views on a number of key issues with respect to Australia's defence industry. Three are particularly relevant to discussions later in this study.

The government has indicated that military-off-the-shelf and commercial-off-the-shelf solutions to Defence's capability requirements will be the benchmark against which a rigorous cost-benefit analysis of the military effects and schedule aspects of all proposals will be undertaken. Such an approach is consistent with the Defence Procurement and Sustainment Review.¹⁶

In many respects it is the last part of the above quote that is most important – consistent with the 'Defence Procurement and Sustainment Review.' Not unlike what Canada is experiencing, Australia has also experienced schedule delays and cost overruns with some of its recent procurement projects and this has influenced how the Australian Government has articulated its defence policy and its defence industrial policy.

The second key issue that is discussed in the defence policy is industry's role in supporting ADF capability. There is a clear indication within the defence policy that the Australian Government wants to increase the defence industry's ability to support the ADF. For example, the defence policy states "Defence will adopt procurement and industry strategies to grow local industry capacity and competitiveness,"¹⁷ This is to be achieved by:

- increasing industry capacity and competitiveness through targeted productivity and workforce growth initiatives;
- building greater flexibility into Defence Capability Plan reprogramming to mitigate the adverse capacity and capability impacts associated with large expenditure peaks and troughs; and
- if necessary, increasing the amount of offshore expenditure, to a level that allows for a more managed, sustainable and achievable local industry growth rate.¹⁸

¹⁵ See Australia, Department of Defence, *Going to the Next Level: the Report of the Procurement and Sustainment Review* (Canberra: Defence Publishing Service, 2008) and Australia, Department of Defence, *The Strategic Reform Program: Delivering Force 2030* (Canberra: Defence Publishing Service, 2009).

¹⁶ Australia, Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030* (Defence White Paper 2009) (Canberra: Defence Publishing Service, 2009), 127.

¹⁷ *Defending Australia in the Asia Pacific Century: Force 2030*, 127.

¹⁸ *Ibid*, 127-8.



Third and perhaps most important, is the commitment to ensure that “certain strategic industry capabilities remain resident in Australia.”¹⁹ However, the policy also indicates that Australia “should not pay a premium for local industry work, unless the costs and risks of doing so are clearly defined and justifiable in terms of strategic benefits.”²⁰ Consequently, the government has decided to articulate priority industry capabilities and will intervene in the market place if required in order to ensure those industries remain viable. Initially, the articulation of those priorities was not going to be publically identified but that decision had changed by the time the 2010 defence industrial policy was released. Their initial view was that making the list public “would confer an advantage on any adversary seeking to exploit critical strategic vulnerabilities, and would compromise commercial leverage.”²¹ This was changed shortly after the defence policy was released when Senator John Faulkner, the Minister for Defence at the time, indicated that the government recognized the value of the information for industry to make plans and investment decisions and therefore “we have decided after careful consideration of the commercial and national security concerns of the government, to make additional information about the Priority Industry Capabilities publicly available from today.”²²

The 2010 defence industrial policy builds on the defence policy statement and provides specific guidance on the Priority Industry Capabilities (PICs) and also adds Strategic Industry Capabilities (SICs) that it wishes to monitor. It also provides much more specific views on how it will approach connecting ADF capability with industry. There are a number of important issues that are articulated in the industrial policy and some of the policy intentions appear to be at odds with other policy intentions.

The government has indicated that “Industry must become more resilient and self-reliant if it is to prosper... It can no longer expect the government to use offsets or local content quotas to help protect Australian defence industry from overseas competition.”²³ This is also consistent with the most recent Commonwealth Procurement Guidelines that establish value for money as a core principle best achieved through competition. Competition will encourage innovation, improve productivity and promote efficiency. The defence industry policy also indicates that in order to deliver the capability requirements of the 2009 Defence White Paper, the industry will need to significantly increase its local capacity through investment. Caruso et al summarize the four principles that are underlying the policy as “(1) to set clear investment priorities; (2) to establish a stronger Defence-Industry relationship; (3) to seek opportunities for growth; and (4) to build skills, innovation and productivity.”²⁴ The difficulty with this focus on competition and the desire to not use offsets is that the requirement to grow local industry and identify PICs that are actually achievable for Australian industry may require deliberate intervention by government, which is at odds with market based competition.

¹⁹ Ibid, 128.

²⁰ Ibid, 128.

²¹ Ibid, 128-9.

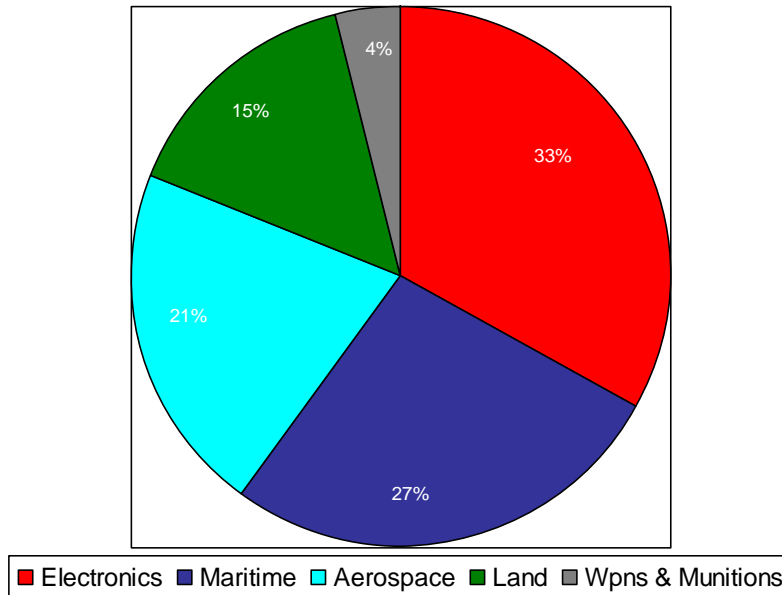
²² Senator John Faulkner, Minister for Defence, “Defence Capability Planning: The Way Forward for Defence – Industry Partnership,” Speech to the Defence + Industry Conference Adelaide, 1 July 2009. available at <http://www.defence.gov.au/minister/92tpl.cfm?CurrentId=9226>.

²³ *Building Defence Capability*, 9.

²⁴ Holly Caruso et al., “Successful and profitable acquisition programs rely on an effective Defence Industry Policy: A review of the 2010 Defence Industry Policy Statement Building Defence Capability: A Policy for a Smarter and More Agile Defence Industry Base” (South Australian Defence Industry Leadership Program, Nov 2010), 3. See also *Building Defence Capability*, 9-10.



Australia’s defence industry today is “predominantly made up of 3,000 SMEs and eight recognised defence Primes, with only one Prime, ASC Pty Ltd, Australian owned. The defence industry in Australia employs around 29,000 people with SMEs accounting for 50% of employment in the sector.”²⁵ This is not unlike Canada’s defence industrial base which is also composed of primarily small and medium sized enterprises having niche capabilities and more often than not with parent companies located elsewhere.²⁶ Within the Australian manufacturing sector, defence industry is concentrated in shipbuilding and repair, aircraft assembly, modification and repair, electronics and computing, vehicles and clothing.²⁷ Almost 80% of the expenditures by DMO are concentrated in the electronics, aerospace and maritime sectors as shown in Figure 2 below.



Source: Australia, Department of Defence, *Building Defence Capability: A Policy for a Smarter and More Agile Defence Industrial Base* (Canberra: Defence Publishing Service, 2010), 27.

Figure 2: Defence Expenditure by Sector

When Australia’s 2009 Defence White Paper was developed, the outlook for defence and industry could only be considered positive. With approximately \$100B expected to be spent by government on replacing and maintaining defence equipment over the next 10 years, the outlook for local industry was positive. However, two important issues from the 2008 procurement review are worth noting. First, the review highlighted that any analysis of market trends would suggest that “Australian-unique defence programs will become increasingly

²⁵ Caruso et al, 2.

²⁶ For example, in 2004 the Canadian Defence Industries Association’s (CDIA) annual defence Almanac indicated that Canada’s defence industrial base was about 1500 firms with approximately 50,000 people. CDIA has now become CADSI and has added security industries to its association. In 2012, their website indicates that they represent 800 member companies and over 90,000 people. See www.defenceandsecurity.ca. A detailed discussion on the Canadian defence industry is provided at Binyam Solomon, “The Defence Industrial Base in Canada,” Chapter 6 in *The Public Management of Defence in Canada* Edited by Craig Stone, 111-139 (Toronto: Breakout Education Network, 2009).

²⁷ *Building Defence Capability*, 27.



uneconomic in the future” and that “While Defence demand is high in dollar terms, the volume of units required by the ADF is unlikely to lead to efficient manufacture.”²⁸ In essence, this implies that Australia, like Canada, will have to explore ways to combine its demand with that of its allies to achieve economies of scale, particularly for major weapons systems like the F-35 Joint Strike Fighter.

Second, the 2008 procurement review also noted that Australia needed to “take advantage of acquisition opportunities, including off-the-shelf purchases and international programs, to contain costs and free-up local industry capacity for priority tasks.”²⁹ This actually supports the plan to provide a list of PICs, but the challenge facing the Australian Government is to find the correct balance between growing priority industries that are compatible with the defence capability requirements of the ADF while also remaining consistent with the recommendations of the most recent procurement and sustainment review. Of particular interest with respect to the emphasis on purchasing off-the-shelf is Caruso et al’s observation that

The success associated with the introduction of the C-17 Globemaster transport aircraft and Super Hornet fighter aircraft, schedule slippages and cost overruns attributable to extensive Australianisation of previously introduced capability, and the strength of the Australian dollar increases the incentive for buying COTS/MOTS [commercial off-the-shelf/military off-the-shelf] offshore, and decreases the focus on manufacturing locally.³⁰

The 2010 defence industry policy builds on the 2007 policy and provides a much clearer articulation of the role of PICs, (See Annex A for the list of the twelve PICs related areas). PICs are defined in the 2009 defence policy statement as “those industry capabilities which would confer an essential strategic advantage by being resident within Australia, and which, if not available, would significantly undermine defence self-reliance and ADF operational capability.”³¹ The intention is that these PICs will be reviewed regularly as part of the development of the annual defence planning guidance, the main defence planning document for the ADF between White Papers.

It is this connection to the annual planning guidance that provides Australia the ability to connect defence industrial policy with defence policy and ADF capability requirements. It also allows the procurement process to be connected to the industrial policy priorities because solutions to defence capability requirements are managed through the procurement process, both acquisitions and sustainment. This is consistent with the 2008 procurement and sustainment review’s recommendation that “[D]efence should prepare an annual submission detailing current and future capability gaps and the priority for their remediation for government consideration and approval.”³²

The 2008 procurement and sustainment review also recommended that the public capability plan contain enough information with respect to project scope and timings that industry would be able to develop strategic business plans. Again the consistency across policy documents is apparent when both the defence policy and the defence industry policy indicate that industry

²⁸ *Going to the Next Level*, 40.

²⁹ *Ibid*, 40.

³⁰ Caruso et al, 4.

³¹ *Defending Australia in the Asia Pacific Century: Force 2030*, 128.

³² *Going to the Next Level*, xi and 6.



will be advised of any changes to the priority areas through the public version of the *Defence Capability Plan*.

The actual 2012 public version of the defence capability plan is structured so that each equipment acquisition proposal over the decade to 2021 is presented in a common format: Background, Australian Industry Capability Considerations, Phase Scope, Planned Schedule, Australian Industry Opportunities, and Point of Contact. The two specific references to industry are further described as:

Australian Industry Capability Considerations provides an indication of the Australian Industry Capability (AIC), Priority Industry Capabilities (PIC), Strategic Industry Capabilities (SIC), and Global Supply Chain (GSC) potential for each phase of the project in tabular format. Further detail on the AIC, PIC, and SIC aspects is generally provided under the Australian Industry Opportunities section of the project phase entry.

Australian Industry Opportunities identify potential opportunities for Australian industry involvement in the acquisition and through-life support stages of the proposal, and in related infrastructure aspects.³³

The *Defence Capability Plan* also provides additional information about industry opportunities. This is really designed to emphasize the government's expectation that defence will "ensure best value for money outcomes in Defence spending, based on open and effective competition." and that "consistent with the principles of value for money and the need to consider OTS solutions, government policy is to ensure that as much of the Defence budget is spent in Australia as is reasonably practicable."³⁴ In essence, Australia wants to use its industry capabilities policy to "maximise opportunities for Australian industry to participate in the delivery of the acquisition and sustainment of ADF capability and to achieve the required strategic industry capability outcomes where this represents value for money."³⁵

Discussions with Australian officials about trying to find the balance between using the market and off-the-shelf (OTS) solutions and ensuring that the Australian industry can support the PICs indicate that they are aware of the issue. Australia's approach is to provide support around a number of alternative industry support programs. For example, the Australian Industry Capability (AIC) program seeks to ensure that whenever Australian industry can competitively provide input into equipment purchased from overseas that industry players should be given the opportunity to at least bid for the work. More specifically, "under the AIC program, all bids for Defence projects valued above \$50M or with a PIC implication must include an AIC plan to examine participation by Australian Industry on a value for money basis."³⁶ Although the threshold is now \$AUD 20M, the threshold value is less important than the requirement for

³³ Australia, Department of Defence, *Defence Capability Plan (Public Version) 2012* (Canberra: Defence Publishing Service, April 2012), 5.

³⁴ *Defence Capability Plan*, 6.

³⁵ *Defence Capability Plan*, 6. This is also consistent with the literature around defence procurement and defence industry and with the actual practice of most nations. See Peter Hall, Stefan Markowski and Robert Wylie, "Government Policy: Defence Procurement and Defence Industry," Chapter 5 in *Defence Procurement and Industry Policy: A Small Country Perspective*, edited by Stefan Markowski, Peter Hall, and Robert Wylie (New York: Routledge, 2010), 160-161.

³⁶ *Building Defence Capability*, 73. As indicated in this quote the original threshold was A\$50M but discussions with DMO staff indicate that the threshold has now been lowered to A\$20M.



bidding competitively because the AIC program does not support paying a price premium just to have Australian industry participate.³⁷ What lowering the threshold does accomplish is that it allows a greater number of small and medium size enterprises to be part of the process.

A second policy approach is to provide assistance to industry in order to increase their competitiveness in the global marketplace. Using a series of grant programs covering industry workforce skilling, innovation, and export market development, the intention is that all industries will have the potential to fully exploit the business opportunities that remain in an off-the shelf procurement environment. In addition it is hoped that increasing industry competitiveness will also help diversify the defence areas of their businesses in order to build the overall size of the Australian defence industry through exports where the opportunity arises. This should in the longer term overcome any increased market volatility which an off-the-shelf procurement strategy produces.

The third policy approach is the PICs program. As indicated above, PICs are supposed to provide a strategic advantage for the ADF. Consequently, Australia has identified the domestic industry capabilities most needed to support the ADF. While many, or even most, of these capabilities relate to the ability to sustain overseas produced equipment, a substantial portion of the PICs cover the capacity for domestic equipment manufacture. The intention is to ensure that Australian industry can support the demands of the ADF within a specified capability range.

The establishment of the current set of PICs and getting agreement on what they actually are has its roots with the Rapid Prototyping, Development and Evaluation (RPDE) program that was established in 2005. Rapid, as the RPDE is commonly referred to, “was created in 2005 as a collaborative arrangement between Defence, Industry and Academia, to solve difficult and complex Defence capability challenges, in an innovative and collegiate environment.”³⁸ In 2008, a workshop was conducted to identify and develop priority industry capabilities. The initial results were analyzed and additional workshops and senior level working groups were held to challenge assumptions, identify gaps in capabilities and come to an agreement on the list that was published in the 2010 defence industry policy (provided at Annex A). The list is focused on capabilities and not companies and there appears to be general agreement on the list by all parties.³⁹

Although the final decision on what becomes a PIC ultimately rests with the ADF, all the players have agreed on the current list albeit with some concerns that will be discussed later. Moving forward PICs will be reviewed on a regular basis to confirm the health of the industrial sector supporting a particular capability area and action will be taken as required if there are problems. Determining the health of a particular capability area will be based on a set of evaluation criteria that are provided in Table 1 below:

³⁷ The material in the next few paragraphs is based on email discussions with Australian government officials in the DMO the week of 23 July 2012.

³⁸ *RPDE Review*, April 2012, 2.

³⁹ Based on discussions with DMO staff the issue of industry support was specifically discussed and they noted that industry has not challenged the validity of the list. This is not to say that individual companies might disagree with specific areas but in the broader context the process was inclusive, included industry participation in development and is an improvement over past practice.



Evaluation Criteria	Questions to be asked/answered
Essential to operational and military requirements	Can the ADF conduct its operation without the industry capability? Is there a work-around if the industry capability is not available in Australia?
Discretion in capability development	Does the industry capability need to be in the country? Is it unique to Australia? Is it specific to Defence?
Critical information and technology sharing	Is the industry capability operationally strategic? Is it uniquely Australian? Does it provide access to the required overseas technology?
Comparative trade advantage and leverage	Is the capability leading edge and sought by allies? Will it increase Australian leverage internationally?
Significant risk to international supply	Is the capability in decline or is its supply at risk? Can the capability be stockpiled? Is their sufficient rate of effort in Australia to maintain critical mass of capability?
Regeneration difficulty	Can the industry capability be regenerated in time to cover ADF needs in a credible contingency? Can it be regenerated cost effectively if in decline or lost?
Affordability, effectiveness and efficiency	Can the PIC be acquired or maintained affordably? Will aggregation of similar PICs lead to a viable base of business thereby adding to affordability? Is Defence influential in shaping the relevant market?

Table 1: Priority Industry Capability Evaluation Criteria⁴⁰

If during a review of the PICs it is revealed that the ADF will require more than industry can supply, the government is prepared to intervene to ensure that domestic supply occurs. To achieve this, the government would need to reschedule its acquisition projects in order to provide companies with the continuity of workload they need to maintain core expertise in the longer term. The government would also, in specific cases, consider providing assistance in terms of including the payment of a price premium to sustain domestic manufacturing. The DMO conducted individual ‘Health Checks’ for 6 of the 12 PICs in 2011 and early 2012 and will

⁴⁰ Australia, Department of Material Organization Staff, August 2012.



release information on the remaining 6 as assessments are completed. All of the health checks have concluded that “Detailed analysis demonstrates the current health of the *insert the* PIC to be satisfactory” or words to that effect. This statement is then followed by an indication that the government will continue to monitor the PIC. Depending on the PIC, there may also be an indication of possible longer term concerns and an indication of what might be considered moving forward to ensure the specific industry remains able to support the ADF.

As indicated earlier, there are a number of different programs that vary in size and scope to help industry and the ADF. The Australian Industry Capability program discussed above is but one of a number of programs. All of these programs are discussed in detail in the 2010 defence industry policy including specific annexes that provide a summary of funding, intentions and main features.⁴¹ A few of the more prominent programs are highlighted here to demonstrate the variety of issues being covered within the policy statement.

Perhaps the most important program in terms of the PICs discussion is the actual PICs innovation program which is designed to encourage industry to submit innovative proposals in one of the PICs areas. Defence will match funding by industry up to \$4M towards development of the capability. The Skilling Australia’s Defence Industry (SADI) is focused on workforce skill sets. If a particular defence industry is having difficulty finding qualified individuals SADI provides a mechanism to help that industry provide the required training and education in order to be successful and competitive.⁴² The Global Supply Chain program is designed to help Australian industry get involved in global supply chains. The program provides a mechanism for “primes and OEMs to develop company specific programs to evaluate Australian suppliers for participation in their global supply chain.”⁴³ The Defence Export Unit was created in 2007 to promote Australian defence industry overseas. It includes senior military officers who act as advocates and help open doors with foreign governments. The Capability Technology Demonstrator was established to allow industry to demonstrate how advanced technologies can enhance ADF capabilities. It is designed to help smaller companies bridge the gap between technology development and the commercialization/manufacture of leading edge technologies.

Each of these programs has been provided funding for a specific period of time. What will remain to be seen is whether or not the government of the day continues the programs after the funding has expired or whether they will develop different initiatives. However, the time constraint for funding may limit or constrain some industry participation because of their desire for consistency and long term commitment. As well, the variety and number of different programs will be a challenge to coordinate and manage over time to ensure that there is no overlap, duplication and more importantly, opportunities missed.⁴⁴ This will require dedicated effort at the most senior levels to ensure someone has a broad holistic perspective and awareness of what is happening across and within departments and across industry. Government bureaucracies in the Westminster system of government like that found in Canada

⁴¹ *Building Defence Capability*. See for example Annex D which covers those programs designed to provide opportunities for growth of Australian Industry or Annex E which is focused on those programs designed to build skills and foster innovation.

⁴² *Ibid*, 76-7.

⁴³ *Ibid*, 74.

⁴⁴ Discussions with DMO staff indicate that there is a significant amount of coordination involved in order to implement PICs in practice. This is particularly true with respect to ensuring alignment of practices and consistency of monitoring. This could actually be more time consuming and difficult than the actual process of identifying the PICs.



and Australia are historically not good at this level of coordination because of the vertical structures and accountabilities that exist.

Returning to the discussion about the defence capability plan and the issue of OTS purchasing, it seems clear that Australia has not sought to react to, or remedy, all of the industrial effects of an inexorable shift towards off-the-shelf procurement but has focused more on mitigating against some of the more damaging or disruptive aspects of this kind of purchasing. The important issue for Australian industry to acknowledge is that it appears that the Australian Government is prepared to accept changes in the size and composition of the defence industry including some diminution in overall industry capability. Although the intention is not to reduce the size of Australian industry, and the policy approaches discussed above are intended to help avoid a reduction, the real challenge is determining what industry capabilities have the highest strategic value and how best to intervene to deal with those with sustainability problems. This will require open and honest discussions between government, the ADF and industry, something that is not necessarily viewed the same way by government and industry.

The friction point in this context is how the government views its relationship with industry. Is the relationship confrontational or considered a partnership in the process to define requirements and acquire military capabilities? If the government view is framed around the notion that industry is only looking for profit and wants the buyer to take all the risk, that is confrontational and what is shared with industry will not be as open and honest as would be possible if industry was viewed as a partner. This notion of perspective is supported by the Australian Business Defence Industry Unit's response to a preliminary report on procurement procedures where in the context of early engagement during the needs definition stage they note "Without adequate IP protection proposed early engagement will be treated with suspicion by industry".⁴⁵ Although industry continues to be frustrated with the lack of clarity and decision making about procurement decisions, it nevertheless appears that there is a sufficient level of openness and discussion in Australia's case that industry is generally supportive of the direction the government is moving. However, recent budget and fiscal challenges may change this as procurement projects are delayed in order to meet budget reduction targets. Most governments are facing similar challenges and the reality is that in periods of constraint policy documents and stated intentions issued prior to the fiscal crisis become meaningless for industry. Industry needs clarity of intent from the government.

In addition to the PICs, there is also an intention to monitor an additional 12 strategic industry capabilities (SICs) because they might become priority areas. SICs are defined as those capabilities that "provide Australia with enhanced defence self-reliance, ADF operational capability, or longer term procurement certainty."⁴⁶ The list of SICs is provided after the PICs at Annex A.

At this point in time it is possible to conclude that the strength of the Australian approach to connecting its industrial policy to procurement lies with the coherence and consistency that has been achieved with a variety of policy documents that are designed for separate but interconnected purposes. What has been described above implies that everything is working well

⁴⁵ Australian Business Defence Industry Unit. "Response To The Preliminary Report Into Procurement Procedures For Defence Capital Projects." Letter to Senator Eggleston, Chair, Senate Foreign Affairs, Defence and Trade References Committee, 28 February 2012.

⁴⁶ *Building Defence Capability*, 41.



and the government of the day is improving the process iteratively on an annual basis through planning guidance, capability plans and procurement reviews and discussions with industry as required. However, the reality is that there are some others who do not share the same level of confidence as government. Industry has its views on the policy documents and process as do others outside of government. The next section will address some of the more important concerns in order to prepare the groundwork for a discussion on what lessons Canada can draw from the Australian experience.

AREAS OF CONCERN

Impact of Priority Industrial capabilities

One of the first issues in the defence industry policy that must be acknowledged is that PICs provide legitimacy for government intervention if the market fails to provide strategically important capabilities. The difficulty is that PICs are not the focus of defence business. As Robert Wylie argues, PICs are only 6-7 % of annual expenditures on acquisition and support and the majority of defence business will be competed on a standard value for money basis.⁴⁷ This is supported by Minister Combet's speech at the 2009 annual defence and industry conference where he indicated that the PICs represented approximately \$700M while the entire DMO budget was \$10.9B.⁴⁸ Minister Combet's intent was to highlight that there would be sufficient demand to sustain the industries connected to the PICs. This is at odds with the point being made by Wylie.

Foreign Ownership

A related concern raised by Wylie deals with the identification of PICs and that the government has not actually provided enough guidance on how they would manage the risk associated with a foreign supplier should that supplier decide to withhold or limit availability for political reasons. Caruso et al expand on Wylie's observation by providing an example where a foreign company with very little presence in Australia was awarded a contract for an acoustic technology identified as a PICs rather than another supplier who had made a substantial research and development investment in Australia.⁴⁹ It is important to note that the PICs are focused on industry capabilities and not specific companies so it is quite possible for a capability to be provided by an Australian based company with a foreign parent. Despite the appearance articulated above that everyone was in agreement on the PICs, there remain areas, from an industry perspective, that require improvement in implementation.

The issue of foreign ownership is also connected to the broader issue of how much actual capability should the defence industry be providing to the nation. For example, the trend in many western nations over the past decade has been to increase the amount of civilian contractor support for military operations. Australia is no different and is now in a position where industry is operating the strategic communications facilities. In this case industry is actually providing a capability and sustaining that capability. The policy issue here is related to risk and how much dependence the ADF has on industry to provide required military capability for conducting operations.

⁴⁷ Robert Wylie, "Supplying and Supporting Force 2030: Defence Policy for Australian Industry," *Security Challenges* 5, no.2 (Winter 2009): 118.

⁴⁸ Greg Combet, "Force 2030: Government and Industry" Address to the Defence and Industry Conference, Adelaide, 1 July 2009

⁴⁹ Caruso et al, 6.



The use of industry to provide military capability is not unique in today's complex security environment. Canada has contracted its basic pilot training to industry and contracted a large part of its logistical support at the base camp in Kandahar to industry. Other nations have adopted similar approaches and solutions to sustain their militaries. For many, this shift to industry providing more direct support is all about achieving savings so that limited funds can be dedicated to more important requirements and Australia has embarked on similar efforts. For example, the Defence Strategic Reform Program contains a number of initiatives designed to make the DMO operate in a more business like fashion, particularly in how it develops incentives that encourage industry to implement ongoing productivity improvements. This is just one of a number of initiatives that are based on recommendations from the 2008 procurement and sustainment review and are designed to provide \$5.1 B in savings over 4 years.⁵⁰ Within DMO most of the initiatives are connected to enhancing productivity through initiatives like reducing inventories, adopting commercial practices for improving maintenance processes and using better incentive arrangements to increase productivity.⁵¹ However, in the broader context of the Strategic Reform Program, the intention is to improve the linkage between policy development, force planning, the development of capability requirements and the subsequent acquisition of those capability requirements.

Practicing the Policy

Another area of concern that has been articulated by Ben White is that the “defence industry's contribution to ADF capability appears vastly understated in the White Paper.”⁵² He cites the lack of offset policies and a perceived lack of investment in local industry capability in the past as a concern. In essence White is looking at past action by government and indicates that this brings into question the government's actual commitment to a viable defence industry in Australia. He goes on to note that “in providing a sustainable defence capability, industry will need to be seen as a vital capability partner” and that “lengthy acquisition lead times and the long in-service life cycle of major Defence platforms means planning for a sustainable defence capability – with industry the primary source for its innovations – must occur now.”⁵³ White's observation is supported by the example provided in Caruso et al where a company that had invested heavily in research and development within Australia towards a PIC related system lost to an outside contender who had not invested in Australia.

Lack of Specific Guidance for Industry

Australian industry has also articulated a number of concerns about the latest defence industry policy. Although they are generally supportive of the approach, the Australian Business Defence Industry Unit has articulated concerns in four specific areas. First, in relation to the articulation of PICs and SICs they note that they are “too broad and Government funding for the new projects and sustainment work in these areas too uncertain to give industry the guidance or

⁵⁰ Australia, Department of Defence, *The Strategic Reform Program: Delivering Force 2030* (Canberra: Defence Publishing Service, April 2009), 15.

⁵¹ The Strategic Reform Program is about improving accountability, improving defence planning and enhancing defence productivity and has 15 separate reform streams that will be implemented over the next three to five years. These include: Capability Development; the Defence Estate; Information and Communications Technology; Intelligence; Smart Maintenance; Inventory; Procurement and Sustainment; Logistics; Non-Equipment Procurement; Preparedness, Personnel and Operating Costs; Reserves; Science and Technology; Output Focused Budget Model; Strategic Planning; and Workforce and Shared Services.

⁵² Ben White, “Sustainable Defence Capability: Australia's national security and the role of defence industry.” *Australian Defence Force Journal* no. 183 (2010): 90.

⁵³ White, 90.



confidence required to invest.”⁵⁴ Industry will need to have more clarity on how investments in PIC and SIC areas will be promoted and argue that “a public commitment to regular tranches of new Defence projects and sustainment work for PICs and SICs would be a start to giving industry the confidence to invest in these priority capabilities.”⁵⁵

Need for Longer Term Certainty

The second area of concern dealt with future capital acquisitions and the articulation of requirements into the future. Industry expressed concern over the ability to actually grow industry’s capabilities because most of the projects identified to be modernized or replaced in the current procurement cycle were already set in place. From their perspective, industry needs to know what will be required beyond the next decade if it is to grow the necessary workforce skills needed to meet future requirements. Industry argues that “[W]ithout regular tranches of new defence projects or long-term sustainment contracts, resources will continue to leave defence industry for other sectors.”⁵⁶ The obvious risk to the ADF is that industry resources will be committed to other work and will not be available for defence when it is needed.

The third area of concern deals with the provision of reliable defence information. This is really a continuation of the previous concern but is more generalized across all of the ADF’s plans and not just capital acquisition. Industry argues that it needs reliable and dependable information in order to make investment decisions. The implication is that this has not happened in the past or that as a general comment, it could be improved upon moving forward. Industry is looking for more certainty and longer term commitments by government for defence projects and sustainment work.

Creating a Real Partnership

The fourth area deals with the notion of creating a real defence and industry partnership and the need to get industry involved early in the procurement process. Industry notes that the focus by the government on “Value for Money and market-based competition in key capability areas means industry gets involved too late to bring the best and most cost-effective solution to the table.”⁵⁷ Not surprisingly, industry’s view is that if they are engaged earlier the level of risk can be reduced without ignoring the requirement of value for money and competition. Industry argues that “Early industry engagement in this first 20% can help clarify project feasibility, emerging technologies and robust cost estimates and allow industry to align business investment with Defence’s plans.”⁵⁸ This view requires some caution because industry has also stated, as noted earlier, that early involvement with the needs definition stage must be done carefully to avoid suspicion with respect to intellectual property protection. A related but separate issue is the time it takes to actually complete the contracting process. A recent Defense News article by Nigel Pittaway quotes Graham Priestnall, the President of the Australian Industry and Defence Network, by indicating “You can’t have a situation where it takes the preferred tenderer nine months to get into contract – that’s ridiculous.”⁵⁹

⁵⁴ Australian Business Defence Industry Unit, “Defence Industry Policy Priorities 2011”, 1; available at <http://www.nswbusinesschamber.com.au/NSWBC/media/Misc/DIU%20documents/Australian-Business-Defence-Industry-Policy-Priorities-2011.pdf>; accessed 17 Jul 2012.

⁵⁵ Ibid Unit, 1.

⁵⁶ Ibid Unit, 1.

⁵⁷ Ibid Unit, 3.

⁵⁸ Ibid Unit, 3.

⁵⁹ Priestnall, Graham. Quoted in Nigel Pittaway, “Australian Defense Minister Seeks Better Relations With Industry,” *Defense News* 27 Nov 2013; internet; <http://www.defensenews.com/apps/pbcs.dll/article?AID=2013311270021>.



Increased Dependence on Foreign Supply

In addition to the four areas discussed above, the Caruso et al study provides the results of a survey of South Australian Defence Industries on their attitude towards defence and the 2010 industry policy. Perhaps the most significant observation made to the team was with respect to the increasing dependence on foreign supply with one of the respondents stating:

While the strength of Australian Industry has been smart sustainment, the continued overseas acquisition of platforms will, over time, reduce the capability of Australian industry to sustain these capabilities. The front end engineering capabilities developed in acquisitions and developmental projects will be lost, leading to the loss of these skills required to sustain the platforms later.⁶⁰

The Caruso et al study made seven recommendations based on the results of their survey with industry. These are:

- *Clarify the government's intentions with respect to PICs.* The government should clearly define the link between required capabilities and industry priorities to provide greater certainty to industry its [sic] investment decisions.
- *Audit the defence industry's capabilities.* Perform an assessment of the health of the supplier base in order to identify industry capability gaps. The gaps would inform future government action to obtain the required capabilities and capacities.
- *Improve Investment in PICs.* The government should contract industry directly to provide the desired level or expertise and industrial capacity for priority capabilities.
- *Ensure contracting arrangements between Primes and SMEs are appropriate.* Depending upon the risk inherent with each acquisition, Prime contracts should contain provisions to ensure that appropriate commercial terms are flowed down to subcontractors and SMEs to minimize complexity and compliance costs.
- *Develop Improved Opportunities for SMEs.* Defence should take a more active role in developing the SMEs and implement strategy to help drive efficiencies, to lower costs and make local industry more competitive.
- *Improve the R&D funding model.* To maximize the government's return on R&D funding to industry, programs such as the Capability and Technology Demonstrator program need to be made more accountable.
- *Conduct a defence industry attitudinal survey annually.* To improve the development of the DIPS for future releases, there needs to be a feedback mechanism to capture industry's attitudes to the Defence relationship and the business impact of the DIPS.⁶¹

These recommendations and the concerns articulated by Australian industry could be part of a discussion with Canadian industry about Canada's procurement process and its approach to supporting the defence industrial sector. The Canadian Association of Defence and Security Industries' (CADSI) priorities for 2011 reflects a similar set of concerns and the study conducted by CADSI for Ministers in the fall of 2009 contained recommendations very similar to what has been articulated in Australia.⁶²

⁶⁰ Caruso et al., 5

⁶¹ Ibid, 16.

⁶² See Canadian Association of Defence Security Industries, *CADSI Policy Priorities 2011*, (Ottawa, CADSI, 2011); available at <https://www.defenceandsecurity.ca/UserFiles/File/2011/CADSIPolicyPriorities11.pdf>



More recently, a 2012 study on the Aerospace sector by the Honourable David Emerson entitled *Beyond the Horizon: Canada's Interest and Future in Aerospace* and a 2013 study by Tom Jenkins entitled *Canada First: Leveraging Defence Procurement Through Key Industrial Capabilities* reflect similar concerns.⁶³ The reality is industry wants clarity and consistency over time, something that is difficult to do in most democracies. Australia is making an attempt to provide the consistency and clarity desired by industry and others. The connection of defence policy, defence industry policy, defence planning guidance and procurement reform with ADF capability requirements is a significant move in the right direction. Despite the concerns discussed above, the consistency in these documents reflects an intention to provide a coherent and connected set of policies and guidance to all concerned. Determining appropriate lessons for Canada begins with connecting the Australian experience with the most recent studies by Jenkins, Emerson and CADSI.

LESSONS FOR CANADA

Although it is not intended to review all of the recent Canadian literature on the defence industry and procurement, it is important to understand that Canada is at an important juncture. The Conservative government issued the *Canada First Defence Strategy* (CFDS) in 2008 which included an articulation of consistent 2% nominal growth in the defence budget from 2011-12 until 2028 combined with an intention to replace most of the core equipment platforms.⁶⁴ Since 2008, and the release of CFDS, there have been a series of perceived procurement failures and the recent reports by Emerson and Jenkins are related to this issue.

Recommendation 2 of the Emerson report on the Aerospace sector dealt with developing a list of aerospace technology priorities while recommendations 13 and 14 dealt with establishing “earlier, clearer, firmer commitments on industrial and technological benefits” and developing “a partnership approach to in-service support”.⁶⁵ The Jenkin’s report identified six key industrial capability clusters that could be used to inform pending decisions followed by “a regular and more robust review, initially within the next four years, to validate or amend the initial selection based on experience and better data and analysis.”⁶⁶ The initial clusters listed in the Jenkins report are:

⁶³ See Emerson, The Honourable David, *Beyond the Horizon: Canada's Interests and Future and Aerospace Volume 1*, Aerospace Review Mandated by the Government of Canada (Ottawa: Public Works and Government Services Canada, November 2012); and Tom Jenkins, *Canada First: Leveraging Defence Procurement Through Key Industrial Capabilities* Report of the Special Advisor to the Minister of Public Works and Government Services, (Ottawa: Public Works and Government Services Canada; February 2013). The Honourable David Emerson was the Canadian Minister of Industry from 2004 to 2006, Minister of International Trade and Minister for the Pacific Gateway and the Vancouver-Whistler Olympics from 2006 to 2008 and Minister of Foreign Affairs in 2008. Tom Jenkins is the Executive Chairman and Chief Strategy Officer of Open Text Corporation, the largest independent software company in Canada and chaired the *Expert Review Panel on Federal Support for Research and Development* in 2012.

⁶⁴ See Canada, DND, *Canada First Defence Strategy* (Ottawa; DND). Over time this amounts to 490 \$B. Although this sounds like a significant amount of money, the growth in defence spending does not keep pace with the long term average growth of the Canadian economy. That would imply, all things being equal, that the burden on Canadian society to fund defence would fall from approximately 1.2% of GDP in 2013 to approximately 0.8% of GDP in 2028 should the Canadian economy grow at its longer term average of between 2 and 3%. This is not to argue that defence should be funded as a percentage of GDP but rather to make the point that \$490B over 20 years is not that significant. In the more technical context, the reader should note that the defence budget was already increasing a 1.5% to allow for inflation so the actual increase is only 0.5% above the original intended funding line prior to the release of CFDS.

⁶⁵ See *Beyond the Horizon*, 32-33 and 51-53.

⁶⁶ Jenkins, xiv.



- Arctic and Maritime Security
- Protecting the Soldier
- Command and Support
- Cyber-Security
- Training Systems
- In Service Support⁶⁷

These clusters are not as specific as those developed in Australia but the longer term intention if the government implements the Jenkins' and Emerson's recommendations would be to provide additional fidelity to these clusters. What prevents that fidelity at the moment is the lack of adequate data to support further refinement. Canada does not have the analytical data nor has it engaged with industry in a way that Australia has in order to develop a more refined list. Despite some of the concerns expressed by Australian industry, it remains prudent to take any appropriate lessons from the Australian experience as Canada moves forward with its own refinement.

Lesson 1

There is a significant amount of coordination and effort required to connect a defence industrial policy with defence capability requirements and future procurement requirements to meet those capability requirements.

The most important lesson for Canada when it examines the Australian approach to defence industry policy is to look at the amount of effort that has been dedicated to connecting a series of related policy documents that provides industry and others with an articulation of what the government of the day intends to do and what their priorities are moving forward. For Australia, this includes a defence policy white paper, a defence industrial policy, a public defence capability plan, published results of two separate but related procurement reviews and a published strategic reform program. The main strength that comes out of this effort is that industry has a "comprehensive catalogue and description of the range of practical, funded programs in place to foster the development of the Australian defence industry base."⁶⁸

In contrast, Canada has generally avoided publishing 'White Papers' and has not formally examined industrial policy since the Royal Commission on the Economic Union and Development Prospects for Canada in the early 1980s.⁶⁹ This is not to say that Canadian governments have not had an industrial policy but rather to make the point that they have not articulated that policy in a single document. Those looking for a policy need to examine speeches by the Prime Minister, speeches by other Ministers, Throne Speeches, Budget documents, the Hansard or Press Releases in order to piece together what the policy might be. To be fair, there is a National Shipbuilding and Procurement Strategy, a National Aerospace and Defence Strategic Framework and an Industrial and Regional Benefits Policy. Individual policies like these are useful but do not provide the same level of coherence as that found in Australia. A

⁶⁷ Ibid, XV.

⁶⁸ Wylie, *Defence Industry Policy 2010*, 59

⁶⁹ As part of that Commission, D.G. McFetridge completed a separate research study entitled *Canadian Industrial Policy in Action*. See D.G. McFetridge, *Canadian Industrial Policy in Action*, Volume 4 of the Research Studies Prepared for the Royal Commission on the Economic Union and Development Prospects for Canada (Toronto: University of Toronto Press, 1985). See also Craig Stone, "Canada Needs a Defence Industrial Policy," *International Journal* 63, No. 2 (Spring 2008):344-357.



coherent defence industrial policy would be useful and is desired by Canada's defence industry. The requirement to establish and implement a defence industrial policy was the first recommendation from the December 2009 CADSI report to the government.⁷⁰

In Canada's case it would likely require some additional coordination beyond what Australia has experienced. Canada would need to include the broader North American Defence Industrial Base as part of its deliberations and provincial considerations and dynamics would need to be addressed. More broadly, the significant amount of coordination and work associated with making these policy document connections will not guarantee immediate results. Australia has been connecting these types of documents for a couple of decades and is only now getting to the stage where there is some degree of alignment, support and trust with industry. In addition, there should be no expectation of a perfect solution. Regardless of how aligned government is with industry there will always be friction because there will ultimately be winners and losers. Industry is in business to provide profits for owners and shareholders while government, in this context, is about providing the most effective defence capability possible based on a constrained budget.

For Canada, this would be a long term initiative that would develop incrementally and iteratively over time. It will require consistency, engagement and a degree of trust from all participants. In addition, government employees involved in this effort will need to have a better understanding of industry and its requirements if there is to be any chance of developing policies that are agreeable to all sides.

Lesson 2

Developing a list of Priority Industry Capabilities is a worthwhile endeavour.

Related to the issue of policy documents, the development and articulation of priority industrial capabilities has been viewed as a positive step by Australian Industry. Despite some of the concerns that were discussed earlier, the general view is that it is beneficial for industry when combined with the ADF's capability requirements. It allows industry to make longer term investment and workforce decisions with some degree of confidence. Developing a similar list in Canada could provide similar benefits. The word could is utilized here because there is no empirical evidence yet to indicate that Australian Industry is better (or worse) off with the most recent development of PICs. Early indications from the literature and discussions with DMO staff indicate that industry supports the initiative and that the first round of Health Checks appears to be positive. But, as discussed above, Australian industry continues to have some concerns with the Australian Government's actual application.

For example, if the government is not consistent in how it implements and conducts initiatives like the AIC, it may be very difficult to determine whether or not an industry is better off with or without the programme. As discussed earlier, the concerns raised by White and Caruso et al with respect to selecting foreign companies without significant investment in Australia over those with significant investment is interpreted by industry as being inconsistent with the articulated

⁷⁰ See CADSI, *Canada's Defence Industry: A Vital Partner Supporting Canada's Economic and National Interests: Industry Engagement on the Opportunities and Challenges Facing the Defence Industry and Military Procurement* (Ottawa: CADSI, December 2009), vii. The need for a defence industrial policy was also articulated in Stone, Craig. "Canada Needs a Defence Industrial Strategy." *International Journal* 63, no. 2 (Spring 2008): 341-357.



policy. If the policy is not implemented consistently over time, any empirical evidence will be open to challenge.

Nevertheless, developing such a priority list would be consistent with the government's existing approach of establishing Canada Research Chairs in particular sectors of the economy and the recent Expert Panel Report, *Innovation Canada: A Call to Action*. The *Innovation Canada* report calls for Canada to make business innovation a core objective of public procurement while the Canada Excellence Research Chairs program announced with the 2008 budget is designed to promote innovation and leading edge research in areas of strategic importance to Canada based on the Government's Science and Technology Strategy. The government's four priority areas are: environmental sciences and technologies; natural resources and energy; health and related life sciences and technologies; and information and communications technologies.⁷¹ Within each of these areas there is scope to combine the intentions of the *Innovation Canada* recommendation on public procurement with the government's priority research areas and future defence procurement requirements. It would also be consistent with the recommendation in the Jenkins report that recommends six key industry clusters that can "balance Canada's short-term practical needs with the long-term goal of high value-added participation in global markets."⁷²

Lesson 3

There are benefits to conducting a broad based procurement review.

The next area that Canada can leverage from the Australian experience is more specific to the relationship between industry and procurement. Australia has conducted two procurement reviews in less than a decade. Both reviews provided the government with substantial recommendations on what needed to be done to improve the procurement process and how that should be done. Australia has a single procurement organization as does the United Kingdom and many of Canada's traditional Allies. From an accountability perspective Canada has one department legally by Act of Parliament responsible for procurement (the Defence Production Act indicates it is the Minister of Public Works and Government Services Canada (PWGSC)) but three main departments are involved in the process. It is in this area that improvement is required within the overall procurement process. Related to this issue is the acknowledgement that the Ministers of Industry, National Defence and Public Works asked CADSI to look at Canada's procurement system in the fall of 2009. The report was done with an industry focus and while many of the recommendations in the report are valid and worthwhile, there is a requirement to look more broadly at the procurement system in its entirety.

For example, there is no formal requirement for Canada to compete defence acquisition projects internationally. Both the World Trade Organization's (WTO) Agreement of Government Procurement (AGP) and the North American Free Trade Agreement (NAFTA) have exemptions for national security. Canada's requirement is generally self-imposed through the Agreement on Internal Trade (AIT) with the provinces and territories. In the case of the AIT, there is a similar national security clause but it is contained in the final provisions chapter rather than the procurement chapter. In this context the AIT is not well aligned with NAFTA and the WTO-

⁷¹ See Industry Canada, *Innovation Canada: A Call to Action: Review of Federal Support to Research and Development – Expert Panel Report* (Ottawa: Industry Canada, 2011), 7-4 and the Canada Excellence Research Chairs website at www.cerc.gc.ca.

⁷² Jenkins, xiv.



AGP. Because AIT defines any domestically registered company as Canadian, it effectively opens up all Canadian procurement to international companies.⁷³ This is an important issue in terms of balancing OTS purchases with protecting Canadian industry. The defence market is imperfect with one buyer and in many cases only one seller. Any argument for competition must be made based on the knowledge that there is a marketplace with more than one seller. Without that marketplace, there is no real economic benefit to competition. More importantly, the requirement to compete can actually prevent industry from being engaged early in the development process because they risk having their intellectual property released to a competitor as part of the Statement of Requirement when the process reaches the Request for Proposal stage.

The most important reason for conducting a more holistic procurement review is really no different than reasons that Australia conducted its reviews. The process is not serving government, industry and most importantly, the military as well as it should be. And while there may be benefits for Canada to create a separate procurement organization, (as some have recently argued) there needs to be work done to demonstrate with evidence that this is the case. That can only be done based on having a clear understanding of what is wrong, what can be improved and what needs to change completely. As Stone has recently indicated, creating a separate agency will not fix cost overruns, delivery delays and equipment not meeting operational requirements, the three most common issues that plague most western nations' procurement purchases.⁷⁴

Lesson 4

The North American Defence Industrial Base is an Opportunity and a Constraint.

Regardless of the outcome of a procurement review, there are still some immediate lessons that can be captured from the Australian experience. As indicated in the earlier discussion on the state of Australian industry, Canada's industry is quite similar. The PICs and SICs identified by Australia could provide a starting point for the development of a Canadian list of priorities. However, because Canada's defence industries are part of the larger North American Defence Industrial Base, the list will not be identical and there will need to be some consideration given to how Canada approaches the development of policy. For example, Canadian industries that provide significant exports to the US market will not be interested in giving up that business just to have their industry on the priority list without some assurance that subsequent Canadian business will be at the same level. In other words, in the same way that Australian industry was identifying the need for a long term commitment of identifiable acquisitions, Canadian industry would be looking for the same assurances.

In a more pragmatic context, the development of a Canadian priority capabilities list would need to be done in consultation with the US as part of a broader determination of North American priorities. There would almost certainly be restrictions imposed as a result of our relationship

⁷³ Ugurhan Berkok, "Canadian Defence Procurement," Chapter 7 in *Defence Procurement and Industry Policy: A Small Country Perspective*, edited by Stefan Markowski, Peter Hall, and Robert Wylie (New York: Routledge, 2010), 215 and 225. For a more specific discussion on the AIT see Alan Williams, *Reinventing Canadian Defence Procurement: A View from Inside*, (Montreal and Kingston: Breakout Education Network and McGill-Queen's University Press, 2006).

⁷⁴ See J.C. Stone, *A Separate Defence Procurement Agency: Will it Actually Make a Difference?* Strategic Studies Working Group Papers Canadian International Council and Canadian Defence and Foreign Affairs Institute (February 2012).



with US parent industries and US requirements around sensitive technologies (ITARs issues are one example). However, there is also clear benefit for Canadian industry if an identified capability is a North American requirement rather than just Canadian. The economies of scale associated with a North American requirement would reduce unit costs for Canada.

Clearly this will be a challenge but there will be some common areas based on the Australian experience. Further discussion with Australia might even provide a mechanism to support one another where economically feasible. The Light Armoured Vehicle Turret is an example where both Australia and Canada are involved in the production process for upgrading an existing weapon system where the Prime (General Dynamics) is a US owned company.

Lesson 5

Defence industry needs to be involved throughout the process as a partner.

The performance of the defence industry is critical to the long term development and sustainment of both the ADF and the Canadian Forces. The Government of Australia realizes this and is trying to strike a balance between finding value for money and creating a competitive defence industrial base while at the same time ensuring that key capability requirements are available in Australia. In the case of Canada, the requirement for early involvement by industry and regular discussions about requirements was highlighted by the 2009 CADSI report for Ministers. Issues around intellectual property and the dynamics associated with the AIT need to be addressed as part of this early engagement in order to ensure no one is disadvantaged. In this context, the evolution of the Rapid Prototyping, Development and Evaluation Program (and a similar program in the United Kingdom (Niteworks)) has been key in bringing together industry and government early in the process to find solutions for problems without compromising subsequent activity. Canada's own version of this, Project Accord, should continue to be developed and implemented.⁷⁵

CONCLUDING REMARKS AND RECOMMENDATIONS

Based on the discussions above there are a number of areas that should or could be considered by Canada moving forward, particularly since most of the major acquisitions listed in the *Canada First Defence Strategy* have yet to come to fruition. Rather than provide a large number of very specific recommendations that would need to be articulated with Canada's specific circumstances in mind, particularly the relationship with the US and the connection to the North American Defence Industrial Base, the paper will provide a limited number of very broad macro level recommendations. These recommendations flow from the discussions provided above but do not require as many caveats or restrictions.

Perhaps one exception to this is that it is the view of the author that politically there are very few benefits for the Canadian Government to action any of the recommendations because there is no perceived consequence for inaction. Australian politicians have a much better awareness of the requirements associated with national security because Australia is geographically located in a region of the world that has significant security challenges. This is not the case with Canada. Canadian politicians are not generally interested in defence and security issues because they do not believe there is a security risk. This is even more important during times of fiscal restraint when it is the economy and domestic issues that take priority. Despite this caveat, the following

⁷⁵ DND has received the Project Accord Options Analysis Study Final Report dated 31 March 2012 which contains a recommendation for the way forward.



recommendations are provided as a way to improve the connections between industry, the CF and government and this will ultimately be useful if only to bring some coherence to policy across multiple jurisdictions.

Recommendation 1:

Canada should develop a defence industrial policy that provides a clear articulation of what industries are important and must be resident in Canada in order to sustain the CF.

Developing a defence industrial policy is consistent with what our traditional allies have done in the past decade and is consistent with the recommendations from CADSI and the 2009 industry and procurement study completed for the Ministers of Defence, Public Works and Industry. More importantly, based on the Australian experience and what has been discussed above it will help improve the relationship between government and industry by providing some clarity to expectations and priorities.

Although not discussed in this report, Project Accord in Canada is similar to the RPDE program in Australia and could be used as the forum to start the discussion and the development of industry capabilities that should be a priority. This would be similar to the process used by Australia to develop its PICs. Canada and Australia could work together to come up with shared solutions to common problems.

Recommendation 2:

In conjunction with a defence industry policy government should also provide a public version of its expected defence capability requirements so that industry can make appropriate investment decisions.

As discussed in this report, industry needs clarity over the long term in order to make investment decisions. As shown in Figure 1 of this report, the ADF has connected its classified planning guidance and defence industry self-reliance plan with a public version of a defence capability plan and the PICs. This should not be that difficult for the CF and DND because the existing departmental Investment Plan developed for the Treasury Board contains most of the information that would be required in a public version of a capability plan.

Recommendation 3:

Canada should conduct a thorough review of its entire procurement process in order to capture those areas that need improvement.

Conducting a procurement review will provide the necessary validation and mechanism for the government to make changes to the existing process in order to fix the problems that are currently being experienced. As discussed in this report, Australia has conducted two reviews in the last decade in order to improve how it assesses, acquires and maintains defence capability. These reviews have proven to be beneficial to Australia. This was clearly articulated in the 2008 review when Mortimer discussed the improvements that had been made since the original 2003 Kinnaird review. A similar review in Canada needs to be completed and needs to examine all parts of the process including the processes internal to DND, PWGSC, Industry Canada and all the other actors that can be involved in a Canadian procurement project.

A procurement review should be chaired by someone outside of the government. Only then can a credible evidence based decision be made as to whether or not Canada should create a



separate procurement agency similar to Australia or the United Kingdom or make changes to the existing process.

Recommendation 4:

Ideally Defence procurement and the issue of national security should be explicitly removed from the Agreement on Internal Trade

The removal of defence and national security from the AIT is not likely to get provincial support and would be difficult for the government. Recognizing this problem, an attempt should be made to amend the AIT so that defence procurement and the issue of national security are brought in line with the NAFTA and the WTO-AGP. This would move the text from the final provisions chapter to the chapter on procurement.

In addition, the rules around competition must be amended so that industry can be engaged as part of the development process without concern about losing Intellectual Property to competitors in the subsequent proposal stage. This is consistent with similar concerns discussed above whereby the Australian Business Defence Industry Unit noted the industry suspicion that would exist with becoming involved with the needs definition stage without IP protection.

Developing a set of coherent policy statements like those found in Australia would provide clarity to both industry and those government departments that are involved in the procurement process. More importantly, the development of a set of coherent policy statements requires a long term strategic view of the relationship between industry and defence. A defence industrial policy must be consistent with a broader national level industrial policy that actually articulates where Canada wants to have a competitive advantage in the future. A defence industrial policy needs to articulate what is strategically important to Canada moving forward. There is already some activity in this area with the funding associated with the Canada Excellence Research Chairs program and the *Innovation Canada* report provides yet another mechanism for the government to take a more holistic and longer term strategic view of Canada's needs. The recommendations for six key industrial clusters in the Jenkins' report is also a move in the right direction but only if those clusters can be confirmed and/or expanded based on empirical evidence that supports a clear connection between defence spending and economic benefits. All of this must be done based on a solid understanding of what is actually working and what is not working in the procurement process. Although another review may be met with frustration, a broad based review of the entire procurement process is the only way to ensure the government is fixing what actually needs fixing.

The Australian experience with articulating priority industry capabilities is an approach worth looking at to obtain lessons and best practices. It is not, however, a panacea for all that ails defence procurement. There will always be friction as government tries to balance multiple competing interests, including industry. As articulated in this paper, Australian industry continues to have concerns about how the Australian Government is implementing its industrial priorities. The development of a coherent set of policies that is connected to military capability requirements is achievable with the right direction and coordination.



ANNEX A

AUSTRALIAN PRIORITY INDUSTRY CAPABILITIES

Acoustic technologies and systems
Anti-tampering capabilities
Combat uniform and personal equipment
Electronic warfare
High end system and 'system of systems' integration
High Frequency and phased array radars
Infantry Weapons and remote weapon stations
In-service support of Collins-class submarine combat systems
Selected ballistic munitions and explosives
Ship Dry-docking facilities and common-user facilities
Signature management
Through-life and real time support of mission critical and safety critical software

AUSTRALIAN STRATEGIC INDUSTRY CAPABILITIES

Composite and exotic materials
Elements of national infrastructure, including:

- Supply and storage of aviation fuel
- Provision of terrestrial and space communications systems
- Logistic infrastructure for using Darwin and Townsville

Geospatial information and systems
Guided weapons
Naval shipbuilding
Protection of networks, computers and communications
Repair and maintenance of specialist airborne early warning and control systems
Repair, maintenance and upgrading of armoured vehicles
Repair, maintenance and upgrading of aircraft (including helicopters)
Secure test facilities and test ranges
Systems assurance
System life cycle management



REFERENCES

- Australia, *RPDE Review* April 2012. available at www.rpde.org.au.
- Australia. Department of Defence. *Defence Capability Plan (Public Version) 2012* Canberra: Defence Publishing Service, April 2012.
- _____. Defence Material Organization. *Priority Industry Capability Health Check 2011: Infantry Weapons*. Canberra: DMO, 2011; available at http://www.defence.gov.au/dmo/id/pic/docs/PIC_FactSheet_InfantryWeapons.pdf
- _____. *Building Defence Capability: A Policy for a Smarter and More Agile Defence Industrial Base* Canberra: Defence Publishing Service, 2010.
- _____. *The Strategic Reform Program: Making it Happen Making Every Minute, Dollar and Round Count* Canberra: Defence Publishing Service, April 2010.
- _____. *Defending Australia in the Asia Pacific Century: Force 2030 (Defence White Paper 2009)* Canberra: Defence Publishing Service, 2009.
- _____. *The Strategic Reform Program: Delivering Force 2030* Canberra: Defence Publishing Service, April 2009
- _____. *'Key Questions for Defence in the 21st Century' A Defence Policy Discussion Paper* Canberra: Defence Publishing Service, April 2008
- _____. *Going to the Next Level: The Report of the Defence Procurement and Sustainment* Canberra: Defence Publishing Service, 2008.
- _____. *Looking Over the Horizon Australians Consider Defence* Canberra: Defence Publishing Service, December 2008.
- _____. *Defence and Industry Policy Statement 2007* Canberra: Defence Publishing Service, March 2007.
- _____. *Australia's National Security: A Defence Update 2007* Canberra: Defence Publishing Service, 2007.
- _____. *Defence Procurement Review 2003* Canberra: Defence Publishing Service, August 2003.
- _____. *Defence Needs of Australian Industry 2000* Canberra: Defence Publishing Service, June 2000.
- _____. *Defence 2000: Our Future Defence Force* Canberra; Defence Publishing Service, 2000.
- _____. *Defence and Industry Strategic Policy Statement* Canberra: Defence Publishing Service, June 1998.



- Australian Business Defence Industry Unit. "Response To The Preliminary Report Into Procurement Procedures For Defence Capital Projects." Letter to Senator Eggleston, Chair, Senate Foreign Affairs, Defence and Trade References Committee , 28 February 2012.
- Australian Business Defence Industry Unit. "Defence Industry Policy Priorities 2011" available at <http://www.nswbusinesschamber.com.au/NSWBC/media/Misc/DIU%20documents/Australian-Business-Defence-Industry-Policy-Priorities-2011.pdf>; accessed 17 Jul 2012.
- Berkok, Ugurhan. "Canadian Defence Procurement," Chapter 7 in *Defence Procurement and Industry Policy: A Small Country Perspective* Edited by Stefan Markowski, Peter Hall, and Robert Wylie, 209-227. New York: Routledge, 2010.
- Canada. Industry Canada. *Innovation Canada: A Call to Action: Review of Federal Support to Research and Development – Expert Panel Report* Ottawa: Industry Canada, 2011.
- Canada. Industry Canada. *National Aerospace and Defence Strategic Framework 2005-2025*. Ottawa: Industry Canada, 2005.
- Canada. Department of National Defence. *Defence in the 70s: White Paper on Defence* Ottawa: Queens Printer, 1971.
- Canadian Association of Defence and Security Industries, "CADSI Policy Priorities For 2011" available at <https://www.defenceandsecurity.ca/UserFiles/File/2011/CADSIPolicyPriorities11.pdf>.
- Canadian Association of Defence and Security Industries. *Canada's Defence Industry: A Vital Partner Supporting Canada's Economic and National Interests: Industry Engagement on the Opportunities and Challenges Facing the Defence Industry and Military Procurement*. Ottawa: CADSI, December 2009.
- Caruso, Holly, Karl Falzon, Lachlan McInnes and Craig Williams. "Successful and profitable acquisition programs rely on an effective Defence Industry Policy: A review of the 2010 Defence Industry Policy Statement Building Defence Capability: A Policy for a Smarter and More Agile Defence Industry Base" South Australian Defence Industry Leadership Program. Nov 2010. available at <http://www.dtc.org.au/Documents/140.pdf>.
- Combet, The Honorable Greg. Minister for Defence Material and Science. "Building Defence Capability: A Policy for a Smarter and More Agile Defence Industry Base." Speech to the Australian Industry Group 25 June 2010.
- Combet, The Honorable Greg. "Force 2030: Government and Industry" Address to the Defence and Industry Conference, Adelaide, 1 July 2009. available at <http://www.defence.gov.au/minister/96tpl.cfm?CurrentId=9225>
- Davies, Andrew, Rod Lyons and Mark Thomson. "Australian Defence Policy Assessment 2010." *Australian Strategic Policy Institute Special Report No. 30*, April 2010.



- Emerson, The Honourable David, *Beyond the Horizon: Canada's Interests and Future and Aerospace Volume 1*, Aerospace Review Mandated by the Government of Canada. Ottawa: Public Works and Government Services Canada, November 2012.
- Faulkner, Senator John. "Defence Capability Planning: The Way Forward For The Defence - Industry Partnership." Speech to the Defence + Industry Conference. Adelaide: 1 July 2009. available at <http://www.defence.gov.au/minister/92tpl.cfm?CurrentId=9226>
- Hall, Peter, Stefan Markowski and Robert Wylie. "Government Policy: Defence Procurement and Defence Industry." Chapter 5 in *Defence Procurement and Industry Policy: A Small Country Perspective* Edited by Stefan Markowski, Peter Hall, and Robert Wylie, 153-183. New York: Routledge, 2010.
- Jenkins, Tom. *Canada First: Leveraging Defence Procurement Through Key Industrial Capabilities*. Report of the Special Advisor to the Minister of Public Works and Government Services. Ottawa: Public Works and Government Services Canada; February 2013.
- Kane, Ron. "National Governments and their Defence Industrial Bases: A Comparative Assessment of Selected Countries." Report submitted to the Canadian Association of Defence and Security Industries, October 2009.
- Lyon, Rod Andrew Davies. "Assessing the Defence White Paper 2009." *Australian Strategic Policy Institute Policy Analysis* Canberra: ASPI, 7 May 2009.
- Markowski, Stefan, Peter Hall, and Robert Wylie. Editors. *Defence Procurement and Industry Policy: A Small Country Perspective* New York: Routledge, 2010.
- McFetridge, D.G. *Canadian Industrial Policy in Action*, Volume 4 of the Research Studies Prepared for the Royal Commission on the Economic Union and Development Prospects for Canada. Toronto: University of Toronto Press, 1985.
- Priestnall, Graham. Quoted in Nigel Pittaway, "Australian Defense Minister Seeks Better Relations With Industry," *Defense News* 27 Nov 2013; internet; <http://www.defensenews.com/apps/pbcs.dll/article?AID=2013311270021>
- Purnell, Leigh and Mark Thomson. "How much information is enough? The disclosure of defence capability planning information." Report of the Capability Planning Information Review *Australian Strategic Policy Institute Report*, Barton: ASPI, December 2009
- Sandler, Todd and Keith Hartley. *The Economics of Defense* Cambridge: Cambridge University Press, 1995.
- Solomon, Binyam. "The Defence Industrial Base in Canada." Chapter 6 in *The Public Management of Defence in Canada*. Edited by Craig Stone, 111-139. Toronto: Breakout Education Network, 2009.



Stone, J.C. *A Separate Defence Procurement Agency: Will it Actually Make a Difference?* Strategic Studies Working Group Papers. Canadian International Council and Canadian Defence and Foreign Affairs Institute, February 2012.

Stone, Craig. "Canada Needs a Defence Industrial Policy." *International Journal* 63, no. 2 (Spring 2008):341-357.

Thomson, Mark. "A Trillion Dollars and Counting: Paying for Defence to 2050" *ASPI Policy Report*. Australian Strategic Policy Institute, March 2004.

White, Ben. "Sustainable Defence Capability: Australia's national security and the role of defence industry." *Australian Defence Force Journal* no. 183 (2010): 87-96.

Williams, Alan Williams. *Reinventing Canadian Defence Procurement: A View from Inside* Montreal and Kingston: Breakout Education Network and McGill-Queen's University Press, 2006.

Wylie, Robert. "Defence Industry Policy 2010: The Combet Iteration" *Security Challenges* 6, no.3 (Spring 2010): 59-77.

Wylie, Robert. "Supplying and Supporting Force 2030: Defence Policy for Australian Industry." *Security Challenges* 5, no. 2 (Winter 2009): 117-126.

Wylie, Robert. "A Defence Policy for Australian Industry: Are We There Yet?" *Security Challenges* 3, no. 2 (June 2007): 53-71.

Wylie, Robert. "Defence Industry Policy And Defence Accountability" *Security Challenges* 2, no. 2 (July 2006): 15-24.

Phone and email discussions with Mr Michael Desmond, Dr Rob Bourke, and Mr David Marshall, Defence Material Organization.

Email discussions with Drs Peter Hall, Stephan Markowski and Robert Wylie of the University of New South Wales.

► About the Author

Dr Craig Stone holds a BA in Economics from the University of Manitoba and an MA and PhD in War Studies from the Royal Military College of Canada. Dr Stone joined the academic staff at Canadian Forces College (CFC) as an Assistant Professor in the summer of 2005 after 29 years in the Canadian Forces, the last five at CFC in the Strategic Studies Directorate. Dr Stone became the Director of Academics in December 2008. He teaches *Strategic Resource Management* and *Formulating National Security Strategy* on the National Security Programme, *Defence Management* on the Joint Command and Staff Programme and *Defence Decision-Making* for the Master of Arts in Security and Defence Management and Policy Programme.

As a military officer in the Royal Canadian Artillery, Dr Stone served in a variety of regimental positions in the First and Third Royal Canadian Horse Artillery regiments in Lahr, Germany, and Shilo, Manitoba. Employment outside the Artillery included two years as Military Career Counselor and Operations Officer in St. John's, Newfoundland, one year on the operations staff at the Fourth Canadian Mechanized Brigade Group Headquarters in Lahr, two years as the Executive Assistant to the Commander, Land Force Central Area, Toronto, and two years as a staff officer with Chief of Force Development and then with Director General Strategic Planning at National Defence Headquarters, Ottawa, Ontario. Dr Stone is a graduate of Canadian Land Forces Command and Staff Course 8801 and Canadian Forces Command and Staff Course 21.



► **Canadian Defence & Foreign Affairs Institute**

CDFAI is the only think tank focused on Canada's international engagement in all its forms - diplomacy, the military, aid and trade security. Established in 2001, CDFAI's vision is for Canada to have a respected, influential voice in the international arena based on a comprehensive foreign policy, which expresses our national interests, political and social values, military capabilities, economic strength and willingness to be engaged with action that is timely and credible.

CDFAI was created to address the ongoing discrepancy between what Canadians need to know about Canadian international activities and what they do know. Historically, Canadians tend to think of foreign policy – if they think of it at all – as a matter of trade and markets. They are unaware of the importance of Canada engaging diplomatically, militarily, and with international aid in the ongoing struggle to maintain a world that is friendly to the free flow of goods, services, people and ideas across borders and the spread of human rights. They are largely unaware of the connection between a prosperous and free Canada and a world of globalization and liberal internationalism.

In all its activities CDFAI is a charitable, nonpartisan organization, supported financially by the contributions of foundations, corporations and individuals. Conclusions or opinions expressed in CDFAI publications and programs are those of the authors and speakers and do not necessarily reflect the views of the Institute staff, fellows, directors, advisors, or any individuals or organizations that provide financial support to CDFAI.

