

THE SINGLE SHIPBUILDING ENTITY MODEL IN CANADIAN NAVAL PROCUREMENT: A DISCUSSION PAPER ON NAVAL CONTRACTS IN CANADA

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In an April 14th 2004 speech Prime Minister Paul Martin promised seven billion dollars worth of new capital purchases for the Canadian Forces (CF), of which 2.1 billion was allocated for the purchase of three multi-role Joint Support Ships (J.S.S.).¹ The new J.S.S., which would replace the aging Protecteur Class, will serve as re-fuel and re-supply vessels for the fleet, but it will also be capable providing sea-lift and serve as a command center for forces deployed ashore.² If history is any guide, the government would be better served purchasing a similar type vessel from one of its allies. An after action report of the Halifax Class frigate construction program revealed that similar vessels could have been acquired faster and cheaper from the international market.³ This would also have saved costly investments in infrastructure development and personnel training. Despite this historical precedent the government has stated that the J.S.S. will be built domestically. Creating the infrastructure and training the personnel required for this build will cost hundreds of millions of dollars. This paper will examine whether the Australian *Single Shipbuilding Entity Model* could be used to ensure the long term viability of this investment in Canada. It should be noted that this is not

¹ Lt(N) H. Diane Grover. "Several Capabilities, One platform: The Joint Support Ship," in Department of National Defence: Canada's Navy: News and Information, http://www.navy.forces.gc.ca/mspa_news/news_e.asp?id=48 (23 Jan 2005).

² "The Joint Support Ship Project" in Department of National Defence News Room: Background, http://www.forces.gc.ca/site/newsroom/view_news_e.asp?id=1346 (23 Jan 2005).

³ Report on Canadian Patrol Frigate Cost and Capability Comparison. Canada. Chief of Review Services. Ottawa: 26 March 1999. 9.

intended to provide the best option economically, but rather to balance economic considerations with political realities.

Why build domestically?

At the root of the government's decision to build domestically is the number of jobs that will be created. At the present contract stage it is impossible to accurately state how many workers will be employed, but it would likely be comparable to the over 3,000 workers that were used during the construction of the Halifax Class.⁴ The size and complexity of the J.S.S. build would require a well educated, highly skilled workforce. These workers would in turn command significant salaries. A 1994 RAND study estimated that the average salary in the American shipbuilding industry was \$80,000 (U.S.) per year.⁵ More importantly, building the vessels in Canada would mean that the majority of the \$2.1 billion would go to Canadians in the form of contracts and employment. If the ships were built in foreign yards the direct impact on the Canadian economy would be limited to industrial offsets, such as components or repair contracts. Building the ships domestically would provide significant direct benefits, in the forms of jobs, but also be an indirect help to the regional economy, in the form of increased spending and spin-offs.

This benefit, however, does not come without a cost. The construction of the Halifax Class Patrol Frigate during the mid 1990s illustrates this point. The Halifax Class was conceived as a replacement for the St. Laurent Class destroyer/escort. The Irving

⁴ Kelly Toughill, "No Questions Asked," *Toronto Star Online*, 14 Mar 2004, <http://www.thestar.com> (4 Feb 2005).

⁵ John Birkler, John Schank, Giles Smith, Fred Timson, James Chiesa, Marc Goldberg, Michael Mattock, Malcolm MacKinnon, *The U.S. Submarine Production Base: An Analysis of Cost, Schedule, and Risk for Selected Force Structures*. (Santa Monica: RAND, 1994), 32

Shipyard in Saint John, New Brunswick received the bulk of contract, producing nine vessels, while the Davie yard in Quebec built the remaining three.⁶ During the Halifax build \$340-360 million was spent developing infrastructure at the Irving shipyard in Saint John while \$58 million was spent sub-contracting three vessels to the Davie Shipyard in Quebec.⁷ Millions more were spent on development costs. In total the project cost \$9.54 billion.⁸ The government hoped that the contract would create a competitive industry in one of Canada's poorer regions and help kick-start the nascent Canadian defence industry.⁹

The program was initially a success, with twelve world class vessels created and over 3,000 jobs created in Saint John alone.¹⁰ In the aftermath, however, the Irving Shipyard in Saint John was unable to acquire enough non-government contracts to remain viable. It built its last ship in 2000, before eventually closing in 2003.¹¹ To aid with shutdown costs and worker placement the Federal Government provided \$55 million to Irving.¹² The Davie yard also experienced difficulties before eventually being forced into receivership.¹³ In short the government was forced to invest significant dollars to develop the infrastructure and skills required to complete the contract only to pile on additional expenses for their removal.

⁶ Report on Canadian Patrol Frigate Cost and Capability Comparison. Canada. Chief of Review Services. Ottawa: 26 March 1999. 17.

⁷ Laurie Watson, "Missing the Boat: Offshore Versus Domestic Procurement," in Forum: Journal of the Conference of Defence Associations Institute 6:3 (1991): 14-15

⁸ Interdepartmental Review of the Canadian Patrol Frigate Project – Report on the Contract Management Framework. Canada. DND/PWGSC. Ottawa: 26 March 1999. p 14/48.

⁹ Kelly Toughill, "No Questions Asked,"

¹⁰ Ibid

¹¹ Ibid

¹² J.D. Irving Ltd. "Statement From James K. Irving, Chairman and James D. Irving, President Regarding the Official Closure of Saint John Shipbuilding, Limited" http://www.jdirving.com/Index.asp?Site_Id=1&Page_Id=469 (28 Jan 2005).

¹³ Peter Cairns, "Let the Games Begin" in Shipbuilding Association of Canada, <http://www.shipbuilding.ca/articles.shtml>, (18 Sep 2005).

International Situation

The reason that the shipbuilding industry has been unsustainable outside of government contracts in Canada is due to a series of handicaps that it faces when competing internationally. These include: over-capacity within the industry, subsidies and foreign restrictions. The first issue, foreign over-capacity, is the root of the Canadian shipbuilding industries problems, with much of the blame falling on South Korea. Possessing more than a third of the global market South Korea is a major player within the industry.¹⁴ In the mid-1990s South Korea undertook an aggressive expansion of its shipbuilding industry, nearly tripling its capacity.¹⁵ This move and similar expansions by other leading players, such as Japan and Norway, resulted in a world wide over-capacity that today reaches nearly 20-25 percent.¹⁶

Shipyards are able to maintain this capacity through extensive use of government subsidies, which in some cases are in excess of 40 percent of cost.¹⁷ Further incentives are provided in the form of loans that have interest rates below market value.¹⁸ Governments offer these incentives for a variety of reasons. One motive is job protection, but the strategic importance of the shipbuilding industry has also been used as justification. Some governments, such as the U.S., have stated that assured access to shipbuilding facilities is a matter of national security. Despite repeated calls from industry, the Canadian government has never committed to a similar pledge.¹⁹ The Department of National Defence has argued that there is no similar strategic military

¹⁴ The National Partnership Project Committee. (2001) "Breaking Through," Ottawa: Industry Canada. 20.

¹⁵ Ibid

¹⁶ Ibid

¹⁷ Ibid,

¹⁸ Ibid, 26.

¹⁹ Peter Cairns, "Crisis in Naval Shipbuilding"

requirement for naval shipbuilding in Canada.²⁰ Instead the government of Canada has pushed for an end to subsidies within the industry globally and has lobbied Canadian industry for “no-subsidy” solutions.²¹

A final handicap for Canadian shipbuilders is the Jones Act, a piece of American legislation that hinders their access to the U.S. market. Written in 1920 the Jones act requires that all water transportation of goods between U.S. ports be on U.S. built, owned, crewed and operated ships.²² The purpose of this law was to support the U.S. merchant marine industry. It has significant implications for Canada as it excludes Canadian shipbuilders from supplying U.S. firms for their domestic use. Canada has made many attempts to create a special role for Canada within the Jones Act, but so far has been rebuffed. During the North American Free Trade Agreement talks the Jones Act was specifically excluded by U.S. negotiators.²³ Even if changes could be made for commercial shipbuilders in Canada, the military element could still be excluded under article 2102 of the NAFTA agreement.²⁴ These restrictions are a significant handicap for Canadian shipbuilders as it cuts them off from their largest, natural market. It is not difficult to imagine a similar crisis occurring within the automobile or aircraft industries if they were unable to access the U.S. market. The overall consequence of the Jones Act is that Canadian shipyards are heavily dependent on a domestic market that has significantly less demand. The result of all these international factors is that Canadian shipyards are not competitive internationally. In certain niches, such as luxury yachts,

²⁰ Peter Cairns, “Building the Navy’s Ships” in [Shipbuilding Association of Canada](http://www.shipbuilding.ca/articles/article_may3-04.shtml). http://www.shipbuilding.ca/articles/article_may3-04.shtml, (23 May 2005).

²¹ “Government of Canada to Address Shipbuilding Subsidies in International Negotiations” in [Media Room](http://www.ic.gc.ca/cmb/welcomeic.nsf/0/85256a5d006b97208525702f00563194?OpenDocument). <http://www.ic.gc.ca/cmb/welcomeic.nsf/0/85256a5d006b97208525702f00563194?OpenDocument> (June 29, 2005).

²² The National Partnership Project Committee. (2001) “Breaking Through,” Ottawa: Industry Canada. 20

²³ Ibid

²⁴ “The North American Free Trade Agreement” International Trade Canada, <http://www.dfait-maeci.gc.ca/nafta-alena/agree-en.asp#PartIV>, (05 Sep 2005).

Canadian yards have been very successful, but for larger, high value vessels the Canadian yards have proven unviable outside of government contracts.²⁵

Improving the Government's Decision

In spite of this the government has committed to building the J.S.S. in Canada. If the Federal Government is intent on developing the infrastructure and personnel required for this build once again, an alternative is needed to ensure the viability of the industry and safeguard this investment. After all, it makes little sense to create this capability only to have to re-create it again next time the government wants to build a ship. One possible solution to this problem is currently being examined in Australia. After a period of increased naval expenditure during the 1990s the Australian government realized that future procurement would not be enough to meet the requirements shipbuilding industry.²⁶ They expected that during the next fifteen years their demand for warship construction would be half of what it had been in the previous fifteen.²⁷ In several defence documents the government had stated that Australia had a strategic interest in maintaining a viable military shipbuilding, therefore the government set out to examine the most economical way to preserve the industry.²⁸

Prior to this slowdown Australia, like Canada, relied upon a competitive market system to award defence contracts; the difficulty was that maintaining several competing shipyards in the future would place significant costs on the Australian government. As a result the government is examining the viability of a *Single*

²⁵ The National Partnership Project Committee. (2001) "Breaking Through," Ottawa: Industry Canada. 13

²⁶ "The Australian Naval Shipbuilding and Repair Sector Strategic Plan" Defence Materiel Organization: Industry Division, Commonwealth of Australia. Sept, 2002. 3.

²⁷ Ibid, 57.

²⁸ Defence 2000: Our Future Defence Force, Department of Defence, 2000. p. 47.

*Shipbuilding Entity Model (SSEM).*²⁹ Under this model the government would set out the capabilities that the government required, such as an ability to build a certain tonnage, for the single entity. Industry would then be challenged to meet these demands. Eventually this policy and market forces would result in a single shipyard that would provide the government with all of its naval procurement, repairs and upgrades needs for the life of the contract.³⁰

The obvious difficulty with this plan is that it creates a monopoly situation for the single supplier. Without competition the supplier could artificially inflate costs or pursue policies of vertical integration which would harm small and medium level contractors.³¹ There are, however, many potential benefits. A single supplier is likely to achieve better scale and utilization rates than two or more suppliers.³² The consolidation of functions should result in improved efficiency; lower overhead and better economies of scale. For example, learning curve costs would be lower under this model.³³ The stability of the single supplier would encourage the retention of highly skilled labor, which in turn would lower the training and “fumble” costs on additional projects.³⁴

By creating a single supplier the SSEM would also lower the cost of one time purchases, such as infrastructure and equipment that are typically added into the contract.³⁵ Essentially by guaranteeing their use over various projects their costs could be amortized over their expected life, rather than paid at once. Over the course of the project's life the SSEM would create additional benefits. By using the same shipyard for

²⁹ “The Australian Naval Shipbuilding and Repair Sector Strategic Plan,” 107.

³⁰ Ibid, 109

³¹ Ibid, 122

³² Ibid, 122

³³ Ibid, 123

³⁴ Ibid, 124

³⁵ Ibid, 124

repairs and upgrades the government could take advantage of a “corporate memory” which would increase labor efficiency.³⁶ Simply put, the same people that built it would be the ones effecting repairs and upgrades. Finally, while less substantial, the SSEM would make contract tendering less expensive and time consuming, as it would involve only one company.³⁷

Despite these benefits, the risks inherent in this model are still significant. To mitigate them the Australians plan to take advantage of their monopsony, or single buyer, situation to create a set of rules to govern their relationship with the single supplier. For example legislation would be created to ensure a competitive bid process among the sole suppliers’ sub-contractors.³⁸ This would ensure that numerous creative responses are provided to unforeseen technical challenges. The situation would require careful management by the government, but the Australians believe that if done properly it would provide significant savings and ensure the viability of an industry that they have deemed strategically important.³⁹

This is a policy driven solution that could prove to be effective in Canada. In effect the J.S.S. contract will create a monopoly type situation within the industry, as the winner would be the only shipyard capable of building vessels of the size and complexity required for the Navy. The major difference in the Canadian context is that the Australians would be implementing this policy during the final construction phases of the ANZAC Class Frigate and the Collins Class submarine. In contrast, Canada would be implementing this policy after the much smaller J.S.S. build program. To ensure that

³⁶ Ibid, 126

³⁷ Ibid, 125

³⁸ Ibid, 127

³⁹ Ibid, 129.

the shipyard remains viable the Federal Government would have to provide new construction contracts for the winning shipyard. This could prove difficult as the government has decided not to replace the Tribal Class destroyers at the end of their operation life. Instead the government plans to shift the Tribal's command and control responsibilities to the Halifax Class Frigates and eventually replace both classes with one vessel somewhere around 2020.⁴⁰ The shortage of upcoming Navy contracts makes the implementation of SSEM more difficult compared to the Australian context.

This does not mean that the SSEM solution is untenable. The first J.S.S. is not slated to be delivered until 2011; in order to retain the corporate knowledge acquired during its construction the government could award the contracts for Coast Guard and Royal Canadian Mounted Police (RCMP) vessels to the yard that builds the J.S.S. In the near future the Coast Guard will require sixteen vessels in four types.⁴¹ While these vessels are not as large, or as complex as the Navy's requirements, they are significantly more complex than commercial builds and would gainfully employ the infrastructure and personnel required for the J.S.S. build. This situation would be further improved if the Conservatives went ahead with their election promise to replace the aging Coast Guard icebreakers.⁴² Skillful management of these contracts could maintain the viability of the winning shipyard, thus protecting the investment in infrastructure and personnel, until the replacement for the Halifax Class begins production around 2020.

⁴⁰ Assuming a useful operational life of 25-30 years for the Halifax Class (1992+25=2017)

⁴¹ This includes 8 mid-shore patrol vessels, 2 offshore fisheries research vessels, 4 mid-shore fishery research ships and 2 vessels for channel survey and sounding. This information was obtained through email correspondence with M. Desormeaux, Fleet Planning Officer Canadian Coast Guard. Email: DesormeauxM@DFO-MPO.GC.CA.

⁴² "Harper Stands up for Arctic Sovereignty" [Conservative Party of Canada](http://www.conservative.ca/1004/36622/), 22 Dec 2005. <http://www.conservative.ca/1004/36622/> (Feb 28 2005).

In short, the implementation of the SSEM for Canada's naval procurement requirements is a policy driven solution that would guarantee the viability of the industry domestically, safeguard the government's investment and ensure a steady stream of new vessels for the Navy, Coast Guard and RCMP. It is not, however, a perfect solution. In addition to issues of monopoly, awarding all future federal procurement to one shipyard would likely be unpopular politically.

Politically Viable?

It is no secret that defence contracts are highly sought after by Federal leaders. Their inherent size makes them valuable prizes for any region. As a result they have also attracted a lot of controversy. Few Western Canadians have forgiven the Mulroney government for awarding the lucrative CF-18 fighter maintenance contract to Montreal-based Bombardier over a bid from Bristol Aerospace of Winnipeg.

By definition the SSEM would require a contract in the neighborhood of 20-30 years, comprising an entire generation of vessels. During this period the profitability of the winning shipyard would be guaranteed, as the yard could reasonably expect several billion dollars worth of contracts. There is little doubt that this would be fought over heavily. To make matters worse there is no clear leader within the industry. Davies is the only remaining shipyard with any experience in the building ships of this size and complexity, but the length of time since their last major build program combined with their financial difficulties limits the applicability of that experience.⁴³ The reality is that several Canadian shipyards could make a legitimate case for the awarding of the SSEM

⁴³ Peter Cairns, "Let the Games Begin" in Shipbuilding Association of Canada, <http://www.shipbuilding.ca/articles.shtml>, (18 Sep 2005).

contract. Thus while the SSEM makes sense from a policy point of view, the awarding of the contract could be extremely difficult politically.

Relief from this problem could be found through the sub-contracting of components and systems to regions away from the primary yard, but this would have to be managed carefully to prevent additional costs. It might also be possible to soothe regional concerns through the awarding off additional army or air force contracts to regions not part of the shipbuilding contract.⁴⁴ In the end, though, the SSEM is policy driven solution that would require strong political direction. Battles over the placement of this shipyard could easily result in political compromises that would dramatically add to costs, thereby defeating the initial goal of the exercise. Leadership would be needed to award the contract and weather the fallout from dissatisfied regions.

Conclusion

The Federal government has pledged to build the J.S.S. domestically. This will entail significant start up costs, in terms of both infrastructure and personnel. History has shown that the industry is not viable in long term without continued government support. Using the SSEM for Federal naval procurement would guarantee the survival of the industry, maintain a strategic commodity and safeguard the significant investment in infrastructure and personnel. It is not a perfect solution, but it could bridge the gap between political decision and economic realities. Ultimately the implementation of the SSEM would shore up some expensive government decisions and protect the significant investment in infrastructure and personnel. This, however, can only occur if

⁴⁴ A de-facto single supplier agreement already exists for production of LAV IIIs by General Dynamics in London, Ontario.

strong direction is given as to the placement of the contract. Lacking that direction, this policy driven solution could end up being no solution at all.