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POLICY, TRANSFORMATION AND SHIPBUILDING: THE PERFECT STORM THREATENING THE FUTURE OF CANADA'S SURFACE COMBATANT FLEET

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ABSTRACT

The ability of the Canadian Navy to respond globally to developing situations and crises by deploying on short notice and applying military resolve or providing humanitarian assistance has been proven on numerous occasions. Standing at the forefront to fulfill Canada's security and defence needs, the Navy presents a broad range of capabilities to address threats to Canadian interests and protect national values anywhere in the world. Today's fleet was designed and built largely during the Cold War and is now reaching a significant turning point with the thirty five-year old DDH 280s nearing the end of their effective lifespan and the CPFs scheduled to undergo mid-life modernization commencing in 2010. This essay demonstrates that given Canadian policy, CF Transformation initiatives, and the status of the Canadian shipbuilding industry, there is a significant risk that the Navy's surface combatant fleet, namely the DDH 280 destroyers and the HALIFAX class frigates, may not be replaced. In June 2006, the new Conservative government announced the acquisition of three Joint Support Ships to replace the ageing PROTECTEUR class replenishment vessels. It is important to note, however, that these ships are not replacements for the surface combatant fleet and that their joint lift capability will likely make them attractive assets to both the Army and the Air Force, in addition to their role of supporting naval Task Groups at sea. Given the 15-year procurement cycle, the naval leadership must act decisively to ensure the fleet of 2020 and beyond is capable of adapting to the ever changing global environment and responding to the broad spectrum of naval missions, from domestic homeland defence to regional conflicts and international crises. Otherwise, the Navy could risk losing its Rank 3 status and become marginalized in a joint-centric CF focused on land operations.

> *"It follows then, as certain as night succeeds day, that without a decisive naval force we can do nothing definitive, and that with it everything honorable and glorious."*[1]
>
> President George Washington, 1781

INTRODUCTION

Following the attacks of 9/11 on the World Trade Centre, Canada was the first nation after the United States (U.S.) to deploy naval units to the U.S. Central Command (CENTCOM) area of responsibility. Shortly after then Prime Minister Chrétien's announcement of 7 October 2001 that Canada would contribute forces to the International Campaign against Terrorism (ICAT), Her Majesty's Canadian Ship (HMCS) MONTREAL was quickly diverted from her deployment with NATO's Standing Naval Force Atlantic (SNFL) to the Arabian Sea. Hence began Operation APOLLO, Canada's contribution to the American-led ICAT. At the peak of the operation in January 2002, the Canadian Naval Task Group comprised six ships and approximately 1500 naval personnel. Operation APOLLO continued until December 2003 and during its existence, a total of 17 Canadian warship deployments occurred. Extremely versatile, capably armed and highly manoeuvrable, the Canadian frigates and destroyers took on tasking such as the defence of specialized high value naval units of the coalition fleet, Maritime Interdiction Operations (MIO), Leadership Interdiction Operations (LIO) against members of Al Qaeda and the Taliban, as well as humanitarian interventions.[2] The Canadian Navy's involvement in the Global War on Terrorism (GWOT) continues to this day but under the auspices of a different operation.

The ability of the Canadian Navy to respond globally to developing situations and crises by deploying on short notice and applying military resolve or providing humanitarian assistance has been proven on numerous occasions before the Operation APOLLO commitment. During the 1990-91 Gulf War, Canada contributed a Naval Task Group in support of the liberation of Kuwait following invasion by Iraq; after the coup that overthrew President Aristide of Haiti in 1991, Canada's ships enforced United Nations (UN) sanctions to assist with the restoration of a stable government; from 1992 to 1995 destroyers and frigates were deployed to the Adriatic Sea in support of UN resolutions against the former Republic of Yugoslavia. There were also similar responses to events in Canadian waters. For instance, during the turbot dispute with Spain on the Grand Banks of Newfoundland in 1995, our ships demonstrated the Canadian Government's

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[1] Naval Historical Centre, "Traditions of the Naval Service," http://www.history.navy.mil/trivia/trivia02.htm; Internet; accessed 10 January 2007. The web site indicates that this quote from President George Washington to Marquis de Lafayette on 15 November 1781 is taken from the following source: *The Writings of George Washington from the Original Manuscript Sources 1745-1799*, vol. 23 (Washington, DC: Government Printing Office, 1937): 341.

[2] National Defence and the Canadian Forces: Newsroom, "The Canadian Forces' Contribution the International Campaign Again Terrorism," http://www.forces.gc.ca/site/Newsroom/view_news_e.asp?id=490; Internet; accessed 10 January 2007.

determination to protect national interests in its own maritime approaches;[3] additionally, the Navy responded to the illegal seizure of the GTS Katie, a merchant vessel contracted to return military equipment from Kosovo in 2000, and escorted the ship back to a Canadian port.[4] This being said, not only does the Canadian Navy have the ability to deploy quickly when called upon, but it also enjoys a solid reputation amongst allies for accomplishing its tasks competently and professionally.

Canada's current surface combatant fleet counts three IROQUOIS class destroyers (DDH 280) and 12 Halifax class Canadian Patrol Frigates (CPF). Launched in the early 1970's as state-of-the-art anti-submarine platforms, the four original DDH 280s of the class were re-fitted in the early 1990s as command platforms with area air defence capability around which the Canadian Naval Task Group (TG) is built. HMCS HURON was decommissioned in 2005. The CPFs entered service in the first half of the 1990s to replace the Cold War era ST-LAURENT class ships. Incorporating many technological advances, the multi-purpose CPFs are the work horses of the Canadian TG.[5]

Today's fleet, designed and built largely during the Cold War, a time when the Navy was focused on anti-submarine warfare, has steadily evolved to tackle the multitude of functions required of the less stable global environment that unexpectedly emerged following the collapse of the Soviet Union in 1990. Because maritime forces offer a broad range of mission options, the government has found the Navy to be an extremely valuable military resource in the uncertain post-Cold War era. Despite the general lack of interest in the military amongst Canadians, support to the naval service remained steady and the state of the fleet and the condition of its ships in 1999 were such that, long Canada's Cinderella service, the Navy was the most modern and versatile environment of the Canadian Forces (CF) and in excellent shape to enter the new century.[6] One must recognize however that today's fleet is reaching a significant turning point. The thirty five-year old DDH 280s are nearing the end of their effective lifespan while the CPFs are scheduled to undergo mid-life modernization, with the first ship proceeding to refit around 2010. The Navy plans to eventually replace both platforms with a single class of ships that will maintain a wide range of naval capabilities.[7] The next generation of surface combatants however is nothing more that a concept at this point and, given that the capital procurement cycle in Canada is on average 15 years in length, it could be close to the end of the next decade before the chosen platform is operational if a project is approved.

The Naval Service Act became a law on 1910, amidst debate on whether Canada should provide for the naval defence of its own coasts. Following the Great War, the Navy was afflicted

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[3] Department of National Defence, *Canadian Navy: Your First Response Abroad* (Ottawa: Assistant Deputy Minister (Public Affairs)) [Pamphlet on-line]; available from http://www.navy.dnd.ca/mspa_video-media/dnd_intern_policy_eng.pdf; Internet; accessed 12 January 2007.

[4] CBC News, "Ottawa says forced to seize *Katie*," http://cbc.ca/cgi-bin/templates/view.cgi?/news/2000/08/03/katie_confront000803; Internet; accessed 12 January 2007.

[5] Canadian Navy: The Fleet, http://www.navy.forces.gc.ca/cms_fleet/fleet_e/fleet-home_e.asp; Internet; accessed 10 January 2007.

[6] Marc Milner, *Canada's Navy: The First Century* (Toronto, Buffalo and London: University of Toronto Press, 1999), 303.

[7] Department of National Defence, *Securing Canada's Ocean Frontiers: Charting the Course from Leadmark* (Ottawa: Directorate of Maritime Strategy, 2005), 40.

by severe budget cuts and faced the challenge of subsisting on a shoestring budget until Canada entered World War II, by the end of which it had grown to become the third largest allied Navy. The Navy subsequently endured constant declining budget allocations and a shrinking fleet from the 1960s until the end of the Cold War, during which it created a niche for itself in Anti-Submarine Warfare (ASW). The Navy survived two armed forces reorganizations, in 1922 and 1946, and the strongly opposed and highly emotional 1968 Unification of the CF under one Chief of the Defence Staff. During the first century of its existence, the Navy lived through periodical confrontations about its relevance but always succeeded in stemming the tide.

If the next decade and a half is deemed once more uncertain for the Navy's surface fleet, such perception would only seem to be alleviated by the recent resurgence in military interest amongst the political leadership. Following years of neglect by various federal governments, the CF has experienced an increase in support commencing with the appointment of General Rick Hillier as Chief of the Defence Staff (CDS) in February 2004. General Hillier received government endorsement to initiate substantive transformation of the CF and consequently reshape the military to ensure success in operations domestically and overseas. Additionally, the recent election of Prime Minister Stephen Harper's Conservative government early in 2006 maintained this trend to revitalize the Canadian military. In June 2006, the new government began fulfilling election platform commitments to build a stronger military capable of defending Canada's sovereignty at home and meeting obligations abroad. Recent announcements have included the acquisition of strategic lift aircraft and medium- to heavy-lift helicopters for the Air Force, new logistics vehicles for the Army and for the Navy, three Joint Support Ships (JSS) to replace the ageing PROTECTEUR class replenishment vessels.[8] It is important to note that the JSS class ships are not replacements for the surface combatant fleet and that their joint lift capability will likely make them attractive assets to both the Army and the Air Force, in addition to their role of supporting naval Task Groups at sea.

While the JSS platform will not address the surface combatant fleet future requirements, the project will impact the Canadian shipbuilding industry. Current Department of National Defence (DND) demand in the sector includes the upcoming mid-life modernization of the CPFs, refits of the VICTORIA class submarines and construction of ORCA class training vessels and. With significant potential major projects such as armed ice breakers as well as future surface combatants, questions have been raised regarding the capability, capacity, technical ability and skill level of the industry and its manpower.[9] Since World War II, most ships of the Canadian Navy have been built in Canadian shipyards. However, because Canadian naval vessels tend to be built in batches rather than in a steady state fashion, and with gaps of up to 25 years between projects, this trend sends the industry through boom and bust cycles which only exacerbates the issues of capacity not to mention the significant costs associated with re-activating the industry each time new platforms are approved. The long-term vision of the current Chief of the Maritime Staff (CMS), Vice Admiral Drew Robertson, encompasses solutions to break the cycle

[8] Office of the Prime Minister, News Releases, "Canada's New Government keeps its commitment to support our military," http://www.pm.gc.ca/eng/media.asp?id=1229; Internet; accessed 14 January 2006.

[9] Vice Admiral (Ret'd) Peter Cairns, "Shipbuilding and Industrial Preparedness," *Canadian Naval Review* 2, no. 3 (Fall 2006): 16.

that has caused frustration in the shipbuilding industry for many decades now and facilitate fleet transition.[10]

In today's global environment tainted by terrorist threats, rogue states, natural disasters and humanitarian crises, "sea power offers the best chance of maintaining stability and, if stability is reduced or lost, is an essential element in its restoration."[11] Also significant is the flexibility of naval forces which labels them as ideal instruments of foreign policy providing governments with influential vehicles to exercise visible diplomacy.[12] With Maritime Command's mission "to generate and maintain combat-capable, multi-purpose maritime forces to meet Canada's defence objectives"[13] the Navy stands at the forefront to fulfil Canada's security and defence needs, presenting a broad range of capabilities to address threats to Canadian interests and protect national values anywhere in the world.

The purpose of this essay is to demonstrate that given the current political climate in Canada and the global geopolitical situation, CF Transformation initiatives, and the status of the Canadian defence industrial base in the shipbuilding industry, there is a risk that the Navy's surface combatant fleet, namely the DDH 280 destroyers and the HALIFAX class frigates, may not be replaced. The thesis will be proven in three separate folds. The first part of the paper will demonstrate that, while supportive of maintaining a navy, Canada's international, security and defence policies do not specifically endorse the need for a 'blue water'[14] capability, and that it may impact on the continued existence of the combatant fleet. Part two will explain that recent CF Transformation initiatives, namely the joint command structure, the potential emergence of a sealift capability niche, and defence budget considerations, may have longer term effects on the Navy's ability to modernize and renew the fleet of destroyers and frigates. The third part will explain that the building of ships in Canada, specifically the application of the Canadian Shipbuilding Policy , the decreased domestic shipyard capacity, and current political uncertainties, do not constitute a cost effective option for contracting the next generation of combatant ships, a situation that has significant implications for future naval procurement programmes. Finally, the conclusion will reassert the relevance of surface combatant ships in a transformed CF and forecast the potential impact on Canada and on the CF should destroyers and frigates not be replaced.

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[10] Stephen Trimble, "Canada Seeks Shipbuilding Stability," *Jane's Defence Weekly* (8 November 2006) [Journal on-line]; available from http://www4.janes.com; Internet; accessed 18 December 2006.

[11] Charles Hutton Brown and Hartmut Manseck, "Naval Profile: The Canadian Navy," *Naval Forces* 5 (2004) [Journal on-line]; Internet; available from http://web.ebscohost.com; accessed 18 December 2006, 110.

[12] Fred W. Crickard and Peter T. Haydon, *Why Canada Needs Maritime Forces* (Nepean, ON: Napier Publishing for the Naval Officers' Association of Canada, 1994), 18.

[13] Department of National Defence, *Leadmark: The Navy's Strategy for 2020* (Ottawa: Directorate of Maritime Strategy, 2001), 92.

[14] Referring to maritime forces capable of operating across the oceans and on the high seas, and distinguished from 'green water' littoral and coastal forces, and 'brown water' inland and river forces.

CANADIAN POLICY

Of the 243 countries in the world today, 193 are recognized independent states, the Vatican and 192 members of the UN; and of these 156 are littoral states.[15] Canada is ranked first with the longest coast line and has vested maritime interest in three oceans. Accordingly, Canada's economy largely depends on maritime trade, whether domestic flow, trans-border traffic with the U.S., or overseas imports and exports with other trading partners. Canada's maritime zones are also extremely rich in a wide variety of fish stocks and in undersea oil and gas natural resources, many yet to be exploited. Additionally, global warming predictions fuel discussions regarding the eventual opening of the Northwest Passage in the Canadian Arctic and the ensuing sovereignty and environmental concerns are becoming leading items on the national front. In a globalizing world, the importance of protecting Canada's Sea Lines of Communications (SLOC) must therefore not be overlooked and Canada must remain an engaged player in the maritime environment.

As country arguably enjoying the status of 'Medium Power,'[16] Canada possesses a Rank 3 - Medium Global Force Projection Navy[17] to defend its interests and fulfil its responsibilities on the global scene. Figure 1 shows the Navy's *Leadmark* version of Booth's Triangle that illustrates the functions the Canadian Navy is expected to perform in the 21st century. The three sides of the triangle, namely diplomatic, constabulary and military, reflect roles that support government foreign policy, domestic sovereignty responsibilities, and defence commitments respectively, through the use of the sea.

Figure 1 – Roles of Canada's Navy [18]

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[15] Central Intelligence Agengy, "TheWorld Fact Book 2007," available from https://www.cia.gov/cia/publications/factbook/index.html; Internet; Accessed 23 January 2007.

[16] *Leadmark*, 29.

[17] While Rank 3 Navies do not possess the full range of capabilities, they have credible capacity in a number of them and consistently demonstrate determination to exercise these capabilities at a distance from domestic waters in cooperation with other Force Projection Navies. *Leadmark*, 44.

[18] *Leadmark*, 99.

The *Leadmark* triangle will be used to demonstrate how the Canadian Navy addresses government strategic direction and, conversely, that the current application of government policy could potentially put the future surface combatant fleet at risk and cause the Navy to lose its Rank 3 status by the continued use of destroyers and frigates in roles they are not specifically designed for.

Support to Canadian Foreign Policy

Included in countries with a coastline are Brazil, Russia, India and China, the BRIC economies as identified by the Goldman Sachs Investment Bank. According to Goldman Sachs, over the next 50 years the BRIC countries have the potential to become significant players on the world stage, estimating that by 2025 BRIC nations could account for over half the size of the G6 in terms of Gross Domestic Product (GDP). Additionally, of the current G6 countries (US, UK, Japan, France, Germany, Italy), only the US and Japan are likely to be among the six largest economies in US dollar terms in 2050.[19]

Canada's 2005 International Policy Statement (IPS) discusses the emergence of the BRIC giants, recognizes that their growth will carry significant economic implications worldwide, and states that their increasing demand for commodities and energy has the potential to influence the Canadian natural resources sector and advance Canada's position on the global market.[20] Notwithstanding a series of government changes early in this decade, Canada's relation with China remains steady and the current Harper government continues to support trade initiatives, seeking market opportunities for mutual benefits and working to build stronger investment ties with this emerging economy.[21]

For Canada, the Navy plays a key role in the advancement of foreign policy objectives aimed at strengthening diplomatic relations and opening trade opportunities.[22] Figure 2 depicts the Navy's areas of operations and location of port visits in the second half of the 1990s. It also demonstrates Navy's global reach as a strategic instrument for the government.

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[19] Dominic Wilson and Roopa Purushothaman, "Dreaming with BRICs: The Path to 2050," *Goldman Sachs Financial Workbench*, Global Economics Paper No. 99 (1 October 2003) 2; Available from http://www2.goldmansachs.com/insight/research/reports/99.pdf; Internet; accessed 23 January 2007.

[20] Department of Foreign Affairs and International Trade, *Canada's International Policy Statement: A Role of Pride and Influence in the World – Overview* (Ottawa: Department of Foreign Affairs and International Trade, 2005) 1.

[21] Canadian Embassy in Bejing. News Releases, "Canada's New Government Promotes Stronger Links Between Canada and China," available from http://www.beijing.gc.ca/beijing/en/index.htm; Internet; accessed 26 January 2007.

[22] Bruce Fenton, "Foreign Policy and Naval Forces: A Canadian Perspective," in *Canadian Gunboat Dipomacy*, ed. Ann L. Griffith, Peter T. Haydon and Richard Gimblett, 131-145 (Halifax: Centre for Foreign Policy Studies, Dalhousie University, 1998) 143.

Figure 2 – Canadian Maritime Operations and Port Visits [23]

Trade partnerships often build over time, and warship visits can play a useful role in developing new economic ventures for Canadian industry.[24] Recent naval visits to Canada's trading partners include HMCS REGINA visiting Shanghai and Qingdao, China, in August 2006,[25] and in November 2006, HMCS OTTAWA making stops in Goa and Mumbai, India. [26] In a period of cautious defence budget allocations and spending, and given the costs and time required to bring naval forces to operational readiness, it would be unlikely, at the very least infrequent, and certainly not recommended, that surface combatant ships sail with the primary mission of conducting diplomatic and trade relations activities.

Historically, diplomatic naval port visits have been conducted within the scope of primary missions, time and operational schedules permitting. To expand on the recent visits made in Asia, HMCS REGINA's visits to China were part of the Navy's routine, recurring *Westploy* deployment consisting of a series of exercises with naval forces in the region,[27] while HMCS OTTAWA's stops in India were made during the transit to her designated area of operations in the Arabian Sea.[28] The same can be said about deployments with NATO engagements and other nationally scheduled exercises and operations.

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[23] *Leadmark*, 67.

[24] Fenton, "Foreign Policy and Naval Forces," 142.

[25] Canadian Navy: HMCS REGINA, "HMCS REGINA Deploys to Northeast Asia," http://www.navy.forces.gc.ca/regina/news/ship_news_e.asp; Internet; accessed 26 January 2006.

[26] Canadian Navy: HMCS OTTAWA, "HMCS OTTAWA set sail for six months on anti-terror campaign," http://www.navy.forces.gc.ca/ottawa/news/ship_news_e.asp; Internet; accessed 26 January 2006.

[27] "HMCS REGINA Deploys to Northeast Asia."

[28] "HMCS OTTAWA set sail for six months on anti-terror campaign."

Diplomatic visits are not conducted solely by surface combatant units and other classes of ships and platforms can prove as suitable to display the Canadian flag abroad, particularly when frigates and destroyers engage in missions specific to their combatant purposes: Canadian Auxiliary Oiler Replenishers (AOR) also deploy globally and Maritime Coastal Defence Vessels (MCDV) have expanded their range from their traditional domestic theatre out to Europe and the Caribbean. While significant gains can be derived from the marriage between naval assets and political objectives,[29] the foreign policy objective of fostering relations may justify maintaining naval forces but not these types of ships specifically. Economic trade and diplomatic engagement are, therefore, not a primary mandate to maintain a surface combatant fleet.

Peace support operations and the stabilization of failed and fragile states are also significant items on the global political agendas and will likely continue to be the focus of many military interventions in the post-Cold War environment. In 2006, the magazine *Foreign Policy* listed 60 countries as 'Failed States' based on an index calculated using 12 indicators of instability. Figure 3 illustrates the location of those countries around the world, clearly showing their predominance in Africa and Asia, and notably along continental coastlines. Included in the top portion of the list are countries such as Haiti, Somalia, Sudan, Iraq and Afghanistan, where Canada is currently engaged or has demonstrated interest in the recent past.

Figure 3 - The Failed States Index Map [30]

Among the Canadian Government's priorities stated in the 2005 IPS is to "maintain combat-capable Canadian Forces, focused on the challenge of restoring peace and stability to failed and fragile states."[31] Part of Canada's response to state failures is to help deal with populations displaced within their countries as well as across borders through the provision of material assistance while engaging in diplomatic discussion to better conditions. Key initiatives

[29] *Leadmark*, 38.

[30] *Foreign Policy and The Fund for Peace* (May/June 2006), "The Failed States Index" [Journal on-line]; available from http://www.foreignpolicy.com/story/cms.php?story_id=3420; Internet; accessed 22 January 2006. Ranking and Coding are provided at Appendix 1.

[31] *International Policy Statement – Overview*, 14.

to achieve these goals include the continuous review and modernization of the CF capabilities with specific mention of equipping the Navy with JSS to carry out missions abroad.[32]

While the Navy certainly engaged in Canadian peacekeeping missions in the decade following the end of the Cold War, the overall role of the surface combatant ships was somewhat limited and peripheral in nature. During missions in Somalia (1992) and East Timor (1999), for instance, the vessels deployed in support of the UN were HMC Ships PRESERVER and PROTECTEUR, Canada's two AORs. In 1991, Canada also sent a naval contingent of officers and non-commissioned members (NCM) to operate local patrol vessels on Cambodian rivers but no Canadian ship was deployed. Finally, Canada did provide naval forces to operations in the Adriatic in support of UN sanctions in the former Yugoslavia, but it must be noted that these deployments (1993-96) took place under the umbrella of Canada's commitment to NATO's Standing Naval Force Atlantic (SNFL).[33]

Responding to failed and fragile state situations in the 21st century does not follow the typical peacekeeping missions encountered during the Cold War. The lack of clear consent from the parties in conflict, asymmetric threats and counter-insurgency often make operations more dangerous than Canada has experienced since the Korean War over half a century ago. The mission in Afghanistan is a very good example. With roles such as disarmament, demobilization, monitoring elections and infrastructure restoration, land forces generally lead the operations whereas maritime and air forces play support roles and assist in setting conditions for successful resolution.[34]

Specific roles for CF in the provision of assistance and security to failed and fragile states depend on current capabilities and resources available. [35] Future involvement will, therefore, depend on future CF capabilities and resources which, given that projections of up to 25 years are required to develop and acquire military capabilities, are being decided and developed today.[36] Accordingly, because Canada has limited resources, governments must prioritize where and how CF assistance can achieve the greatest impact. If the government's intent remains to acquire JSS to support peacekeeping missions as indicated in the IPS and announced in the summer of 2006, there is a chance the Navy's involvement in future peacekeeping operations could be limited to lifting troops and equipment to and from areas of operations in support of the Disaster Assistance Response Team (DART) and Stabilization and Reconstruction Teams,[37] thus further reducing the relevance of surface combatant ships in international operations.

Among issues related to failed and fragile states is piracy activity off the Horn of Africa sparked by terrorism and poverty, and exacerbated by despot governments and tribal rivalries.

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[32] *Ibid*., 14.

[33] This paragraph on maritime contributions to peace-support operations consists of data extracted from: Douglas S. Thomas, "The Canadian Maritime Contribution to Peace-Support Operations," in *Canadian Gunboat Dipomacy*, ed. Ann L. Griffith, Peter T. Haydon and Richard Gimblett, 185-228 (Halifax: Centre for Foreign Policy Studies, Dalhousie University, 1998).

[34] David Carment, *Effective Defence Policy for Responding to Failed and Failing States* (Calgary: Canadian Defence and Foreign Affairs Institute, 2005) 9-10.

[35] *Ibid*., 15.

[36] *Ibid*., 18.

[37] *Ibid*., 30.

This type of challenge would ideally be tackled by naval surface combatant ships. However, if government international policy objectives in terms of assistance to failed and fragile states continues to ignore the value of blue water naval forces, there exists long-term risk to the necessity for Canada's surface combatant fleet due to the lack of foreign policy demand in such capability.

The development and proliferation of WMD remain leading concerns in the post-9/11 environment and the fact that countries such as India and North Korea have direct access to the sea raises Canada's 2005 IPS recognizes that regional tensions in the Middle East and on the Korean Peninsula drive the desire of some states as well as of non-state actors, including terrorist organizations, to acquire and share WMD in an attempt to gain international influence. Canada's IPS commits to preventing the spread and reducing the existing stocks of WMD through participation in joint missions and information sharing such as with partners of the Proliferation Security Initiative (PSI), [38] a U.S.-launched activity, focused on practical cooperation to deter, impede and stop shipments of WMD. In Fall 2003, PSI participants, including Canada, agreed to *a* 'Statement of Interdiction Principles' consistent with international law. One of the agreed upon principles consisted in "[adopting] streamlined procedures for rapid exchange of relevant information concerning suspected proliferation activity, . . . [dedicating] appropriate resources and efforts to interdiction operations and capabilities, and [maximizing] coordination among participants in interdiction efforts."[39] PSI is not an issue exclusively tackled by naval forces and Canada's Air Force is also a player in discussions, forums and exercises. Moreover, in terms of global security in the maritime domain, proliferation is not isolated in specific geographical areas but is rather prevalent along SLOCs everywhere on the high seas. While Canada's surface combatant fleet possesses the capability to track, detect and share maritime traffic information and has acquired significant experience in MIO since the 1991 Gulf War, PSI engagement remains an activity within scheduled naval deployments, such as the NATO commitments as well as exercises and operations in domestic and continental waters. From a naval perspective the issue is one of dedicated resources, specifically ships at sea, to meet Canada's commitment to PSI. If resources are not dedicated however, there can be little expectation of quantifiable and positive results. Moreover, insufficient consideration given to providing the necessary resources to support policy commitments would serve as evidence that ". . . the often self-congratulatory and self-serving rhetoric of Canadian involvement in solving the world's many problems increasingly outstrips by far Canada's very limited capacity to use its military to these ends."[40] Consequently for the Navy, the global security role in terms of controlling and preventing the proliferation of WMD by rogue states would not in and of itself support the maintenance of a surface combatant fleet.

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[38] *International Policy Statement – Overview*, 15.

[39] Department of Foreign Affairs and International Trade, Proliferation Security Initiative, http://www.dfait-maeci.gc.ca/arms/psi-en.asp; Internet; accessed 29 January 2007.

[40] Dan Middlemiss, *A Military in Support of Canadian Foreign Policy: Some Fundamental Considerations* (Halifax: Centre for Foreign Policy Studies, Dalhousie University, 2003); available from http://cdfai.org/currentpublications.htm; Internet; accessed 4 February 2007.

Securing Canadian Sovereignty

In the post-9/11 global environment concerned with increased numbers of security issues, Canada's 2004 National Security Policy (NSP) acknowledges that the Government has "a responsibility to be able to defend against threats to Canadian sovereignty."[41] Accordingly, the 2005 Defence Policy Statement (DPS) lists as one of the tasks of the CF assigned specifically to the Maritime Forces, "enhanced surveillance and presence in Canadian areas of maritime jurisdiction,"[42] to ensure the physical security of Canadians, their values and key institutions against illegal entry and incursions into Canada's territorial waters. The Navy has always played a key role in the protection of Canadian interests in domestic waters.

Building the Recognized Maritime Picture (RMP) in Canada's maritime approaches has historically been a cooperative effort between Canadian Coast Guard (CCG) assets, naval units and Maritime Patrol Aircraft (MPA), as well as other units and ships from other departments capable of providing relevant information. From a Navy stand-point, populating the RMP is a task every ship at sea conducts while engaged in other missions, operations and training. This task is not solely a surface combatant role and in fact, when the Maritime Coastal Defence Vessels (MCDV) entered service in the 1990s, their primary role was maritime surveillance and coastal patrol, in addition to and concurrent with other functions such as route surveying, sea-bed mapping and training. Manned by Naval Reserve personnel, they have assisted in meeting the requirements to conduct coastal patrols and maintaining a presence in Canadian waters but are limited in range and sea handling in certain weather and sea conditions. Operating off the Grand Banks of Newfoundland can prove particularly challenging in the January-February timeframe for example, thus requiring frigates and destroyers to fill the gap.

A similar capability gap recently emerged in light of global warming trends, as politicians, citizens and activist groups call for greater defence measures and increased presence in Canada's northern waters. The 2005 DPS consequently extended the surveillance and presence jurisdiction of the Navy to the near ice and ice free waters of the Arctic.[43] Regardless, CPFs and DDH 280s are not capable of operating in ice and can also be quite vulnerable in areas near ice as their hull is not strengthened for such harsh conditions. Their capacity to patrol arctic waters and show the Canadian flag on the often forgotten third coast is therefore limited to southern portions of the archipelago and only during a short window of opportunity in the summer months. While two MCDVs ventured to Resolute Bay off Frobisher Island in Summer 2003, it is important to note that these vessels are also not ice capable. In fact, Canada's maritime forces have a very limited capability to patrol Arctic waters and, since the CCG's ice breakers are not armed and hence limited in their constabulary roles in the Canadian Arctic, there is a significant gap in Canada's ability to oversee its northern maritime interests. While the requirement for Arctic patrols may not seem urgent at the moment, the demand will likely increase with the expected opening of the Northwest Passage in the coming decades, thus adding to the domestic responsibilities assigned to the Navy.

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[41] Privy Council Office, *Securing an Open Society: Canada's National Security Policy* (Ottawa: Privy Council Office, 2004) 5.

[42] Department of National Defence, *Canada's International Policy Statement: A Role of Pride and Influence in the World – Defence* (Ottawa: Department of National Defence, 2005) 19.

[43] *International Policy Statement – Defence*, 19.

Similar challenges are also reflected in the Navy's provision of services to Other Government Departments (OGD), with the 2005 DPS calling for the Navy to increase its support in the conduct of environmental surveillance to ensure the protection of Canada's fish stocks and monitor illegal drugs and immigration activities.[44] DND has signed Memoranda of Understanding (MOU) with the Department of Fisheries and Oceans (DFO) and the Solicitor General (SolGen) for the Royal Canadian Mounted police (RCMP) to provide each with a number of 'sea days' every year. Accordingly, the Navy has been an engaged participant in fisheries patrols, drug interdiction operations and other law enforcement scenarios in Canada's maritime approaches and areas of interest. Over the past several years however, DFO has begun to rely increasingly on the Navy for support concurrent with the reduction of its offshore enforcement fleet. Consequently, while the number of boardings carried out by DFO officers embarked aboard naval vessels remains relatively constant, the overall percentage of boardings instigated by fisheries officers embarked in naval vessels is increasing.[45] Peter Haydon makes the case for the Navy to conduct the majority of Canada's coastal sovereignty and security patrols because it is the sole department equipped to accomplish those missions efficiently.[46] He cautions, however, against 'constabularization' to the point that Canada's naval expertise lies in coast guarding functions and arguing that in such a case the Canadian Navy could be excluded from multinational naval operations.[47]

MCDVs also play an honourable role in Canadian maritime law enforcement missions, commensurate with their scope of capabilities. But the fact remains that surface combatants do the bulk of the work although over-equipped for such taskings with their state-of-the-art military sensors and armament suites. Given defence budget allocation trends by most governments since the 1960's, growing demand for additional naval support to OGDs lacking the proper assets could steer Canada's surface combatant fleet towards roles that would justify diminished future capabilities in comparison with the multi-purpose profile provided by today's surface fleet or to the adoption of less expensive, large patrol vessels in lieu of the frigates.

Another important responsibility vested in the Navy is the provision of Search and Rescue (SAR) assistance in Canadian waters. In 1976, the Minister of National Defence (MND) was appointed as the lead minister for SAR in Canada. DND delivers primary air SAR services for both air and maritime incidents[48] and the Navy, as directed in the 2005 DPS, is to sustain one Ready Duty Ship (RDS) on each coast to respond to national contingencies in Canadian waters

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[44] *International Policy Statement – Defence*, 19.

[45] Laurence M. Hickey, "Enhancing the Naval Mandate for Law Enforcement: Hot Pursuit or Hot Potato?" *Canadian Military Journal* (Spring 2006) [Journal on-line]; available from http://www.journal.forces.gc.ca/engraph/Vol7/no1/PDF/07-Maritime_e.pdf; accessed 6 February 2007.

[46] Peter T. Haydon, "*Canadian Naval Future: A Necessary Long-Term Planning Framework,*" Institute for Research on Public Policy, IRPP Working Paper Series no. 2004-12 (November 2004); available from http://www.irpp.org/wp/archive/wp2004-12.pdf; Internet; accessed 6 February 2006.

[47] Hickey, "Enhancing the Naval Mandate. . ." 45.

[48] Fisheries and Oceans Canada, Maritime Search and Rescue in Canada, http://www.ccg-gcc.gc.ca/sar/program/index_e.htm; Internet; accessed 6 February 2007.

and maritime approaches.[49] All ships in the Canadian fleet can assume RDS duties on a rotation basis and, when so designated, deploy within eight hours of receiving a tasking. The exception to this status pertains to MCDVs which, given their limited capabilities, necessitates the concurrent availability of a major surface vessel in case the SAR scenario requires greater capability in terms of speed, seaworthiness and shipboard space for mass casualties for instance. Canada's frigate and destroyers offer rapid reaction, significant command and control and communications capabilities in addition to shipboard space and highly competent personnel to respond to rescue efforts. Once again however, these ships are primarily designed for military roles and their capabilities are more than is required for SAR missions. The government's direction for indefinite sustainment of an RDS on each coast does warrant the existence of a fully capable coastal force, but it does not justify maintaining a modern multi-purpose surface combatant fleet specifically, which expertise lies primarily in military tasks and warfare functions.

In terms of domestic response, other contingencies, apart from SAR occurrences, could necessitate response from naval units. If the 2005 DPS commits to increasing the CF effective strength by 5,000 Regular Force and 3,000 Reserve personnel, it also specifies that the Land Force will benefit from the vast majority of this increase and that these new personnel will help CF better respond to domestic crises such as natural disasters and terrorist attacks.[50] That said, environmental conditions that can be imagined in the aftermath of a major earthquake on the West Coast constitute a possible instance when naval units would likely be the first CF element on site and providing assistance. Naval forces are mobile, rapidly deployable and self-sufficient. In times of emergency they may be the quickest if not the only immediate response option, yet, they seem to receive little support when compared to the value of their potential contribution.

While the Navy can be a significant contributor to domestic contingency responses, disaster relief effort offers very limited roles specific to frigates and destroyers and in many cases, the Naval Reserves and MCDVs are just as suited for the task as Regular Force naval personnel and major surface units. A prime example is the rescue endeavour following the crash of Swiss Air Flight 111 off the coast of Nova Scotia in September 1998. The Navy answered the call and ships on station included the Halifax-based AOR and MCDVs in addition to frigates.

Frigates can play a useful role on the open ocean but, like destroyers, they have more than is required in terms of personnel, equipment and expensive war-fighting capability to assume a constabulary role in Canada's littoral regions.[51] Since there is no indication at present suggesting that Canada will acquire a platform intermediate to surface combatants and MCDVs to fill the capability gaps, it is reasonable to expect that frigates and destroyers will continue to

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[49] *International Policy Statement – Defence*, 19.

[50] *Ibid*., 3

[51] Senate Committee on National Security and Defence, *WOUNDED: Canada's Military and the Legacy of Neglect - Our Disappearing Options for Defending the Nation Abroad and at Home*, Interim Report by the Senate Committee on National Security and Defence (September 2005), available from http://www.parl.gc.ca/38/1/parlbus/commbus/senate/Com-e/defe-e/rep-e/repintsep05-e.htm; Internet; accessed 6 February 2006.

be less than optimally tasked simply because they are the only platforms with sufficient capability in the naval fleet inventory, even for routine coastal constabulary operations. Such an outcome does not represent a cost effective use of scarce resources in a capital limited budget environment. The effect of this platform to mission suitability gap is to monopolize surface combatant assets to a degree that they may very well be precluded from potential missions or operations that would require their specialized capabilities and for which no other platform would be suited.

Defence of National and Allied Commitments

If Rank 8 Constabulary Navies consist of fleets that are not intended to fight,[52] it can be deduced then that navies ranked 7 and higher, and tasked with defence and force projection roles, require some fighting capabilities. The Canadian Navy, arguably a Rank 3 naval force, possesses a number of shipborne warfare systems to support defence functions. However, if modern medium power navies have a primary role of meeting national requirements while maintaining enough operational capability to be employed abroad when necessary,[53] Canada's frigates and destroyers are constrained by fleet size.

When conducting maritime operations, the designated area must be kept secure by controlling the movement of other vessels and aircraft. Accordingly, Peter Haydon assesses that "the primary task of the Canadian Navy today can be thought of as *sea control*,"[54] defined in *Leadmark* as the condition that exists when freedom of action to use an area of sea for one's own purposes, for a period of time, in the subsurface, surface and above water environment has been achieved.[55] Gaining sea control in a given area necessitates the gathering and analysis of information, the physical presence of warships, and quick, effective response capability to actual or potential threats. Canada's surface combatant fleet has demonstrated this sea control capability on numerous international operations since the end of the Cold War, but most significantly during the recent Operation APOLLO.[56] Alone, Canada's maritime forces will only achieve sea control over a limited area. However, when operating in coalitions, in complex environments such as the Arabian Sea, the contribution can be significant.

The government's IPS statement to "increase the Canadian Forces capacity to participate with allies in counter-terror operations"[57] therefore leads to a DPS function expected of maritime forces to remain capable of participating in overseas operations and conducting MIO as part of the ICAT.[58] That said, the deployment tempo of 17 warships between October 2001 and December 2003 during Operation APOLLO put considerable strain on the fleet and consequently

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[52] *Leadmark*, 45.

[53] Crickard and Haydon, Why Canada Needs Maritime Forces, 20.

[54] Haydon, *Canadian Naval Future*.

[55] *Leadmark*, 35.

[56] Haydon, *Canadian Naval Future*.

[57] *International Policy Statement – Overview*, 12.

[58] *International Policy Statement – Defence*, 28.

stretched the Navy's ability to meet its domestic obligations during the same time period,[59] specifically in fulfilling RDS assignments, and carrying out fisheries and sovereignty patrols.

Government policy offers a role for the Navy's surface combatants but it must be understood that the operational environment consists of an extensive domestic coast line and an unstable global security environment. Conversely, the fleet is comprised of too few ships to address such high demand and as a result, the Navy cannot be expected to exercise sea control both at home and abroad simultaneously.

The measurement of the functions of fleet-in-being and maritime power projection reside in the ability to generate and sustain a naval force. Conversely, the limitations imposed by Canada's fleet size impact the ability of the Navy to generate forces to assemble naval forces on both coasts simultaneously to meet domestic readiness assignments, alliance and coalition commitments. 'Fleet-in-being' refers to the use of options provided by the continued existence of a fleet to constrain the enemy's options to use theirs, [60] and 'Maritime Power Projection' is the ability to project , sustain and apply effective military force from the sea in order to influence events on shore.[61] The tool offered by the Canadian Navy to execute these functions is the naval task group. Generally consisting of one DDH 280 destroyer, two frigates and one AOR, with helicopter detachments embarked, the model provides the government with greater number of flexible options and offers a range of capabilities to respond to assigned missions.[62] But once again, Canada's fleet presents some force generation limitations and the Navy's response to the DPS task group requirement is now the Composite Contingency Task Group (CCTG), composed of ships from both Atlantic and Pacific coasts to deliver on assigned defence missions,[63] on a rotation basis.

The 2005 DPS requires the Navy to sustain for up to six months the deployment of a task group and a follow-on deployment of another group for the same duration.[64] With the Navy's inability to maintain a single task group of ships located on the same coast due to force generation issues, it is difficult to conceive that the Government's requirement to maintain an ability to power project for a period up to one year could be met and that the fleet of surface combatants, in its current status, would generate the effects expected of a fleet-in-being. In order to maximize its naval capabilities, Canada should continue to nurture alliance commitments with NATO and bi-national cooperation with the United States in order to continue to make a difference in global maritime operations.

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[59] Charles Hutton Brown and Hartmut Manseck, "Naval Profile:The Canadian Navy," *Naval Forces* 5 (2004) [Journal on-line]; available from http://web.ebscohost.com; accessed 18 December 2006.

[60] *Leadmark*, 36.

[61] *Ibid*., 36.

[62] *NATO's Nations and Partners for Peace 2/2003*, "Canadian Naval Task Group Concept Translates into Readiness and Sustainment" [Journal on-line]; available from http://web.ebscohost.com; accessed 18 December 2006.

[63] Department of National Defence - Vice Chief of the Defence Staff, "Generate and Sustain Joint, National, Unified and Special Operations Forces," http://www.vcds.forces.gc.ca/dgsp/pubs/dp_m/intro_e.asp; Internet; accessed 7 February 2007.

[64] *International Policy Statement – Defence*, 30.

Canadian decision makers generally understand that Canadian sea power is best applied in cooperation with stronger allies. As such, up to and during the Second World War, the Canadian Navy operated closely with the Royal Navy. After the Second World War however, the focus shifted south and cooperation between the US Navy and the Canadian Navy emerged.[65] Furthermore, Canada joined the NATO alliance from its creation in 1949, through which the Navy developed significant ASW expertise during the Cold War period.

In 2005, the DPS called for close cooperation of maritime forces with the US Navy and Coast Guard as well as continued participation in operations overseas in order to address threats at their source and enhance the CF role in the defence of North America.[66] Since the Operation APOLLO commitment was terminated in 2003, the Navy has maintained its participation in the GWOT and continues to deploy frigates to the US CENTCOM area, normally integrated into US naval strike groups, at designated intervals commensurate with the readiness and sustainment cycle capacity. Additionally, the long-time NATO naval commitment of frigates and destroyers joining the Standing Naval Forces Atlantic (SNFL), suspended during the Operation APOLLO marathon, resumed in 2004. This re-engagement corresponded with the government's DPS commitment to maintaining Canada's status as a contributing member in key international institutions as the Alliance goes through significant transformation initiatives to adapt from the bi-polar environment of the Cold War to the insecure global climate of the early 21st century marked by asymmetric threats. In January 2006, the Canadian Navy completed a year in command of the Standing NATO Maritime Group One (SNMG 1), the former SNFL, with two consecutive DDH 280s serving as the command platform for the Canadian commander and his appointed staff.

These commitments are also impacted by the force generation restrictions: there are gap periods between deployments to the Arabian Sea and there is no ship assigned to SNMG1 for the first half of 2007. While government's expectations in terms of participation in alliances and coalitions support the requirement for Canada to maintain a surface combatant fleet, the resources provided are too scarce for the Navy to fulfil all the commitments.

In a world the future of which is uncertain and unknown, frigates and destroyers offer the most and best long-term flexibility options for their governments. Accordingly, despite the limitations imposed by its size, Canada's surface combatant fleet's contribution on the global scene must be recognized for its versatility. Canadian foreign, security and defence policies do make the case for Canada to maintain a navy but not a fleet of surface combatants specifically. More often than not, frigates and destroyers are employed for tasks which they are either not designed for or in missions for which they are well 'over-equipped'.[67] The longer-term danger is that future surface combatants may be fitted with fewer capabilities or worse, that the fleet may be replaced, or not, by lesser platforms that do not offer the same global reach, resulting the loss of a tremendous domestic and strategic defence asset for Canada. This risk of operational gaps must be kept in mind considering that Canada has a history of maintaining its ships in service for

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[65] Rob Huebert, "Continental Defence at Sea: The Canadian Challenge," *Journal of Military and Strategic Studies* 9, Issue 2 (Winter 2006/07); available from http://www.jmss.org; Internet; accessed 7 February 2007.

[66] *International Policy Statement – Defence*, 23.

[67] 'Over-equipped' meaning similar to one's résumé making an individual over-qualified for a job.

periods often exceeding 30 years, well beyond their original life expectancy, and the length of the procurement cycle required to introduce new units in the fleet.

CF TRANSFORMATION

Military forces alter their organizational structures, modify their training standards and acquire new equipment to counter emerging threats, adapt to changing environments and make use of developing technologies. In the dynamic decade following the end of the Cold War that culminated with the 9/11 attacks the world has seen a change in the nature of warfare with the emergence of asymmetric threats. While military analysts, senior officers and the previous CDS, General Ray Henault, had recognized that fundamental changes were necessary to better position the CF to meet the defence and security challenges of the 21st century, the lack of current defence policy[68] did not provide the opportunity to transform the structure of the CF until 2005 with the release of the DPS and the appointment of General Rick Hillier as CDS.[69]

The transformation of the CF directed by General Hillier has four strategic lines of operation: a vision that reflects the mission and expectations set by the Government of Canada; a structure that balances the functions of force generation, force employment and force development; capabilities that ensure the CF are relevant, responsive and effective; and personnel recruited, trained, educated, integrated and employed to meet the demands of assigned operational missions.[70] To achieve the objectives, the CDS has vowed to "to focus, build and sustain an irreversible momentum."[71]

CF Transformation, specifically the joint command structure, the development of a more robust sea lift capability and budget considerations, to include the Afghan mission, has the potential to impact significantly on the replacement of the Navy's surface combatant fleet and alter the future roles, functions and capabilities of Canada's naval service. A comparison of CF Transformation to the 1968 Unification of the CF demonstrates that concerns on the part of the Navy regarding the potential loss of capabilities and responsibility that are common to both events seem more justified this time.

Joint Command Structure

Although the Unification of the CF that took place in the 1960s and the on-going CF Transformation of the present decade are very distinct milestones in the history of the Canadian

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[68] The most recent policy document at that time was the 1994 White Paper.

[69] Daniel Gosselin and Craig Stone, "From Minister Hellyer to General Hillier: Fundamental differences between the Unification of the Canadian Forces and its present Transformation," *Canadian Military Journal* 6, no. 4 (Winter 2005) [Journal on-line]; available from http://www.journal.dnd.ca/engraph/Vol6/no4/03-Trans_e.asp; accessed 18 December 2006.

[70] Department of National Defence, *CDS Transformation SITREP 03/05*, available from http://cds.mil.ca/cft_tfc/pubs/SITREP0305_e.asp [accessible only on the Defence Wide Area Network (DWAN)]; DND Intranet; accessed 13 December 2006.

[71] Department of National Defence, *CDS Transformation SITREP 01/05*, available from http://cds.mil.ca/cft_tfc/pubs/SITREP0105_e.asp [accessible only on the Defence Wide Area Network (DWAN)]; DND Intranet; accessed 13 December 2006.

military, a few interesting parallels can be drawn between the two events, starting with the ironically similar last names of their respective sponsors, Minister Paul Hellyer and General Hillier respectively. The similarities also include the foundation on the political climate and security environment, namely the Cold War and the threat of global terrorism, the rapidity of the changes driven, and of course the focus on reorganization and reshaping into a more unified and joint force structure. While the intent here is not to review the circumstances and the outcomes of the Unification, it is important to recall that to the three distinct services of the day, Unification was perceived as a menace to their own identity, culture and operational effectiveness. This resistance was particularly true for the Navy, and Admiral Landymore, Chief of the Naval Staff at the time, expressed to the minister that "he could not go along with a plan that would appear, in principle to wipe out the navy completely."[72] Reluctance to embrace change was felt across the senior leadership and many generals and admirals retired early as a result.

In shaping Transformation, General Hillier articulated six guiding principles. The most relevant, as it is considered to impact potentially the future roles of the Navy within the CF, is the development of a command-centric structure that fully enables strategic, operational and tactical leaders. Accordingly, on 1 February 2006 Canada Command (CanadaCOM), responsible for domestic and North American continental operations, and the Canadian Expeditionary Force Command (CEFCOM), commanding missions outside the CanadaCOM area of responsibility, were stood up as the pillars of a stronger command structure designed to improve operational effects both at home and abroad.

CF Transformation has been significantly better received than Unification by senior military leadership, and troops alike, although not unanimously embraced, and this acceptance is mostly due to General Hillier's strong commitment for a sustained and shared dialogue with his flag and general officers to whom he gave the responsibility to provide frank assessment and recommendations on the work in progress.[73] With the shift of power to the operational commanders however, increased resistance should be expected on the part of the Environmental Chiefs of Staff (ECS), namely the commanders of the Navy, Army and Air Force, as they lose their Force Employment (FE) responsibilities to the newly established operational commanders. For the Navy, this development means that CMS no longer commands naval operations and is relegated to Force Generation (FG)-type responsibilities and activities. In the newly established command construct, each time a ship sails on a domestic or international operation, operational command is transferred to the appropriate operational-level commander who holds authority over the ship until the mission is terminated and the ship returned to naval command. Additionally, the RDS on each coast are assigned to the Commander CanadaCOM who is responsible for all domestic emergency response tasking. What is now residual to CMS are the FG responsibilities, consisting of periods at sea dedicated mostly to training, sea trials and readiness exercises designed to prepare ships and naval personnel for scheduled operations. CMS responsibility also continues to include the maintenance and repair of the fleet through the Fleet Maintenance Facilities (FMF) in MARLANT and MARPAC. In essence, CMS has become the custodian of the fleet whereas the operational commanders have gained authority

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[72] Keith Cameron, "The Royal Canadian Navy and the Unification Crisis," in *RNC in Retrospect, 1910-1968*, ed. James A. Boutilier, 334-342 (Vancouver and London: University of British Columbia Press, 1982) 338.

[73] *CDS Transformation SITREP 01/05*.

over ships for which they are not responsible, nor equipped to prepare, maintain and repair in the conduct of operations.

Another interesting fact is that under the new joint focus, the operational commanders may be from almost any CF officer profession and background and when authority over ships is transferred to either CanadaCOM or CEFCOM, they may be commanded by an officer from either of the other two environments who has little or no experience in naval operations. The operational commanders do have naval experts, usually lower in rank and experience, on their staff to advise them in maritime matters but except in the case of the commanders of MARLANT and MARPAC, who are dual-hatted with Joint Task Force Atlantic (JTFA) and Pacific (JTFP) duties under the Commander CanadaCOM, admiralship experience at the operational level is almost non-existent, particularly in international operations under the commander CEFCOM. As wearing a green uniform and army ranks was complaint among sailors following Unification, having Army or Air Force Officers exercising command and control of naval units assigned to operations may become a contentious issue for the Navy in a transformed CF.

Prior to CF Transformation, a clear responsibility of ECSs, as Force Generators as well as Force Employers, was to define future capability requirements for their respective services. The question that may be rightfully asked in the post-Transformation context is whose responsibility will it be to define capabilities that will enable the CF to execute assigned missions? While it will likely not be the sole responsibility of the operational commanders as Force Employers, it is unclear exactly how much influence they will exercise and what residual portion will be left to the ECSs, as Force Generators and environment experts. In a new joint era dominated by operations on land and for which the Navy acts almost exclusively in a support role, the acquisition of new surface combatant vessels may not be a high priority item on the CF capital procurement list. Consequently, decisions made at the political level regarding naval capabilities may be highly influenced by generals without naval background:

> One of the long standing naval problems in Canada is that no national consensus exists on the structure, or the purpose, of the navy. In some respects, the Canadian navy exists at the minister's pleasure. Even though the prime minister and Cabinet are involved in the decision making process, they are greatly influenced by what the minister presents to them, and they invariably turn to him – rather than the service chiefs – for military advice. To be effective, the service chiefs have to accept, and learn to work within, the prevailing political environment.[74]

While the end state of CF Transformation remains unknown, it seems almost certain that the ECSs will have less authority as General Hillier strives to create a new CF identity and institutes a command structure that integrates the three environments into a joint operational construct.[75] With the ECSs losing power to the operational commanders, they will have less opportunity and less authority to work with the political leadership, and will therefore be less effective in the decision-making processes regarding future force employment options and equipment acquisition. Significant risk would arise if the Navy is discounted in the development of future

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[74] Michael Whitby, Richard H. Gimblett and Peter Haydon, *The Admirals: Canada's Senior Naval Leadership in the Twentieth Century* (Toronto: Dundurn Press, 2006) 251.

[75] Gosselin and Stone, "From Minister Hellyer to General Hillier . . ."

fleet composition with CMS relegated to a position of peripheral influence in a joint operational setting, resulting in future fleet mix development not getting the close examination and examination of naval subject matter expertise.

Sea Lift

When Unification occurred in the 1960s the Navy felt threatened by the integration of the three services under an army-green umbrella. Unification was a direct threat to the Navy: "[Admiral] Landymore and his supporters, increasingly alienated by the policy-makers in DND, saw [in Unification] great risk for a navy relegated to providing territorial defence, or sealift and possible amphibious support to the army and air force."[76] This particular threat did not materialize and the Navy maintained a reputable general purpose fleet. Nonetheless, CF Transformation raises similar concerns amongst the naval community today. The JSS programme, initially seen by the Navy as a replacement project for the two TG support AORs, appears to be becoming a sea lift project aimed closely at joint operations.

The ongoing replacement program for the existing AORs has seen several iterations. It started in 1992 as the Multi-role Support Vessel, became the Afloat Logistic Support Capability (ALSC) program in 1999 and evolved into what is known today as the multi-role, highly capable JSS.[77] Considering some of the humanitarian and disaster relief missions the AORs have carried out since the end of the Cold War, namely in Somalia, East Timor and more recently in New Orleans, the plan for a platform that will perform beyond replenishing ships at sea seems sensible. Accordingly, the JSS will have the flexibility not only to support logistically the naval TG but also the capability to take cargo, vehicles, helicopters and a command and control (C2) module for joint operations, a Role Two or Role Three medical facility and a company of land troops in support of expeditionary missions.[78] These capabilities are a significant improvement over the AORs which primary function is the support of the naval TG at sea and are limited in terms of C2 and equipment transport.

In order to tackle this wider range of functions, three platforms may not suffice. For example, until HMCS PROVIDER was paid off in 1998, three AORs had the capacity to provide support to TGs on both coasts while cycling through the readiness cycle. With only two replenishment ships remaining however, there have been periods in the fleet operational schedule when no AOR was available to support ships at sea. While three JSS should be able provide continuous support to TGs at sea, their simultaneous use in joint expeditionary tasking in addition to TG operations could potentially decrease this capacity and in a joint context, the lift mission could very likely take precedence over maritime operations.

The JSS only offer a limited expeditionary capability and the CDS has indicated that an amphibious assault ship could be the next naval priority to "efficiently and effectively project power into centres of population".[79] This statement clearly denotes the joint-centric framework

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[76] Whitby, Gimblett and Haydon, *The Admirals*. . . , 295.

[77] Joetey Attariwala, "The JSS Program," *Canadian Defence Review* 12, Issue 4 (Fall 2006) 20-27.

[78] Joe Woodard, "Canada First: DND's 'Big Five' Needs," *Canadian Defence Review* 12, Issue 5 (Winter 2007) 7-8.

[79] *Ibid*., 8.

of CF Transformation. Accordingly, the Standing Contingency Force (SCF) was stood up in Fall 2005 and commenced developing a Concept of Operation that was tested during an exercise at sea in Fall 2006. However, in March 2007 this ambitious and costly project, which was to achieve operational readiness by December 2008, was put on hold for at least three years due to the mounting pressure from the Afghan mission and the expectation that the CF will provide security for the 2010 Winter Olympic Games in Vancouver.[80] As a result, there may be increased pressure to use the JSS in a wide range of missions, thus further diminishing their service to the Navy. Additionally, this use may, in the longer term, lead to increased desire to acquire additional JSS platforms, more so once the ships have been delivered and demonstrate their usefulness to the CF and to the Army in support of joint missions. The question will be whether acquiring additional JSS platforms would be achievable within the Defence budget allocations and the priority such a follow-on project would enjoy compared to other capital equipment purchases. Undoubtedly, additional JSS units would have a crowding out effect on the capital budget.

When the CPFs entered service commencing in the early 1990s, they ended decades of naval capability focused primarily on (ASW) imposed by the Cold War. The new multi-purpose platform allowed the Canadian Navy to broaden its expertise in other areas of naval warfare and expand the range of its contribution to allies, NATO and other coalitions, all the while maintaining a credible ASW capability. Ships such as the JSS and the large amphibious assault ship, while manned by the Navy, do not fall in the surface combatant category of ships nor are they multi-purpose combat-capable vessels, and their core functions in logistic support and lift make them a viable joint asset in support of expeditionary operations. When General Hillier declared that an amphibious assault capability may be the next priority for the Navy, he by implication downgraded the surface combatant fleet replacement plan and potentially initiated a sea lift niche for the Navy.

In the case of countries like Canada, multi-purpose surface combatant platforms offer the flexibility to undertake various types of missions from domestic patrols to TG projection abroad. Conversely, in a dynamic, rapidly changing global environment, niches bring significant risk to operational flexibility, given their inherently limited capabilities. Guessing on the wrong niche could prove catastrophic in the long run. Creating niches can also lead to the loss of significant capabilities which can be difficult, even impossible, to regain once they have disappeared. For example, Canada never reacquired a naval air capability after decommissioning its last aircraft carrier in 1970, and likely never will. Similarly, the CF fleet of Chinook helicopters was sold to the Netherlands in 1991 only to realize a little more that a decade later, when the mission in Afghanistan stood up in 2002, that a medium-lift helicopter capability was required to support adequately troops in theatre. Consequently, it was announced in Summer 2005 that the CF would acquire 16 Chinook helicopters, the first to enter service in 2010. Either of these two scenarios could apply to the surface combatants if the Navy's functions were to be concentrated in sea lift support to land operations with the DDH 280s and CPFs allowed to rust out without timely replacement.

Regardless of the JSS mission, a fleet of surface combatant ships is still required in order to provide local air defence, and protection against the wide range of threats that could come to bear on such High-Value Units (HVU) when they transit the ocean to an area of operations,

[80] David Pugliese, "Military Scales Back Plans," The National Post, February 2007.

when reaching the coast to land the embarked troops and equipment, and when stationed in littoral regions to conduct sea basing and provide C2 to joint missions. Additionally, multi-purpose surface combatant ships provide the most flexibility in terms of types of missions a navy can undertake. Therefore, with the pending demise of the DDH 280s, and the CPFs now reaching mid-life with plans for a replacement platform in the conceptualisation stage only, there is a longer term risk that the JSS could sail without protection or be limited in their missions for lack of surface escorts.

Budget Considerations

In his quest for Unification in the 1960s Minister Hellyer was accused of political ambition. If there were ambitious aspirations on his part, the reality was that "he [also] viewed a major reorganization of the defence forces as the only means to make resources available for future capital equipment acquisition"[81] in times when social programmes were at the forefront of government priorities. Nonetheless, the General Purpose Frigate (GPF) project then on the table was eventually reduced to only four DDH 280 class destroyers and the Navy's last remaining aircraft carrier, HMCS BONAVENTURE, was decommissioned in 1970 following an intensive mid-life refit in an attempt to further reduce naval expenses. By the time the fleet was renewed with the commissioning of the CPFs in the early 1990s the majority of the surface combatant fleet was over thirty years old and its capability concentrated solely in anti-submarine warfare.

General Hillier's Transformation concepts are directed at increasing operational effectiveness[82] while respecting DND annual budget limits. That being said, contrary to what Minister Hellyer intended to achieve through Unification, CF Transformation could translate into an impediment to future naval capital acquisitions, specifically the replacement of the surface combatant fleet.

Historically, defence procurements have not been dictated by the desires of governments in terms of defence capability but have rather been a question of what equipment could be purchased with the money available. Despite the substantial financial commitments to the CF by the recent Martin and Harper governments, the apportionment of the Defence budget to the Navy could be questioned as the CF undergoes Transformation. With 9,500 effectives, the Navy is the smallest of the three services compared to 19,000 for the Army and 13,000 for the Air Force with the remaining 18,000 of the total 60,000 personnel fulfilling a range of support functions to the three environments. These figures correspond to 16%, 32% and 22% of the CF total effectives for the Navy, Army and Air Force respectively. By this strict number of personnel comparison, the Navy would get the smallest portion of the Defence budget; however, budget apportionment within DND is not a question of size of service, nor is it divided equally among the three elements. In reality, with the Navy being a capital intensive service like the Air Force, compared to the personnel intensive Army service, it has fared rather well in the post-Cold War, pre-Transformation time period in terms of capital equipment and Operations and Maintenance (O&M) support. As shown in Chart 4 of Appendix B, for Fiscal Year 1999-2000 the Maritime Forces portion of the Defence spending was $1.9 billion, or 18% of the total $10.6 billion budget. Additional charts in Appendix B put these budget figures in context.

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[81] Gosselin and Stone, "From Minister Hellyer to General Hillier . . ."

[82] *Ibid*.

It could be argued, however, that in considering budget allocations under the scope of cost of Transformation-related initiatives compared to the total Defence budget, there is a risk that the Navy will receive less funding for capital acquisitions that do not benefit the joint orientation of the CF. For example, while the Navy has recently been approved funding for JSS, these ships' lift capability will clearly be exploited by the CF under the auspices of joint operations. Consequently, money allocated to the Navy for JSS is in reality money at least partially allocated to CF 'jointness' and not the Navy.

The Navy has already seen some resources reallocated in order to support current CF operations and fund future capital equipment. The repairs of the VICTORIA-class submarine HMCS CHICOUTIMI, which suffered significant damage in a fire at sea in October 2005, have been postponed until 2010 in order to bring the remaining three units of the sub-surface fleet to operational readiness without further delays. Additionally, in February 2007 mainstream press reports speculated that over the next three to four years, the Navy will retire one of the three remaining DDH 280s and its two AORs.[83] With the first JSS not scheduled to enter service until 2012 and no planned follow-on platform for the DDH 280s planned as yet, there could be a significant capability gap within the fleet until replacement surface combatants are certified operational.

As for the replacement platform for the DDH 280s and CPFs, with significant expenditures dealing with technical obsolescence such as the HALIFAX Class Modernisation (HCM) and Frigate Life Extension (Felex) programmes, as well as the VICTORIA-class submarine upgrade, one could wonder whether there will be sufficient funding left in the Navy budget allocation to support the SCSC project after these significant financial commitments are addressed.

[83] David Pugliese, "Forces want to scrap gear, save for new," *The Ottawa Citizen*, Friday 2 February 2007; available from http://www.canada.com; Internet; accessed 2 February 2007.

The Canadian Mission in Afghanistan

The CF mission in Afghanistan is not a Transformation project in and of itself. However, the fact that it is by far the most resource intensive CF operation being conducted while Transformation is occurring, combined with CDS direction that "strategic effects and operations may not be compromised during transition,"[84] has magnified the significance of the mission within the framework of Transformation. Despite considerable debate at the political level and among the Canadian population regarding the validity of the operation and the number of soldier deaths and casualties, Canada stands by its commitment to re-building Afghanistan and the mission has been extended until 2009 by the Harper Government. The mission is adding strain on the Army and the military leadership is searching for means to meet the long-term needs for personnel in Afghanistan. Potential solutions include re-allocating personnel from the non-Army trades, including naval occupations, to fill mission personnel gaps to the detriment of the other services' capabilities.[85] Such an answer would only exacerbate the Navy's own personnel shortages and challenges of manning its ships to meet domestic tasking and naval operational commitments.

The impact on the Navy has also been felt in terms of possible equipment transfers to the Army. In Fall 2006, military planners considered the option of stripping ships of their Phalanx Close-In Weapons System (CIWS), a self-protection gun system against missiles, and send them to Afghanistan for use by ground troops to destroy incoming mortar shells and rockets.[86] Also, the design of the Cyclone helicopter, the replacement for the Navy's aging Sea Kings, was amended such that the platform would not only carry out anti-submarine and other missions at sea, but also allow the air force to assign them to a variety of roles, including lifting troops and potential air support to the Army in Afghanistan.[87] Although these proposals have not all come to fruition, and likely will not, they raise substantial risk that naval equipment so allocated may be difficult to recover from Army-centric joint operations hence diminishing the overall capability of the surface combatant fleet. In turn, if the Navy continues to undertake and successfully complete assigned missions with fewer ships and combatants of lesser capability, this could potentially impact on the ship type designated to replace the DDH 280s and CPFs. A cartoon published in *The Globe and Mail*, Figure 4, in the Fall of 2006 sadly conveys that the Navy bears a considerable portion of the cost of the CF mission in Afghanistan.

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[84] Department of National Defence, *CDS Planning Guidance – CF Transformation*, October 2005, available from http://cds.mil.ca/cft_tfc/00native/cds-planning-guidance_e.doc; http://cds.mil.ca/cft_tfc/pubs/SITREP0305_e.asp [accessible only on the Defence Wide Area Network (DWAN)]; DND intranet; accessed 13 December 2006.

[85] Victor Suthren, "Sinking the Navy in Afghanistan," *The Ottawa Citizen*, 2 November 2006, available from http://server09.densan.ca/archivesnews/061102/cit/061102bu.htm; Internet; accessed 3 November 2006.

[86] David Pugliese, "Navy guns could land duty in Afghanistan," *The National Post*, 11 November 2006.

[87] Canadian Press, "New Navy helicopters will carry troops, as well as hunt submarines," Toronto Star, 30 October 2006.

Figure 4 – Cartoon Response to Debate over Re-Rolling of Sailors [88]

The Afghan operation is also impacting on long-term Defence budget planning. According to the Standing Senate Committee on National Security and Defence, given current government promises to purchase several pieces of major military equipment "the projected [defence] budget of $20 billion by 2012 will come up at least $5 billion short, and more probably $15 billion short."[89] In the 1980-90s, CPFs were built at a cost of approx $750 million each. Estimating that new surface combatants would cost up to $1 billion each in today's dollars, a batch of 15 ships would add up to $15 billion dollars, coincidently the amount the Senate Committee is estimating DND will be short of in the next decade. The Navy will likely not absorb this budget gap alone, but there is already speculation that the Navy's anticipated fleet of 18 to 24 Single Class Surface Combatant (SCSC)[90] has been reduced to 14 vessels to replace the original four destroyers and existing 12 frigates.[91] In addition, it is not completely unforeseeable that more concessions would have to be made in which case the SCSC fleet could translate into fewer units or in a completely different platform of lesser capability but more affordable economics.

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[88] Gable, "Ships of the Desert," Editorial Cartoon. *The Globe and Mail*. 24 October 2006.

[89] Standing Senate Committee on National Security and Defence, "Managing Turmoil: The Need to upgrade Canadian Foreign Aid and Military Strength to Deal with Massive Change," an Interim Report by the Senate Committee on National Security and Defence (5 October 2006), available from http://www.parl.gc.ca/39/1/parlbus/commbus/senate/com-e/defe-e/rep-e/ExecSumRepOct06.pdf; Internet; accessed 15 December 2006.

[90] Joe Woodard, "Canada's Future Naval Fleet: The High Tech Imperative," *Canadian Defence Review* 12, Issue 4 (Fall 2006) 7.

[91] David Pugliese, "Forces want to scrap gear, save for new."

The issue for the Navy in terms of future acquisition is how much money is allocated to capital projects, not only today but over the next 15 or so years, a time period commensurate with the length of the defence procurement cycle. Obviously, if the Navy allocation within the Defence budget is insufficient to cover the cost of the SCSC, the project will no longer be tenable and the risk of losing the blue water capability will increase as old ships are paid off. In order to obtain the required funding, the Navy must demonstrate the broad utility of surface combatants to Canada and the valuable role these ships can play in a transformed CF. The alternative is a risk that the joint focus of the transformed CF will concentrate Canada's naval functions into sea lift and expeditionary support missions and preclude the modernization of the surface combatant fleet.

SHIPBUILDING IN CANADA

Countries with armed forces normally maintain a defence industrial base with capabilities in at least some specific areas, if not across the spectrum, to equip and sustain their military. Conversely, governments negotiate offsets when purchasing defence equipment from foreign firms to ensure the return of benefits domestically. That said, fluctuating defence budgets, changing military doctrine and the closing technology gap between military and non-military items cause adjustments in governments' policies and the scope of industrial cooperation between countries.[92] Similarly, maritime and coastal nations, and those with maritime interests, such as Canada, have historically maintained a shipbuilding industry to sustain their fleet of commercial ships and naval vessels. Canada has had a shipbuilding industry since the 1600s with capacity reaching its peak during the Second World War. During both world conflicts, the domestic shipbuilding industry largely produced steel hull ships, but more significantly during the Second World War which saw the construction in Canada of 400 warships and an equal number of cargo vessels and tankers in six years. Since then however, shipyards in Canada have gone through production cycles marked by peaks and valleys which have resulted in periods of employment uncertainty in the industry and decreased capacity over time. Incidentally, the Navy has been attempting to revive and stabilize the shipbuilding industry for decades to ensure its fleet is renewed and core naval construction capabilities are maintained. Each time new naval platforms were built, however, political and budget considerations have precluded the establishment of a long term production strategy that would secure the Navy's and the industry's future.

The Canadian shipbuilding industry, in its current state, may not provide a cost effective option to the surface combatant fleet renewal requirements looming on the horizon. Indeed, the requirements of lifting the industry from its current position in the trough of its historical 'boom-and-bust' trend, present capacity in terms of shipyards and specialized manpower, in addition to political considerations relating to Canada's shipbuilding policy could potentially set the price tag of replacement vessels such as to impact significantly on the types and numbers of ships built to replace the DDH 280s and CPFs. The three-fold basic naval concept 'to float, to move, to fight' (Figure 5) will be used to demonstrate that, when its comes to convincing Canada that the

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[92] Michael Slack and John Skynner, "Defence Production and the Defence Industrial Base," in *Canada's International Security Policy*, ed. David B. Dewitt and David Leyton-Brown 365-390 (Scarborough: Prentice-Hall, 1995) 365.

Navy needs new ships, the 'fight' part of the concept is the most difficult to justify to Canadians as tax payers.

RELATION OF NAVAL COMPETENCY COMPONENTS TO CF CAPABILITY AREAS

BASIC NAVAL CONCEPTS	NAVAL CORE COMPETENCIES	COMPETENCY COMPONENTS	CF CAPABILITY AREAS
FLOAT	• To generate and maintain credible combat forces	• Force Generation • Sustainment (Resources Maintenance)	• Force Generation
MOVE	• To provide sea-based service support and co-ordination	• Sustainment (Operational) • Sealift	• Sustain Forces • Corporate Strategy and Policy • Mobility
FIGHT	• To know what is going on in real time and to be able to act with a wide range of force options	• C4ISR • Self-Defence • Organic Air • Force Defence • Sealift • Naval Fire Support • Gateway C4ISR • Tailored Capabilities for OOTW	• Command • Information and intelligence • Conduct operations • Protect Forces • Corporate Strategy & Policy

Figure 5 – Basic Naval Concepts Chart [93]

The fighting vessel that the Navy is proposing as a replacement for the DDH 280s and CPFs is the previously mentioned SCSC, a common hull with core capabilities to fulfil the roles both of a C2 platform or that of a frigate. This general purpose, multi-mission warship would be capable of operating in brown and blue water environments, in joint, expeditionary and domestic operations, while possessing the ability to provide presence and influence in the Canadian Arctic. The design would also incorporate a high level of combined interoperability for alliance and coalition operations. Additionally, it would have to be capable of carrying the CH-148 Cyclone helicopter, the aircraft shortly entering service to replace the current-serving shipborne Sea Kings. The shipbuilding concept for this vision is the long considered continuous build fleet renewal programme through which a ship would be launched every 12-18 months over an extended period of years. The initial vessels of the class would replace DDH 280 capabilities as the destroyers are paid off, with the first ship launched in 2012 and operational by 2014.[94] Before attempting to determine whether the shipbuilding industry in Canada can deliver on such a project, however, let us consider briefly the Government of Canada policy regarding shipbuilding and the Canadian marine industry.

Canadian Shipbuilding Policy

In 2000, then Industry Canada minister Brian Tobin sought recommendations on practical and workable solutions to revitalize the shipbuilding and marine fabrication industry in Canada.

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[93] *Leadmark*, 125.

[94] Department of National Defence, *SCSC Working Group One: Report on Current and Future Material – Summary* (February 2006) 5-7.

A report drafted by the National Shipbuilding and Industrial Marine Partnership Project Committee, entitled *Breaking Through: The Canadian Shipbuilding Industry*, was published and submitted to the minister in 2001. In response to this report, Industry Canada produced, later that same year, *A New Policy Framework for the Canadian Shipbuilding and Industrial Marine Industry: Focusing on Opportunities 2001*, thereby establishing the Government's plan to address marine industry issues and concerns in Canada. Among several other recommendations, *Breaking Through* suggested that the Government of Canada (GoC) press for the elimination of subsidies to the worldwide shipbuilding industry, a practice adhered to by dozen of countries that provide handouts in one form or another to their shipyards.[95] Such practices are considered unfair as they preclude free competition and equal access to world shipbuilding and marine markets and have generated significant global overcapacity in the past decade. With subsidies in the range of up to 40%, South Korea has become a major player in the shipbuilding industry and is now securing the majority of worldwide shipbuilding orders, both in terms of percentage and gross tonnage. As a result, they have been under scrutiny by other nations in the shipbuilding business such as European countries and Japan who, while agreeing that subsidies should be eliminated, continue to provide financial support to their own shipyards in an attempt to protect their share of the market. Conversely, Canada has elected to stay out of the business of subsidies. These practices, however, preclude Canadian competitiveness on the global shipbuilding market and have had a negative effect on the industry at home. International overcapacity and low labour rates in underdeveloped countries have prevented Canadian shipyards from securing foreign contracts which in turn has caused a decrease in the marine industry capacity in Canada.

To address this situation, Canada applies a 25 percent tariff on most non-NAFTA imported vessels in order to provide the Canadian shipbuilding industry with some protection from imported vessels, many of which benefit from extensive government support.[96] However, fishing vessels over 30.5 meters in length are exempted from this policy and the industry sees no particularly valid reason for this and they believe the tariff should apply to imported vessels across the board. The industry also assesses that the 25 percent tariff is only effective in countering the effects of subsidies of 20 percent or less. In the case of competitors like South Korea who provide subsidies in the range of 30-40 percent and who hold the major share of the marine construction market, tariffs imposed by the Canadian Government do little to assist the domestic industry in competing globally.[97] In addition to imposing tariffs, the Government also vowed to continue discussions through the World Trade Organisation (WTO) and to find solutions to the subsidy issue and committed to increasing Canada's participation in the Organisation for Economic Cooperation and Development in attempt to solve difficulties in the global shipbuilding industry.

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[95] Industry Canada – National Shipbuilding and Industrial Marine Partnership Project, *Breaking Through: The Canadian Shipbuilding Industry* (Ottawa: Information Distribution Centre Communications Branch Industry Canada, 2001); available from http://www.shipbuilding.ca/graphics/MINIbreaking_e.pdf; Internet; accessed 8 April 2007.

[96] Industry Canada. *A New Policy Framework for the Canadian Shipbuilding and Industrial Marine Industry: Focusing on Opportunities 2001*. Ottawa: Information Distribution Centre Communications Branch, 2001; available from http://www.shipbuilding.ca/graphics/response-nc.pdf; Internet; accessed 8 April 2007.

[97] *Breaking Through*.

The *Breaking Through* report also asked that the federal government GoC recommit to its policy of procuring, refitting and overhauling government vessels in Canada. A major focus was eliminating the peaks and valleys in the procurement process for the Navy and the Coast Guard through more effective forward planning in order to keep order books and employment levels more consistent over the longer term.[98] Domestic procurement of the Canadian fleet (to include Navy, Coast Guard, Fisheries and Oceans as well as RCMP vessels) is viewed as a major opportunity by the shipbuilding industry and the 'Buy Canada' policy ensures that the benefits of federal procurement of vessels and repairs flow to Canadian industry on a competitive basis.[99] In response to this recommendation, the government pledged to continue to procure, repair and refit vessels in Canada subject to operational requirements and the continued existence of a competitive domestic marketplace.[100] Despite the Government's written responses to the industry's recommendations, few have been subsequently addressed. The Government subsequently appointed another committee, the Shipbuilding and Industrial Marine Advisory Committee (SIMAC), which produced a report in October 2005 detailing a strategy for the marine and shipbuilding industry to become self-sufficient and competitive, but as of 2007 there has been a paucity of effective, tangible action to address formally the situation. Because federal fleet renewal requirements seem to be converging towards a similar timeframe, a closely examined and carefully implemented project and work schedule will be essential to avoid another peak and building an industry that once again could not be supported in subsequent years.

While foreign practices directly impact Canadian shipyards' ability to secure foreign contracts and compete on the international market, they also preclude Canada from meeting its own requirements. Domestic capacity is declining and the numbers of skilled workers has become insufficient to meet the country's demand. This situation is even more significant since GoC policy requires that Canada's federal fleet be procured and repaired in Canada on a competitive basis among domestic firms. Consequently, Canadian shipyards continue to suffer as the Canadian shipbuilding and marine industry fails to compete fairly in a highly subsidized and ever globalizing environment. It is thus fair to say that Canadian policy in terms of shipbuilding is hardly supportive of the design and construction of the Navy's next fighting platform.

Industry Capacity

In the late 1940s, the first of the ST-LAURENT class destroyers, also known as the 'Cadillacs', were laid down. These first-class ASW ships were completely designed and built in Canada and included innovative technologies such as the citadel, to operate in Nuclear, Biological and Chemical (NBC) environments, as well as a flight deck capable of carrying a large shipborne helicopter. There were significant concerns at the time about the Canadian shipbuilding industry's ability to complete a project of such magnitude but the domestic builders skilfully delivered and the ST-LAURENTs and follow-on classes served Canada throughout the Cold War. Twenty years after the ST-LAURENTs, the DDH 280 destroyers were laid down

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[98] *Ibid*.

[99] *A New Policy Framework for the Canadian Shipbuilding and Industrial Marine Industry*.

[100] *Ibid*.

amid similar concerns. Yet, Canada's industry rose again to the challenge and the Navy sailed the 'Sisters of the Space Age', state-of-the art vessels fitted with gas turbine propulsion and high-tech C2 systems. Concerns about shipbuilding capacity and capability surfaced again another 20 years later when the CPFs were constructed. After 15 years of operational service the Canadian frigates have earned a reputation for being among the world's finest, when compared ton-for-ton to other naval vessels of the same generation. Today, with the DDH 280s nearing the end of their service life and the CPFs reaching their scheduled mid-life extension work, concerns regarding Canada's shipbuilders' ability to address the Navy's operational demands are being voiced once more. When asked about the Canadian industry's ability to meet the Navy's fleet renewal requirements, Vice-Admiral Peter Cairns (Ret'd), former Commander of Maritime Command (1992-94) and current president of the Shipbuilding Association of Canada, replied: "as [Canada's shipbuilders] have done three times since 1949, they will prove once again that they are up to the task."[101] However, there has been no significant naval construction programme in Canada since the completion of the MCDV project in the mid-1990s and one could question the cost of re-activating the domestic industry when globalization has since created shipbuilding overcapacity and relegated the Canadian sector to the margins.

The shipbuilding industry is not only about the capacity of building a naval fleet. In fact, the sector in Canada has proven quite versatile over the years:

> Canadian shipyards have built ferries, fishing vessels, offshore supply vessels, lakers, cargo ships and offshore drilling platforms. They have designed and produced sophisticated naval ships and icebreakers. They are successfully building luxury yachts for the world market and have carved out a niche in ship repair and overhaul.[102]

Domestic shipyards have also produced commercial trade and other uses. It is the large federal procurement projects, however, that affect the industry capacity the most. As previously discussed, these tend to be highly cyclical, thereby creating production gaps leading to prolonged periods of low employment in domestic maritime construction. That said, since the Navy no longer maintains the capacity to conduct the extensive maintenance of its ships, repairs and overhauls will continue to provide a steady stream of work to Canadian shipyards.[103]

Today, there are six major shipyards in Canada involved in the construction, assembly, refit or repair of vessels and offshore structures, and seven smaller firms engaged in shipbuilding activities but which employ less than 100 workers. These are supported by other businesses and corporations involved in the rendering of services to support the shipbuilding and marine industry.[104] The Shipbuilding Association of Canada claims that the domestic demand for ships is real and sets the estimate in dollar terms at $8.6 billion over the next 15 years. This business

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[101] Shipbuilding Association of Canada - Articles, "Shipbuilding Demand and Capacity," by Peter Cairns, President (October 2006); http://www.shipbuilding.ca/articles.shtml; Internet; accessed 8 April 2007.

[102] *A New Policy Framework for the Canadian Shipbuilding and Industrial Marine Industry*.

[103] *Ibid*.

[104] Shipbuilding Association of Canada, http://www.shipbuilding.ca/articles.shtml; Internet; accessed 5 April 2007.

comprises $5.8 billion for renewal and conversion of government fleets and $2.8 billion for renewal and conversion of commercial fleets.[105] As of 2001, Canadian shipyards were capable of building modern, advanced technology ships of less than 85,000 deadweight tons and had the capacity of employing 12,000 skilled tradespersons. However, the industry has been operating at 30-35 percent capacity for a prolonged period and the demise in July 2003 of Saint John Shipbuilding Limited, less than 10 years after the delivery of the last CPF, has left Davie Maritime as the only yard currently capable of building a ship the size of the JSS, which tonnage is expected to be approximately 28,000 tons. To make matters worse, the majority of the hard-earned expertise has migrated to other industry sectors where employment is more or less guaranteed.[106] The Alberta oil sands industry is an example where skilled workers have been in high demand and where the soaring energy sector is providing longer term employment guarantees and income security. Every boom and bust cycle creates the requirement to recruit and train skilled manpower to tackle the new projects. Today, there are two main areas of concern with regard to the Canadian shipbuilding industry: the availability of adequate shipyard facilities and whether the industry possesses adequate numbers of skilled trade workers to meet potential future demands. The primary issue in terms of trade workers is the fact that those remaining in the industry are older and there is significant difficulty attracting young apprentices to rebuild the industry's capacity in a sector marked by the uncertainty of boom and bust employment cycles.

The SCSC project is on the horizon but currently remains excluded from the industry's demand analysis because it is too early in the development cycle to predict its impact with any degree of accuracy. However, it is not ruled out that "capacity and scheduling issues could arise."[107] Figure 6 shows shipyard employment statistics in 2001 and Appendix 3 points to the location of shipbuilding facilities in Canada. The 4,707 figure depicted in the table has been re-calculated and updated to reflect a force of 3,800 full-time equivalent workers in 2003.[108] These numbers illustrate the declining trend in shipyard effective workers. If ". . . any navy worth its salt should have a matching shipbuilding industry, one that betokens to a nicety the standing of the navy in the pecking order of power afloat," then allowing the capacity of Canadian shipyards to continue to decline could impact on the types of vessels that can be built domestically thereby potentially reducing the Navy's future capabilities and the flexibility maritime forces will be able to offer to the government.[109]

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[105] "Shipbuilding Demand and Capacity."

[106] Shipbuilding Association of Canada – Articles, "Crisis in Naval Shipbuilding? Canada must maintain home grown capability for national security," by Peter Cairns, President (October 2006); http://www.shipbuilding.ca/articles.shtml; Internet; accessed 5 April 2007.

[107] "Shipbuilding and Industrial Preparedness," 21.

[108] *Ibid*., 20.

[109] Daniel Todd and Michael Lindberg, *Navies and Shipbuilding Industries: The Strained Symbiosis* (Westport, CT and London: Praeger,1996) 1.

Table 3 Canadian Shipyard Jobs / Capacity Statistics

SHIPYARD	ESTIMATED CURRENT EMPLOYMENT	SHARE OF TOTAL EMPLOYMENT
14 shipyards and 1 offshore oil and gas (OOG) fabrication facility in Atlantic	2315	50%
5 shipyards in Québec	570	12%
5 shipyards in Ontario	632	13%
6 shipyards in British Columbia	1190	25%
1 shipyard in Northwest Territories	N/A	N/A
TOTAL: 32 shipyards, national	4707	

N/A = not available

Source: Industry Canada, estimate based on industry sources, May 2001

Figure 6 – Canadian Shipyards Jobs/Capacity Statistics [110]

The industry has long been advocating a continuous building procurement strategy that would reduce the extreme cycles experienced in Canadian shipyards over the past several decades. The positive effects of such a policy are many, including a fleet continuously modernized to meet emerging warfare demands, more predictable budget allocations within DND, a strengthened defence industrial base, workforce confidence, production efficiency and cost effectiveness. Implementing this continuous strategy to include other government department fleets, such as the Coast Guard and Fisheries and Oceans would in turn extend these benefits across the government.

Nonetheless, if the Canadian shipbuilding industry can successfully revive the marine construction sector once more and tackle the SCSC challenge, either through batch or continuous build, it will first necessitate government approval of such a project and the injection of funding to support the task. It is one thing to have skilled manpower to cut steel and build hulls that float and move but the task is magnified when it comes to integrating sophisticated systems in a modern ship of war with multi-purpose fighting capabilities. The future of the surface combatant fleet, therefore, depends on the political gallery having sufficient appetite and support among the Canadian population to build a platform that fights. As a result, political interest might simply be greater in allocating funds to build ice breakers for the Coast Guard and vessels for the Department of Fisheries and Oceans or even patrol vessels to replace the MCDVs rather than invest in the next generation of blue water fighting capability. In the meantime, by failing to renew its fleets at regular intervals, the federal government faces a trade-off between large expenditures or a significant reduction in capability, the latter not an option if Canada values its sovereignty.[111]

The Politics of Building Ships in Canada

[110] *A New Policy Framework for the Canadian Shipbuilding and Industrial Marine Industry*.

[111] Shipbuilding Association of Canada – Articles, "Renewing the Navy – The Process Begins," by Peter Cairns, President (14 March 2005); http://www.shipbuilding.ca/articles.shtml; Internet; accessed 5 April 2007.

While a strategy of continuous shipbuilding, as opposed to batch building, would be good policy both from an industry and Navy perspective, it may not present an attractive long-term political option. This reasoning perhaps explains why past governments have failed to implement this strongly advocated strategy and why current and future politicians may continue to set it aside. When governments commit to a long-term capital acquisition program, they commit the country to a long-run defence policy and, in the face of future political, economic and technological uncertainties, they may well be unwilling to make such commitments.[112] Indeed, federal governments plan for the next election, the one that will keep them in power, and not the subsequent ones over which they have little control given the dynamic political and electoral environment. This argument is particularly true in the current time period marked by a succession of minority governments with terms horizon of less than four years. Political parties do not wish to serve their opposition's agenda or be disadvantaged by policies they themselves put in place. As a result, the implementation of a continuous shipbuilding strategy "would require that the government look beyond its four-year mandate and adopt a non-partisan long-term strategy."[113] Few governments will be willing to adopt such a stance and capital acquisition decisions are in reality a lengthier process.

Oddly enough, however, the JSS three-ship project quickly gathered steam once the Conservative Government announced the funding for the project in Summer 2006. Despite being over fifteen years in the making since its inception as the Multi-role Support Vessel in 1992, industry bidders are now expected to deliver their designs by the second half of 2007, with steel being cut in 2008 and the first ship entering service in 2012. Politicians can move quickly when the political timing and climate seem right. In terms of significant military equipment acquisitions, the JSS may also have been perceived as easier to accept by politicians and Canadians at large simply because it is a multi-purpose platform as opposed to a combatant and therefore reflects more the 'Blue Beret' peace keeping orientation that the CF acquired during the 1956 Suez Crisis and cultivated throughout the Cold War era and beyond. Conversely, a platform that can apply power overseas with fighting capabilities in most warfare areas contravenes such an image of the CF and may encounter more obstacles in obtaining government approval.

That said, politicians strive to stay in power by attending to the interests of their constituency base and addressing concerns of regions and provinces. Consequently, because defence is the largest single area of discretionary spending for the government, capital spending will normally be used to promote a wide variety of political and social economic interests in regional and industrial development."[114] This assumption proved true when the Harper government made its series of defence announcements in 2006, and is demonstrated by Industry minister Maxime Bernier:

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[112] John M. Treddenick, "Distributing the Defence Budget: Choosing between Capital and Manpower," in *Issues in Defence Management*, ed. Douglas S. Bland, 57-82 (Kingston: School of Policy Studies, Queen's University, 1998) 65.

[113] "Shipbuilding and Industrial Preparedness," 19.

[114] J. Craig Stone and Binyam Solomon "Canadian Defence Policy and Spending," in *Defence and Peace Economics* 16, no. 3 (June 2005): 161.

> All of the equipment will be purchased using a fair, open and transparent procurement process that will make sure Canadian taxpayers receive the best value for their hard-earned money. . . . The Government will negotiate a specific industrial benefits package for this project. We expect contractors to deliver one dollar in high-quality economic activity in Canada for every dollar they are awarded as part of this project. This economic benefits package will mean billions in long-term business activity in Canada.[115]

Canada's Industrial and Regional Benefits (IRB) Policy was approved by Cabinet in 1986 and the program provides the framework for using federal procurement to lever long-term industrial and regional development. The policy is the responsibility of the Industry Canada department and is applied in a way that does not compromise operational requirements, incur additional cost for government, or contravene trade agreements. It is not a strictly a defence industrial base programme and rather benefits all industry sectors. Contract proposals must ensure long-term industrial and regional development, lasting economic value, pre-position Canadian industry for future needs and contribute to government priorities.[116] In the case of capital projects, Cabinet political concerns are not solely defence related but also include industrial, economic and other considerations such as alliance and coalition commitments. For example, in 1958 the design for the MACKENZIE class was selected because of the need to keep shipyards busy while minimizing costs down by following previous designs, although the Navy had initially investigated a larger platform with more effective weaponry. The six ships of the MACKENZIE class that were built never effectively fulfilled operational requirements.[117]

In the context of the IRB Policy, senior naval leadership can themselves be caught between the political agenda and the requirement to keep the fleet afloat, relevant and combat effective. As a result, statements of requirement could be written such as to be less than what the military assessment of the Navy's requirements truly are for the sake of obtaining programme approval by satisfying the political objectives of the government and seeking to stimulate the economy in specific regions (Again, refer to Appendix 3 for the location of shipyards in Canada). In the case of the MACKENZIE class for instance, Admiral DeWolf willingly sacrificed capability in order to get a ship replacement programme approved.[118] Recent and planned future capital acquisitions indicate that tensions among competing interests remain unresolved and it is highly likely that future CF capability will be less than current capability as a result.[119] These competing interests may come down to how the cost of building a fighting ship for Canada can be justified to Canadians. Navies and naval arsenals are expensive and a combatant fleet renewal project of $20 billion dollars for example will likely be perceived as a significant lump amount of funding competing against social and welfare programmes, not to

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[115] "Canada's New Government keeps its commitment to support our military."

[116] Industry Canada, The Industrial and Regional Benefits Policy, http://strategis.ic.gc.ca/epic/site/ad-ad.nsf/en/ad03658e.html; Internet; accessed 31 March 2007.

[117] *The Admirals*. . ., 226.

[118] *Ibid*., 232.

[119] James Fergusson, "Beyond the Dollar Crisis: Defence Strategy and Procurement in Canada," in *Security, Strategy and the Global Economics of Defence Production*, ed. David G. Haglund and S. Neil MacFarlane, 93-106 (Montreal and Kingston: School of Policy Studies, Queen's University, 1999) 94.

mention other defence interests. In the age of sound bites and a 24-hour or less media cycle, it is difficult to convey effectively that such a cost includes in service support fees and should be amortized over the 20 to 30-year lifespan of ships, much like the mortgage of a home.

Reviving the shipbuilding industry from its current state will cost the same whether it is for batch or continuous building. The main difference is in the time period during which benefits are transmitted to industry. But a continuous building strategy also presents the same potential negative implications as batch building in that elections and changes of government cannot only delay, but also modify and potentially cancel previously approved procurement programmes. For the Navy, once a design has been approved and ships are being built and delivered, there is no guarantee that a promise of 'No more ships' will not be made, as Jean Chrétien vowed 'Zero Helicopters', referring to the procurement of the EH-101 to replace the Sea Kings, during the campaign that elected him Prime Minister in 1993. If a similar scenario was to occur after only a few platforms have been delivered, the Navy could find itself in a position of significantly decreased capability with three newer JSSs, 12 CPFs nearing the end of their service lives, four aging submarines, and only a few SCSCs, all split between two coasts. When accounting for maintenance periods, readiness cycles and training requirements, the actual number of ships that can be put to sea at any one time is materially less that the number of platforms comprising the fleet.

Recent suggestions, made by industry experts and analysts to mitigate the shipbuilding cost, have included purchasing abroad. The idea has received vibrant opposition. Policy aside, purchasing a vessel built in China would have too many security implications when considering the regime in place and purchasing hulls in South Korea to then integrate combat systems domestically really does not solve the issue since the area where skilled workers are lacking is not so much in the cutting and welding of steel but rather in the high-tech systems integration. Shipyards in Europe are also being impacted by the effects of heavy foreign shipyard subsidies and are forced to implement measures to keep their own industry globally competitive. Shipyards in Germany and France could probably deliver frigate-type ships of equivalent or better quality than Canadian firms but they may not constitute a valid cost-effective option when considering currency fluctuations. Finally, purchasing a platform of American design and build would cause tremendous uproar among Canada's shipbuilding industry workforce and could have severe political implications. Indeed, it is difficult to imagine a domestic political scenario which would allow for a capital acquisition project of this magnitude to be secured offshore. In essence, purchasing Canada's naval vessels abroad could potentially decide the fate of the country's shipyards once and for all, but not without political implications in regions with many stakeholders in the shipbuilding industry.

Given prevailing Government shipbuilding policy, the current weakened state of the domestic shipbuilding industry and the unsettled political climate, any approved design for the DDH 280 and CPF replacement could very likely be fewer in number and lesser in capability, than today's fleet. Tomorrow's ships may indeed form less of a fighting force than the fleet in being.

CONCLUSION

The Canadian Navy was born in 1910 from the evolution of the Fisheries service into a small coastal defence force. From a fleet counting less than a dozen ships on the eve of the Second World War, it had grown to be the third largest navy by the end of the conflict and made a significant contribution in convoy escort during the Battle of the Atlantic. While the first century of its existence was marked by struggles to stay relevant compared to Canada's other two services, and within a unified CF after 1968, the Navy always surmounted difficulties and met challenges head on, earning a solid reputation among allies and coalition partners. Highlights of its post-World War II activities include the NATO ASW role during the Cold War, participation in the Korean War and the 1991 Gulf War, MIO in the Arabian Sea and the Balkans in the 1990s and active involvement in the GWOT since the 9/11 attacks. As an important asset for the Canadian government, if occasionally overlooked, the Navy has repeatedly proven its relevance as an alliance and coalition partner in regional conflicts as well as in humanitarian assistance and disaster relief operations throughout the world.

Today, the Navy is at a significant crossroad with the imminent phasing out of the IROQUOIS class destroyers, and the HALIFAX class frigates soon cycling through their scheduled mid-life extension refit. As a result, it may experience a capability gap in the years to come until, or even if, a replacement platform for the DDH 280s enters service and once all the CPFs have completed their modernization programme. The JSS project was announced with funding approved in 2006 and the first of three ships is scheduled to enter service in the 2012 timeframe. It must be emphasized that these ships are not surface combatants rather transport and support ships which serve to replace the aging PROTECTEUR class replenishment vessels. Meantime, the SCSC project is in the concept definition stage only and given the 15-year capital procurement time, it is unlikely that the next generation of surface combatants, if approved, would be operational before 2020. Indeed, no decision has yet been made regarding the suitability of the SCSC concept.

Given the current geopolitical climate and Canadian policy, CF Transformation initiatives, and the status of the shipbuilding industry in Canada, there is significant risk to the Navy that the surface combatant fleet, the DDH 280s and CPFs explicitly, may not be replaced. Such a scenario would cause the Navy to lose its Rank 3 status as a medium global force projection navy, capable of exercising not all but some warfare capabilities at a distance from home waters, and be relegated to coastal patrol functions in domestic waters.

While Canadian foreign, security and defence policies support the requirement to maintain a navy, they do not make the case for a fleet of surface combatant ships specifically. Quite often, frigates and destroyers are employed for tasks they are not designed for or for which they are over-equipped. The potential impact is that the fleet gets replaced by platforms with lesser capabilities or with vessels that do not possess the same global reach, resulting in the loss of a useful strategic asset for Canada. Recent CF Transformation initiatives tend to create a niche for the Navy in the support of joint, army-led operations to the detriment of the blue-water, general purpose capability. The new joint command structure, in which ECS lost power to the new operational commanders, the likely emergence of a sealift function in support of land missions, and budget constraints, mainly imposed by the current mission in Afghanistan, could preclude the modernization and renewal of the surface combatant fleet. Finally, shipbuilding capacity in Canada, being in constant decline since the mid-1990s and reaching a point where the industry can scarcely compete against other marine constructors globally, combined with

government policy of procuring in Canada and realistic political considerations, make the situation such that it could perhaps be too costly to once more resurrect Canadian shipyards from the current nadir of the boom and bust trend they have experienced since the end of World War II. There appears to be little appetite among politicians, CF leadership and the broad Canadian populace to build a fighting platform, particularly one that does not align with the traditional peace keeping image of the CF.

As a result, Canadian policy, CF Transformation and shipbuilding in Canada constitute three systems converging to create the perfect storm that could threaten the future of the Navy's surface combatant fleet. Independently, each of these factors may not create sufficient danger, but the effect of their convergence at the same place in time could be such that Canada is without a blue water naval capability when the CPFs reach the end of their service life in the 2020-30 timeframe.

In order to avoid placing itself in such a precarious position, the Navy must convince the Government that the naval expeditionary, power projection blue water capability needs to be preserved if Canada is to remain credible on the global stage. Strategic issues or events that impact upon Canadians are frequently initiated abroad. The Government requires a broad array of tools, a general purpose, global reach Navy being one of them, to address effectively such occurrences prior to their impact at home. It must also make clear to CF leadership that, while an expeditionary lift capability is becoming an essential part of a transformed CF, support and lift platforms frequently require protection provided by combatant ships in certain threat environments. In addition, it must be forcefully conveyed to the CF Command that strategic lift alone does not make for an effective, fighting maritime component of a joint force. Lastly, Canada is a vast country and the interests and national awareness of its population differ greatly from one region to another. While Canadians on the East and West coasts may recognize the importance of the Navy, this level of awareness is often not shared by residents more removed from coastal regions. The Navy must, therefore, strive to educate Canadians at large of the existence and relevance of a capable naval force in Canada and persuade them of the necessity of addressing and supporting future fleet renewal which would not only resurrect the Canadian shipbuilding industry but also spread economic benefits to other domestic business sectors. Modernisation of the current fleet, namely the CPFs, and JSS acquisition do not address long-run combatant fleet requirements. If the Navy is to purchase a replacement vessel for the destroyers and frigates, the project must get underway in the immediate future in order to avoid a rust-out status in 15 to 20 years, considering the 15-year procurement cycle and the fact that CPFs are reaching mid-life now.

Significant factors at work suggest that the Navy's future fleet could be reduced in numbers and comprise vessels of lesser capability, thereby impacting on the flexibility of the Government in terms of response at home and abroad. The Navy must justify the necessity to maintain a multi-purpose, interoperable, combat capable fleet and promptly engage in the procurement process in order to avoid a capability gap that could in turn translate in the blue water capability not being replaced.

The future of the Navy is being shaped today. Politicians, CF and Navy leadership, and shipbuilding industry leaders must act decisively to ensure the fleet of 2020 and beyond is capable of adapting to the ever changing global environment and responding to the broad spectrum of naval missions, from domestic homeland defence to regional conflicts and international crises. Otherwise, '*without a decisive naval force, Canada will do nothing*

definitive.'[120]

[120] Refer to the opening quote on page 1.

Appendix 1 – Failed States Index Rankings [121]

The Failed States Index Rankings			Indicators of Instability											
Rank	Total	Country	Demographic Pressures	Refugees and Displaced Persons	Group Grievance	Human Flight	Uneven Development	Economy	Delegitimization of State	Public Services	Human Rights	Security Apparatus	Factionalized Elites	External Intervention
1	112.3	Sudan	9.6	9.7	9.7	9.1	9.2	7.5	9.5	9.5	9.8	9.8	9.1	9.8
2	110.1	Dem. Rep. of the Congo	9.5	9.5	9.1	8.0	9.0	8.1	9.0	9.0	9.5	9.8	9.6	10.0
3	109.2	Ivory Coast	8.8	7.6	9.8	8.5	8.0	9.0	10.0	8.5	9.4	9.8	9.8	10.0
4	109.0	Iraq	8.9	8.3	9.8	9.1	8.7	8.2	8.5	8.3	9.7	9.8	9.7	10.0
5	108.9	Zimbabwe	9.7	8.9	8.5	9.0	9.2	9.8	8.9	9.5	9.5	9.4	8.5	8.0
6	105.9	Chad	9.0	9.0	8.5	8.0	9.0	7.9	9.5	9.0	9.1	9.4	9.5	8.0
6	105.9	Somalia	9.0	8.1	8.0	7.0	7.5	8.5	10.0	10.0	9.5	10.0	9.8	8.5
8	104.6	Haiti	8.8	5.0	8.8	8.0	8.3	8.4	9.4	9.3	9.6	9.4	9.6	10.0
9	103.1	Pakistan	9.3	9.3	8.6	8.1	8.9	7.0	8.5	7.5	8.5	9.1	9.1	9.2
10	99.8	Afghanistan	7.9	9.6	9.1	7.0	8.0	7.5	8.3	8.0	8.2	8.2	8.0	10.0
11	99.0	Guinea	7.5	7.2	8.1	8.4	8.0	8.0	9.1	9.0	8.1	8.1	9.0	8.5
11	99.0	Liberia	8.0	9.3	7.0	7.1	8.6	8.9	7.8	9.0	7.2	7.3	8.8	10.0
13	97.5	Central African Republic	9.0	7.7	8.8	5.5	8.5	8.1	9.0	8.0	7.5	8.9	8.0	8.5
14	97.3	North Korea	8.0	6.0	7.2	5.0	9.0	9.5	9.8	9.5	9.5	8.3	8.0	7.5
15	96.7	Burundi	9.0	9.1	7.0	6.7	8.8	7.8	7.2	8.5	7.5	7.3	7.8	10.0
16	96.6	Yemen	7.8	6.7	7.0	8.2	9.0	7.8	8.8	8.2	7.2	9.0	9.4	7.5
16	96.6	Sierra Leone	8.5	7.9	7.1	8.9	8.7	9.0	8.0	8.0	7.0	7.0	7.7	8.8
18	96.5	Burma	8.9	8.8	9.0	6.0	9.0	7.1	9.2	8.2	9.8	9.0	8.0	3.5
19	96.3	Bangladesh	9.0	5.8	9.5	8.5	9.0	7.0	9.0	7.5	7.8	8.3	8.9	6.0
20	95.4	Nepal	8.5	4.8	9.2	6.0	9.2	8.5	9.2	6.2	9.1	9.0	9.0	6.7
21	94.5	Uganda	8.0	9.2	7.8	5.7	8.4	7.5	8.0	8.0	8.0	8.5	7.9	7.5
22	94.4	Nigeria	8.0	5.9	9.1	8.5	9.0	5.4	9.0	8.3	7.1	9.2	9.0	5.9
22	94.4	Uzbekistan	7.7	5.8	7.5	7.5	8.1	7.0	9.3	7.0	9.3	9.1	9.1	7.0
24	92.9	Rwanda	9.5	7.0	9.0	8.2	7.2	8.0	8.7	6.9	7.7	5.0	8.9	6.8
25	92.4	Sri Lanka	8.0	8.2	9.1	6.7	8.0	5.7	8.6	7.0	7.2	8.5	8.9	6.5
26	91.9	Ethiopia	9.0	7.6	7.0	7.5	8.5	8.0	7.6	6.2	8.0	7.5	8.7	6.3
27	91.8	Colombia	7.0	9.1	7.4	8.5	8.5	3.2	8.7	6.5	7.6	9.0	9.2	7.1
28	90.3	Kirgizstan	8.0	6.6	7.0	7.5	8.0	7.5	8.3	7.3	7.9	8.3	7.9	6.0
29	89.8	Malawi	9.0	6.0	6.0	7.0	8.8	8.8	8.0	9.0	8.0	5.5	6.7	7.0
30	89.7	Burkina Faso	9.0	5.9	6.5	6.6	8.8	8.2	7.8	8.4	6.5	7.6	7.7	6.7
31	89.5	Egypt	8.0	6.0	8.5	6.0	8.0	7.0	9.0	7.3	8.0	6.5	7.7	7.5
32	89.2	Indonesia	7.5	8.2	6.3	8.3	8.0	6.8	6.7	7.2	7.5	7.5	7.9	7.3
33	88.6	Syria	7.0	7.1	8.0	6.8	8.9	6.5	9.0	5.5	9.0	7.5	7.1	6.2
33	88.6	Kenya	9.0	7.1	6.7	8.0	8.0	6.8	7.3	7.2	6.9	7.0	7.6	7.0
35	88.5	Bosnia and Herzegovina	6.5	8.5	8.6	6.0	7.3	6.2	8.1	5.8	5.3	7.5	8.7	10.0
36	88.4	Cameroon	6.5	6.8	6.5	8.0	8.7	6.0	8.5	8.0	7.2	7.6	7.9	6.7
37	88.3	Angola	8.0	8.5	6.3	5.0	9.0	4.9	8.8	7.6	7.8	6.8	8.0	7.6
37	88.3	Togo	7.0	5.8	6.0	6.5	7.5	8.0	8.7	8.1	8.1	8.1	7.8	6.7
39	87.9	Bhutan	6.0	8.1	7.0	6.7	9.0	8.0	8.4	6.0	8.6	5.0	8.4	6.7
39	87.9	Laos	8.0	5.9	6.3	6.6	5.9	6.5	7.9	8.0	8.2	9.0	8.9	6.7
41	87.8	Mauritania	9.0	5.9	8.5	5.0	7.0	7.8	7.1	8.2	7.1	7.6	7.9	6.7
42	87.7	Tajikistan	7.0	6.6	6.2	6.5	7.4	6.8	8.9	7.5	8.6	7.5	8.7	6.0
43	87.1	Russia	8.0	7.2	8.0	7.0	8.0	3.7	8.2	6.9	9.1	7.5	9.0	4.5
44	87.0	Niger	9.4	4.3	8.5	6.0	7.2	9.0	7.9	8.5	6.5	6.7	6.0	7.0
45	86.1	Turkmenistan	7.0	4.2	5.2	6.0	7.2	8.0	9.1	7.2	9.7	8.5	8.0	6.0
46	85.4	Guinea-Bissau	7.0	4.9	5.5	7.0	9.3	7.4	7.8	8.0	7.9	7.5	6.5	6.6
47	85.0	Cambodia	7.5	6.5	7.0	8.0	7.2	6.0	7.8	7.5	6.9	6.7	7.5	6.4
47	85.0	Dominican Republic	7.8	7.0	6.5	8.5	8.0	6.0	6.2	8.0	7.1	7.0	7.4	5.5
49	84.6	Papua New Guinea	8.0	2.5	8.0	8.0	9.0	7.0	7.8	8.0	6.1	7.0	6.7	6.5
50	84.5	Belarus	9.0	5.1	5.5	3.5	8.5	6.3	9.0	7.5	7.3	6.8	8.0	8.0
51	84.3	Guatemala	8.7	6.0	7.1	6.7	8.0	7.1	7.5	7.1	7.1	7.5	6.0	5.5
52	84.0	Equatorial Guinea	7.0	2.0	6.7	7.5	9.0	4.0	9.0	8.0	8.5	8.3	8.0	6.0
52	84.0	Iran	6.5	8.7	6.9	5.0	7.5	3.0	8.1	6.1	9.1	8.0	8.8	6.3
54	83.9	Eritrea	8.0	7.2	5.4	6.0	6.0	8.0	8.0	7.3	6.8	7.2	7.5	6.5
55	83.8	Serbia and Montenegro	5.7	8.5	8.6	5.5	8.0	6.5	7.8	5.0	5.6	6.5	8.6	7.5
56	82.9	Bolivia	7.5	4.0	7.0	7.0	8.8	6.2	7.0	7.8	6.7	6.5	8.4	6.0
57	82.5	China	8.5	5.1	8.0	6.6	9.2	4.5	8.5	7.3	9.0	5.5	8.0	2.3
57	82.5	Moldova	7.0	4.7	7.3	8.0	7.5	7.5	7.4	7.0	6.8	5.5	6.8	7.0
59	82.4	Nicaragua	6.5	5.5	6.4	7.1	9.0	8.5	7.3	7.2	5.7	6.5	7.0	5.7
60	82.2	Georgia	6.0	6.8	7.4	6.1	7.0	5.5	7.7	6.3	5.6	8.1	7.1	8.6

[121] The columns highlight the 12 political, economic, military, and social indicators of instability. For each indicator, the higher scores (greater instability) are in black; lower scores (less instability) are in white. *Foreign Policy and The Fund for Peace* (May/June 2006), "The Failed States Index" [Journal on-line]; available from http://www.foreignpolicy.com/story/cms.php?story_id=3420; Internet; accessed 22 January 2006.

Appendix 2 – Canadian Funding Figures 1999-2000 [122]

Chart 1

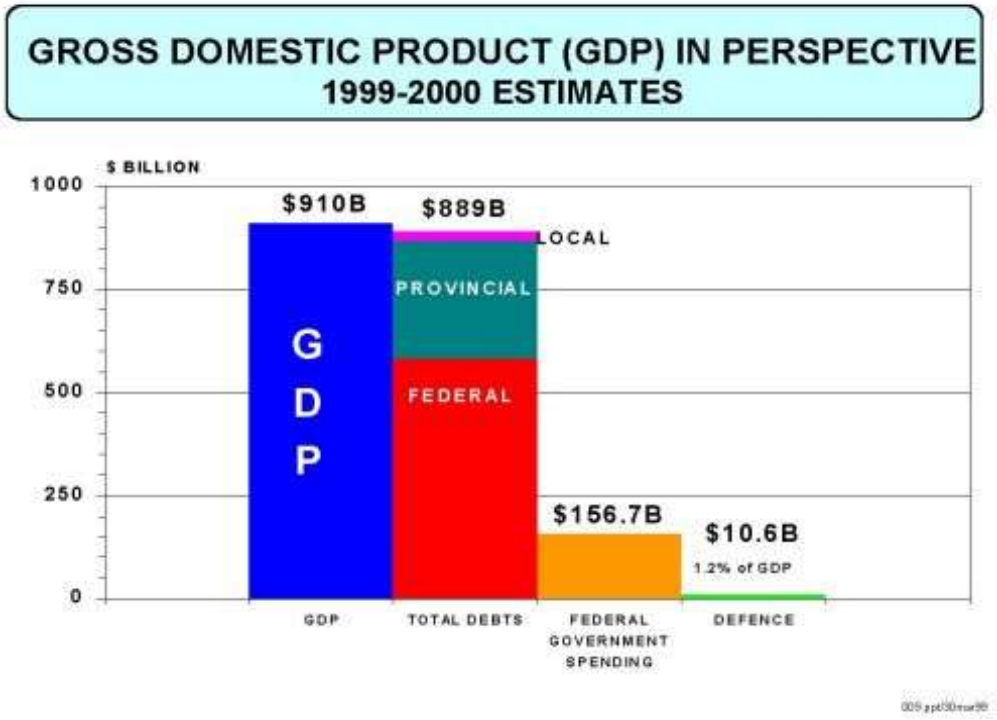


Chart 2

[122] Conference of Defence Associations, "Reinvestment in Defence – Charts showing the Situation of Canadian Defence Funding," available from http://www.cda-cdai.ca/library/Fincomsubcharts.htm; Internet; accessed 14 March 2007.

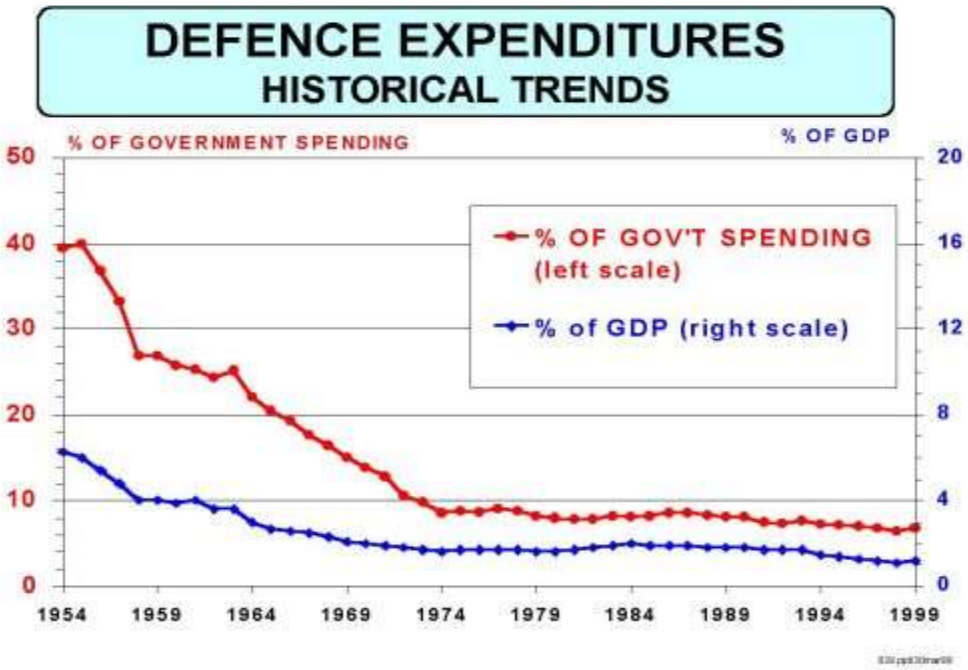


Chart 3

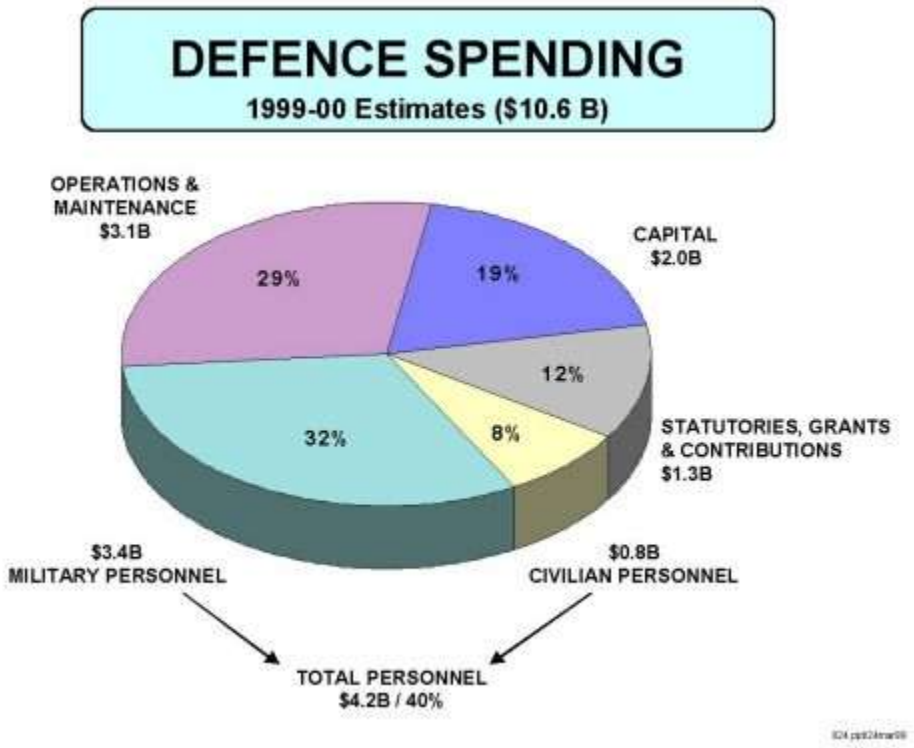


Chart 4

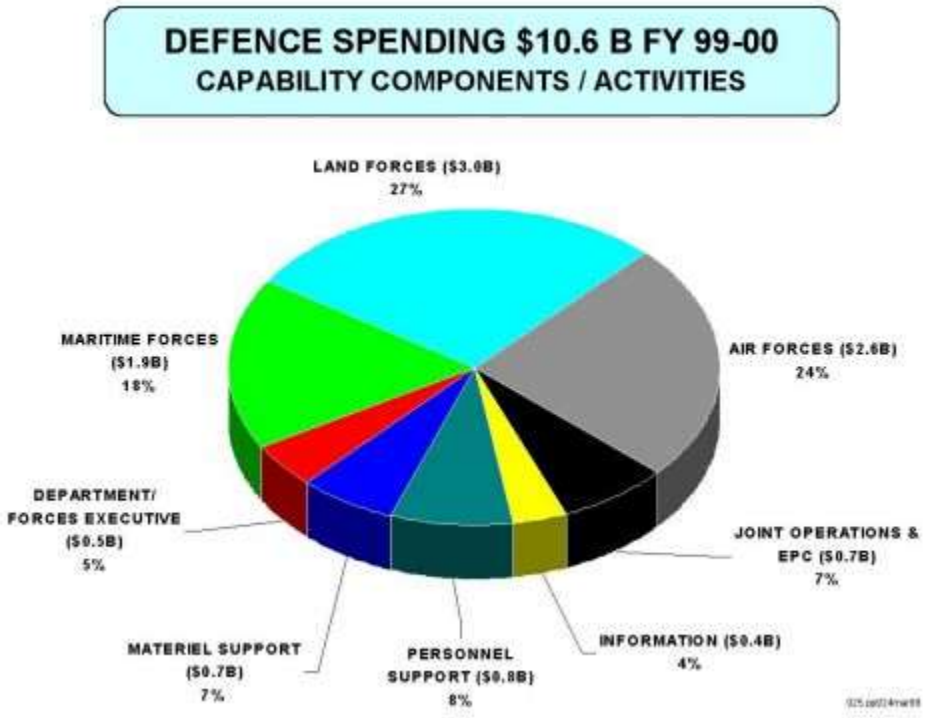
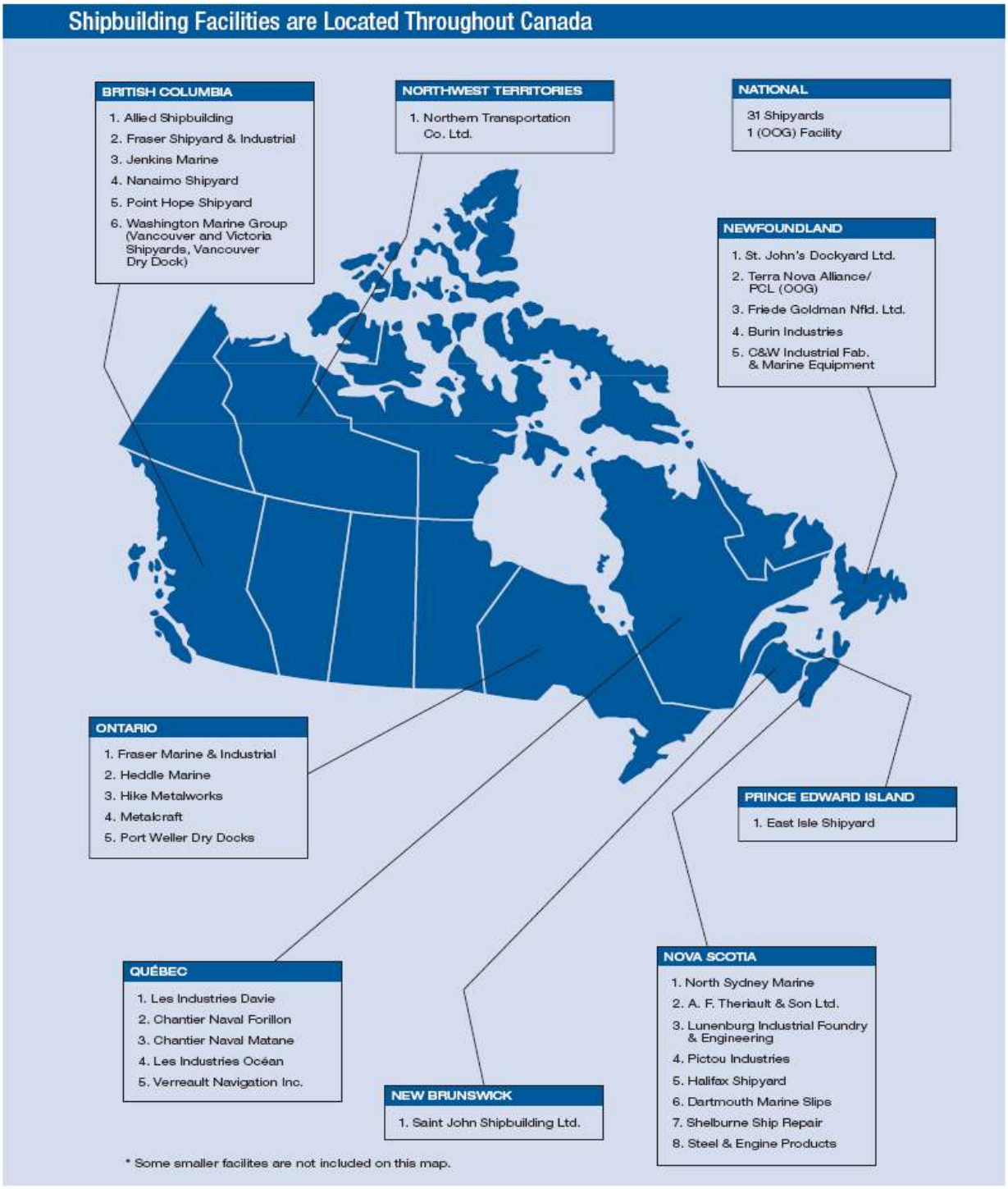


Chart 5

MAJOR CAPITAL PROJECTS

	($M) 99-00	($B) TOTAL
Underway		
Armoured Personnel Carriers	454	1.3
Canadian Search and Rescue Helicopter	171	0.8
Tactical Command Control Communications System	124	1.9
Canadian Patrol Frigate	112	9.0
Canadian Submarine Capability Update	83	0.8
CF Supply System Upgrade	58	0.3
Lynx Replacement Project	57	0.9
Armoured Personnel Carriers Life Extension	51	0.3
In Planning		
Maritime Helicopter		2.3
Multi-Role Support Vessel		1.6
Armoured Personnel Carriers (Phase II)		1.3

Appendix 3 – Shipbuilding Facilities in Canada [123]



[123] Industry Canada, *A New Policy Framework for the Canadian Shipbuilding and Industrial Marine Industry: Focusing on Opportunities 2001* (Ottawa: Information Distribution Centre Communications Branch, 2001), available from http://www.shipbuilding.ca/graphics/response-nc.pdf; Internet; accessed 8 April 2007. Note: Saint John Shipbuilding Ltd. has closed in 2003.

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