

Canadian
Forces
College

Collège
des
Forces
Canadiennes



PREDICTABLE TENSION: TRANSLATING DEFENCE POLICY INTO NAVAL CAPABILITY

Lieutenant-Commander L.T. Creasy

JCSP 39

Master of Defence Studies

Disclaimer

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

© Her Majesty the Queen in Right of Canada, as represented by the
Minister of National Defence, 2013

PCEMI 39

Maîtrise en études de la défense

Avertissement

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

© Sa Majesté la Reine du Chef du Canada, représentée par le
ministre de la Défense nationale, 2013.

CANADIAN FORCES COLLEGE – COLLÈGE DES FORCES CANADIENNES
JCSP 39 – PCEMI 39
2012 – 2013

MASTER OF DEFENCE STUDIES – MAÎTRISE EN ÉTUDES DE LA DÉFENSE

**PREDICTABLE TENSION: TRANSLATING DEFENCE POLICY INTO NAVAL
CAPABILITY**

By Lieutenant-Commander L.T. Creasy
Par le capitaine de corvette L.T. Creasy

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

Word Count: 18 784

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

Compte de mots: 18 784

TABLE OF CONTENTS

Table of Contents	ii
List of Tables	iii
List of Figures	iv
Abstract	v
Introduction	1
Chapter One – Needs	9
Canadian Defence Policy During the Cold War	10
Moving Beyond the Cold War – Defence in the 1990s and Beyond	22
The Changing Landscape – Defence Policy, Post- 9/11	27
Summing Up the Need	34
Chapter Two – Roles	36
Naval Theory Applied	36
Roles Examined – The Diplomat	45
Roles Examined – the Constable	49
Balancing the Triangle – The Warfighter	53
Summing Up the Roles	58
Chapter Three – Capability	60
The <i>Halifax</i> Class: 20 Years in the Making	60
Lengthy Projects: Boom and Bust	65
Lengthy Projects: Planned Obsolescence?	67
Addressing the Need – Today	69
Addressing the Need – Tomorrow’s Fleet	71
NSPS vs. Fleet Mix: A Question of Balance	77
Summing Up Meeting the Demand	83
Conclusion	85
Bibliography	91

LIST OF TABLES

Table 1.1 – Cold War Priorities	11
Table 1.2 – Pre-9/11 Defence Priorities	23
Table 1.3 – Post-9/11 Defence Priorities	29
Table 3.1 – Haydon’s Recommended Fleet Mix from 2001	82

LIST OF FIGURES

Figure 2.1 – Booth’s Triangle (Leadmark Model)	37
Figure 2.2 – The Naval Roles vs. Defence Priorities, Pre-9/11	40
Figure 2.3 – Naval Roles, Post-9/11	42
Figure 2.4 – The Naval Roles vs. Defence Priorities, Post-9/11	43
Figure 3.1 – Technology Life Cycles	68

ABSTRACT

The post-war development of the current Royal Canadian Navy demonstrates that the development of naval forces is a complicated task. Due to Canada's proximity to the United States, defence spending has traditionally been vulnerable to political and economic pressures. As a result, translation of defence policy into actual naval capabilities frequently deviates from acceptable practice, and numerous pressures and obstacles impair stated objectives and programmes. Consequently, should the traditional pressures continue, Canada's ability to achieve the appropriate fleet mix for the future navy could be jeopardized. This paper compares defence policy, naval roles and naval requirements to provide context to the current National Shipbuilding Procurement Strategy's ability to meet the needs of the future navy.

The analysis shows that the naval self-image has historically been at odds with the government's view of what the RCN requires to meet its responsibilities. When viewed in conjunction with the economic and political pressures associated with both the global economic situation and the necessity to re-establish Canada's domestic shipbuilding capacity, it appears likely that the RCN of the future may not meet the navy's current intent. In real terms, dwindling resources will challenge the navy's self-image by raising the possibility of patrol ships instead of warships.

INTRODUCTION

The clear need for credible navy is as valid today as it was in 1910.
- Peter Haydon¹

During its existence, the Royal Canadian Navy (RCN) has faced numerous challenges central to its rationale and function. At the end of the Second World War, the RCN had developed from a tiny and irrelevant force only five years previously to what was lauded as the third largest navy in the world by 1945. In terms of context, this rapid expansion was largely based on the acquisition of a wartime emergency fleet with the broader naval capabilities provided by larger capital ships and light fleet carriers arriving at the end of the war. What followed was a rapid force reduction as the world returned to the uneasy peace characterized by the Cold War and the atrophy of the RCN as both an institution and an instrument of Canadian foreign policy.

The development of Canada's modern fleet has its birth in the uncertainty of the Cold War. A cursory examination of Canadian Defence policy ranging from the government's 1964 *White Paper on Defence* through to the present day's 2008 *Canada First Defence Strategy* (CFDS) shows the predicament facing naval planners. The strategic policy documents are, in theory, supposed to provide coherent guidance. The reality is that pressures such as changing security environments, political motivations and

¹ Peter Haydon, *Why Canada Needs a Navy* (Canada: The Navy League of Canada, 2010), 19.

economic cycles cause the planning, procurement and sustainment of a viable fleet mix to be vexing to the RCN.

While Canada's involvement in the North Atlantic Treaty Organization (NATO) provided an effective measure of collective security throughout the Cold War, it had the unintended effect of dictating the focus of the RCN while constraining it geographically. As Marc Milner notes in *Canada's Navy: The First Century*, the threat of war with the Soviet Union coupled with pressure from NATO to create specialized niche roles conspired to position the development of an efficient, fully operational anti-submarine (ASW) fleet as the RCN's top priority.² While this focus certainly had the effect of enabling Canada's NATO commitments, the resulting fleet structure reflected a highly specialized navy that excluded some of the capability required to meet the defence priorities established in the 1964 *White Paper on Defence* that point to "[f]orces for the direct protection of Canada which can be deployed as required."³ The resulting effect was less naval emphasis on capabilities necessary for domestic duties and more emphasis on achieving capabilities directly attuned with NATO.

Changing NATO doctrine in the late 1950s acknowledged the increasing threat presented by Soviet forces and adopted doctrine to protect essential sea lines of communication to Europe that formed the foundation of common defence plans. This

² Marc Milner, *Canada's Navy: The First Century* (Toronto, ON: University of Toronto Press, 1999), 200.

³ Canada, Department of National Defence, *White Paper on Defence* (Ottawa, ON: Government of Canada, 1964), 24.

change addressed this threat closer to its source by moving maritime forces into the Norwegian Sea and Eastern Atlantic to “crush Soviet submarines before they could reach their operational areas.”⁴ To meet this aim, it would be necessary to deploy naval forces much closer to Soviet air and naval bases, requiring warships capable of operating under a direct surface and air threat.⁵ The net result of this additional pressure for both the Canadian government and RCN force development planners was the foundation of Canada’s current fleet mix.

Nicholas Tracy believes the Canadian focus on ASW had its benefits. In 1959, a major modernization project of the existing *St Laurent*-class destroyers to carry maritime helicopters resulted in the CH-124 Sea King entering service in 1962 with *HMCS Assiniboine* leading the charge as the first helicopter carrying destroyer (DDH) was approved.⁶ This level of innovation and evolution proved to be a driving factor for the RCN. The advent of the shipborne helicopter revolutionized modern ASW, provided additional capabilities in other warfare domains and, as a legacy function, remains a critical component of the existing RCN capability today.

The drive to answer NATO’s call for operations in the Eastern Atlantic and Arctic Circle against a diverse Soviet threat caused the RCN to commence development of a more general-purpose capability that could remain effective a multi-threat environment.

⁴ Marc Milner, *Canada’s Navy: The First Century . . .*, 228.

⁵ *Ibid.*, 229.

⁶ Nicholas Tracy, *A Two-Edged Sword: The Navy as an Instrument of Canadian Foreign Policy* (Montreal, QC: McGill-Queen’s University Press, 2012), 333.

Spurred on by recognition that the extant fleet and air assets were approaching the end of service lives, which threatened the Navy's ability to provide effects in the Eastern Atlantic, the RCN turned its efforts to modernizing the fleet through the design and building of new General Purpose Frigates (GPF) and acquisition of submarines.⁷ This ambition, while laudable in its attempts to create a relevant naval capability for Canada, ultimately fell victim to the political strife of the time (characterized by the Cuban missile crisis, a litany of minority governments, budgetary restraints and the unification of all three armed services into the Canadian Armed Forces) resulting in the cancellation of the GPF program outright in 1963.⁸ The only survivors of the RCN's ambitious plan to re-tool Canada's naval capability were the acquisition of three *Oberon*-class conventional submarines and the building of three fleet replenishment ships. The budgetary reductions driving the demise of the naval programmes flew in the face of NATO's pressure to increase spending, heralding the beginning of Canada's waning ability to meet NATO commitments.⁹ The scope of the problem was magnified through the degradation of existing capabilities as technology moved ahead of what simple modernization efforts could be expected to provide.

Canada's lack of available finances to modernize the RCN placed immense pressure on the navy's relevance in NATO. As historian Richard Mayne points out, "the

⁷ Marc Milner, *Canada's Navy: The First Century . . .*, 233.

⁸ *Ibid.*, 233-237.

⁹ Wilfred Lund, "The Rise and Fall of the Royal Canadian Navy, 1945-1964: A Critical Study of the Senior Leadership, Policy and Manpower Management," Doctoral Dissertation, University of Victoria, 1999, 455.

RCN was expected to provide a fleet of 43 ships”¹⁰ – Canada would fall short of this goal by 1970. The RCN’s capability-to-commitment gap would not go unnoticed by Canada’s NATO partners and the resulting Allied pressure eventually resulted in the design and building of the Tribal-class destroyers. With the first of the class, *HMCS Iroquois*, entering service in 1972¹¹, the RCN entered the missile age with a platform that Milner observed “looked very much like a General Purpose Frigate.”¹² This trend was hardly a Canadian phenomenon: other similar-sized navies facing similar budgetary pressures moved to add frigates to their surface fleets.

The Trudeau government’s policy statement, *Defence in the 70s*, set the tone for the next decade. This document, which pointed to rapid changes in the world since the previous 1964 defence review, changed priorities to reflect new directions: the maintenance of Canadian sovereignty, the defence of North America in conjunction with US forces, the meeting of NATO commitments and the performance of international peacekeeping roles.¹³ Unlike its predecessor, the new policy statement provided some direction to naval planners by signalling a change to a more balanced, general purpose naval role and de-emphasis on ASW.¹⁴ Unfortunately, as historian Peter Haydon points out, the financial woes of the 1970s created a situation where “the military did not have enough money to maintain the existing level of activity which meant that the new defence

¹⁰ Richard Mayne, “Years of Crisis: The Canadian Navy in the 1960s” in *The Naval Service of Canada, 1910-2010: The Centennial Story* (Toronto: Dundurn Press, 2009), 143-148.

¹¹ Roger Steed, *Canadian Warships Since 1956* (St. Catharines: Van Well Publishing, 1999), 79.

¹² Marc Milner, *Canada’s Navy: The First Century . . .*, 258.

¹³ Canada, Department of National Defence, *Defence in the 70s* (Ottawa, ON: Government of Canada, 1971), 16.

¹⁴ *Ibid.*, 27-28.

policy (issued in 1971) was already out of date.”¹⁵ In an economic climate where inflation significantly eroded buying power, naval planners were faced with both uncertainty and austerity. This downward spiral of naval capability continued until it was finally checked by the introduction of the programme that continues to form the backbone of today’s RCN: the Canadian Patrol Frigate (CPF).

The CPF project, known as the *Halifax*-Class, began with Cabinet approval of the program in 1977.¹⁶ Impacted by delays resulting from a variety of factors including economic, political and design issues, the first of class, *Halifax*, would not actually enter service until 1992¹⁷. In other words, the lengthy design and production cycle resulted in the provision of a Cold War capability that essentially arrived after the collapse of the Berlin Wall, and passing of the adversary the new ship was designed to fight.

Development of defence policy in Canada progressed as Brian Mulroney’s 1987 policy, *Challenge and Commitment: A Defence Policy for Canada*, was out-dated by the end of the Cold War. Although actual defence priorities remained largely unchanged, this policy is important as it acknowledged that the Canadian Forces (CF) was incapable of meeting Canada’s commitments, coining the phrase “commitment-capability gap.”¹⁸ While steps, such as the building *Halifax* class, were underway to correct the acknowledged gap, the policy added additional defence tasks through the continued

¹⁵ Peter Haydon, “From Uncertainty to Maturity, 1968-89” in *The Naval Service of Canada, 1910-2010: The Centennial Story* (Toronto: Dundurn Press, 2009), 171.

¹⁶ Nicholas Tracy, *A Two-Edged Sword . . .*, 334.

¹⁷ *Ibid.*, 336.

¹⁸ Canada, Department of National Defence, *Challenge and Commitment: A Defence Policy for Canada* (Ottawa, ON: Government of Canada, 1987), 43-44.

building of an Arctic focus in Canada's defence policy. This addition of roles without the addition of resources serves to increase the challenge to defence planners and stresses the need for new capabilities to meet changing priorities.

The changing strategic situation brought about by the end of the Cold War fundamentally changed Canada's defence posture. The *Canadian Defence Policy 1992* acknowledged the changing international scene and reawakened interest in the Pacific, promising to provide a strong naval force to maintain Canadian sovereignty.¹⁹ A change of government later, and naval planners were presented with new policy in the *1994 White Paper on Defence* adding 12 Maritime Coastal Defence Vessels (MCDV) and a replacement for the aging Sea King helicopter.²⁰ The emerging emphasis on domestic operations coupled with the procurement announcements signalled a change away from global efforts to the collective defence of North America.

The devastating attacks on the World Trade Center of September 2001 provided another important change, heralding both a revised *Defence Policy Statement* in 2005 and the current directive, the *CFDS* in 2008. While both of these policies show little change in defence priorities, the *CFDS* does clearly indicate the government's intent for fleet renewal through the plan to provide the navy with 15 combatants, 6-8 Arctic Offshore Patrol ships (AOPS), and Joint Support Ships (JSS) to replace the navy's 40 year-old

¹⁹ Canada, Department of National Defence, *Canadian Defence Policy* (Ottawa, ON: Government of Canada, 1992).

²⁰ Canada, Department of National Defence, *1994 Defence White Paper* (Ottawa: Canada Communications Group, 1994), 8.

replenishment ships.²¹ The emerging vision, demonstrated through both ongoing modernization projects and the recently announced National Shipbuilding Procurement Strategy (NSPS), is a plan to renew a gracefully maturing fleet in conjunction with a major building effort that will be domestically centred in Canada.

The post-war development of the current RCN demonstrates that the development of naval forces is a complicated task. This task is further complicated by Canadian geography. The fact that Canada has long coastlines on three oceans, substantial maritime resources and a lack of a current direct military threat is counterbalanced by the proximity of the United States who possesses the largest and most capable navy in the world. As a result, translation of defence policy into actual naval capabilities frequently deviates from acceptable practice, and numerous pressures and obstacles impair stated objectives and programmes. Consequently, should traditional pressures continue, Canada's ability to achieve the appropriate fleet mix for the future navy could be jeopardized. Renewing the naval inventory requires a careful assessment of needs, requirements and wants in the Canadian context. Canada should, in an affordable manner, have the right warships for the right tasks that are capable of working alongside its principle allies.

²¹ Canada, Department of National Defence, *Canada First Defence Strategy* (Ottawa, ON: Government of Canada, 2008), 4.

CHAPTER ONE – NEEDS

It is a safe prediction that at the end of this century, Canada will occupy the north half of the North American continent and the United States will occupy the south half.

- R.J. Sutherland, 1962²²

From any perspective, the process by which Canada arrives at what naval capabilities are necessary to meet national requirements is highly convoluted. Budget and defence policy, issued by Cabinet, forms the impetus for the Canadian Forces (CF) to establish and maintain capabilities consistent with priorities established by the government in power. To state the obvious, for naval planners to even engage with the problem of developing the correct balance of naval capability, the nation must possess either a coherent defence policy or the political intent to design and fund defence policy.

Development of modern Canadian defence policy and its influences directly impact naval capability because it forms the foundation of the requirements the navy strives to meet. The development of national policy from the 1960s onwards as articulated in the present CFDS provides contextual understanding of the fundamental themes that underpin Canada's defence. It is through the overarching defence policy that strategic context, expectations of allies, economic realities and the nuances of Canadian culture combine to set the priorities designed to ensure the safety and security of Canadian interests both at home and abroad.

²² R.J. Sutherland, "Canada's Long-Term Strategic Situation," *International Journal* 17, no. 3 (Summer 1962): 202.

Canadian Defence Policy During the Cold War

In 1962, one of Canada's eminent strategic thinkers, Dr. Robert Sutherland examined Canada's strategic position in the world. In his article *Canada's Long Term Strategic Situation*, Sutherland sought to establish some common and lasting themes for Canadian planners. Although his work explored different dimensions of the Canadian situation, none has had as profound an impact as his assessment that Canada and United States are joined by geography, and that link forges security bonds that will last as long he could imagine.²³ Although it seems to be a wry observation hardly worthy of consideration, Sutherland's assessment of the geographical reality that is North America has directly influenced the development of Canadian defence policy throughout the Cold War and beyond.

An examination of Canadian defence policy, from the 1964 *White Paper on Defence* to the present CFDS, reveals common threads. These commonalities, much like Sutherland's invariants – geography, economics and natural alignments²⁴ – depicts a country whose defence is inextricably linked to its nearest neighbour and its involvement in collective security issues. Table 1.1 provides a general summary of defence priorities through the Cold War:

²³ *Ibid.*

²⁴ *Ibid.*, 202-204.

Table 1.1 – Cold War Defence Priorities

<i>Year</i>	<i>Title of Policy</i>	<i>Defence Priorities</i>
1964	White Paper on Defence	1. Collective defence measures 2. Participation in international organizations 3. Defence of Canada ²⁵
1971	Defence in the 70s	1. Sovereignty 2. Defence of North America 3. NATO commitments 4. Peacekeeping ²⁶
1987	Challenge and Commitment: A Defence Policy for Canada	1. Strategic Deterrence 2. Conventional Defence 3. Sovereignty 4. Peacekeeping 5. Arms Control ²⁷

The *White Paper on Defence*, tabled by then Minister of Defence Paul Hellyer in March 1964 followed the Cuban Missile Crisis of 1962 and attempted to position Canadian defence policy in a world where strategic deterrence was seen as the only way to avoid nuclear annihilation. It was with this aspiration in mind that Hellyer acknowledged Sutherland's claim by declaring: "[i]t is, for the foreseeable future, impossible to conceive of any external threat to Canada which is also not a threat to North America as a whole."²⁸ In acknowledging that the United States would play a large role in the defence of North America (and by extension, Canada), the policy provided some guidance to defence planners:

The minimum requirements for the defence of Canada are: the ability to maintain surveillance of Canadian territory, airspace and territorial waters;

²⁵ Canada, Department of National Defence, *White Paper on Defence* (Ottawa, ON: Government of Canada, 1964), 5

²⁶ Canada, Department of National Defence, *Defence in the 70s* (Ottawa, ON: Government of Canada, 1971), 16.

²⁷ Canada, Department of National Defence, *Challenge and Commitment: A Defence Policy for Canada* (Ottawa, ON: Government of Canada, 1987), 17-26.

²⁸ Canada, Department of National Defence, *White Paper on Defence* (Ottawa, ON: Government of Canada, 1964), 13.

the ability to deal with military incidents on Canadian territory; the ability to deal with incidents in the ocean areas off of the Canadian coast; and the ability to contribute, within the limits of our resources, to the defence of Canadian airspace.²⁹

The minimum requirements outlined above set out some basic requirements for defence planners using existing resources while pointing directly to the necessity to live within the nation's economic means when developing newer capabilities.

In terms of specific guidance to naval planners, Hellyer's direction to the navy was noticeably vague. In acknowledging the specialized role ASW role the RCN was to play in NATO, the policy promised studies to determine the correct fleet balance and alluded to a possible capability expansion into nuclear submarines.³⁰ The move to study the problem fell short of immediate action and failed to provide an actual output to a navy seeking to meet its new role during a dynamic period in its development.

The 1960s were a period of significant turmoil for the RCN, turmoil that cannot be blamed entirely on vague expectations of defence policy statements. Within the decade, the RCN saw tremendous change take place, ranging from the formal specialization of the navy as an ASW force (reinforced by its role in the Cuban missile crisis of 1962) to unification, which naval leaders resisted.³¹ Throughout this period, the RCN confronted tremendous personnel pressures wrought by the navy's culture of overextending itself to meet commitments in the face of the post-WWII downsizing.

²⁹ *Ibid.*

³⁰ *Ibid.*, 23.

³¹ Richard Mayne, "Years of Crisis: The Canadian Navy in the 1960s" in *The Naval Service of Canada . . .*, 142-150.

This pressure ultimately led to a crisis point in 1964 when the personnel pressures reached critical mass with some ships being mothballed, others being extended in their refits and the remaining operating with reduced crew sizes.³² Notwithstanding the challenges and pressures, the navy continued to look forward in an effort to establish and maintain new capabilities.

Personnel pressures aside, the RCN, entered the stormy decade of the 1960s with its first attempt at a complete fleet plan to meet Canada's needs. This plan, put together by Commodore A.G. Bolton and his staff in 1959, provided an outlook for the period of 1960-1966 and was "driven by changing naval technology and the pressing need to maintain a steady flow of at least two new ships each year throughout the coming decade."³³ Beyond that intention, the plan also called for conversion of existing ships to embark shipborne helicopters, the addition of nuclear submarines to the naval inventory, increased anti-aircraft capabilities and additional fleet replenishment ships.³⁴ While Bolton's plan was admirable in its efforts to generate and maintain a modern capability to meet the challenge of rapidly changing technologies, only long-term debate resulted.

Unfortunately for the RCN, the fiscal realities of the time were aligned against realizing an ongoing programme of modernization and building. Ross Fetterly described the situation as one where the defence policy was already at odds with the economic climate, observing that "[p]ressures to reduce defence spending pre-dated the 1964

³² Wilfred Lund, "The Rise and Fall of the Royal Canadian Navy . . .", 518-521.

³³ Marc Milner, *Canada's Navy: The First Century* . . ., 227.

³⁴ *Ibid.*

White Paper on Defence.”³⁵ Moving beyond the pressure to reduce simply spending, the programme also ran into a similar challenge confronting today’s naval planners: the purchasing power of the allocated funding is being steadily eroded by defence inflation during the life of the projects.³⁶ Although, in this case the impact to long range programmes was somewhat cushioned by the delivery of previously funded initiatives.

The RCN’s efforts to construct a stable fleet plan occurred as some replacement and modernization was taking place. The surface fleet saw some renewal with the completion of the destroyer escort project with the addition of four *Mackenzie*-class and two *Annapolis*-class ships by 1964.³⁷ Additionally, the creation of a modern conventional submarine force with completion of the *Oberon*-class submarine project (1967)³⁸ served to retain the RCN’s contribution to NATO as a capable ASW force while still living within the financial realities confronting Canada. In terms of new programs, the government reluctantly approved the building of four *Iroquois*-class DDHs, two replenishment ships, and dabbled in innovation with commissioning of a high-speed hydrofoil, *HMCS Bras d’Or*. In addition to the new builds, fleet modernization of existing platforms continued apace with transformation of the original *St Laurent*-class destroyers into enhanced helicopter carrying ASW ships by 1966 and

³⁵ Ross Fetterly, “The Influence of the Environment on the 1964 Defence White Paper,” *Canadian Military Journal* 5, no. 4 (Winter 2004): 54.

³⁶ *Ibid.*, 50.

³⁷ Ken Bowering, *Military/Naval Procurement in Canada: A Flawed Process*, General Sir Arthur Currie Paper 1-08 (Ottawa, ON: Conference of Defence Associations, 2008), 2.

³⁸ “Milestones in Canadian Naval History,” *Canadian Naval Review* 6, no. 1 (Spring 2010): 31.

the first helicopter air detachment (Helairdet) proceeding to sea in 1967.³⁹ Despite the economic pressures precluding the level of new-builds the RCN had asked for, the modernization of existing platforms served to both extend their service lives and address changing technology in an effort to remain operationally relevant.

Despite the capability gains made through modernizing existing platforms, financial pressures heralded an era of capability degradation. This reduction can be seen in the distinct lack of building programmes between the *Iroquois* class (ordered in the late 1960s) and the ordering of the current fleet workhorse, the *Halifax* class in 1983.⁴⁰ Moreover, this trend can be seen as a continuation of Hellyer's 1963 vision for the navy. At the start of his term as Minister of National Defence the navy possessed an impressive sounding 44 major warships, albeit of an aging and marginally effective nature, and when he left the Department in 1968, the navy had been significantly reduced in numbers to 24 combatants that represented a modern capability.⁴¹ Hellyer's efforts, while not popular, had stepped Canada back from operating a larger navy than it could afford while making a concerted effort to ensure the reduced number of ships were more capable than their predecessors.

The election of Pierre Trudeau as Prime Minister provided a new impetus for changing defence policy as politicians discovered Canada had a third ocean of strategic

³⁹ Marc Milner, *Canada's Navy: The First Century* . . . , 259.

⁴⁰ Nicholas Tracy, *A Two-Edged Sword* . . . , 158.

⁴¹ Marc Milner, *Canada's Navy: The First Century* . . . , 263.

importance. This awakening forced naval planners to face the emerging prominence of Arctic sovereignty as Canada adopted defence policy surrounding a “three ocean” approach.⁴² Reacting to the challenge to Canadian sovereignty presented by the Northwest Passage transit of the American-flagged *SS Manhattan* in 1970 and the FLQ crisis in Quebec later in the year, Trudeau became convinced “that the primary role for the Canadian Forces was at home.”⁴³ Trudeau’s efforts to refocus the CF on domestic defence were reflected in the changing defence priorities (noted in Table 1.1) published in his government’s White Paper, *Defence in the 70s*.

The impact of the change in defence priorities was keenly felt in the navy. Whereas significant effort had been placed in achieving success as an ASW optimized force, the new focus on sovereignty elevated the role of presence above that of actual war-fighting capability.⁴⁴ Additionally, the policy specifically de-emphasized the ASW role for Maritime Command and alluded to a more general-purpose role for fleet units without providing any guidance or funding to support the new direction.⁴⁵ The failure to resource the changing policy effectively tied the hands of naval planners and set the stage for the crippling degradation of Canada’s naval capability that was to follow. Changing defence roles without resourcing the new focus was reflective of Trudeau’s reluctance to fund defence and resulted in an era of rust-out; without new procurement or

⁴² Peter Haydon, “From Uncertainty to Maturity, 1968-89” in *The Naval Service of Canada, 1910-2010: The Centennial Story . . .*, 163-164.

⁴³ Marc Milner, *Canada’s Navy: The First Century . . .*, 270.

⁴⁴ *Ibid.*

⁴⁵ *Ibid.*, 270-271.

efforts to modernize existing units, the RCN's ability to provide relevant operational effect became marginalized.

Nearly 16 years would pass before Canadian defence policy would be reviewed again. In the intervening period, no real steps were taken to keep Maritime Command modernized to the point of remaining operational. With the exception of the fairly modern *Iroquois* class DDHs, whose modern weapons systems allowed for more general employment, the remaining ships began to lose relevance in any role approaching conflict. Rear-Admiral Michael Martin's testimony before a Senate subcommittee in February 1983 provides a concise and damning capability assessment:

In the Atlantic, four of the destroyers . . . could probably do a reasonably effective job; but do not be misled. These ships are at least a generation behind in their capability. The other helicopter-destroyers are so old that all they are really only providing is a command and control centre and a deck from which a . . . helicopter can operate. In the Pacific, the situation is even worse. The four improved *Restigouche* class destroyers will have some ability to survive, and I put it that way intentionally. However, the *Mackenzie* class will not only be in danger but a liability to the Commander.⁴⁶

The Senate's reaction was to point out to government that, although some additional capability had been added in the form of replenishment ships, the fleet was no longer capable of conducting mine-countermeasures, and without the addition of any ships since 1972, the fleet was aging rapidly.⁴⁷ Pointing to the world's strategic situation, the subcommittee noted that during this period the Soviet Union, the main adversary, had

⁴⁶ Nicholas Tracy, *A Two-Edged Sword* . . . , 158.

⁴⁷ *Ibid.*, 159.

completely replaced its fleet with more modern capabilities.⁴⁸ The combination of pressures affecting Canada's defence policy had created a poor strategic situation. Not only had the navy been left behind by developing technology, but the resulting technical divide between Canada and her allies serves to showcase the long term effects of political disinterest in resourcing defence priorities.

To be fair to Trudeau, his approach to defence was governed by a belief that modern warfare would be conducted with a massive thermonuclear exchange, making the continued development of conventional forces a patent waste of resources.⁴⁹ Aware that the RCN was equipped and tasked to hunt ballistic missile carrying submarines, Trudeau initially harboured a concern that strategic ASW could accidentally cause the nuclear catastrophe he was determined to avoid.⁵⁰ This view found expression in the government's new found Arctic focus and the 1977 Canadian adoption of a 200 nautical mile economic exclusion zone, both of which significantly increased the amount of ocean for the navy to monitor.⁵¹ In the end, Trudeau's assessment did not signal the end of naval forces. The new vision merely espoused a different philosophy that focussed more on the patrol functions of constabulary roles and, much to the navy's chagrin, less on the traditional functions of high-end warfighting.

⁴⁸ *Ibid.*

⁴⁹ Marc Milner, *Canada's Navy: The First Century* . . . , 271.

⁵⁰ Nicholas Tracy, *A Two-Edged Sword* . . . , 166.

⁵¹ *Ibid.*, 161.

Trudeau's studied disinterest of the navy, Tracy contends, was a policy option vice an unintended consequence.⁵² Regardless of intentions, this approach began to encounter challenges when operational irrelevance began to impact collective defence. The navy's frustration with the perceived funding to commitment gap and erosion of capability appeared as early as 1975 when Vice Admiral Boyle, the Commander of Maritime Command was so concerned about the increase of Soviet submarine activity on Canada's East Coast while most of his ships were unable to sail due to fuel constraints that he suggested Canada was failing its allies.⁵³ The degradation of the Canadian navy to the point of irrelevance in the face of inflationary pressures and higher costs was not passing unnoticed by Canada's allies, who brought tremendous political pressure to bear resulting in efforts to modernize the CF to meet commitments. The 1977 Cabinet approval of what was to become today's *Halifax* class is a direct result of efforts to meet the expectations of Canada's allies.⁵⁴

Criticism of Trudeau's *Defence in the 70s* went well beyond naval circles. In 1972 Charles Merritt, a Victoria Cross winner from World War II, applauded the prioritization of the defence of Canada while at the same time lamenting the lack of resources being provided.⁵⁵ Moving beyond the criticism surrounding resources, concerns were expressed through the subtle change of wording in the defence roles replacing 'control' with

⁵² *Ibid.*, 162.

⁵³ Marc Milner, *Canada's Navy: The First Century . . .*, 274.

⁵⁴ Nicholas Tracy, *A Two-Edged Sword . . .*, 161.

⁵⁵ C.C.I. Merritt, "The True Requirements of Canadian Defence: A Critique of the 1971 White Paper." *Canadian Defence Quarterly* 1, no. 3 (Winter 1972): 24.

‘surveillance.’⁵⁶ These two words have very different meanings when translated into naval capability; surveillance suggests an effect that can be provided by presence alone while the term control speaks to an effect that may require the higher-end warfighting capabilities the navy was striving to maintain.

Brian Mulroney’s 1987 *Challenge and Commitment* acknowledged the growing Soviet nuclear capability along with the likelihood that any nuclear attack on the United States would, by necessity, overfly Canada.⁵⁷ The policy, Tracy observed, “left unchanged the operational commitments of the Canadian Forces, but attempted to increase resources.”⁵⁸ Mulroney’s efforts to bolster resources acknowledged both Canada’s declining ability to contribute to collective defence and the tense security environment of the final stages of the Cold War.

For naval planners, this policy heralded exciting times. Including an intent to invest in a fleet of “up to twelve nuclear attack submarines” to ensure a capable presence in Canada’s three oceans, this project resulted in a great deal of internal and external pressures.⁵⁹ While the internal pressure came from protest groups in favour of disarmament and world peace, American pressure centred on the Arctic. A nuclear submarine-equipped Canadian navy was perceived as threatening the United States Navy’s (USN) ability to operate submarines in the arctic with impunity and eventually

⁵⁶ *Ibid.*

⁵⁷ Canada, Department of National Defence, *Challenge and Commitment* . . . , 9.

⁵⁸ Nicholas Tracy, *A Two-Edged Sword* . . . , 183.

⁵⁹ *Ibid.*

collapsed once “it was generally understood the U.S. Navy accepted the political restraint on its movements in the Canadian arctic.”⁶⁰ The government gracefully stepped back from the project as the need to actually enforce sovereignty diminished. As well, the economics of the project were unsupportable and would have required a massive increase in defence spending, likely triggering naval planners to return to the earlier unrealized fleet plans of the 1960s.⁶¹ This manner of thinking, while understandable, demonstrates a gap between naval ambitions and defence policy.

Like its predecessor, the 1987 defence policy attracted criticism of the promises made in the policy. Critics took a balanced approach, applauding the progress made on the CPF project, the modernization of the four *Iroquois* class, and the Maritime Coastal Defence Vessel project while panning the submarine cancellation and failure to increase the number of maritime patrol aircraft (MPA).⁶² Moving beyond simple examination of capabilities, the navy’s almost single-minded view of the prominence of the Atlantic as the focus of operations was questioned in the face of the building Soviet naval presence in the Pacific.⁶³ This question of balancing naval forces would not be effectively answered until completion of the *Halifax* class in the late 1990s, which provided the Pacific fleet with five modern combatants to replace the aging training squadron’s steam-driven destroyers.

⁶⁰ *Ibid.*, 191.

⁶¹ *Ibid.*

⁶² G.J.H. Halstead, “A Defence Policy for Canada: The White Paper Two Years On.” *Behind the Headlines* 47, no. 2 (Winter 1989): 5.

⁶³ Nicholas Tracy, *A Two-Edged Sword* . . . , 194.

While Canada's naval capability modernized to meet the needs identified in the defence policy, there was still a long way to go to close the policy's self-identified 'capability-commitment gap' in terms of creating the operational effect necessary to contribute to collective defence. Fortunately for defence planners, the collapse of the Berlin Wall in November 1989 heralded the end of the Cold War and reduction in the Soviet threat upon which Canadian defence policy was based.⁶⁴ This change allowed for the emergence of a new era where naval forces, expanding from their Cold War roles, gained in prominence.

While the end of the Cold War saw a drastic threat reduction, it also rendered Canada's 1987 defence policy, postured against a Soviet threat, largely ineffective. Naval planners were faced with an entirely new dynamic of having to define the right types and numbers of ships to meet the country's maritime requirements while not countering a specific dominant threat.

Moving Beyond the Cold War – Defence in the 1990s and Beyond

The beginning of the 1990s saw the navy facing the reality of change. With the primary naval focus of ASW in support of NATO's common defence plans no longer required, the navy found itself returned to its 1975 condition of poor technical readiness.⁶⁵ While ongoing projects to modernize the fleet, such as the building frigates

⁶⁴ *Ibid.*, 196.

and the return of the modernized DDHs from their upgrade to area air defence destroyers through a Tribal Update and Modernization Program (TRUMP) were delivering, the immediate challenge of remaining operationally relevant was daunting and Maritime Command was correct to be wary.⁶⁶ In August 1991, Saddam Hussein's occupation of Kuwait signalled the start of the First Gulf War and Canada's hasty assembly of a naval task group on the East as part of a multi-national response.⁶⁷ Canada's response to the invasion of Kuwait set the tone for the defence policy of the 1990s. Table 1.2 demonstrates the ongoing development of defence priorities during this period.

Table 1.2 – Pre-9/11 Defence Priorities

<i>Year</i>	<i>Title of Policy</i>	<i>Defence Priorities</i>
1992	Canadian Defence Policy	1. Defence of Canada. 2. Collective defence through NATO/US. 3. International peace and security. ⁶⁸
1994	Defence White Paper	1. Protection of Canada. 2. Defence of North America. 3. Contributing to international security. ⁶⁹

The Gulf War demonstrated the navy's ability to do much with very little. Over a period of 10 days, using weapon systems procured for the new frigate builds, the navy refitted three ships into an ad hoc task group. Proving that necessity can drive immediate progress, *Athabaskan* (a pre-TRUMP DDH), *Protecteur* (fleet support ship) and *Terra Nova* (destroyer escort) were able to defend themselves properly in a modern war and set

⁶⁵ Richard H. Gimblett, "The Transformation Era, 1990 to the Present" in *The Naval Service of Canada, 1910-2010: The Centennial Story*. Toronto: Dundurn Press, 2009, 185.

⁶⁶ *Ibid.*, 186.

⁶⁷ *Ibid.*

⁶⁸ Canada, Department of National Defence, *Canadian Defence Policy* (Ottawa, ON: Government of Canada, 1992), 11.

⁶⁹ Canada, Department of National Defence, *1994 Defence White Paper* (Ottawa: Canada Communications Group, 1994), 17-24.

about interdicting shipping bound for Iraq in the Persian Gulf.⁷⁰ A peacetime effort to achieve this capability across three different platforms, Milner supposes, would have taken at least 18 months.⁷¹ While the fact that the navy was able to respond to the invasion of Kuwait in a meaningful manner is significant, it is equally important to note the capability limitations imposed by the earlier failures to build and maintain a modern fleet mix. It limited the available employment of the task group to roles outside of those associated with higher end combat operations. Fortunately, the lack of a significant naval threat beyond mining permitted Canadian participation, as the ad hoc capabilities were suited to the operational demands. Moreover, the lack of threat allowed the navy to demonstrate a strong degree of interoperability with Canada's allies, or more simply put, despite the lack of modern naval capability, Canada was still part of the team.

Following the First Gulf War, the 1992 *Canadian Defence Policy* indicated a government attempting to react to a series of rapid changes. In acknowledging the reduction in the preceding Russian threat, policymakers pointed to the emerging divide between the developed and developing world as a major cause for concern.⁷² Beyond that, the defence priorities remained unchanged as reflected in Table 1.2 and reflected the Canadian vision of peacekeeping and peace-making as a the focus of international effort in that decade.

⁷⁰ Marc Milner, *Canada's Navy: The First Century . . .*, 295-297.

⁷¹ *Ibid.*, 296.

⁷² Canada, Department of National Defence, *Canadian Defence Policy . . .*, 2-4.

From the navy's standpoint, the 1992 policy, while recognizing the reduced importance of the Atlantic sea lines of communication, was intended to adapt the navy's emerging capabilities to meet more general purpose roles in support of Canadian interests abroad.⁷³ Identifying a 15-year planning outlook, the *Canadian Defence Policy* assured naval planners of a robust shopping list including completion of the CPF and TRUMP programs, corvettes, MCDVs, and submarines.⁷⁴ As Milner points out, the fleet plan that had been simmering since the mid-1970s coalesced into a workable arrangement. By 1993, the navy had achieved everything they had worked for except for helicopters and submarines.⁷⁵ Survival of the navy's ambitions through a period of economic austerity, mixed messages from government and the disinterest of the Prime Minister at the beginning stages of the plan was a testament to both the tenacity of naval planners and the complete lack of naval capability Canada possessed by 1990.

A change of government heralded a rapid-fire re-assessment of Canadian defence policy with Jean Chrétien's *1994 White Paper on Defence*. Although, as Table 1.2 demonstrates, defence priorities remained essentially unchanged, the resource base for defence was to change once again. Acting on his election promise to cancel the EH-101 helicopter replacement for the venerable Sea King, Chretien's actions resulted in technological imbalance for the navy by matching an elderly helicopter with a brand new class of warship.⁷⁶ Forecasting tough times for the Canadian Forces, the new policy

⁷³ *Ibid.*, 21.

⁷⁴ *Ibid.*, 23.

⁷⁵ Marc Milner, *Canada's Navy: The First Century . . .*, 305.

⁷⁶ *Ibid.*

devoted an entire chapter to domestic considerations: “[d]efence policy must respond to challenges at home – in particular to current fiscal circumstances.”⁷⁷ DND was not alone in funding reductions, taking its share of cuts along with other federal departments. What did set DND apart was the lasting impact of force reduction measures during the mid-1990s and the institutional stain of the Somalia Inquiry. In terms of addressing naval capabilities, the policy made allowances for a replacement helicopter (clearly not the EH-101), the 12 previously ordered MCDVs and directed the retaining of the replenishment ship *Provider* (scheduled to be paid off in 1996) for the time being.⁷⁸ In other words, while the fleet was continuing to modernize under previous direction and resources, additional resources were neither being allocated nor anticipated.

The *1994 Defence White Paper* is now held as the last actual white paper published in Canada and reflected Jean Chretien’s focus on international trade. Prioritizing the navy ahead of the army, still recovering from the public outcry over Somalia, the policy complimented Chretien’s efforts to open Asian market. Despite ongoing budgetary constraints, the poor financial climate was mitigated from the navy’s perspective by the ongoing modernization of the fleet that was continuing largely as envisioned in the 1987 fleet plan.⁷⁹ Enjoying the fruits of previous planning, the navy spent the rest of the decade accepting the newly upgraded TRUMP destroyers, the 12 new frigates, and the 12 new MCDVs.⁸⁰ Beyond that, the life of Canada’s submarine

⁷⁷ Canada, Department of National Defence, *1994 Defence White Paper* . . . , 3.

⁷⁸ *Ibid.*, 8.

⁷⁹ Richard H. Gimblett, “The Transformation Era, 1990 to the Present” in *The Naval Service of Canada* . . . , 192.

⁸⁰ *Ibid.*

service was renewed with the 1998 announcement of Chretien's move to purchase 4 *Upholder* class conventional submarines from the Royal Navy.⁸¹ In short, the navy now represented an effective and reasonably modern capability with which to meet the challenges of the post-Cold War era. While in no sense representing the leading edge of naval capability on the global stage, Canada's navy was, as best as could be accomplished within the circumstances, ready for the new strategic environment.

The Changing Landscape – Defence Policy, Post-9/11

On the morning of September 11, 2001, cozy international security presumptions were shattered by the terrorist attacks on the World Trade Center and the Pentagon. Instantly, the threat of terrorism, while extant in other parts of the globe, was brought home to North America bringing with it a renewed emphasis on continental and homeland security. As part of Canada's response to the attacks, the navy began a series of deployments known as OPERATION APOLLO, consisting of deployments to the Arabian Sea during from 2001-2003.⁸² Although largely unnoticed by the public, the scope of effort required equalled, in Gimblett's words, "the largest sustained Canadian naval operation since the Korean War."⁸³ Nearly every major warship took part and almost every one of Canada's 4,200 sailors deployed.⁸⁴ Clearly, the resources required to sustain this effort, both in terms of people and platforms, amounted to what was

⁸¹ "Milestones in Canadian Naval History." *Canadian Naval Review* 6, no. 1 (Spring 2010): 33.

⁸² *Ibid.*

⁸³ Richard H. Gimblett, "The Transformation Era, 1990 to the Present" in *The Naval Service of Canada . . .*, 201.

⁸⁴ *Ibid.*

realistically an unsustainable mobilization of the navy. By 2004, the navy reduced the commitment to one ship at a time.⁸⁵ This deployment cycle, swinging through some gaps and some larger deployments formed the basis of the navy's operational employment for the remainder of the decade and, despite the reduction in available ships caused by the current mid-life refits, remains intact today.

Although Paul Martin's Liberal government was short-lived, it reacted to the new reality by shifting towards internationalism. From a policy standpoint, the government issued a defence update in 2005 as part of a larger document called *Canada's International Policy Statement: A Role of Pride and Influence in the World* (IPS) that outlined the changing focus of effort across a spectrum of areas including diplomacy, defence, development and commerce.⁸⁶ Distracted by ongoing operations in Afghanistan, the defence portion of this plan, known simply as the *Defence Policy Statement*, acknowledged the threat provided by terrorism and failed states while broadly maintaining similar defence priorities as the *1994 Defence White Paper*.⁸⁷ Table 1.3 identifies the development of defence priorities from 2005 to their present form.

⁸⁵ *Ibid.*

⁸⁶ Andrew Godefroy, *Canada's International Policy Statement Five Years Later* (Calgary, AB: Canadian Defence & Foreign Affairs Institute, 2010), 2-11.

⁸⁷ Canada, Department of National Defence, *Defence Policy Statement* (Ottawa, ON: Government of Canada, 2005).

Table 1.3 – Post 9/11 Defence Priorities

<i>Year</i>	<i>Title of Policy</i>	<i>Defence Priorities</i>
2005	Defence Policy Statement	1. Protecting Canada and Canadians. 2. Canada-US Defence Relationship. 3. Contributing to a Safer World. ⁸⁸
2008	Canada First Defence Strategy	1. Defence of Canada. 2. Defence of North America. 3. International Security. ⁸⁹

The policy sought to optimize integrated operations within the CF (known as CF Transformation) by establishing operational level commands to deal with the force employment of CF assets deployed operationally and added both a Special Operations Group and the Standing Contingency Task Force (SCTF).⁹⁰ From a naval standpoint, the policy supported the continuing development of the naval task group as a core capability of a new focus on joint operations, directing the navy to develop better abilities to support forces ashore, act in the littorals, modernize the existing frigates and begin development of a replacement major surface combatant.⁹¹ In reality, the policy directed the navy to work with what it had in the short term while beginning the dialogue necessary to begin the process of modernization.

The navy's reaction to the 2005 direction was to maintain the navy's current direction. While work on identifying the requirements for the identified projects, such as modernizing the *Halifax* class and the Joint Support Ship (JSS) commenced, an analysis of the policy five years on seems to indicate that, as has happened before, the navy's

⁸⁸ Canada, Department of National Defence, *Defence Policy Statement . . .*, 16-26.

⁸⁹ Canada, Department of National Defence, *Canada First Defence Strategy* (Ottawa, ON: Government of Canada, 2008), 3.

⁹⁰ Canada, Department of National Defence, *Defence Policy Statement . . .*, 11-12.

⁹¹ *Ibid.*, 14.

ongoing focus on maintaining and developing blue water capability resulted in the failure of the SCTF concept.⁹² While this failure may have been a deliberate action on the navy's part, the more realistic view is that, given the historical nature of capability development within the CF, the time between inception to death of the SCTF concept was simply too short to allow the necessary capabilities to be developed.⁹³

The failure of the SCTF concept was symptomatic of larger issues resident in the relationship between defence policy and naval capabilities. While some of the items contained in the policy were already taking place, such as interdepartmental cooperation exemplified by a successful 2004 anti-narcotics operation off of Newfoundland, other capabilities were being added to the navy's purview without being resourced.⁹⁴ This state of affairs reflects a historical pattern where the means to enable new strategic initiatives disappear through delayed programmes and cost overruns before the end goal is realized. A quick review of other stalled defence projects conducted by Hobson, such as the replacement search and rescue aircraft, JSS and the Maritime Helicopter project, provide strong examples of how easily defence policy can be disrupted before capability is achieved.⁹⁵ As of early 2013, eight years later, Hobson's assessment has been proven correct: while they continue to progress, the three projects she mentions have yet to provide a capability.

⁹² Andrew Godefroy, *Canada's International Policy Statement Five Years Later . . .*, 7.

⁹³ *Ibid.*

⁹⁴ Peter T. Haydon, "A New Security Framework: Le mieux est l'ennemi du bien, non?" *Canadian Naval Review* 1, no. 2 (Summer 2005): 36.

⁹⁵ Sharon Hobson, "Let's Be Realistic About the Budget." *Canadian Naval Review* 1, no. 1 (Spring 2005): 31.

In 2008, the current articulation of Canadian defence policy was put forward, signalling the government's commitment to the military. Although funding of the policy has already been negatively impacted by a global recession and falling commodity prices, the policy brought the promise of a reasonable increase in funding for the CF over the next 30 years. Additionally, the *CFDS* maintained the priorities found at Table 1.3 and emphasized new capabilities across all three services. For the Navy, *CFDS* confirmed the previously announced AOPS, JSS and Maritime Helicopter (MH) projects while announcing a project to maintain the current fleet mix into the future through the design and building of 15 surface combatants to replace both the aging destroyers and, eventually, the frigates.⁹⁶ In terms of what the government expects the navy to accomplish, the mission set is non-service specific and identifies six core missions:

- Conduct daily domestic and continental operations, including in the Arctic and through NORAD;
- Support a major international event in Canada, such as the 2010 Olympics;
- Respond to a major terrorist attack;
- Support civilian authorities during a crisis in Canada such as a natural disaster;
- Lead and/or conduct a major international operation for an extended period; and
- Deploy forces in response to crises elsewhere in the world for shorter periods.⁹⁷

CFDS's missions, while pointing to a timely example such as the Vancouver 2010 Olympics, are exceptional in their lack of fidelity and serve to create discretionary armed forces for the government's use. The broad nature of the mission set allows for subjective measures of success, potentially enabling political room for manoeuvre to ensure that the

⁹⁶ Canada, Department of National Defence, *Canada First Defence Strategy* . . . , 12.

⁹⁷ *Ibid.*, 3.

perception of any capability gap can easily be deflected. As a matter of good governmental policy, it is conceivable that the generic nature is a deliberate acknowledgement that three decades is a long time to commit funding; changing circumstances such as the current financial reality may require changes. Moreover, the financial risk is overshadowed by the most obvious threat: a change of government could bring new defence priorities and render the new plan obsolete before the capability has arrived.

In what appears to be a repeating theme, the *CFDS* was met with criticism over the resources required to meet the goals as opposed to criticism over the capabilities identified within the policy. Generating discussion amongst the defence community about the ‘boom and bust’ cycle of procurement, Madigan sees the historical change of political priorities and public appetite for defence spending as a direct threat to actually achieving the identified capabilities.⁹⁸ Additionally, while the projected increase in spending to 2% of GDP is certainly welcome news for DND, it is additional expense to taxpayers at a time when the effects of a stalled global economy are making themselves felt.⁹⁹ While in stable economic times, the proposed funding increase will have a positive effect, failure to achieve the predicted growth in Canada’s GDP could easily impact defence procurement unless it is seen to provide employment opportunities as part of an economic plan.

⁹⁸ Gerry Madigan, “Canada First – Defence Strategy: A Retrospective Look. Too Much? Too Little? Just Right?” *Canadian Military Journal* 10, no. 3 (Summer 2010): 27.

⁹⁹ *Ibid.*, 35.

Warning signs of increasing economic pressure are certainly evident. The government's Deficit Reduction Plan, DND's own internal Strategic Review and the Leslie Report all point to one key conclusion: funding to meet the plan may not exist.¹⁰⁰ It is, however, too early in the cycle of procurement to declare the stated initiatives defeated as the governments efforts to find funding within operational budgets and the reduction of administrative overhead may be indicative of a plan to return to addressing defence priorities once a balanced budget has been achieved.¹⁰¹ While naval planners may take some solace in the recently announced progress of the JSS contract, in reality this represents a very minor step in the process and the navy is no closer to receiving a capability than it was before.¹⁰² While the RCN continues to work feverishly to move projects forward in order to attempt to get in front of financial pressures and avoid changing of plans to reduce costs through capability reductions, signals are that a new defence policy statement is beginning to emerge. The economic tension is a reflection of the realities facing the Canadian government; rising health care costs, an aging population, reduced economic growth all compete for the same resources as defence resulting in a climate that may be unfriendly to the RCN's aspirations.

¹⁰⁰ David Perry, *Defence After the Recession* (Calgary, AB: Canadian Defence & Foreign Affairs Institute, 2012), I.

¹⁰¹ *Ibid.*, 4.

¹⁰² Government of Canada, "Harper Government's Ship Strategy Bolstering Canada's Economy" last accessed February 27, 2013. <http://news.gc.ca/web/article-eng.do?mthd=tp&ctr.page=1&nid=722379&ctr.tp1D=1>

Summing Up the Need

Canada's developing defence policy from the Cold War to the present day has suffered from many influences that have run the gambit of changing security environments, political ambitions and economic realities. The emerging theme that should concern naval planners is the impact of dwindling resources and shifting priorities. In a stark comparison of history repeating itself, the economic realities saw the failure of a sustainable fleet plan throughout the 1960s and resulted in a largely ineffective naval force struggling to contribute to the first Gulf War. Reinforcing what appears to be the Canadian pattern of a 'boom and bust' cycle, the revitalization of the Canadian navy through the 1990s provided a capability that, having reached its mid-life, will be in danger of rusting out if naval procurement trends continue. Further, this effect could easily be magnified with a change of government and the resulting change of defence priorities.

The current defence policy expressed by the *CFDS* contains aggressive procurement projects designed to ensure that Canada maintains a modern and capable fleet able to operate within the context of the defence priorities and six identified core missions. The policy's direction to procure the Arctic patrol vessels and the stated intent through NSPS to provide the resources to complete the programme signals this government's focus on continental operations. Having said that, economic realities facing Canada exert much pressure; like many plans that preceded it, such as the ambitions of the Brock Report and Brian Mulroney's efforts to expand into the realm of nuclear attack

submarines, the procurement process may falter in the face of economic realities leaving the government to choose between a patrol ship or combatant capability.

Given the demand the RCN is required to meet and the historical context for the current fleet mix as it developed in concert with defence policy, translating policy into capability is clearly a daunting and challenging task. The navy is in the process of attempting to accomplish this translation by identifying the roles needed to meet the defence priorities through the development of naval doctrine that is designed to ensure the demands of policy are met without eroding what the navy views as its core capabilities. This approach highlights an uncomfortable truth: the navy's self-image and the government's view of the navy may in fact be different, leading to further challenges moving forward.

CHAPTER TWO – ROLES

The direction given by the overarching defence policy and its influence on development of Canada's current naval capabilities form only part of the total equation that frames the establishment of a proper fleet mix to meet the nation's maritime ambitions. Translation of the strategic level policy statements into capability is inextricably tied to the roles that the RCN will be asked to perform as well as the roles it has historically performed on a continual and contingency basis. Naval theory applicable to the RCN explains why the navy is organized the way it is, what drives the efforts to cling to high-end combat capability and even justifies why Canada actually might need the fleet the navy is striving to protect.

Naval Theory Applied

In 2001, the Canadian Navy made a concerted effort to provide some strategic context to justify its vision for the future. Reaching out to a 25-year horizon, the navy used existing naval theory to both identify roles for itself as part of Canada's position as a maritime nation and to provide the context behind the selected roles. More importantly, the navy, recognizing the immense level of investment necessary to maintain its current position would require additional support, aimed the message at both the government and the Canadian populace as a form of outreach aimed at garnering the necessary momentum.

The naval vision leaned heavily on Booth's triangle, a construct he introduced to demonstrate his ideas on use of the sea as the "underlying consideration in the whole business of navies and foreign policy."¹⁰³ Booth argues that navies carry out functions in three broad areas: military roles, diplomatic roles and policing roles.¹⁰⁴ The navy's efforts to rationalize the national direction with their own self-image as a combat capable force resulted in the envisioned roles seen in Figure 2.1:



Figure 2.1 – Booth's Triangle (Leadmark Model)

Source: Canada. *Leadmark: The Navy's Strategy for 2020*, 34.

In applying Booth's triangle, the navy has carefully examined both the roles directed in policy along with roles that match the naval self-image. The results worked to

15. ¹⁰³ Ken Booth, *Navies and Foreign Policy* (New York: Holmes & Meier Publishers, Inc, 1979),

¹⁰⁴ *Ibid.*

support the assertion of Canada as a “medium power, but one with a limited awareness of sea power, even as its latent capability to exercise it is strong.”¹⁰⁵ Having said that, the continuous rotations of OP APPOLO deployments in 2001-2003, contributions to NATO’s Standing Naval Force, command of Combined Task Force (CTF) 150’s anti-piracy operations off of Somalia in 2008, relief operations in Haiti in 2010, and support to the campaign in Libya clearly points to a navy that is both useful and busy. More importantly, this tempo points to a country that is well aware of the value of sea power in maintaining its position in the global community.¹⁰⁶ This massive swing towards constant deployments abroad signalled a sea change in Canada’s self-image that moves beyond the a limited awareness of sea power. It in fact moves towards Booth’s definition of an ocean-going navy:

. . . one which, having some interest in distant waters, will have sufficient naval strength to be able to threaten convincingly, to fight independently, to control or contest the sea in the areas of interest against all but the most highly sophisticated opposition. However, such a navy will lack the sufficient forces to attempt more than one serious operation in distant waters at the same time.¹⁰⁷

Other naval theorists might classify Canada as possessing a medium power navy due to its on-going role in coalition operations.”¹⁰⁸ But the navy leans towards a more sophisticated classification to define itself:

Rank 3: Medium Global Force Protection Navy – these are navies that may not possess the full range of capabilities, but have a credible capacity in certain of them and consistently demonstrate a determination to exercise

¹⁰⁵ Canada, Department of National Defence, *Leadmark: The Navy’s Strategy for 2020* (Ottawa, ON: Government of Canada, 2001), 29.

¹⁰⁶ “Milestones in Canadian Naval History.” *Canadian Naval Review* 6, no. 1 (Spring 2010): 33.

¹⁰⁷ Ken Booth, *Navies and Foreign Policy* . . . , 121.

¹⁰⁸ Geoffrey Till, *Seapower: A Guide for the Twenty-First Century* (London: Frank Cass, 2004), 119.

them at some distance from home waters, in cooperation with other Force Projection Navies. E.g., Canada, Netherlands, Australia.¹⁰⁹

At the time the navy pointed to this definition as an identity in 2001, it was valid.

Moreover, all 12 *Halifax* class were relatively youthful and operationally relevant, the Canadian Task Group concept was achievable with the area air defence and higher command functions resident in the *Iroquois* class and the entire enterprise could be sustained through the use of fuel agreements with other navies and the aging replenishment capability of the *Protecteur* class oilers. A more current assessment of a navy that is on the cusp of retiring its area air defence platforms as well as facing a sustainment gap with the JSS project operating in a period of distinct austerity measures that will likely see a drastic reduction in operational deployments could result in a downgrade of Canada's self-image by both the RCN and Canada's allies.

This assessment of Canada's navy is important, as it is this self-image that drives capability development. The navy's view must match that of the overarching defence policy in order to ensure the nation receives the capability it has directed. While some parts of defence policy lend themselves to the naval self-image as a high-end warfighting organization, others areas such as sovereignty tasks require more effort to link directly to capability. The real danger to the naval procurement will be found in the differences between both views; failure to meet the government's vision will almost certainly result in further delays/cancellations to naval programmes. *Leadmark* represents the navy's efforts to navigate between both positions.

¹⁰⁹ Canada, Department of National Defence, *Leadmark* . . . , 44.

Though the naval vision in *Leadmark* was penned in 2001, prior to the attacks of 9/11, the policy in force at the time, the *1994 White Paper on Defence*, was easily rationalized against naval roles. Figure 2.2 illustrates the naval vision's compliance with defence policy:

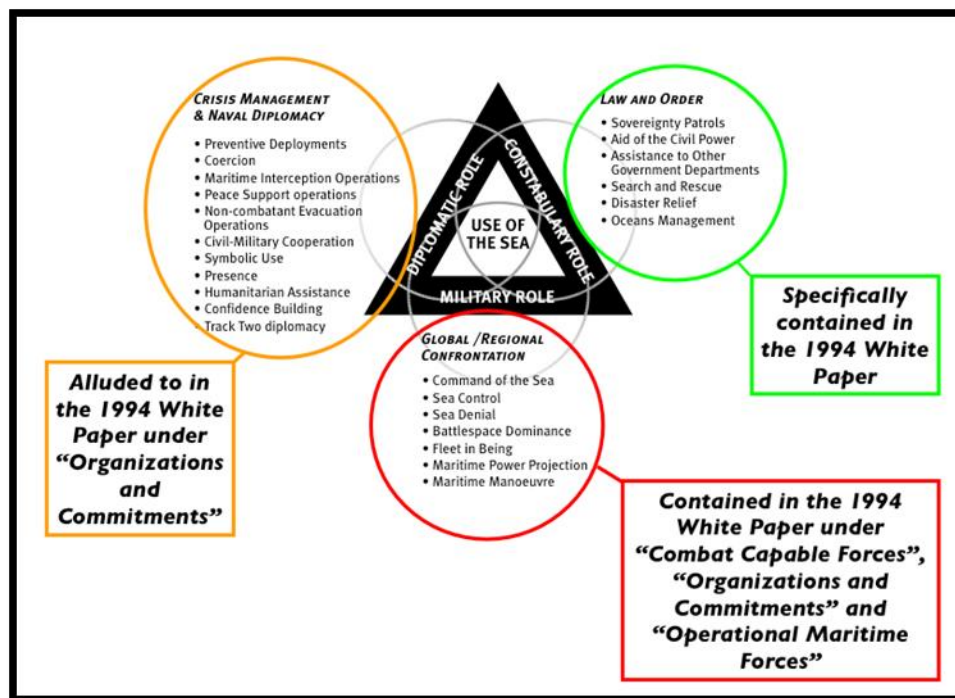


Figure 2.2 – The Naval Roles vs. Defence Policy Comparison Pre-9/11

For Maritime Command, the application of naval theory, coupled with the emerging tasks after the Gulf War of 1991 can be easily seen to line up with defence policy. However, the world security paradigm underlying the policy, and hence, the roles imagined by Maritime Command, changed with the post-9/11 environment. This change was not towards an era of stability that would enable the navy to maintain the vision it had created for itself, but towards a world where chaos was the new normal and the navy needed to adjust itself to be employable against an asymmetric threat. In other words, all

assumptions and roles needed to be challenged and older Cold War attitudes had to be shed.

In the realm of defence policy, rapid change takes time as changes to the security environment need to be assessed and evaluated. The *Defence Policy Statement* of 2005 accounted for the changing environment: “The 2001 attacks on New York and Washington reset the international security agenda. They have also raised the profile of domestic security, and the defence of the continent that we share with the United States.”¹¹⁰ The policy reviewed CF roles and priorities and the navy was quick to react, amending the naval vision with *Securing Canada’s Ocean Frontiers: Charting the Course From Leadmark* published in the same year. This document, still looking at a 20-year strategic context, pushed the planning timeframe out to 2025 and rationalized the new defence policy against *Leadmark’s* use of Booth’s triangle. The changes included some semantic updates designed to focus on Canadian foreign policy and sovereignty while military roles were updated to step back somewhat from independent action and emphasize collective efforts.¹¹¹ In supporting the change, *Securing Canada’s Ocean Frontiers* argued:

Although the diagram was drawn as an equilateral triangle, the prevailing pre-9/11 strategic context skewed the construct towards the more purely military roles and functions. The future security environment has exposed a whole range of scenarios in which Canada and North America are vulnerable to sea-borne threats and the need for a more coordinated

¹¹⁰ Canada, Department of National Defence, *Defence Policy Statement . . .*, 5.

¹¹¹ Canada, Department of National Defence, *Securing Canada’s Ocean Frontiers: Charting the Course From Leadmark* (Ottawa, ON: Government of Canada, 2005), 18.

national maritime response to them demands a restoration of balance to the triangle.¹¹²

The changing naval self-image, provided at Figure 2.3, reflected a much more pragmatic viewpoint if the roles required to meet the national strategic vision by removing some of the higher-end military roles such as Battlespace Dominance, Maritime Manoeuvre and Command of the Sea. This adjustment not only provided for clearer alignment with overarching policy, but also set the stage for already signalled capability gaps arriving with delays to the JSS project, impending retirement of the destroyers and prospective plans to modernize the *Halifax* class frigates.

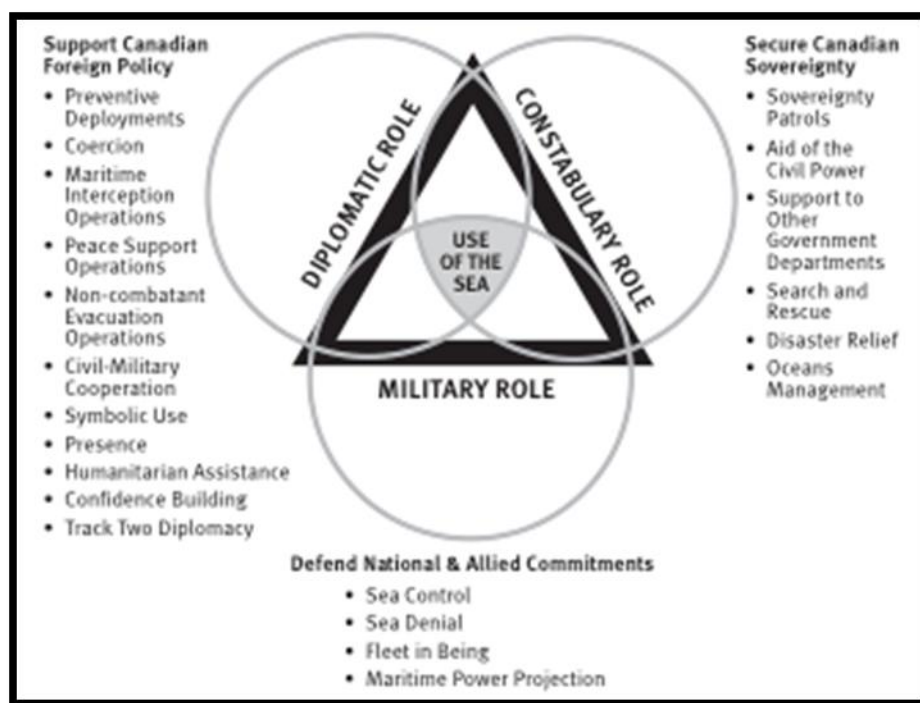


Figure 2.3 – Naval Roles, Post 9/11

Source: Canada. *Securing Canada's Ocean Frontiers: Charting the Course From Leadmark*, 18.

¹¹² *Ibid.*

The realignment of roles identified in Figure 2.3 has proven to be appropriate. The naval contribution to coalition operations such as OP APOLLO, CTF 150 and Libya style deployments have been the mainstay of the navy's operational deployments since the surge operations of 2001-2003. The fact that the navy is actually carrying out more realistic self-identified roles, resulting in government support for both modernizing existing ships and progressing towards a balanced fleet mix for the future shows the positive results the navy has achieved in both adapting to and meeting the demands of national policy.

Comparing the 2005 *Defence Policy Statement* with modified Booth's triangle in Figure 2.3 reflects alignment between the RCN's assessment of their role and the nation's defence policy. Figure 2.4 shows the relationship:

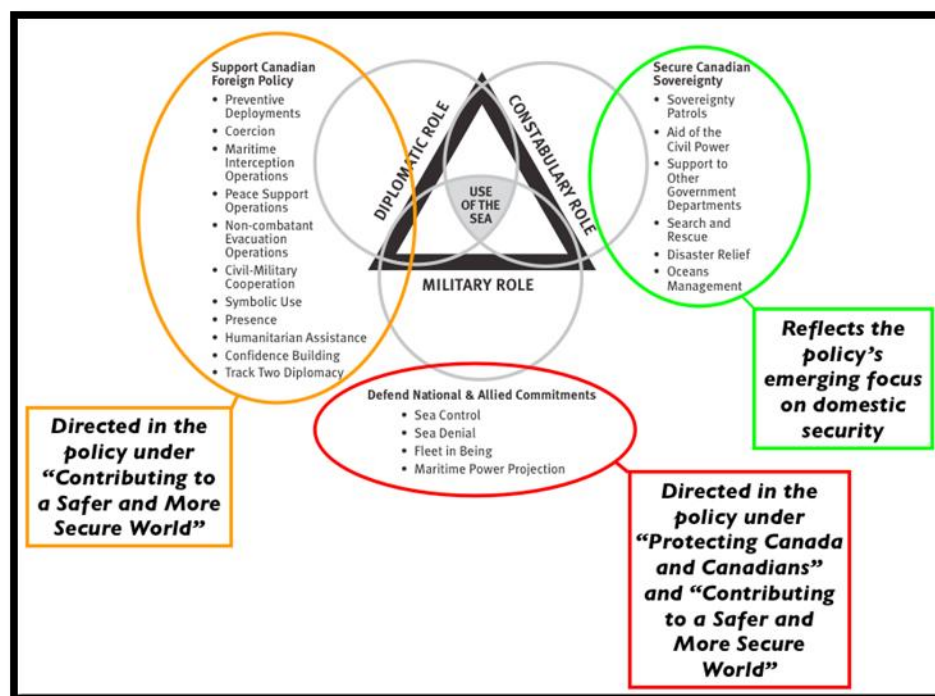


Figure 2.4 - The Naval Roles vs. Defence Policy Comparison Post-9/11

The direction that the RCN was astute enough to absorb from the evolving defence policy and examination of the security environment made itself recognized in *Securing Canada's Ocean Frontiers* when the navy leadership declared, “[t]he high readiness, multi-purpose, combat capable and adaptive fleet as called for in Leadmark permits the Navy to shift the balance among the domestic and international imperatives, when and as required, in a rapid and seamless manner.”¹¹³ This rather adroit statement points towards how a flexible the navy became in meeting whatever the government viewed as important in a changing environment, while simultaneously making an argument for the continued maintenance of higher-end warfighting capabilities.

While it was clear that the navy's pre-9/11 vision needed to be updated to reflect the changing world security environment, the navy's motivation in rebalancing its identified roles did not escape scrutiny. In fact, re-balancing the roles was seen less as a new approach to reflect the post-Cold War reality and more of an effort by the RCN to garner support for the navy's procurement plans for new replenishment ships and the not-yet defined future surface combatant.¹¹⁴ When viewed against the historical context of how Canada's current fleet mix came to be, this viewpoint certainly resonates as the navy continues to fight to maintain a relevant capability with the full knowledge that a lack of both government and public support can often result in the degradation of naval capabilities on a large scale.

¹¹³ *Ibid.*

¹¹⁴ Aaron P. Jackson, *Keystone Doctrine Development in Five Commonwealth Navies: A Comparative Perspective*. Papers in Australian Maritime Affairs No. 33 (Australia: Sea Power Centre, 2010), 23-24.

The broader aspects of Canada's naval vision in terms of applied naval theory finds expression in the three sides of Booth's Triangle as they apply to the RCN. Examination of each broad area is critical as the navy relies upon them to link the naval vision to the overarching defence policy in an effort to establish the correct capability mix.

Roles Examined – The Diplomat

Canada is a maritime nation, a maritime nation with trade, commerce and interests around the world.

- Stephen Harper¹¹⁵

The role that the navy plays in the diplomatic efforts of Canada remains important. Canadian warships embody Booth's assertion that "warships have always had more than a fighting function."¹¹⁶ The Canadian approach to using warships as instruments of foreign policy certainly accords with naval theory. Whether participating in coalition operations or merely showing the flag in the Western Pacific, Canada relies on "the use of warships in support of a country's general bargaining position, particular negotiating stances and influence-building tactics and for representational tasks of various kinds."¹¹⁷ This growing emphasis on ocean trade and resources continues to drive the use of warships to create political effects in a peacetime environment.¹¹⁸ As a nation that relies on collective defence and maritime trade, the employment of warships in the diplomatic realm makes good sense. To constrain the navy to military and constabulary

¹¹⁵ Stephen Harper (Speech, The Unveiling of the Royal Canadian Navy Monument on Richmond Landing, Ottawa, Canada, May 3, 2012).

¹¹⁶ Ken Booth, *Navies and Foreign Policy* . . . , 26.

¹¹⁷ *Ibid.*

¹¹⁸ Geoffrey Till, *Seapower: A Guide for the Twenty-First Century*. . . , 274.

roles would limit foreign policy options and potentially reduce Canadian influence on the world stage.

As Stephen Harper pointed out, Canada is a large coastal state with significant maritime interests. With major ports such as Vancouver, Montreal and Halifax hosting trade in three oceans and the Great Lakes, the nation's 243,000 kilometres of coastline positions Canada as having the largest coastline of any nation in the world.¹¹⁹ Beyond that, approximately half of Canada's international trade is conducted by sea through the visits of an average of 21,000 ships annually; in real terms this accounted for \$170 billion worth of trade in 2010.¹²⁰ In real terms, Canada's ongoing prosperity depends on the sea, driving the necessity to be able to influence events that occur within the ocean domain.

If naval forces have a diplomatic role and contribute to Canada's significance as a maritime nation, how then, does the RCN use the diplomatic domain to advance a sense of what roles it needs to fill? The answer lies in an examination of recent naval efforts abroad.

The line between naval operations and diplomatic effect is ill-defined. Higher end operations, such as the 2008 deployment of a Canadian Task Group to meet the CTF 150 anti-piracy operations off of Somalia, demonstrates Canada enforcing its will proactively vice reactively. Canadian warships continue to actively prosecute foreign engagement as

¹¹⁹ Canada, Transport Canada, *TP-14916 – Canada: Committed to the Goals of the International Maritime Community* (Ottawa, ON: Government of Canada, 2011), 2.

¹²⁰ *Ibid.*

part and parcel of routine deployments that see them represent the nation during port visits and smaller exercises.¹²¹ Simple activities, such as the planning of transit routes for a warship deploying to the Arabian Gulf, uses port visits en route to best effect.

Providing effect to coalition operations crosses the boundaries between the diplomatic and warfighting domains. In the wake of the Cold War, naval operations in the Arabian Gulf allowed the navy to gain expertise in Maritime Interdiction Operations (MIO). Following Iraqi defeat in the First Gulf War, Canadian warships conducted nearly continuous MIO deployments in support of the UN Sanctions against Iraq, rotating eight ships through the area from 1991-98.¹²² The navy achieved an unprecedented level of interoperability with the USN as Canadian warships, beginning with *HMCS Calgary's* in 1995, began to integrate fully with deployed American carrier battle groups.¹²³ This level of integration into the largest and most effective naval force in the world is not just flattering to the navy, but serves as a powerful form of justification to maintain the level of capability required for continued operations.

From the national standpoint, the changing use of naval assets reflects the changing self-image of Canada as a larger player on the world stage. The 1998 diversion of a warship from a standing NATO force to join multi-national forces in the Persian Gulf to contain Saddam Hussein indicates a decreasing emphasis on NATO as a

¹²¹ *Ibid.*

¹²² Nicholas Tracy, *A Two-Edged Sword* . . . , 204..

¹²³ Richard H. Gimblett, "The Transformation Era, 1990 to the Present" in *The Naval Service of Canada* . . . , 190.

symptom of changing perspectives.¹²⁴ This growing sense of importance in the world has reflected itself in a steady increase in the scope and complexity of naval tasks. Delicately balancing Canadian non-participation in the 2003 invasion of Iraq with diplomatic efforts to maintain the character of Canadian-US relations, Canada's command of a task group providing indirect support to coalition operations demonstrates naval diplomacy.¹²⁵ Once again, Canada's employment of warships to achieve diplomatic efforts not only provided direct benefit to the government but also served to advertise the number of flexible strategic options an effective navy can provide.

Not all diplomatic roles the navy has played support the higher-end capability the navy imagines it requires for every task. The last two decades has seen the navy act as Canada's first responder to humanitarian crises around the world. In 1992, *HMCS Protecteur* assisted with the aftermath of Hurricane Andrew in Florida and the Bahamas; 2005 saw the deployment of *HMC Ships Athabaskan, St. John's* and *Toronto* to provide relief after Hurricane Katrina devastated New Orleans; and more recently in 2010, *HMC Ships Athabaskan* and *Halifax* deployed to Haiti to provide assistance after a massive earthquake ravaged the island nation.¹²⁶ While these efforts are certainly consistent with Canadian values, the general purpose nature of the deployed warships (with the exception perhaps of *Protecteur's* deployment) does not lend much capability to this type of task. Arguably, the capabilities required to bring large effect to a humanitarian crisis demand a

¹²⁴ *Ibid.*, 194-196.

¹²⁵ *Ibid.*, 200-201.

¹²⁶ Nicholas Tracy, *A Two-Edged Sword . . .*, 282-283.

different focus that, while validating the JSS concept, detracts from the navy's view of itself as a warfighting fleet.

The truth is that naval diplomacy demands flexible forces that range from combat capable warships to the support platforms capable of bringing effect to a humanitarian crisis. If Canada is truly a maritime nation, then Canada has a role to play in what is referred to as the "regulated ocean commons."¹²⁷ These roles run across the realm of securing the ocean commons for lawful use, responding to humanitarian crises to ensuring the continued flow of Canada's trade.

The navy's prosecution of such roles falls under the diplomatic side of the naval vision and demonstrates the nexus wherein naval planners have provided capability to meet defence policy direction. Moreover, tangible results demonstrate the ongoing role of the navy as a valuable component of Canadian foreign policy.

Roles Examined – The Constable

First and foremost, the Canadian Forces must ensure the security of our citizens and help exercise Canada's sovereignty.

- Canada First Defence Strategy¹²⁸

¹²⁷ Dean McFadden, "The Navy and Canada's National Interest in the Maritime Century." *Canadian Naval Review* 6, no. 1 (Spring 2010): 5.

¹²⁸ Canada, Department of National Defence, *Canada First Defence Strategy* . . . , 7.

The evolution of Canadian defence policy lends itself to naval employment within the constabulary realm. In keeping with Booth, navies have a policing role in determining the use of the sea that typically manifests itself in the areas of what he calls ‘coastguard responsibilities’ (sovereignty, resource protection, law enforcement) and ‘nation-building’ (internal stability and development).¹²⁹ These tasks point directly to the emphasis in Canada’s developing defence policy aimed at ensuring protection of Canada as the first and foremost priority. In naval terms, this focus has the effect of generating critical tasks within the constabulary role as laid out in *Securing Canada’s Ocean Frontiers*.

While the constabulary role might be seen as less important than conducting combat operations off of Libya, the domestic roles the navy plays are important and necessary. The line between domestic and expeditionary operations presents a challenge to a navy who, through its capabilities and history, views itself as an expeditionary force designed to play the away game as a matter of course and the home game as a matter of necessity.¹³⁰ For the navy, this balancing act represents a critical challenge because the capabilities necessary for most constabulary tasks fall short of the warfighting capability it is struggling to maintain.

¹²⁹ Ken Booth, *Navies and Foreign Policy . . .*, 7.

¹³⁰ Peter T. Haydon, *Sea Power and Maritime Strategy in the 21st Century: A “Medium” Power Perspective*, Maritime Security Occasional Paper No. 10 (Halifax, NS: Centre for Foreign Policy Studies, Dalhousie University, 2000), 126.

As part of a focus on Canadian sovereignty, government policy has shown a clear interest in the Arctic, representing a policy shift from the waning Arctic emphasis left after the Cold War.¹³¹ A recent geological survey of the Arctic provides impetus for the level of interest by revealing massive energy resources that are now becoming accessible through global warming.¹³² Adding to the more immediate regional prominence in Canadian policy is the question of growing Arctic accessibility. Whereas the climate of the region alone provided a measure of security, global warming is expected to open arctic sea routes that have, historically, remained inaccessible.¹³³ The identification of vast rewards viewed in combination with reduced challenges to regional access present a changing domestic security environment that naval planners need to adapt to.

Naval reaction to the emerging Arctic emphasis has been slow. Since OPERATION NARWHAL in 2002 and several subsequent deployments, Canadian warships have moved north during the summer months in high profile exercises aimed at displaying presence, gaining familiarity with arctic operations, and progressing interoperability training with the Canadian Rangers, Royal Canadian Mounted Police and the Canadian Coastguard.¹³⁴ These operations have applied existing naval capabilities, not necessarily designed for Arctic operations, to begin the process of learning to work in the environment and with the other agencies that operate in the North. While the

¹³¹ Rob Huebert, "The Security Implications for Canada of Global Warming in the Arctic" in *Naval Gazing: The Canadian Navy Contemplates Its Future*, ed. Anne Griffiths and Eric Lerhe, 173-192 (Halifax, NS: Dalhousie University, Centre for Foreign Policy Studies, 2010), 173.

¹³² United States Geological Survey, *90 Billion Barrels of Oil and 1,670 Trillion Cubic Feet of Natural Gas Assessed in the Arctic*. US Department of the Interior's US Geological Survey (23 July 2008).

¹³³ Dean McFadden, "A Sailor's Perspective on the Arctic: Security on a Changing Frontier." *Frontline Defence* 5 (2010): 9.

¹³⁴ Nicholas Tracy, *A Two-Edged Sword . . .*, 293.

Canadian government has demonstrated its Arctic resolve through ongoing development of a scaled-down naval support facility in Nanisivik and the approval to build six to eight arctic offshore patrol ships (AOPs), achieving a whole of government effort in the Arctic may prove difficult.¹³⁵ For the navy, the challenge lies with the nature of the work: the development of AOPs as a capability directed by government vice one arrived at by naval planners as necessary to meet their vision, creates tension between how the navy and the government view the navy's role. The resulting disparate views may result in challenges, both for the government in meeting its Arctic aim and for the navy in meeting its own vision. In the end, the naval image will have to evolve to include both Arctic operations and AOPs.

To be clear, while the RCN accepts the concept of domestic operations, it finds difficulty framing them within the context of traditional roles. Not forgetting the humble beginnings of the RCN as a fisheries protection service, recent domestic successes include involvement in the Turbot War on the Grand Banks, intercepting illegal migrants, responding to sovereignty challenges and supporting law enforcement activities.¹³⁶ While these activities contribute to domestic security, they also serve to keep the navy operating in its preferred blue-water environment, using expensive higher-end capabilities to achieve an operational effect.

¹³⁵ *Ibid.*, 294.

¹³⁶ Richard H. Gimblett, "The Transformation Era, 1990 to the Present" in *The Naval Service of Canada . . .*, 194.

The navy's views of its own success within the domestic context have support. Efforts made to understand domestic operations leading up to the 2010 Winter Olympics suggest that the key elements of domestic security (domain awareness, safeguarding, responsiveness and collaboration) require a more physical response the closer they occur to Canada.¹³⁷ While these activities resonate with the RCN's vision of domestic activities, they also suggest a similar capability to many other activities that meet the navy's vision, namely those associated with complex blue-water naval operations.

The domestic challenges facing Canada certainly support Booth's notion of the constabulary component in the maritime setting. Despite the emerging tension between the government's direction and the navy's self-image, defence policy has confirmed the need and naval doctrine has identified the role, allowing for the development of the necessary capabilities on the domestic scene for continental defence.

Balancing the Triangle – The Warfighter

Canadians expect and deserve no less than a highly capable military that can keep them safe and secure while effectively supporting foreign policy and national security objectives.

- Canada First Defence Strategy

Under Booth's triangle used in *Securing Canada's Ocean Frontiers* (see figure 2.3), the core military functions of the RCN fall under the military role. Speaking directly

¹³⁷ Peter Avis, "Chapter 8: Canadian Maritime Domestic Security: Interoperability, Best Practices and Dead-Ends" in *Breaking the Box: The Increasing Demands of Non-Combat Roles on Maritime Forces* ed. Kenneth P. Hansen (Halifax, NS: Dalhousie University, Centre for Foreign Policy Studies, 2008), 131.

to the RCN's traditional activities, this range of roles speaks directly to the warfighting or combat capability Canada expects its navy to be capable of. Or put another way by RCN in identifying their role to the public: "Canada's navy – versatile, multipurpose and combat-capable – diligently protects our interests by safeguarding our maritime approaches, exercising sovereignty over our waters, protecting our offshore natural resources and contributing to global security."¹³⁸ Of the three domains naval planners use to define the navy's roles, this one best reflects the naval image because the current navy has its roots in the heavy militarily focused days of the Cold War.

The fact the military domain forms the base of Booth's triangle is an acknowledgement of crossover between capabilities necessary to operate successfully within the diplomatic and constabulary realms. This line of thought, supported by Booth's assessment that fighting ability is the key factor to maintaining a warship's relevance, keeps the navy moving towards its traditional roles.¹³⁹ The successful 2008 Canadian command of CTF 150's efforts to combat piracy off of Somalia stands out as an example of military roles meshing with diplomatic ones.¹⁴⁰ While the efficacy of warships in both the diplomatic and constabulary roles is not contested, naval planners are presented with the challenge of trying to optimize capabilities for higher-end warfare without a direct threat or defined adversary.

¹³⁸ Royal Canadian Navy, "Canada's Navy at a Glance," accessed 29 January 2013, http://www.navy.forces.gc.ca/cms/12/12_eng.asp.

¹³⁹ Ken Booth, *Navies and Foreign Policy* . . . , 24.

¹⁴⁰ Patrick Lennox, "The Navy and Canadian Foreign Policy: The Four Dimensions of Global Engagement" . . . , 44.

According to the military roles laid down in Figure 2.3, higher intensity operations predominate over the other two domains. For example, the task of sea control as defined in *Leadmark* and forming part of the overall function of sea power, speaks directly to the ability to “use an area of sea for one’s own purposes for a period of time in subsurface, surface and above water environments.”¹⁴¹ This doctrinal definition clearly highlights the naval vision of blue-water combat capability that has underpinned naval operations in recent decades.

The CTF 150 deployment illustrates both the control and denial principles at work as part of an ongoing effort to deter piracy. The 1990 Gulf War deployment of HMC Ships *Athabaskan*, *Terra Nova* and *Protecteur* as part of the coalition forces directly contributed to the exercise of sea control in the Persian Gulf.¹⁴² And, not least, the OPERATION APOLLO deployments following 9/11 represent yet another compelling example of when the RCN has been called upon to act militarily.¹⁴³ These examples are significant because they all required the ability operate as part of a large modern naval force engaged in military operations. Moreover, the aggregate military requirement necessary to participate forms the basis of the RCN’s vision of itself as a medium power navy with operationally relevant capabilities.

While these examples point to the RCN’s view of itself as a medium power navy, is this truly the case? France, categorized by naval theorists as possessing a navy one

¹⁴¹ Canada, Department of National Defence, *Leadmark: The Navy’s Strategy for 2020* . . . , 35.

¹⁴² Nicholas Tracy, *A Two-Edged Sword* . . . , 336.

¹⁴³ *Ibid.*, 337.

level above the RCN, consistently operates on a global scale in order to protect interests in places like Tahiti, an effort that requires both significant numbers of platforms and the ability to support them at sea.¹⁴⁴ To do so, France possesses a modern naval force complete with nuclear submarines, an aircraft carrier and 33 surface combatants.¹⁴⁵ Canada certainly presents a more modest picture with just 15 surface combatants, four diesel submarines and an aging support capability. The Netherlands, a so-called medium power navy, possesses a fleet mix of 11 frigates, 4 submarines and an amphibious capability, all supported by 4 support ships to present a force held to be highly adaptable and internationally deployable.¹⁴⁶ South Africa, as an example of a lesser-ranked navy, operates a smaller, but modern force that tends to confine its operations to the sub-Saharan region leaving it to fall short of the definition of medium power navy.¹⁴⁷ By any comparison of so-called medium power navies, Canada features as a smaller force whose defining characteristic is mere participation.

Delving deeper into the military role, the growing emphasis on joint operations within the CF that emerged in the 2005 *Defence Policy Statement* has seen the navy expend effort in meeting the requirement of maritime power projection. Doctrinally, the RCN leans on the Royal Australian Navy for a definition in *Leadmark* more so than the US or NATO, defining the concept as the “ability to project, sustain and apply effective

¹⁴⁴ Canada, Department of National Defence, *Leadmark* . . . , 44.

¹⁴⁵ Alexander von Rosenbach, *IHS Jane's Navy International Issue Ten: 2012* (London: HIS Global Ltd, 2012): 181-184.

¹⁴⁶ *Ibid.*, 381-401

¹⁴⁷ *Ibid.*, 506-512.

military force from the sea in order to influence events on land.”¹⁴⁸ The recent deployment of HMCS *Charlottetown* and HMCS *Vancouver* as part of the NATO action to support Libyan rebels showed Canada directing forces in this role. Forming part of OPERATION MOBILE in 2011, *Charlottetown* was an active participant in the Battle of Misrata, where her presence directly off the coast allowed the ship to correlate and pass information to the NATO commander on activities in Misrata thereby contributing to the direction of air assets.¹⁴⁹ Not only did this deployment encompass both sea control and maritime power projection, it placed *Charlottetown* in harm’s way, requiring the ship to operate at a high state of readiness. Highlighting the risks involved, *Charlottetown* was attacked twice in May 2011, making her, as *Frontline Defence* correspondent Tim Dunne noted, “the first Canadian warship to be fired upon since the Korean War.”¹⁵⁰ This deliberate exposure of Canadian warships to a direct threat showed both the government’s willingness to utilize naval forces in the military domain and the navy’s ability to perform in higher-end operations. Viewed from this perspective, the Battle of Misrata may go a long way to garnering government support for the combatants that the navy is seeking.

The military component forms the base of Booth’s triangle since the capabilities involved translate into capabilities required for lesser intensity operations found under the diplomacy and constabulary domains. *Leadmark* sets out the spectrum of naval

¹⁴⁸ Canada, Department of National Defence, *Leadmark: The Navy’s Strategy for 2020 . . .*, 36.

¹⁴⁹ Tim Dunne, “HMCS Charlottetown: The Battle of Misrata,” *Frontline Defence* 6, no. 6 (2011): 20.

¹⁵⁰ *Ibid.*, 21.

operations with warfighting at the top.¹⁵¹ This hierarchy is key to understanding the effort expended by naval planners to retain higher-end functions because they remain the foundational aspects of naval capability. In other words, while it is easier for a frigate to step down the spectrum of operations and use its capabilities to provide surveillance in the low Arctic in support of sovereignty operations, it could be next to impossible for the envisioned AOPS to step up the spectrum to integrate successfully with a coalition battle group to enforce embargo operations in the Arabian Gulf. Moreover, the current frigates are unable to navigate any significant ice, showing that a viable fleet mix for the RCN will need to balance both the security environment and the physical environment.

Summing Up the Roles

The RCN's vision for its roles and responsibilities, published in both the 2001 naval strategy *Leadmark* and its subsequent 2005 update *Securing Canada's Ocean Frontiers*, derives directly from the government's overall direction for the defence of Canada. In keeping with the work of naval theorists such as Booth and Till, the roles that the RCN has developed against the backdrop of Booth's triangle present a spectrum of conflict, or framework, for the navy to use in translating the demands provided by policy into achievable mission sets.

The RCN's recent experiences highlight the merits and utility of the use of naval capability in the three areas (diplomacy, constabulary and military) that Booth asserts

¹⁵¹ Canada, Department of National Defence, *Leadmark: The Navy's Strategy for 2020 . . .*, 16.

govern the use of the seas. From multi-national operations in both Gulf Wars, to a presence in Canada's arctic and the most recent example of warfighting off of Libya, Canada's role on the world stage continues to support the use of maritime power as a component of both foreign policy and domestic defence. Additionally, these experiences serve to influence naval planners in the fight to maintain combat capable forces as the foundation of the RCN.

While the RCN's efforts to identify roles in support of defence policy all the while maintaining core capabilities is largely academic in nature, the real challenge lies with attaining resources for the desired capabilities.

CHAPTER THREE – CAPABILITY

Choices must be made in an era where a state-of-the-art anti-air destroyer like the British Type 45 can cost the equivalent of 15 capable patrol vessels, or a partial upgrade of its two Anzac frigates is the same as New Zealand's whole seven-strong multi-role Projector fleet.

- Professor Geoffrey Till¹⁵²

Whereas defence policy and its translation into naval roles is difficult and pressing, the process of establishing actual capability is, by comparison, daunting. Historical pressures of boom and bust economics, political pressures, and changing defence priorities continue to make maintaining the current fleet mix while developing the future naval capability a challenging prospect. The navy's last shipbuilding experience, viewed in combination with the challenges facing the current fleet renewal efforts, paint a compelling picture of diminishing naval capabilities.

The *Halifax* Class: 20 Years in the Making

The fact that the *Halifax* Class, approved in 1977 and commissioned from 1992-96, provided the navy with appropriate capability to conduct operations in the post-Cold War environment was just a happy coincidence.¹⁵³ The government's shifting defence priorities, reflecting the emergence of domestic efforts as the top priority, was the catalyst

¹⁵² Geoffrey Till, "The Canadian Navy, Trade, and Choosing Threats" in *Naval Gazing: The Canadian Navy Contemplates Its Future*, ed. Anne Griffiths and Eric Lerhe, 25-38 (Halifax, NS: Dalhousie University, Centre for Foreign Policy Studies, 2010), 34.

¹⁵³ "Milestones in Canadian Naval History." . . . : 31-33.

to develop a more general purpose fleet.¹⁵⁴ The resulting design studies, focusing on meeting the demand in an economical fashion, provided the government with three options to achieve a capability comparable to the USN's *Oliver Hazard Perry* class frigates.¹⁵⁵ At that time, this class of ship represented the cutting edge of naval technology. In keeping with historical trends limiting massive investment in naval capability, the government considered a massive modernization of the existing *Mackenzie* class, but discarded the idea because, with only 15 years of life remaining in the platform, it would "provide very little return on investment."¹⁵⁶ The sheer amount of money and effort required to modernize a class of ship that had been systematically neglected to the point of complete irrelevance represented a problem because warship lifespans tend to be at most 35 years. Modernizing aging ships while perhaps achieving a degree of relevance, would simply move the problem a few years down the way instead of achieving actual effect. Ironically, the navy is in the process of doing just that through the ongoing *Halifax* class Modernization Project which is designed to ensure the ships remain operationally relevant until their eventual replacement.

The efforts made to ensure replacement ships were on the cutting edge managed to survive both the length of the project and the rapidly changing security environment brought about by the end of the Cold War threat they were designed to meet. Unlike previous building programmes that sought simply to replace ASW platforms with an

¹⁵⁴ Peter T. Haydon, "Choosing the Right Fleet Mix: Lessons From the Canadian Patrol Frigate Selection Process," *Canadian Military Journal* 9, no. 1 (Spring 2008): 67.

¹⁵⁵ *Ibid.*, 68.

¹⁵⁶ *Ibid.*

more modern version of the same capability, naval planners had to take a whole new reality of naval warfare into account, including:

Technical developments in ASW had made it essential that ships be equipped to operate on their own, hundreds of miles away from their consorts, deploying towed passive sonar arrays. This made it necessary to provide them with strong air defences, and to equip them with fully capable command and control displays with satellite UHF communications, as well as helicopter landing pads and hangars. They were also armed with *Harpoon* surface-to-surface missiles to enhance their ability to survive as isolated ships in a hostile environment.¹⁵⁷

In addition to technical advances, the navy had to contend with changing NATO doctrine that required nations to provide national task groups instead of simply providing ships to a NATO commander.¹⁵⁸ This choice, in turn, drove Canada's navy to develop both the current task group concept and the sophisticated command and control equipment necessary to operate it. The final change driving such a robust capability effort was a sweeping change in NATO's approach to containing the Soviet naval threat. Where previous doctrine concentrated on fighting in the Western Atlantic, the increased range of Soviet missile systems drove an emerging plan to contain the Soviet threat in their own backyard by surging forces into the Norwegian Sea in an effort to attack naval bases before Soviet submarines could reach their launch points.¹⁵⁹ This forward deployment, in turn, would expose Canadian warships to concentrated air and surface threats.¹⁶⁰ These factors combined to present the navy with a golden opportunity to define a requirement for a truly capable surface combatant that could thrive in a more general-purpose warfare environment. Had Canada's efforts to modernize the navy stopped at meeting technical

¹⁵⁷ Nicholas Tracy, *A Two-Edged Sword* . . . , 170.

¹⁵⁸ Marc Milner, *Canada's Navy: The First Century* . . . , 288.

¹⁵⁹ *Ibid.*

¹⁶⁰ *Ibid.*

challenges, it seems likely that the navy would be unlikely to meet either the current defence priorities or its own self-image as a medium power navy.

The government's experience with exploding costs associated with the DDH-280 project in the early 1970s left a long legacy. The navy, gaining approval to spend \$142 million to build what was essentially a modern version of an existing ship, allowed the project to increase in cost by spending \$252 million to build much larger and far more expensive ships.¹⁶¹ While the navy pressed on and entered the missile age with four large destroyers, the fallout was much government angst and ongoing suspicion about the navy's ability to manage major procurement projects.¹⁶² The cause of this concern can be attributed partially to Hellyer's process of unification and the chaos it caused within the CF. Milner quotes an Admiral involved with the design process: "If the boss calls, find out who he is and I'll call him back."¹⁶³ While this paints a humorous picture, it represents a complete lack of control within the CF's approach to managing procurement.

The massive cost overruns of the DDH-280 design and build process coupled with the perception of an independent naval vision created a turning point in the way Canada approaches the construction of warships. Whereas the previous warship programmes up to 1973 had been exclusively managed by the navy, including designs developed by the navy itself, the CPF project was managed by turning over the design responsibilities to

¹⁶¹ *Ibid.*, 265.

¹⁶² *Ibid.*

¹⁶³ *Ibid.*, 266.

industry.¹⁶⁴ While it might be easy to tie the changed approach to the DDH-280 experience, it is also likely that the shift is due, in part, to the loss of an internal naval design capability resulting from the time lag between building programs. Whatever the reason, the result is a process relying on the initial definition of platform requirements to be that critical bridge between defence missions and naval roles because the design function has been removed from the navy's control.

In terms of political pressure, the size of the contract coupled with the government's direction to design and build the ships in Canada, competition was indeed intense. Haydon points to a highly charged arena where "the process by which the contract was awarded was complex and intensely predictable."¹⁶⁵ The highly political result was a contract that was split between shipyards in both Quebec and the Maritimes in order to realize maximum regional benefits, not the least of which was the modernizing of Canadian shipyards because they lacked capacity to undertake the project.¹⁶⁶

The considerable investment in shipyard capacity necessary to build the ships was a direct result of both the poor state of Canada's shipbuilding industry and lack of naval contracts in the preceding decade.¹⁶⁷ While the navy finally commissioned *Halifax* in 1992, the resulting lessons arising from the degradation of national shipbuilding capacity

¹⁶⁴ Ken, Bowering, *Military/Naval Procurement in Canada: A Flawed Process*, General Sir Arthur Currie Paper 1-08 (Ottawa, ON: Conference of Defence Associations, 2008), 2.

¹⁶⁵ Peter Haydon, "From Uncertainty to Maturity, 1968-89" in *The Naval Service of Canada, 1910-2010: The Centennial Story . . .*, 175.

¹⁶⁶ *Ibid.*

¹⁶⁷ *Ibid.*

appears to have gone unheeded, resulting in additional financial pressures and delays to today's efforts to modernize the navy. These ongoing pressures are a direct result of lengthy and infrequent defence procurement cycles.

Lengthy Projects: Boom and Bust

The boom and bust cycle of defence procurement and its accompanying massive bureaucratic process is a direct result of government reactions to the perceptions of financial waste emerging in the 1960s.¹⁶⁸ This process, which has grown to include other government departments, such as Treasury Board, in the approval process had (in 2001) the net result of creating a project cycle time of 15.8 years.¹⁶⁹ While this lengthy process is complete madness from a naval planner's perspective, it presents less of a problem for a government facing economic pressures because a slower procurement cycle represents a slower rate of spending or spending spread over a longer period of time.

Historical completion times of major naval projects reflect this lengthy process. The initial plan for the *Halifax* class, for example, reflected a 10-year time frame, with planning starting in 1976 and the proposed delivery of the first six in 1985-86.¹⁷⁰ In reality, the project began delivering in 1992, validating the observed data. Although naval planners, armed with the data, should be able to incorporate the process length into

¹⁶⁸ Craig Stone, "Defence Procurement and the Need for Disciplined Capital Investment" in *Public Management of Defence in Canada* ed. Craig Stone, 93-109 (Toronto, ON: Breakout Educational Network, 2009),

¹⁶⁹ *Ibid.*, 103.

¹⁷⁰ Peter T. Haydon, "Choosing the Right Fleet Mix: Lessons From the Canadian Patrol Frigate Selection Process," . . . , 70.

procurement plans, the time factor has provided secondary effects that complicate procurement.

The lengthy project cycle time is further aggravated by the infrequent nature of naval builds conducted in Canada. A cursory examination of building programmes reveals, on average, a 20-year gap between major projects, resulting in a multifaceted problem: attrition of skill sets within DND to design ships and oversee projects as well as an inability of Canadian shipyards to build the ships once a decision to build them has been made.¹⁷¹ This problem, as cyclical in nature as the building contracts themselves, is once again presenting itself as a challenge to the NSPS to be overcome as before.

The overall result of a boom and bust approach to shipbuilding is a country that, despite having conducted much ship repair activity, lacks the industrial capacity to build large combatants. This, in turn, creates the necessity to generate shipbuilding capabilities as part of the process. In the lead up to the NSPS announcement, one assessment of the five major Canadian shipyards revealed that “with the exception of Kiewit in Marystown, NF, none have built any vessels over 5000 tons since 1995.”¹⁷² This predictable state of affairs represents an additional pressure to the navy’s plans as funding that may have available to directly fund capability will likely be diverted in order to transition a viable repair and refit industry into an industry capable of building modern warships. While this reality points to a strong rationale to purchase warships built abroad, political and

¹⁷¹ Ken, Bowering, *Military/Naval Procurement in Canada: A Flawed Process* . . . , 3-4.

¹⁷² J.K. Wilson, “The Politics and Economics of Shipbuilding in Canada: Lessons for Naval Planning?” Masters in Defence Studies Paper, Canadian Forces College, 2009, 54-56.

economic pressures to realize regional benefits and employ Canadians works to ensure the current approach will remain the only one.

Lengthy Projects – Planned Obsolescence?

The lengthy project cycle associated with major defence projects provides issues that move beyond the industrial capacity issue. The development of technology in today's industrialized world does not stand still in face of bureaucratic processes. The obsolescence challenge facing the RCN can be seen in four broad areas: technology, missions, economics and threats.¹⁷³ With technological obsolescence presenting the largest threat, it is clear that Canada's lengthy procurement process will ensure, whatever the desired capability, it will likely be obsolete on delivery.

The speed at which technology passes its best before date to become obsolete or no longer supportable is directly at odds with a lengthy procurement cycle. This problem is not new for the navy; the evolution of defence policy towards collective defence and interoperability with American forces is a likely technology driver for the RCN.¹⁷⁴ While the requirement to remain interoperable with allied navies remains an important capability, the technology cycle times in Figure 3.1 (taken from the United States Naval Research Advisory Panel data set from 2002) serve to highlight the challenge facing the navy.

¹⁷³ Brent Hobson, "Obsolescence Challenges and the Canadian Navy," *Canadian Naval Review* 4, no. 2 (Summer 2008): 9.

¹⁷⁴ *Ibid.*

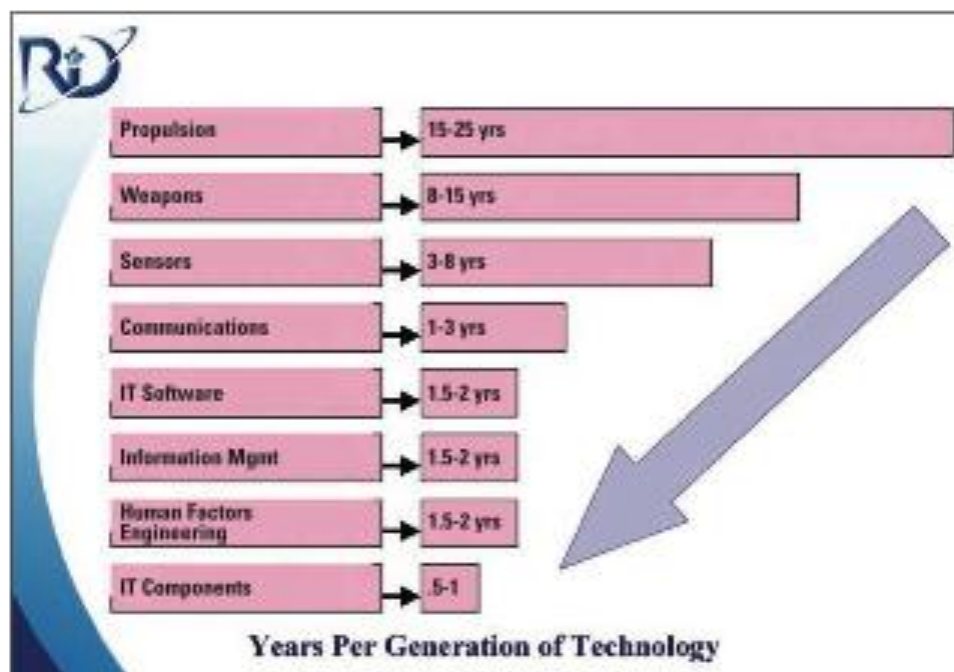


Figure 3.1 – Technology Life Cycles

Source: United States, Naval Research Advisory Council, “Life Cycle Technology Insertion,” July 2002, quoted in Brent Hobson, “Obsolescence Challenges and the Canadian Navy,” *Canadian Naval Review* 4, no. 2 (Summer 2008): 10.

Given that this data set was developed a decade ago, it seems likely that it presents an optimistic view of the current pace of technology. This issue is not new and has always faced navies attempting to operate on the leading edge of technology. Having said that, these metrics point to a significant challenge to any Canadian efforts to design and build warships. Reflecting on the cycle time associated with propulsion systems as the longest lasting component vs. the exceptionally short lifespan of IT components, it becomes obvious that few of the components built into a modern warship will still be considered current by the end of the building programme. Armed with this knowledge, naval planners should look to ameliorate this problem through batch-builds that are updated between batches and an understanding that certain components will need replacement far before the traditional mid-life modernization point. In understanding that a batch-build

approach may bring increased costs to any programme, consideration should be given to open-architecture IT systems that allow for easy and cost-effective modernization.

While the remaining areas of obsolescence – mission, economics and threat – continue to present challenges to the RCN, they also represent areas that the navy can actually create effect. Mission sets, for example, can be updated and changed. Joint operations and littoral warfare are rising to prominence in today's navy, as the current view of naval combat requires “fully integrated offensive and defensive joint action across all physical dimensions in the maritime domain.”¹⁷⁵ This view of the future reveals that today's navy fully grasps the impact of obsolescence on both its existing and new capabilities and always has.

Addressing the Need – Today

As the backbone of Canada's post-Cold War fleet, the 12 *Halifax* class frigates face an obsolescence challenge. In the traditional RCN fashion of modernizing at the mid-life point, the current *Halifax* Class Modernization/Frigate Life Extension program (HCM/FELEX) is designed to extend the operational capabilities of the RCN until the next generation of combatants is built.¹⁷⁶ The project, spanning a seven-year period from 2010-2017, will replace the command and control system, radars, and weapons directors

¹⁷⁵ Paul Maddison, “Strategic Trust and Cooperation in This Maritime Century,” *Canadian Military Journal* 13, no. 1 (Winter 2012): 9.

¹⁷⁶ Sharon Hobson, “Giving You Extra: Halifax-class Upgrades New Threats.” *Jane's International Defence Review* 45 (September 2012): 64.

while upgrading weapon systems in an effort to keep the fleet relevant over the last half of their lives.¹⁷⁷ Showing an understanding of the changing nature of naval missions and the drive to provide joint effects, the modernized frigates will make use of a multi-beam radar to optimize littoral operations.¹⁷⁸ Inclusion of augmented capabilities to operate in the joint environment, while falling short of transforming the class into a littoral combat platform does serve to highlight a small success towards creating relevant naval capability that meets both the naval vision and defence policy. In other words, while the project will increase the littoral usefulness and survivability of the class, it cannot overcome the challenges and vulnerabilities of employing a blue water warship in an inshore environment with many threats.

Those who believe that modernizing the *Halifax* class will overcome the obsolescence challenge facing the RCN require a degree of expectation management. Former Chief of Maritime Staff Vice Admiral Drew Robertson's 2008 testimony to a parliamentary committee provided context to the scope of the project when he classified the upgrades as modest in nature, pointing out that while they would enhance the navy's ability to meet the operational demands of the near future, they will not overcome the loss of area air defence that will occur when the three DDH-280s end their service lives.¹⁷⁹ This program, while certainly welcome, follows the historical RCN trend of modernizing platforms at their mid-life in order to keep older ships going longer. In other words, while

¹⁷⁷ *Ibid.*, 64-69.

¹⁷⁸ *Ibid.*, 65.

¹⁷⁹ *Ibid.*, 66.

a modernized frigate may not be as effective as a newly designed and built combatant, it will be effective enough to bridge the gap until new ones are built in the next 15 years.

Addressing the Need – Tomorrow’s Fleet

On October 19, 2011, the NSPS Secretariat announced the selection of two Canadian shipyards that will rebuild Canada’s aging fleet. Irving Shipbuilding Inc. has been selected to build the combat vessel work package, and Vancouver Shipyards Co. Ltd. has been selected to build the non-combat vessel work package.

- Stephen Harper¹⁸⁰

The 2010 announcement of the long-awaited and heavily debated National Shipbuilding Procurement Strategy (NSPS) signalled the return of boom times for a navy and an industry accustomed to the historical naval procurement cycle of feast or famine. The strategy to spend \$33 billion to revitalize both naval and coastguard fleets, while avoiding the traditional pitfalls of large projects, is ambitious and carries a degree of political risk as well as potential gain.¹⁸¹ The government announcement declaring allocation of the combatant and non-combatant building programmes to Irving Shipbuilding’s Halifax Shipyard and Seaspan’s Vancouver Shipyard respectively shows progress along a long path of restoration for the navy and partial revitalization of Canada’s shipbuilding industry on each coast.

¹⁸⁰ Stephen Harper, Speech, The National Strategic Shipbuilding Procurement Strategy. Halifax, Canada, January 12, 2012.

¹⁸¹ Martin Shadwick, “The National Strategic Shipbuilding Procurement Strategy (NSPS) and the Royal Canadian Navy (RCN),” *Canadian Military Journal* 12, no. 2 (Spring 2012): 77-80.

For the navy, the contents of this package represent government commitment to an immense revitalization that has been long sought by naval planners. Viewed in combination with other programmes, the emerging vision is vast in scope, including: modernizing existing capability via HCM; continuing to bring the *Victoria Class* submarines online; building of up to 8 Arctic Offshore Patrol ships (AOPS); building of a possible three Joint Support Ships (JSS); and building of 15 surface combatants (CSC)¹⁸² to replace the aging DDH-280s and *Halifax* class frigates.¹⁸³ While on the surface, this news is good for the RCN in terms of fleet renewal that appears to meet the navy's self-image, the outcome is far from certain. Notwithstanding concerns presented by the sheer scope and size of the programme versus the national means to achieve it, the sequencing of CSC as the last project makes it the most vulnerable to both changing priorities and financial pressure. Following the logic to the end, naval planners must remain cognisant that one potential outcome of NSPS is a navy limited in capability to smaller patrol ships and submarines for the next two decades.

The NSPS has garnered much debate. The first, and perhaps most obvious contention is that of economic feasibility. In 2012, the amount of money set aside for capital projects in the 2008 *CFDS* was seen as potentially insufficient, with the 2008 foundering and subsequent reset of the JSS project due to the costs involved cited as

¹⁸² The first three hulls of the surface combatant will be configured as area air defence destroyers while the remaining 12 will be configured to replace the general purpose capability resident in the *Halifax* class.

¹⁸³ Hughes Canuel, "Developing the Future Canadian Navy," *Frontline Defence No. 3* (May 2008).

being symptomatic of the issue.¹⁸⁴ NSPS, much like other major projects being contemplated within DND's lengthy procurement cycle, is beginning to demonstrate the impact of rising costs and inflation on capability. As one assessment indicates:

With the acquisition of new war- ships, maritime patrol aircraft, and army combat system still years away and likely to increase over time, it appears that the Conservative government failed to calculate accurately the amount of money required to retain the general purpose force as outlined in the Canada First Defence Strategy.¹⁸⁵

For the navy, economics will shape the fleet of tomorrow. Warships represent a significant financial and technical investment. Erosion of available funding, whether by defence cuts, inflation, length of procurement effort or political will represent less capability at the end of the project. Moreover, the capability that the navy receives is likely to drive the naval agenda for decades. As one expert notes: “[Y]es, ships **DO** cost a lot up front, maybe well over \$1 billion each, and based on past experience, the Canadian navy will be stuck with whatever is finally decided upon (provided the money is there, but that’s another story) for at least 40 years.”¹⁸⁶ When viewed against the history of the RCN, this concern is extremely valid; the fleet currently depends on two AORs and three destroyers that fall in the age range of 40 years. Middlemiss’ assessment of the potential length of service these ships will be expected to operate is backed up by past experience. The challenge to naval planners is one of balance: while the capability must meet the requirements of defence policy and the navy’s roles, it also must meet the test of what

¹⁸⁴ Peter Jones and Phillippe Lagassé, “Rhetoric versus reality: Canadian defence planning in a time of austerity,” *Defence & Security Analysis* 28, no. 2 (June 2012): 143-144.

¹⁸⁵ *Ibid.*, 144.

¹⁸⁶ Dan Middlemiss, “Yes, Virginia, military equipment IS expensive (or, what may be ahead for the navy’s major ship replacement programs?)”, *Canadian Naval Review Broadsides Forum* (blog), December 18, 2012.

Canada can afford in competition with other government priorities like health care and social programmes.

NSPS is already beginning to suffer from efforts to achieve the capability/affordability balance. The effects of the recession are already being felt in a recently announced three-year delay to the AOPs project.¹⁸⁷ This type of delay, in a project high on the government's agenda is alarming to the navy as it forecasts potential delays to follow. The navy well knows that delays erode buying power as inflation rears its head, presenting the spectre of fewer ships. This concern, in turn, drives the navy to press for faster procurement. Recent remarks by then Chief of Defence Staff, General Walter Natynczyk asserting the need to cut steel as soon as possible signal that:

the military leadership is getting nervous about the potential impacts of inflation and reduced funding on the shipbuilding program while a more 'soft power' view of Canadian seapower is emerging. The military seems to want the combat components of the NSPS moved forward so that the less-desirable (from their perspective) 'pseudo-combat' components will suffer the cut when monies run out, which it certainly will do, not the future Canadian Surface Combatant (CSC) ships.¹⁸⁸

The navy's concerns are perhaps well founded. The statement of requirement outlining the capabilities necessary in the AOPS is said to have had the desired maximum speed of the ship reduced in an effort to reduce both operating and procurement costs.¹⁸⁹ Adding to concerns, a recent report by the government's Parliamentary Budget Officer assessed JSS, a ship to be built to more affordable commercial standards, as massively

¹⁸⁷ Ken Hansen, "A 'Mad Scramble' to Change the Shipbuilding Plan is Underway". *Canadian Naval Review Broadside Forum* (blog), June 29, 2012.

¹⁸⁸ *Ibid.*

¹⁸⁹ Lee Berthiaume, "New armed Arctic vessels slowed to meet budget: Officials," *The Vancouver Sun*, February 27, 2013.

underfunded, estimating the required budget to be approximately 40% larger than the current allocation.¹⁹⁰ The monetary pressures affecting NSPS do not stop with increasing cost estimates: Vancouver Shipyards will need to make massive infrastructure improvements to achieve the necessary capacity as part of the NSPS package.¹⁹¹ This pressure will translate across other components of the overall package as Halifax Shipyard, chosen to complete AOPS and the CSC, will need similar improvements to meet the demand. Clearly, these pressures will increase rather than abate, and if Canada wants to build ships domestically, the government will have to provide the necessary funding.

In response to the emerging threats, the navy is making strong efforts to influence the process by moving the shipbuilding projects through the procurement process as quickly as possible. In November 2012, Paul Maddison opened the Canadian Surface Combatant Industry Day by suggesting that the best way to get to the point of cutting steel “is to contribute constructively towards the timely locking down on a procurement strategy that will ignite the sustained momentum required to deliver on a Project Implementation decision by 2016.”¹⁹² The navy has correctly assessed that it can only directly influence the part of the process it actually owns, namely, defining the requirement. Progressing the requirements work will, in turn, lead to an approved design and the actual cutting of steel should the Prime Minister and Cabinet elect to support the

¹⁹⁰ Canada, Parliamentary Budget Officer, *Feasibility of Budget for Acquisition of Two Joint Support Ships* (Ottawa, ON: Government of Canada, 2013): 1.

¹⁹¹ *Ibid.*, 56.

¹⁹² Paul Maddison, Speech, Canadian Surface Combatant Industry Day Address, Ottawa, Canada, November 15, 2012.

programme.

The navy's push to lock down the CSC project is not only due to the economic threat but is also in an effort to reduce a capability gap. While HCM/FELEX is updating four of the existing *Halifax* class with command and control facilities, the upgrades fall short of maintaining the area air defence capability currently provided by the aging *Iroquois* class destroyers.¹⁹³ For the navy, while delays mean a gap in high-end warfare capabilities, cancellation of CSC could herald the demise of the navy's area air defence capability altogether.

One concern that should be in the minds of naval planners is the ongoing question of whether or not the high-end combat capability is necessary in today's world. Criticism of this status quo mentality exists, pointing to the post-Cold War trend of NATO navies to base new requirements on past conflicts as a practice that is counter to the enforcement operations that have dominated the more recent naval spectrum of operations.¹⁹⁴ This reasoning again raises the delicate notion of balancing capabilities against affordability and points to the need for patrol ships, both large and small to carry out what has been the bulk of recent tasks. The struggle to achieve this balance directly contributes to the programme delays that are currently plaguing NSPS, or as one expert observed: "[T]he Canadian Navy has lost more ships through financial attrition than to enemy action..."¹⁹⁵

¹⁹³ Sharon Hobson, "Giving You Extra: Halifax-class Upgrades New Threats." . . . : 66.

¹⁹⁴ David Mugridge, "Is There Something Wrong With Our Ships Today? – Vice Admiral David Beatty, Jutland, 31 May 1916." *Canadian Military Journal* 10, no. 3 (Summer 2010): 64.

¹⁹⁵ *Ibid.*, 66.

The gradual degradation in numbers and capability of the JSS portion of NSPS bear out the point. In terms of numbers, one ship has already been lost to inaction and the economic climate makes it entirely possible that more will follow. Moreover, unless the navy can justify the requirement for higher-end combat operations, naval planners should begin to consider the prospect of a navy centred around blue-water patrol ships instead of the traditional frigate-type combatant.

A compelling argument to maintain combatants as the heart of the navy does exist. This rationale focuses on three solid points: combat capability takes time and cannot, unless Canada is willing to purchase foreign built warships, be purchased as needed; lower capability or niche navies restrict options; and, given the service life of warships (30-35 years) aggregated with the length of their design and build projects actually take, naval capability needs to be assessed out to 50 years.¹⁹⁶ The recent experience of the navy off of Libya provides strong support for this perspective as *Charlottetown's* successful participation in the Battle of Misrata placed the ship in an area of kinetic operations that would have over-reached the capability of a ship designed for lower-end constabulary operations.

NSPS vs. Fleet Mix: A Question of Balance

Will the projects sourced through NSPS meet the fleet balance that naval planners envision? In viewing the NSPS as simply a mechanism to provide ships in conjunction

¹⁹⁶ *Ibid.*

with regional employment and stimulus, the question of fleet mix and capabilities lie with naval planners while the question of its overall success lies with resources. The employment of Canada's current fleet shows that many of the same general requirements they were designed against remain extant. For example, the naval task of sea control, derived from defence policy, necessitates certain factors be included such as sea keeping abilities, speed requirements and combat capabilities. In other words, similar to what emerged as the *Halifax* class, the capability required to meet the naval tasks substantiates "a destroyer-type warship in the 3000-to-5000-ton displacement range."¹⁹⁷ With the size of ship established, the question of a balanced approach comes down to numbers of ships and flexibility of employment.

Adjusting the navy's approach to include design flexibility is one option for maximizing the potential of a balanced fleet. The navy's closest partner, the USN, is facing similar budget pressures and is striving to maximize return on investment from each and every platform they own.¹⁹⁸ Leaning on the USN for solutions, the most pertinent design factors that merit consideration in the Canadian context are size and modularity.

Size remains a constant of design for the RCN as a result of simple geography. The role of the RCN requires it to remain capable of operating in blue water as well as

¹⁹⁷ Peter T. Haydon, "Choosing the Right Fleet Mix: Lessons From the Canadian Patrol Frigate Selection Process," . . ., 70.

¹⁹⁸ Robinson Harris, "Possible Lessons From the US Cooperative Strategy" in *Naval Gazing: The Canadian Navy Contemplates Its Future*, ed. Anne Griffiths and Eric Lerhe, 206-218 (Halifax, NS: Dalhousie University, Centre for Foreign Policy Studies, 2010), 209.

inshore; operations near arctic latitudes will expose the platforms to unforgiving sea states demanding a ship large enough to continue operations under such austere conditions.¹⁹⁹ The inability of the current fleet to operate in the near Arctic under all but the most forgiving circumstances could be seen as a driver to consider a blue water patrol vessel larger than the current *Halifax* class in order to maximize its ability to operate across more of Canada's total ocean domain.

The concept of modularity speaks directly to the idea of getting the most out of similar platforms. Although this concept is typically applied to construction techniques such as the German MEKO design (and, for that matter the building process used in the *Halifax* class), it can be applied to adapting capabilities to maximize the use of similar platforms across a range of tasks.²⁰⁰ Systems such as the Mk 41 Vertical Launch System fit this description because it can employ a variety of missiles, allowing for easy upgrading of capability throughout the life of the ship.²⁰¹ While naval planners are already using this concept as the backbone of the CSC project to tailor the first three ships as area air defence platforms, this concept could go further in terms of maximizing capability growth throughout the life of the ships. In other words, maximizing the modularity of the design provides a potential mitigation to the obsolescence challenge that will face this class of ship well ahead of its mid-life point.

The concept of the Canadian naval task group has definite utility. Although its

¹⁹⁹ *Ibid.*, 210.

²⁰⁰ *Ibid.*, 213.

²⁰¹ *Ibid.*

employment is continuing to evolve to ensure that, not only can it exercise sea control as called for in both *Leadmark* and *Securing Canada's Ocean Frontiers*, it can also provide the joint effect to operations ashore. The enduring nature of the task group concept is in its aggregate effect in terms of its ability develop domain awareness while exerting sea control over larger areas.²⁰² The utility of the concept moves beyond Canadian waters because the navy views future deployments as part of larger coalitions.²⁰³ This requirement acts as a capability driver as a task group requires both command and control functions and area air defence in order to remain effective in face of a threat.

Global warming and the opening of the Canadian Arctic provide another factor to consider in determining a potential fleet mix. The current AOPS vision provides a compromise between ice-breaking and operations outside of the Arctic, resulting in a limited ability to operate in Northern waters outside the summer months, potentially freeing them up for other tasks.²⁰⁴ Although mixing capabilities without vastly increasing resources to ensure AOPS is capable of achieving effect both in and out of the Arctic may mean a ship less suited to either task, this mix may appeal to the navy as there is a lower level of support within the RCN for what is seen as a coast guard.²⁰⁵ While those in the navy may be correct in traditional terms, the vast amounts of resources at stake in the Arctic make the northern security environment a significant national issue.²⁰⁶ With that

²⁰² Larry Trim, "Naval Task Groups." *Frontline Defence*, no. 2 (March 2008).

²⁰³ Paul Maddison, "Strategic Trust and Cooperation in This Maritime Century," . . . : 10.

²⁰⁴ Marshall S. Horne, "Course 000 Degrees: The Maritime Enforcement of Canada's Arctic Sovereignty and its Potential Implications for the Canadian Navy," Master's Thesis, The Centre for Military and Strategic Studies, 2009, 109-108.

²⁰⁵ Ken Hansen, "A 'Mad Scramble' to Change the Shipbuilding Plan is Underway" . . . , 2.

²⁰⁶ Paul Maddison, "Strategic Trust and Cooperation in This Maritime Century," . . . : 12.

fact considered in conjunction with the government's clear Arctic focus, command of an AOPS ship may well be among the most sought after command positions in the RCN.²⁰⁷ The bottom line for the navy is that Arctic operations are going to form part of the RCN mandate and therefore become part of the emerging fleet mix. Moreover, as part of the fleet mix, their capability to provide effect both in and out of the Arctic needs to be as jealously guarded as those of more traditional projects like CSC.

In order to maintain activity at sea as well as bring joint effect, Canada must be able to sustain activities. This demand drives a critical requirement for logistical support. The current project to replace Canada's two aging replenishment vessels has been a source of debate and delay for many years. While the project started as a grand effort to provide joint effect by supporting troops ashore as well as sustaining the fleet, the actual state of play is focused on simply replacing the existing capability.²⁰⁸ In addition, the project has reduced in scope to both reflect two ships with an option for a third, and reduced capability as DND is now billing the ship as a platform that "will replace the core capabilities of the current Auxiliary Oiler Replenishment ships."²⁰⁹ While the project will eventually ensure the current capability to sustain naval forces at sea is replaced, it does not appear poised to bring anything new to the naval inventory and is representative of efforts to balance needs with cost.

²⁰⁷ The author is not above a shameless plug for himself and would love to be considered for command of an AOPS.

²⁰⁸ Martin Shadwick, "Joint Support Ship Revisited," *Canadian Military Journal* 11, no. 1 (Winter 2010): 61-64.

²⁰⁹ Government of Canada. "National Defence and the Canadian Forces – Joint Support Ship." Last accessed February 1, 2013. <http://www.materiel.forces.gc.ca/en/jss.page>

In terms of actually determining an appropriate fleet mix, it is necessary to sum up what the navy actually does. While the suggested fleet mix at Table 3.1, developed in 2001 is no doubt dated, it does use roles and maintenance cycles in an effort to arrive at an informed estimate.

Table 3.1 – Haydon’s Recommended Fleet Mix from 2001

Task	DDG	FFH	PV	AOR	SS	NPV	Helo	MPA
Maintain a 'Ready' Task Group	2	6		2			14	
Deploy 1 DD with a US CBG	2						2	
Deploy 1 DD/FF with NATO or UN	2						2	
Provide FF/PV for constabulary tasks		4	8				4	
Maintain SS patrols/deployments					4			
Provide an AOR for sea lift contingency				1			4	
MCM tasking			4					
MPA for Atlantic Area								8
MPA for Pacific Area								8
Ships/MPA for Northern Patrol						2		8
Maintenance and Training	2	2	4	1	2	1	12	8
Totals	8	12	16	4	6	3	35	32

Source: Peter T. Haydon, “Canadian Naval Requirements for the 21st Century,” *Council for Canadian Security in the 21st Century*, 2001, 11.

Even accounting for the missing arctic focus that has been demanded by *CFDS*, this fleet structure forms a wish list for the navy that is simply unachievable in today’s economic environment. Moreover, beyond the simple economics of building the

suggested numbers of ships, the number of personnel required to crew them places this fleet mix well outside the realm of possibility. Having said that, the advocated numbers suggest that the navy is settling for less capability than it requires in order to maintain existing capabilities. In other words, faced with a choice of more ships that are less capable, or fewer but more capable platforms, the navy has invested itself in maintaining capability.

If Haydon's recommended fleet mix invokes memories of the past, it should. The numbers of combatants his plan calls for is reminiscent of the naval inventory at the end of Paul Hellyer's tenure as Minister of National Defence. At that time, as Milner observed, the navy had 24 modern combatants that were, in his view, "just enough to meet all operational commitments, provided the ships were double tasked."²¹⁰ Rationalized against Haydon's suggested 20 destroyers/frigates and the stated intent to build 15, this number seems to point to the government's efforts to balance capability and cost against a lack of direct threat and a challenging economic environment.

Summing Up Meeting the Demand

Canada's navy is poised to undergo a complete revitalization in the next 20 years in order to meet the demand provided by both defence policy and its linked naval strategy. The build program for the current frigate, the *Halifax* class, demonstrates the challenges created through the sheer length of time it takes Canada to bring defence

²¹⁰ Marc Milner, *Canada's Navy: The First Century* . . . , 263.

projects to fruition as well as problems associated with ensuring a private contractor delivers the necessary product. This lengthy process leads to a planned obsolescence of capability even before it becomes operational.

The government sees the NSPS as a convenient way to both revitalize government fleets as well as provide industrial and employment benefits on a long-term basis to political effect. However, it can be seen to be encountering delays that could, due to increasing costs and political pressure, threaten the level of capability that is actually achieved. This threat, summed up by efforts to balance capability with cost, presents a very real danger to the RCN's efforts to maintain itself as a medium power navy capable of high-end warfighting operations. Efforts to arrive at an acceptable fleet mix could fall prey to economic realities, leaving the navy of the future as one formed around constabulary capabilities instead of the more traditional warfighting ones.

CONCLUSION

The nature of translating defence policy into relevant and balanced naval capability without exceeding Canada's financial means is a complicated undertaking. The post-Cold War development of defence policy, the navy's development of its own vision and roles in order to meet the policy, and the resultant efforts to fill the requirements show historical tensions that continue to threaten the development of future naval capabilities. While the naval assessment of roles to meet emerging defence priorities is well based in naval theory and history, the question of balancing capability with resources may well define future naval roles instead of the navy's desired path.

Today's RCN is the product of the Cold War rather than an effort to create a relevant naval force to meet the current security environment. The drive to meet the NATO-mandated ASW specialization left lasting effects on the navy that are still visible in today's fleet mix and naval self-image. The backbone of the modern navy, the *Halifax* class, are direct descendants of the Cold War era and owe their general-purpose utility to changing NATO doctrine vice an identified capability deficit.

Although Canada's defence priorities slowly changed over the last two decades of the Cold War to reflect a larger emphasis on the defence of Canada through the collective defence of North America, the rapidly diminishing Soviet threat in the wake of the Cold War provided the impetus to formalize the change. The emerging priorities reflect the defence of Canada as the primary focus of the CF, followed by the defence of North

America and contributions to international security and can be seen as a pre-cursor to the *CFDS* announced in 2008. The refocusing of Canada's defence policy in the wake of the catastrophic attacks on 9/11 demanded a larger emphasis on defence at home, including a resurgence of interest in the continental defence of North America.

Throughout this period, naval planners consistently attempted to answer the demands of a defence policy that changed at infrequent intervals and at the whim of changing governments. The navy's 2001 strategy document, *Leadmark*, provided the first real statement of how the navy saw itself and what utility it provided to the country. Beyond defining itself, the naval self-examination resulted in defined naval roles and responsibilities in an effort to identify the roles of the navy well into the future. Previous efforts to define the navy had consistently been based on the pressures of NATO commitments and the preservation of an ASW identity forged in the Battle of the Atlantic.

Linking the demands of the defence policy through the naval vision to the actual capability mix has been and continues to be difficult. This challenge is largely based on differences between the navy's self-image and the government's wishes, a tension often fuelled by the necessity to establish and maintain a balance between capability and cost. This situation is further complicated by the enduring theme of dwindling resources available to procure the equipment necessary to maintain a relevant naval capability. At times, as demonstrated by the massive overruns incurred in the building of the DDH-280s during the 1970s, the navy pressed ahead to build what it wants without a defined

understanding of what it needs. Other examples of quashed naval ambition can be seen in death of Admiral Brock's proposed fleet revitalization plan of the 1960s which fell victim to economic and political pressures setting the stage for a complete rust-out of capability.

Likewise, the government has a record of promising the navy new capabilities to meet the issue of the day. The Mulroney cabinet's use of the promise of procuring nuclear attack submarines in order to gain sovereignty understanding with the United States only to cancel the program provides a clear example of when the navy was left in a precarious position.

This historical dance between policy, politics and capability has forced the navy to push its own planning horizons outwards in order to avoid the rusting level of irrelevance that characterized much of the latter Cold War. While the three sides of Booth's triangle may have been inherently understood by the navy itself, their dissemination in 2001 (and subsequent updating in 2005) to meet the current security environment have served an important role in allowing the navy to justify the capabilities required to meet the role Canada has chosen to play on the world stage.

Beyond working to justify the fleet of the future, the RCN continues to invest in current capability in order to remain relevant in the face of a rapidly increasing obsolescence challenge. The ongoing modernization of the twelve frigates is designed not only to ensure they remain capable until replacement; inclusion of command and control facilities in four of the class is a direct effort to overcome the anticipated loss of the task

group command function that will occur with the inevitable retirement of the three remaining *Iroquois* class. This capability, along with area air defence, is important because it strikes at the heart of the Canadian Task Group concept, and thus, at a core component of the naval vision.

In terms of meeting the demands of the future, the recent announcement of the NSPS seems to bode well for more stakeholders than just the RCN. The long-term nature of this capital investment spanning both federal fleets is poised to bring massive benefit to industry and provide jobs in an economically challenging time. This program though, is not without its own challenges, which include lengthy project times, rising costs and an uncertain economic environment.

The navy's prime concern is the historically lengthy process involved in actually moving projects through from inception to completion. The saga of the lengthy *Halifax* class project remains fresh in the navy's memory. Approved to meet the Soviet threat in the Atlantic, the class was approved in 1977 and only began to enter service in 1992, three years after the threat for which they were designed had all but vanished. Fortunately for Canada, the growing need to expose ASW platforms to a significant air and surface threat in order to meet changing NATO doctrine necessitated the procurement of a more general purpose ship with advance anti-air and anti-surface capabilities. The net result, arrived at by happenstance more than deliberate forethought and vision, was a navy capable of meeting the demands that Canada has required since then.

The lengthy process delays that plagued the frigates appears to be set to replay with the new procurement plans. The recent reset of the JSS project and funding uncertainty has seen a delay in capability that the navy feels daily as it continues to operate with aged replenishment vessels. The delay in the AOPS project will have follow-on effects to the CSC project as they are both to be built by Halifax Shipyards in Nova Scotia. As delays increase, the buying power of the funding allocated for the projects decreases, causing concern as to whether the correct fleet mix can ever be achieved. This situation, in turn, presents cases where capability will be sacrificed to keep projects within their assigned funding envelopes. As time moves on, the need to move forward on these projects builds, forcing the navy to invest heavily in force development in an effort to mitigate capability gaps and funding challenges through the timely progression of requirements planning.

In terms of achieving the correct fleet mix, the navy appears satisfied with the number and types of ships the government is prepared to provide. While the economic balance certainly prevents additional scope for the proposed platforms, it also provides a very real threat to the future of the RCN as a medium power navy capable of higher-end operations. Although the NSPS is set, notwithstanding the AOPS project, to provide the navy with the same number of combatants and replenishment ships it currently has, the ability of the programme to deliver in the face of rising costs, infrastructure challenges and a lasting economic downturn remains open to debate. While the projected numbers of ships fall short of the navy's historically desired fleet composition, it can be seen to be sufficient to meet the demand based on the navy's trend of operations in the post-9/11

world. In real terms, dwindling resources will challenge the navy's self-image by raising the possibility of patrol ships instead of warships.

The traditional pressures that conspire to threaten the NSPS are in fact threatening the navy writ large. Taking into account the lengthy project cycles in defence procurement and the historical 40 year lifespan of a warship, decisions made today stand to affect the RCN over the next five decades. Careful tracking of defence priorities, naval roles and requirements planning will be necessary to avoid limiting the RCN's ability to serve Canadian interests in all three domains of naval operations.

BIBLIOGRAPHY

- Avis, Peter. "Best Practices for Canadian Maritime Security – A Comparison of Three National Approaches." *Canadian Military Journal* 7, no. 4 (Winter 2006): 33-39. <http://www.journal.forces.gc.ca/vo7/no4/notice-avis-eng.asp> (accessed January 15, 2013).
- Avis, Peter. "Chapter 8: Canadian Maritime Domestic Security: Interoperability, Best Practices and Dead-Ends" in *Breaking the Box: The Increasing Demands of Non-Combat Roles on Maritime Forces* edited by Kenneth P. Hansen. Halifax, NS: Dalhousie University, Centre for Foreign Policy Studies, 2008.
- Balasevicius, Tony. "Towards a Canadian Forces Arctic Operating Concept." *Canadian Military Journal* 11, no. 2 (Spring 2011): 21-31. <http://www.journal.forces.gc.ca/vo11/no2/05-balasevicius-eng.asp> (accessed January 15, 2013).
- Blanchfield, Mike and Murray Brewster. "Unmanned 'ghost ship' sea drones could be part of Canadian Navy's future." *The National Post*, June 5, 2012. <http://news.nationalpost.com/2012/06/05/unmanned-ghost-ship-sea-drones-could-be-part-of-canadian-navys-future/> (accessed January 12, 2013).
- Berthiaume, Lee. "New armed Arctic vessels slowed to meet budget: Officials." *The Vancouver Sun*, February 27, 2013. <http://www.vancouversun.com/news/national/armed+Arctic+vessel+slowed+meet+budget+Officials/8025813/story.html> (accessed March 4, 2013).
- Booth, Ken. *Navies and Foreign Policy*. New York: Holmes & Meier Publishers, Inc, 1979.
- Bowering, Ken. *Military/Naval Procurement in Canada: A Flawed Process*. General Sir Arthur Currie Paper 1-08. Ottawa, ON: Conference of Defence Associations, 2008. http://www.cda-cdai.ca/cdai/images/currie_1-08bowering.pdf (accessed January 19, 2013).
- Canada. Department of National Defence. *1994 Defence White Paper*. Ottawa: Canada Communications Group, 1994. http://www.forces.gc.ca/admpol/defence_policy_archives-eng.html (accessed January 13, 2013).
- Canada. Department of National Defence. *Canada First Defence Strategy*. Ottawa, ON: Government of Canada, 2008. <http://www.forces.gc.ca/site/pri/first-premier/index-eng.asp> (accessed January 12, 2013).
- Canada. Department of National Defence. *Canadian Defence Policy*. Ottawa, ON: Government of Canada, 1992. http://www.forces.gc.ca/admpol/downloads/CanadaDefPolE_all.pdf (accessed January 14, 2013).

- Canada. Department of National Defence. *Challenge and Commitment: A Defence Policy for Canada*. Ottawa, ON: Government of Canada, 1987. <http://www.forces.gc.ca/admpol/downloads/Challenge%20and%20Commitment%201987.pdf> (accessed January 16, 2013).
- Canada. Department of National Defence. *Defence in the 70s*. Ottawa, ON: Government of Canada, 1971. <http://www.forces.gc.ca/admpol/downloads/Defence%20in%20the%2070s.pdf> (accessed January 16, 2013).
- Canada. Department of National Defence. *Defence Policy Statement*. Ottawa, ON: Government of Canada, 2005. http://www.forces.gc.ca/admpol/downloads/Canada_Defence_2005.pdf (accessed January 14, 2013).
- Canada. Department of National Defence. *Future Security Environment: 2008-2030*. Ottawa, ON: Government of Canada, 2009. http://www.cfd-cdf.forces.gc.ca/documents/CFD%20FSE/Signed_Eng_FSE_10Jul09_eng.pdf (accessed January 15, 2013).
- Canada. Department of National Defence. *Leadmark: The Navy's Strategy for 2020*. Ottawa, ON: Government of Canada, 2001. http://www.navy.dnd.ca/leadmark/doc/index_e.asp (accessed January 12, 2013).
- Canada. Department of National Defence. *Securing Canada's Ocean Frontiers: Charting the Course From Leadmark*. Ottawa, ON: Government of Canada, 2005. http://www.navy.forces.gc.ca/cms_images/strat/story_images/Securing%20Canada%20Ocean%20Frontiers%202.pdf (accessed January 19, 2013).
- Canada. Department of National Defence. *White Paper on Defence*. Ottawa, ON: Government of Canada, 1964. <http://www.forces.gc.ca/admpol/downloads/White%20Paper%20on%20Defence%20-%20March%201964.pdf> (accessed January 15, 2015).
- Canada. Parliamentary Budget Officer. *Feasibility of Budget for Acquisition of Two Joint Support Ships*. Ottawa, ON: Government of Canada, 2013. http://www.pbo-dpb.gc.ca/files/files/JSS_EN.pdf (accessed March 4, 2013).
- Canada. Transport Canada. *TP-14916 – Canada: Committed to the Goals of the International Maritime Community*. Ottawa, ON: Government of Canada, 2011. <http://www.tc.gc.ca/Publications/en/TP14916/PDF/HR/TP14916E.pdf> (accessed January 26, 2013).
- Canuel, Hughues. "Developing the Future Canadian Navy." *Frontline Defence No. 3* (May 2008). http://www.frontline-canada.com/Defence/index_archives.php?page=1613 (accessed January 12, 2013).

- Defense Industry Daily. "Canada's National Strategic Shipbuilding Strategy (NSPS)." Accessed January 12, 2013. <http://www.defenseindustrydaily.com/Canadas-National-Shipbuilding-Strategy-07164/>
- Desgagné, C.R.J. "Evolutionary Acquisition – A Complementary Approach to Capability Based Planning for the Delivering of Aerospace Power." Master's thesis, Canadian Forces College, 2009. www.cfc.forces.gc.ca/259/290/295/286/desgagne.pdf (accessed January 13, 2013).
- Deshpande, Nick. "Seven Sinister Strategic Trends: A Brief Examination of Events to Come." *Canadian Military Journal* 11, no. 4 (Autumn 2011): 15-23. <http://www.journal.forces.gc.ca/vo11/no4/15-strong-eng.asp> (accessed January 15, 2013).
- Dion, J.C.A.E. "e-Capabilities; Canadian Military Transformation in the face of 21st Century Challenges," Master's thesis, Royal Military College of Canada, 2005. www.cda-cdai.ca/cda/uploads/cda/.../dion-apr05-ecapabilities.pdf (accessed January 12, 2013).
- Dunne, Tim. "HMCS Charlottetown: The Battle of Misrata." *Frontline Defence* 6, no. 6 (2011): 17-22.
- Edwards, Robert, H. *The Future of Canada's Maritime Capabilities: The Issues, Challenges and Solutions in a New Security Environment, 18-20 June 2004*, Conference Report. Halifax, NS: Centre for Foreign Policy Studies, Dalhousie University, 2004. <http://www.dal.ca/content/dam/dalhousie/pdf/cfps/pubs/thefutureofcanadamaritime.pdf> (accessed January 25, 2013).
- English, Allan. "Outside CF Transformation Looking In." *Canadian Military Journal* 11, no. 2 (Spring 2011): 12-20. <http://www.journal.forces.gc.ca/vo11/no2/04-english-eng.asp> (accessed January 15, 2013).
- Fetterly, Ross. "The Influence of the Environment on the 1964 Defence White Paper." *Canadian Military Journal* 5, no. 4 (Winter 2004): 47-54. <http://www.journal.forces.gc.ca/vo5/no4/defence-defense-eng.asp> (accessed January 20, 2013).
- Forcier, J.Y. *The Canadian Navy and Canadian Coastguard: Cooperating Sea Services or Coexisting Federal Fleets?* Strategic Studies Working Group Papers. Calgary, AB: Canadian Defence & Foreign Affairs Institute, 2011. <http://www.cdfai.org/PDF/The%20Canadian%20Navy%20and%20Coast%20Guard.pdf> (accessed on January 12, 2013).
- Gimblett, Richard, H. "The Transformation Era, 1990 to the Present" in *The Naval Service of Canada, 1910-2010: The Centennial Story*. Toronto: Dundurn Press, 2009.
- Godefroy, Andrew. *Canada's International Policy Statement Five Years Later*. Calgary, AB: Canadian Defence & Foreign Affairs Institute, 2010.

- <http://www.cdfai.org/PDF/Canadas%20International%20Policy%20Statement%20Five%20Years%20Later.pdf> (accessed January 23, 2013).
- Government of Canada. "National Defence and the Canadian Forces – Joint Support Ship." Last accessed February 1, 2013. <http://www.materiel.forces.gc.ca/en/jss.page>
- Government of Canada. "Harper Government's Ship Strategy Bolstering Canada's Economy." Last accessed February 27, 2013. <http://news.gc.ca/web/article-eng.do?mthd=tp&crtr.page=1&nid=722379&crtr.tp1D=1>
- Granatstein, J.L. *The Harper Government and Defence After Four Years*. Calgary, AB: Canadian Defence & Foreign Affairs Institute, 2010. <http://www.cdfai.org/PDF/The%20Harper%20Government%20and%20Defence%20After%20Four%20Years.pdf> (accessed January 23, 2013).
- Halstead, G.J.H. "A Defence Policy for Canada: The White Paper Two Years On." *Behind the Headlines* 47, no. 2 (Winter 1989). http://www.opencanada.org/wp-content/uploads/2011/05/BTH_vol47_no2.pdf (accessed January 20, 2013).
- Harper, Stephen. Speech, The National Strategic Shipbuilding Procurement Strategy. Halifax, Canada, January 12, 2012. <http://pm.gc.ca/eng/media.asp?id=4575> (accessed January 12, 2013).
- Harper, Stephen. Speech, The Unveiling of the Royal Canadian Navy Monument on Richmond Landing. Ottawa, Canada, May 3, 2012. <http://pm.gc.ca/eng/media.asp?category=2&featureId=6&pageId=46&id=4781> (accessed January 25, 2013).
- Hansen, Ken. "Plans Cannot Be Rationalized Without the Strategic Perspective", *Canadian Naval Review Broadsides Forum* (blog), April 11, 2011, <http://www.navalreview.ca/2011/04/plans-cannot-be-rationalized-without-the-strategic-perspective/> (accessed January 12, 2013).
- Hansen, Ken. "To Group or Not to Group", *Canadian Naval Review Broadsides Forum* (blog), December 6, 2011, <http://www.navalreview.ca/2011/12/to-group-or-not-to-group/> (accessed January 12, 2013).
- Hansen, Ken. "A 'Mad Scramble' to Change the Shipbuilding Plan is Underway". *Canadian Naval Review Broadsides Forum* (blog), June 29, 2012, <http://www.navalreview.ca/2012/06/a-mad-scramble-to-change-the-shipbuilding-plan-is-underway/> (accessed January 12, 2013).
- Hansen, Ken. "Starting Over: The Canadian Navy and Expeditionary Warfare." *Canadian Naval Review* 1, no. 1 (Spring 2005): 20-24. <http://www.navalreview.ca/wp-content/uploads/public/vol1num1/vol1num1art6.pdf> (accessed January 12, 2013).

- Hansen, Ken. "The History and Theory of Naval Effects-based Operations." In *Effects-Based Approaches to Operations: Canadian Perspectives*. Edited by Alan English and Howard Coombs, 95-102. Ottawa, ON: Department of National Defence, 2008.
- Harris, Robinson. "Possible Lessons From the US Cooperative Strategy" in *Naval Gazing: The Canadian Navy Contemplates Its Future*, edited by Anne Griffiths and Eric Lerhe, 206-218. Halifax, NS: Dalhousie University, Centre for Foreign Policy Studies, 2010.
- Haydon, Peter T. "A New Security Framework: Le mieux est l'ennemi du bien, non?" *Canadian Naval Review* 1, no. 2 (Summer 2005): 34-36. <http://www.navalreview.ca/wp-content/uploads/public/vol1num2/vol1num2art9.pdf> (accessed January 23, 2013).
- Haydon, Peter T. "Canada's Navy: A Good, Workable Little Fleet?" *Canadian Naval Review* 1, no. 1 (Spring 2005): 11-17.
- Haydon, Peter T. "Canadian Naval Requirements for the 21st Century." *Council for Canadian Security in the 21st Century*, 2001. <http://www.navyleague.ca/documents/Canadian%20Naval%20Requirements%20for%2021st%20Century.pdf> (accessed January 13, 2013).
- Haydon, Peter T. "Choosing the Right Fleet Mix: Lessons From the Canadian Patrol Frigate Selection Process." *Canadian Military Journal* 9, no. 1 (Spring 2008): 65-75. <http://www.journal.forces.gc.ca/vo9/no1/10-haydon-eng.asp> (accessed January 15, 2013).
- Haydon, Peter T. "From Uncertainty to Maturity, 1968-89" in *The Naval Service of Canada, 1910-2010: The Centennial Story*. Toronto: Dundurn Press, 2009: 163-184.
- Haydon, Peter T. *Sea Power and Maritime Strategy in the 21st Century: A "Medium" Power Perspective*. Maritime Security Occasional Paper No. 10. Halifax, NS: Centre for Foreign Policy Studies, Dalhousie University, 2000.
- Haydon, Peter T. "The Falkland's War: Lessons Learned and Not Learned." *Canadian Naval Review* 7, no. 2 (Summer 2011): 2-3. <http://www.navalreview.ca/wp-content/uploads/public/vol7num2/vol7num2art1.pdf> (accessed February 1, 2013).
- Haydon, Peter T. "What Naval Capabilities Does Canada Need?" *Canadian Military Journal* (Spring 2001): 21-28.
- Haydon, Peter T. *Why Canada Needs a Navy*. Canada: The Navy League of Canada, 2010.
- Hobson, Brent. "Obsolescence Challenges and the Canadian Navy." *Canadian Naval Review* 4, no. 2 (Summer 2008): 9-12. <http://www.navalreview.ca/wp-content/uploads/public/vol4num2/vol4num2art3.pdf> (accessed January 12, 2013).

- Hobson, Brent. "Obsolescence Challenges Part 4: Future Capabilities and Technologies." *Canadian Naval Review* 5, no. 1 (Spring 2009): 20-24. <http://www.navalreview.ca/wp-content/uploads/public/vol5num1/vol5num1art5.pdf> (accessed January 12, 2013).
- Hobson, Brent. "Obsolescence Challenges Part 3: Identifying Future Capability Requirements." *Canadian Naval Review* 4, no. 4 (Winter 2009): 10-14. <http://www.navalreview.ca/wp-content/uploads/public/vol4num4/vol4num4art3.pdf> (accessed January 12, 2013).
- Hobson, Sharon. "Giving You Extra: Halifax-class Upgrades New Threats." *Jane's International Defence Review* 45 (September 2012): 64-69.
- Hobson, Sharon. "Let's Be Realistic About the Budget." *Canadian Naval Review* 1, no. 1 (Spring 2005): 31-32. <http://www.navalreview.ca/wp-content/uploads/public/vol1num1/vol1num1art8.pdf> (accessed January 23, 2013).
- Hobson, Sharon. "Plain Talk: A Questionable Strategy." *Canadian Naval Review* 6, no. 2 (Summer 2010): 34-35. <http://www.navalreview.ca/wp-content/uploads/public/vol6num2/vol6num2art8.pdf> (accessed January 12, 2013).
- Horne, Marshall, S. "Course 000 Degrees: The Maritime Enforcement of Canada's Arctic Sovereignty and its Potential Implications for the Canadian Navy." Master's Thesis, The Centre for Military and Strategic Studies, 2009.
- Huebert, Rob. "The Needs, Costs and Benefits of a Canadian Naval Presence in the Arctic." *Canadian Naval Review* 8, no. 1 (Spring 2012): 4-9. <http://www.navalreview.ca/wp-content/uploads/public/vol8num1/vol8num1art2.pdf> (accessed January 12, 2013).
- Huebert, Rob. "The Security Implications for Canada of Global Warming in the Arctic" in *Naval Gazing: The Canadian Navy Contemplates Its Future*, edited by Anne Griffiths and Eric Lerhe, 173-192. Halifax, NS: Dalhousie University, Centre for Foreign Policy Studies, 2010.
- Jackson, Aaron, P. *Keystone Doctrine Development in Five Commonwealth Navies: A Comparative Perspective*. Papers in Australian Maritime Affairs No. 33. Australia: Sea Power Centre, 2010.
- Jones, Peter and Phillipe Lagassé. "Rhetoric versus reality: Canadian defence planning in a time of austerity." *Defence & Security Analysis* 28, no. 2 (June 2012): 140-151. <http://dx.doi.org/10.1080/14751798.2012.678160> (accessed January 12, 2013).
- Kurtz, M.T.J. "Policy, Transformation and Shipbuilding: The Perfect Storm Threatening the Future of Canada's Surface Combatant Fleet." Masters in Defence Studies Paper, Canadian Forces College, 2007.
- Lennox, Patrick. "The Navy and Canadian Foreign Policy: The Four Dimensions of Global Engagement" in *Naval Gazing: The Canadian Navy Contemplates Its Future*, edited by

- Anne Griffiths and Eric Lerhe, 39-53. Halifax, NS: Dalhousie University, Centre for Foreign Policy Studies, 2010.
- Lerhe, Eric. "Where is the Big Honking Ship?" *The Dispatch* (Winter 2012): 14-15.
- Lund, Wilfred. "The Rise and Fall of the Royal Canadian Navy, 1945-1964: A Critical Study of the Senior Leadership, Policy and Manpower Management." Doctoral Dissertation, University of Victoria, 1999.
- MacDonald, George. *Canada First Defence Strategy – One Year Later*. Calgary, AB: Canadian Defence & Foreign Affairs Institute, 2009.
<http://www.cdfai.org/PDF/The%20Canada%20First%20Defence%20Strategy%20-%20One%20Year%20Later.pdf> (accessed January 12, 2013).
- MacLean, Chris. "Royal Canadian Navy Recapitalized & Revitalized." *Frontline Defence* 8, no. 6 (November 2011). http://www.frontline-canada.com/Defence/index_archives.php?page=1784 (accessed January 12, 2013).
- Madigan, Gerry. "Canada First – Defence Strategy: A Retrospective Look. Too Much? Too Little? Just Right?" *Canadian Military Journal* 10, no. 3 (Summer 2010): 27-36.
<http://www.journal.forces.gc.ca/vol10/no3/06-madigan-eng.asp> (accessed January 15, 2013).
- Maddison, Paul. "Strategic Trust and Cooperation in This Maritime Century." *Canadian Military Journal* 13, no. 1 (Winter 2012): 7-14.
- Maddison, Paul. Speech, Canadian Surface Combatant Industry Day Address, Ottawa, Canada, November 15, 2012. http://www.navy.forces.gc.ca/cms/10/10-a_eng.asp?id=922 (accessed January 12, 2013).
- Mayne, Richard O. "Years of Crisis: The Canadian Navy in the 1960s" in *The Naval Service of Canada, 1910-2010: The Centennial Story*. Toronto: Dundurn Press, 2009: 141-162.
- McDonough, David S. "Joint Expeditionary Warfare and the Dilemmas for Canadian Maritime Strategy." *Canadian Naval Review* 3, no. 3 (Fall 2007): 4-9.
<http://www.navalreview.ca/wp-content/uploads/public/vol3num3/vol3num3art2.pdf> (accessed January 12, 2013).
- McFadden, Dean. "A Sailor's Perspective on the Arctic: Security on a Changing Frontier." *Frontline Defence* 5 (2010): 8-10.
- McFadden, Dean. "The Navy and Canada's National Interest in the Maritime Century." *Canadian Naval Review* 6, no. 1 (Spring 2010): 3-6. <http://www.navalreview.ca/wp-content/uploads/public/vol6num1/vol6num1art2.pdf> (accessed January 14, 2013).

- McFadden, Dean. Interview, Canadian Defence Review, Ottawa, Canada, July 2009. http://www.navy.gc.ca/cms/10/10-a_eng.asp?id=753 (accessed January 12, 2013).
- Merritt, C.C.I. "The True Requirements of Canadian Defence: A Critique of the 1971 White Paper." *Canadian Defence Quarterly* 1, no. 3 (Winter 1972): 24-27.
- Middlemiss, Dan. "Yes, Virginia, military equipment IS expensive (or, what may be ahead for the navy's majorship replacement programs?)" *Canadian Naval Review BroadSides Forum* (blog), December 18, 2012. <http://www.navalreview.ca/2012/12/yes-virginia-military-equipment-is-expensive-or-what-may-be-ahead-for-the-navys-major-ship-replacement-programs/> (accessed January 12, 2013).
- "Milestones in Canadian Naval History." *Canadian Naval Review* 6, no. 1 (Spring 2010): 25-33. <http://www.navalreview.ca/wp-content/uploads/public/vol6num1/vol6num1art7.pdf> (accessed January 13, 2013).
- Milner, Marc. *Canada's Navy: The First Century*. Toronto, ON: University of Toronto Press, 1999.
- Morse, David. "Force Development: A Demand Well Beyond 2015" *Canadian Naval Review* 4, no. 1 (Spring 2008): 2-3. <http://www.navalreview.ca/volume4-issue1/> (accessed January 13, 2013).
- Mugridge, David. "Is There Something Wrong With Our Ships Today? – Vice Admiral David Beatty, Jutland, 31 May 1916." *Canadian Military Journal* 10, no. 3 (Summer 2010): 64-66. <http://www.journal.forces.gc.ca/vol10/no3/11-mugridge-en.asp> (accessed January 15, 2013).
- Penny, K.R. "Strategic Thinking in Defence." *Canadian Military Journal* 2, no. 3 (Autumn 2001): 21-28. <http://www.journal.forces.gc.ca/vo2/no3/doc/21-28-eng.pdf> (accessed January 15, 2013).
- Peer, David. "The NSPS Shipbuilding Strategy: What Are the Risks?" *Canadian Naval Review BroadSides* (blog), October 21, 2011. <http://www.navalreview.ca/2011/10/the-nspshipbuilding-strategy-what-are-the-risks/> (accessed January 12, 2013).
- Perry, David. *Defence After the Recession*. Calgary, AB: Canadian Defence & Foreign Affairs Institute, 2012. <http://www.cdfai.org/PDF/Defence%20After%20The%20Recession.pdf> (accessed January 14, 2013).
- Rempel, Mark. "An Overview of the Canadian Forces' Second Generation Capability-Based Planning Analytical Process." Defence R and D Canada Technical Memorandum, 2010. <http://www.google.ca/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CDgQFjAB&url=http%3A%2F%2Fwww.dtic.mil%2Fcgi-bin%2FGetTRDoc%3FAD%3DADA535431&ei=vmPzUP-eNuqQ2AXE6oCYDw&usg=AFQjCNHrfsVK4a2PnGempCDgbJN45ZQTcw&bvm=bv>

[1357700187.d.b2I](#) (accessed January 12, 2013).

Richter, Andrew. "Towards a More Strategic Future? An Examination of the Canadian Government's Recent Defence Policy Statements." *Canadian Military Journal* 7, no. 1 (Spring 2006): 31-40. <http://www.journal.forces.gc.ca/vo7/no1/strategi-eng.asp> (accessed January 15, 2013).

Royal Canadian Navy. "Canada's Navy at a Glance." Last accessed January 29, 2013. http://www.navy.forces.gc.ca/cms/12/12_eng.asp

Scott, Richard. "Logistics Support Vessels: The New Maids of All Work?" *Jane's Navy International* 118, no. 1 (January/February 2013): 8-9.

Segal, Hugh. Speech, Navy Summit, 2008, Ottawa, Canada, April 29, 2008. www.navyleague.ca/documents/2008NavalStrategyConf_Segal.pdf (accessed January 12, 2013).

Shadwick, Martin. "Comparison Shopping." *Canadian Military Journal* 10, no. 4 (Autumn 2010): 80-82. <http://www.journal.forces.gc.ca/vol10/no4/14-shadwick-eng.asp> (accessed January 15, 2013).

Shadwick, Martin. "Joint Support Ship Revisited." *Canadian Military Journal* 11, no. 1 (Winter 2010): 61-64. <http://www.journal.forces.gc.ca/vol11/no1/13-shadwick-eng.asp> (accessed January 15, 2013).

Shadwick, Martin. "Reviewing Defence Strategy." *Canadian Military Journal* 12, no. 4 (Autumn 2012): 79-82. <http://www.journal.forces.gc.ca/vol12/no4/page79-eng.asp> (accessed January 15, 2013).

Shadwick, Martin. "The National Strategic Shipbuilding Procurement Strategy (NSPS) and the Royal Canadian Navy (RCN)." *Canadian Military Journal* 12, no. 2 (Spring 2012): 77-80.

Sloan, Elinor. *The Strategic Capability Investment Plan: Origins, Evolution and Future Prospects*. Calgary, AB: Canadian Defence & Foreign Affairs Institute, 2006. <http://www.cdfai.org/PDF/The%20Strategic%20Capability%20Investment%20Plan.pdf> (accessed January 12, 2013).

Sloan, Mark. "The Value of Concepts in Capability Development." *Canadian Naval Review* 6, no. 2 (Summer 2010): 17-21. <http://www.navalreview.ca/wp-content/uploads/public/vol6num2/vol6num2art4.pdf> (accessed January 12, 2013).

Steed, Roger, G. *Canadian Warships Since 1956*. St. Catherines: Van Well Publishing, 1999.

- Stone, Craig. "Defence Procurement and the Need for Disciplined Capital Investment" in *Public Management of Defence in Canada* edited by Craig Stone, 93-109. Toronto, ON: Breakout Educational Network, 2009.
- Sutherland, R.J. "Canada's Long-Term Strategic Situation." *International Journal* 17, no. 3 (Summer 1962): 199-233.
<http://pao.chadwyck.com/articles/displayItemFromId.do?QueryType=articles&ItemID=1104-1962-017-03-000001> (accessed January 20, 2012).
- Taylor, R.K. "2020 Vision: Canadian Forces Operational Level Doctrine" *Canadian Military Journal* 2, no. 3 (Autumn 2001): 35-42. <http://www.journal.forces.gc.ca/vo2/no3/doc/35-42-eng.pdf> (accessed January 19, 2013).
- Thorsteinson, Janet. "Think Big: Building Warships Under a National Strategy." *Canadian Naval Review* 6, no. 2 (Summer 2010): 25-26. <http://www.navalreview.ca/wp-content/uploads/public/vol6num2/vol6num2art6.pdf> (accessed January 12, 2013).
- Till, Geoffrey. *Seapower: A Guide for the Twenty-First Century*. London: Frank Cass, 2004.
- Till, Geoffrey. "The Canadian Navy, Trade, and Choosing Threats" in *Naval Gazing: The Canadian Navy Contemplates Its Future*, edited by Anne Griffiths and Eric Lerhe, 25-38. Halifax, NS: Dalhousie University, Centre for Foreign Policy Studies, 2010.
- Tracy, Nicholas. *A Two-Edged Sword: The Navy as an Instrument of Canadian Foreign Policy*. Montreal, QC: McGill-Queen's University Press, 2012.
- Trim, Larry. "Naval Task Groups." *Frontline Defence*, no. 2 (March 2008).
http://www.frontline-canada.com/Defence/index_archives.php?page=1635 (accessed January 12, 2013).
- Trudgen, Matthew P. and Joel J. Sokolsky. "Canadian strategic debate of the 1960s". *International Journal* 67, no. 1 (winter 2011-2012): 183-194.
<http://search.proquest.com/docview/1018566916?accountid=9867> (accessed January 20, 2013).
- United States Geological Survey. *90 Billion Barrels of Oil and 1,670 Trillion Cubic Feet of Natural Gas Assessed in the Arctic*. US Department of the Interior's US Geological Survey, 23 July 2008.
http://www.usgs.gov/newsroom/article.asp?ID=1980&from=rss_home#.UIyU14XiqGg (accessed January 26, 2013).
- von Rosenbach, Alexander. *IHS Jane's Navy International Issue Ten: 2012*. London: HIS Global Ltd, 2012.
- Walker, Bruce A. "Making Waves: Challenging Peter Haydon's Article." *Canadian Naval Review* 1, no. 2 (Summer 2005): 28-29.

Wilson, J.K. "The Politics and Economics of Shipbuilding in Canada: Lessons for Naval Planning?" Masters in Defence Studies Paper, Canadian Forces College, 2009.

Work, Robert O. *Naval Transformation and the Littoral Combat Ship*. Washington: Center for Strategic and Budgetary Issues, 2004.

Zak, Milos. "Rough Waters for the Canadian Navy", *Centre for International Maritime Security* (blog), November 29, 2012. <http://cimsec.org/rough-waters-for-the-canadian-navy/> (accessed January 12, 2013).