CANADIAN NAVAL REVIEW

VOLUME 6, NUMBER 1 (SPRING 2010)

Canadian Navy Centennial Issue

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The *Canadian Naval Review* is published quarterly by the Centre for Foreign Policy Studies (CFPS) at Dalhousie University. It is a professional journal examining a wide range of maritime security issues from a Canadian perspective. In particular it focuses on strategic concepts, policies, historical perspectives, procurement programs and operations of the Canadian Navy, and national security in general. This initiative brings together members of the Canadian defence and academic communities and is a component of the CFPS's Maritime Security Program.

The *Canadian Naval Review* has three primary objectives:

- provide a public forum for the discussion of the maritime dimension of Canada's national security;
- provide a public forum for the discussion of Canada's naval and maritime policies; and
- provide a source for the public examination of Canadian naval and maritime history and for the development of lessons learned.

The material included in the review is presented for the professional and general education of the readers. Articles, commentaries and opinion pieces are invited from the widest possible spectrum for the purpose of informing, stimulating debate and generally challenging readers. The opinions expressed by the authors do not necessarily reflect the opinions of the Editors, Editorial Board, the Centre for Foreign Policy Studies, the Department of National Defence, or the Canadian Navy.

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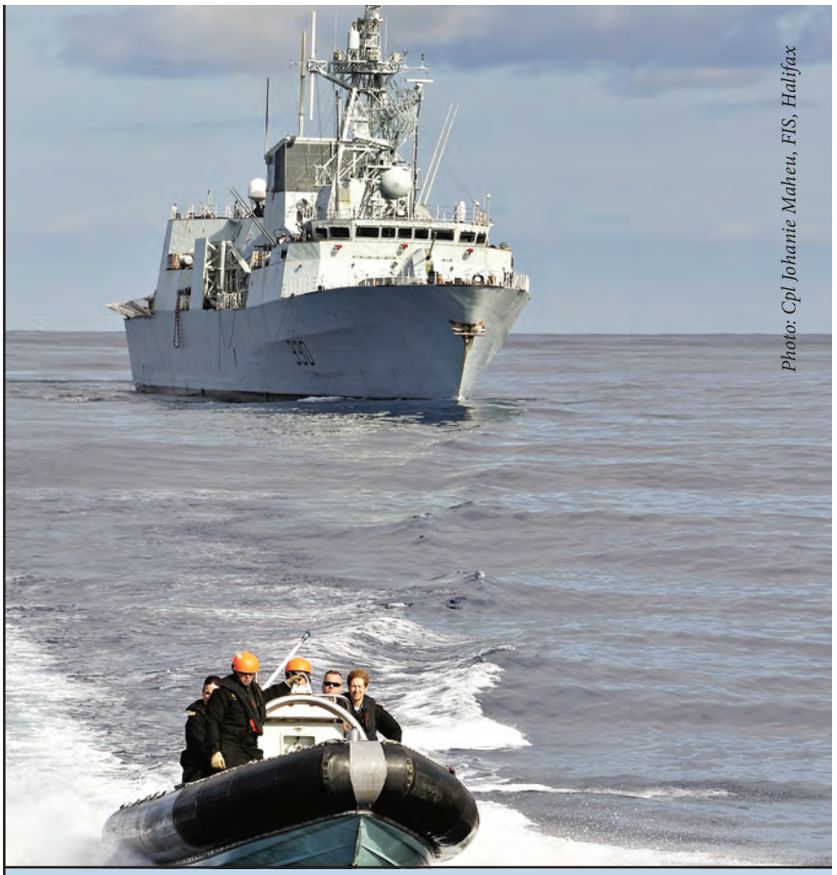

Photo: Cpl Johanie Maheu, FIS, Halifax

*HMCS **Halifax**'s command team leaves the ship during **Operation Hestia**, the Canadian Forces' contribution to earthquake relief efforts in Haiti after it devastated by a 7.0 magnitude quake on 12 January 2010.*

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Message from the Commander, Maritime Command

Vice-Admiral Dean McFadden

It gives me great pleasure to thank the *Canadian Naval Review* for this issue dedicated to celebrating and commemorating the navy in this 100th year of service to Canada, as well as to acknowledge the great work that went into producing this edition. As you read this message, the men and women of Canada's navy are working hard around the world. This issue salutes them all. This centennial edition, however, is not just a tribute to the work that Maritime Command is performing today. It's a tribute to every generation of Canadian sailors who preceded us, and from whom we draw our inspiration.

The decision to establish a national naval service in 1910 was a defining moment for a still-young dominion. As I look back at the navy's first century, what truly stands out is how closely the story of the navy parallels the development of Canada itself. Both came from humble beginnings but aspired to contribute beyond the shores of the country. Both modelled themselves in the remarkable institutions of the United Kingdom. For the Naval Service of Canada, as it was known 100 years ago, the Royal Navy was a natural choice, acknowledged as the premiere fighting service of the day.

Both Canada and its navy came of age in the crucible of war. The young state first gained a true sense of its own capacity, character and identity as a result of its national sacrifice and victory achieved at Vimy Ridge during the Great War. The navy certainly acquired that sense of capacity, essential purpose and identity in the long struggle of the Battle of the Atlantic during the Second World War. Both country and navy have carried this sense into the present day, when both are recognized and respected on the world stage, as much for their labours in peace as in war.

Although it was a defining experience, Canada's navy was standing watch long before the Battle of the Atlantic, and it has continued to stand watch ever since. It patrolled the coasts of Korea during the first conflict fought under the banner of the United Nations. It kept a ceaseless vigil throughout the course of a long Cold War. It deployed to the Persian Gulf as part of an international response to the invasion of Kuwait by Iraq. It responded to the attacks of 11 September 2001 in sustained global maritime operations to counter international terrorism. Today, the navy continues to protect Canada and its interests against menaces both new and old, at home and abroad.

Photo: DND

Vice-Admiral Dean McFadden Chief of the Maritime Staff.

The purpose of the navy's centennial is not just to tell this great story to all Canadians. It's to renew publicly our commitment to Canada. I can't pretend to foresee all the challenges that await us in the decades ahead, but neither could Sir Wilfrid Laurier when he looked forward from 1910. But he had an abiding faith in what Canada stood for and a vision of the country as a leading member of the international community – a vision that the navy helped to secure, in peace and war, and continues to sustain today.

That alone gives me great confidence for our next century. Laurier's vision remains undiminished 100 years later – the vision that Canadians will continue to strive to make a difference, knowing that the world will not be as we wish but rather as we are prepared to help make it.

The Navy and Canada's National Interests in this Maritime Century[1]

Vice-Admiral Dean McFadden,
Commander, Maritime Command

Photo: DND

*HMCS **Protecteur** celebrates her 40th birthday in Esquimalt, British Columbia, on 30 August 2009.*

In my centennial message at the beginning of this issue of the *Canadian Naval Review*, I reflected briefly on our history as a navy. In this article, I will offer my reflections on the future. While no one can predict exactly what will happen in the decades ahead, I am confident in stating two things about the 21st century. First, the oceans will be of increasing importance to Canada's security and prosperity. Second, virtually every defence and security challenge I can envisage will require that Canada integrate all of the elements of the Canadian Forces – in fact, the entire arsenal of skills and competencies that this country has at its disposal – if it is to succeed.

The aim of this article is not to focus on *how* the Canadian Forces must organize to meet challenges, but rather *what* these challenges are likely to be, and *why* they should matter to Canadians. I will argue, as you might expect, that Canada's maritime air and naval forces will make a substantial contribution to addressing these challenges, as they did in the past 100 years and as they do today, as was so recently evident in Haiti, Vancouver and off the Horn of Africa. But, first, let me explain why the 21st century will be a maritime century.

Today's global maritime order is based on a delicate geopolitical and juridical balance between two central but essentially competing ideas that have existed in a state of tension for some 500 years. These ideas are:

- *mare liberum*, the concept that the seas *cannot* be made sovereign and hence are free for all to use; and
- *mare clausum*, the idea that the seas *can* be made sovereign to the limits of effective state control.

The delicate balance was achieved not through bloodshed, but rather through an unprecedented degree of international consultation in the closing decades of the 20th century to reconcile the vital interests of the great


Photo: US Navy

*HMCS **Vancouver** steams alongside USS **John C. Stennis** during her deployment with the carrier battle group, 20 May 2002.*

maritime powers with the interests of coastal states. That balance was precisely what the United Nations Convention on the Law of the Sea (UNCLOS) achieved, making this landmark international treaty arguably the crowning legal achievement in history.

Few states have benefitted as much from the Law of the Sea treaty as Canada. It has endowed us with an immense ocean estate, one that extends beyond our shores to encompass the riches of more than 3.5% of the planet's entire surface. This represents a priceless inheritance for generations to come, with inalienable sovereign authority over nearly one-half of this massive oceanic reach, but as well special duties of care and custody for the resources and ecosystems of the remainder. Anything that challenges or threatens to challenge the geopolitical balance embodied in UNCLOS therefore touches deeply on Canada's national interest.

Given the enormous stakes involved, however, it is by no means assured that the unique and remarkable consensus of maritime interests that occurred in the latter half of the 20th century will withstand the tremendous changes this century is likely to witness. Ocean politics will make for a global maritime commons of great strategic complexity and growing strategic competition.

Nowhere is this more apparent than in the Indo-Pacific region, where ocean politics already occupy centre-stage. China – the region's most rapidly growing maritime power – acknowledged a fundamental strategic reality when it recently stated that its principal vulnerabilities and threats come from the sea. This is a remarkable shift for a state which has focused for millennia on protecting its frontiers from threats originating inland. But it's a shift that was also inevitable as China assumed a more prominent place in a global system that depends on maritime commerce and the fundamental openness of the 'great commons,' as Alfred T. Mahan once described them. It's the echo of a powerful geopolitical idea, expressed in the following words written in the early 16th century and now pertinent to all states, that "[w]hoever is Lord of Malacca has his hand on the throat of Venice."[2]

What is very clear today is that the world's oceans no longer serve to shield Canada from far-distant events. Rather, they connect us through a vast and intricate web of relationships – political, economic, financial and social – that has made us neighbours with all the world's peoples. Our prosperity and security are thoroughly enmeshed in a global system that transcends all boundaries. It is a system that depends to varying degrees on regulated air, space and cyber commons for its functioning, but it would not function at all without a regulated ocean


Photo: Cpl Peter Reed, Formation Imaging Services, Halifax

*HMCS **Fredericton**'s naval boarding party investigates suspected pirates in two dhows in the Gulf of Aden, 27 January 2010.*


Photo: US Navy

commons. Defending that system is not a matter of choice for Canada: it is essential to our way of life.

In fact, I would maintain that the most essential public good of this globalized era is a regulated ocean commons. By this I mean a world in which the seas are open for all to use freely and lawfully, regulated against the increasingly troubling range of illegal and criminal activities that are occurring on them, and defended against those who would threaten the pillars upon which the current global system is built.

Thus, the organizing principle for the application of Canadian seapower in this maritime century is to defend the global system both at sea and from the sea. The strategic requirement this calls for is a globally deployable sea control navy, with an operating concept of a maritime force not only held at readiness, but also forward deployed.

The responsibility to regulate the ocean commons in our own home waters must be taken by Canada alone, even if we were to develop closer arrangements with our American neighbours to defend the three ocean approaches to North America. But this task is not exclusively the preserve of the navy. It requires a comprehensive, whole-of-government approach in which Canada is considered a world leader.

Defending the global system may begin at home but it must also be defended abroad, and this clearly is the work of navies. Only navies can ensure the safety of waters that are likely to become increasingly contested by a range of actors. These actors may be purely criminal and opportunistic, as we're seeing today off Somalia or the Gulf of Guinea, or they may be armed maritime groups whose political purpose and access to increasingly sophisticated weapons can be used to hold even an advanced navy at risk.

But even the largest of navies can't be everywhere. This is why the leaders of many like-minded navies speak of the need for a maritime strategy that seeks to enlist all coastal states and maritime powers to regulate the ocean commons cooperatively, to the extent permitted by their capacities. We need to build a meaningful capacity within the Canadian Forces, including the navy, to help build the capacity of others.

Not only must we defend the global system at sea, we must also defend the conditions that permit the global system to flourish, by being able to operate as part of a joint force 'from the sea.' There's a reason we're seeing defence diplomacy becoming more focused on populations through the elevation of humanitarian assistance and disaster relief to core military missions. It's not just the right thing to do, it's in Canada's national interest because of the crucial roles these populations play in our collective future.

This is not to say that traditional maritime diplomacy will no longer be important. In fact, it is probably more important now in this globalized era than 'gunboat diplomacy' ever was. At the strategic level, forward-deployed maritime forces help to prevent and contain conflict, while also creating the conditions that can shape the success of joint forces should they ever be needed. They provide Canada with insight and influence, promote trust and confidence among our friends and give pause to our potential adversaries.

At the operational level, forward-deployed maritime forces provide options to government. They provide the capacity to respond quickly to unfolding events and a range of choices that can be carefully calibrated to the situation, including creating the time for diplomacy to work, and declaring intent without irreversible entanglement. Nothing says commitment like 'boots on the ground,' whether sailors, aviators or soldiers. However, when the decision is taken to act, maritime forces provide governments the priceless advantage of choosing when and where to commit a force. The use of the sea for operational manoeuvre, as this advantage is called, can greatly amplify the employment of even a relatively small ground force, as was the case in East Timor.

Defending the global system 'from the sea' doesn't require the kind of high-end capabilities that are associated with modern amphibious warfare, which tend in the public imagination to evoke images of Normandy, Iwo Jima or Inchon. These kinds of capabilities are beyond Canada's


Photo: Sgt Dennis Power

*HMCS **Montreal** in Dundas Harbour, Devon Island, Northwest Territories, during **Operation Lancaster**, 18 August 2006.*

Photo: MC1 Kirk Worley, FLTCOMBATCAMGRUPAC

*HMCS **Regina** fires a Harpoon missile in the Pacific Missile Firing Range off Hawaii during the Rim of the Pacific Exercise, 14 July 2008.*

aspirations. What is within our national ambitions, as declared by the current government, is the capacity, in relatively permissive environments, to deliver a force ashore and to sustain it there indefinitely without reliance on shore-based infrastructure. As Haiti so recently demonstrated, there is a whole range of operations where such a capacity would permit Canada to project its power and influence to defend the global system from the sea.

The world's littoral regions – that strip of the planet where land meets sea, extending landward or seaward as far as force and influence can be projected from either environment – will not always be as permissive as we saw in Haiti. Nonetheless, we will be drawn to these regions by our vital national interests. Over three-quarters of the world's population lives within 200 nautical miles of a coast and over half of them within dense urban landscapes. Four out of five of the world's capital cities are to be found in the littoral region, and virtually all of the world's productive capacity. Moreover, these regions are where the effects of massive change along every human axis – social, demographic, cultural, technological and climatological – are increasingly being concentrated. Accordingly, there is little doubt that this is where Canada's future joint force will operate, almost invariably as part of a large multinational operation led by our closest allies.

As a battle space, the world's littoral regions are becoming cluttered and congested, requiring the precise delivery of a whole range of effects, from the need to win the 'battle of competing narratives' at one end of a spectrum to the need to take and hold ground at the other. As we're seeing in Afghanistan, we will usually be more constrained by international law and the values of Canadian society than the potential adversaries that Canada and its allies are likely to face. These are adversaries who have learned to integrate the warfare traditions of Clausewitz and Mao Zedong and to organize all means of violence – criminal, irregular and conventional – to achieve their political ends. This will make for future joint operations of great ambiguity and complexity.

There are important implications in this for Canada's maritime forces, including the fundamental capacity to fight and prevail in combat at sea against a potentially far broader and more comprehensive range of threats than ever before. Our maritime forces must continue to be organized, trained and equipped to control events in contested waters. The price of admission to these high-end capabilities, including the capacity to lead multinational maritime operations, is unlikely to go down.

It is far from certain that the West will continue to enjoy its current technological and materiel advantages, and Canada is unlikely ever to enjoy the advantage of numbers. This means that we must become far more agile and adaptable as an integrated fighting force. Haiti demonstrated what we could achieve as an integrated joint team in the face of great tragedy, and this operation achieved more than a dozen exercises and months of doctrinal discussions could have achieved. But much more remains to be done.

The operation in Haiti illustrated one of our clear strengths – our people. They are the key to our future success, and so they must remain a key area of investment. This is not merely a matter of bringing the number of sailors up to the navy's authorized strength, or of ensuring that the Canadian Forces adopt policies that make sense for a Canadian population that is evolving dramatically. This is about making sure that our people have the skills and competencies that hybrid warfare will demand, and deny to potential adversaries the advantages we now concede them in terms of their superior knowledge of local terrain – physical, social and cultural.

The government entrusts the Canadian Forces with the responsibility to defend Canada, defend North America and contribute to international peace and security. The navy has vital roles to play in all of these enduring pillars of defence policy. Defending the global system is fundamental to all three, as is the capacity to defend from the sea the conditions that permit the global system to prosper. This is our unique contribution towards Canada's prosperity, security and national interests, and has been since the navy's creation in 1910. This is what makes Canada's globally deployable, sea control navy of enduring relevance in this maritime century.

Notes

1. This article is based on opening remarks made by Vice-Admiral McFadden during a panel discussion to examine "National Interests and Power Projection: Required Capabilities," at the 73rd Annual General Meeting of the Conference of Defence Associations, held in Ottawa, 3 March 2010.
2. Tomé Pires, *Suma Oriental of Tome Pires: An Account of the East, from the Red Sea to China, Written in Malacca and India, 1512-1515.*

National Interests and the Naval Service of Canada at the Beginning of its Second Century

Brian Wentzell

Photo: Courtesy of the Canadian Naval Centennial

*A painting by Peter Rindlisbacher – "HMCS **Niobe** at daybreak" – portraying HMCS **Niobe** during the First World War.*

This issue of the *Canadian Naval Review* celebrates the centenary of the Naval Service of Canada. On 4 May 2010 Canadians will have the opportunity to celebrate a century of dedicated and honourable service by the officers, men and women, past and present, of their navy.

In the next few years major shipbuilding and modernization programs will be started that will shape the naval fleet and capabilities for the first half of the new century. Will the future provide the country with a fleet designed to support Canada's broad national interests or just a limited number of those interests? Will the Canadian public support large expenditures of hard-earned tax dollars on a naval force when the economy and health care remain the key priorities of most citizens? In other words, why does Canada have a navy? Irrespective of the final choices made, it is important for all Canadians to think about the future of their navy and how it can support the national interests of their country.

Most Canadians live far from the ocean and have little awareness of maritime affairs. People who live far from the sea do not have an opportunity to view the continuous activities of shipping, fishing, oil and gas production, scientific research, cruise ship visits, yachting, government and naval activities. Thus the importance of the sea for transportation routes, the harvesting of natural resources, and the security of the country is little understood. Hence, many Canadians do not understand the role or work of the naval service in advancing the national interests of their country. They suffer from a condition called 'maritime blindness.' This condition is found in many countries. As the US Navy has learned, to combat this condition it is important for the navy and naval-minded citizens to have a "conversation with the country" to explain the relevance of the navy to the future of the country and its citizens.[1]

This issue of the *Canadian Naval Review* is an important part of the Canadian conversation. To understand the

future, it is useful to reflect briefly on the past, and in particular the reasons that led to the formation of the Naval Service of Canada on 4 May 1910.

The Navy's Historical Context

The navy was intended to fill the gap created as a result of the decision of the British government to withdraw the Royal Navy (RN) from its permanent bases at Esquimalt and Halifax in 1907. The withdrawal was precipitated by the German naval rearmament program that required the RN to revise its strategy and consolidate its fleets into home waters. The emergence of this new military threat and the new British *Dreadnought* technology led to a change in strategy for equipping and deploying the naval fleet. Its immediate success led to an expensive naval armament race with Germany and other states. In the Pacific Ocean, Japan, fresh from defeating the Russian fleet in 1905, saw opportunities to expand its political and economic power in the Far East. The first wisps of the winds of change that led to the decline of the British Empire and the emergence of the United States and the Soviet Union as superpowers by the middle of the 20th century were beginning to blow.

Photo: National Archives of Canada

*The Right Honourable W.L. Mackenzie King, Prime Minister of Canada, inspecting the ship's company of HMCS **Assiniboine** in St. John's, Newfoundland, 1942.*

The growing German external threat to the United Kingdom and British Empire in 1910 led to the formation of the Naval Service of Canada. It was intended that the RN would still take care of the big political and naval threats to the British Empire while Canada would focus on the issues of local defence and fisheries protection. In terms of Canada's national interests at that time, the new navy would contribute to the sea defences of both the country and the British Empire.[2] The RN continued to fulfil the strategic defence and trade protection roles in distant waters. For Canada, this was a tidy arrangement.

National Interests

Every country defines its own national interests. Although much has changed in Canada since 1910, there has been less public consideration of the definition of national interests than one might expect. As Dr. R.J. Sutherland, a former Chief of the Defence Research Board, first identified nearly half a century ago, there are certain interests or "invariants," as he referred to them, which have changed little since Confederation in 1867.[3] He identified the invariants as *geography*, *economic potential*, *natural alignments* and *alliances*.[4]

As part of North America, Canada is geographically isolated from the other continents but closely connected with the United States. As Canada and the United States occupy most of the continent, there are complex and changing security issues that must be continually addressed. Since the Ogdensburg Agreement of August 1940, the two countries have had a mutual defence arrangement that has withstood the tests of the Second World War, the Cold War and, thus far, the asymmetric warfare following the events of 11 September 2001.

Prime Minister William Lyon Mackenzie King speaking in 1938 explained this unique relationship clearly. He noted that:

> We too, as a good and friendly neighbour, have our responsibilities. One of them is to see their country is made as immune from possible invasion as we can reasonably be expected to make it, and, that should the occasion ever arise, enemy forces should not be able to make their way, either by land, sea or air, to the United States across Canadian territory.[5]

In other words, Canada would do what was reasonably necessary to prevent its sea, land and air space from being used to attack the United States. Canada could not do otherwise without impairment of its sovereignty. King recognized the natural alignment of the two countries due to geography and economics.

Professor Paul Buteux revisited Sutherland's work in 1994 and found that, while Sutherland's basic analysis and thesis remained valid,

> [T]he political context and the policy implications of Canada's strategic situation are in many important ways different now from what they were over thirty years ago. It is not that the strategic invariants have changed as that their political and military significance have altered in the light of changed circumstances.[6]

Geography assured that there was an important conti-

nental dimension to Canadian defence and security policies. Buteux concluded that "[i]t became an axiom of Canadian policy that the defence of Canada was inseparable from that of the United States and that *in extremis* Canada could be sure of the aid of the United States in its defence."[7] However, this should not be taken for granted as an unconditional guarantee. American policy-makers assess their international relationships based on whether the partnering countries have the ability to contribute meaningfully to their own defence and the defence of their allies. The combined efforts of Canada and the United States in erecting and maintaining the defences of North America from nuclear-armed manned bombers during the 1950s and early 1960s is evidence of this interdependent relationship.

Following the events of 11 September 2001, Major Jeff Tasseron revisited the invariants as they concerned the defence policy-making process. To him, Sutherland's invariants were "an untidy collection of factors which shape and limit defence policy."[8] However untidy, they cannot be ignored.

During the Cold War the geographic invariant remained the overwhelming factor in the security of the country. While the threat of the Soviet Union has passed, new threats to sovereignty have emerged. Today, international terrorism is frequently identified as the main threat to security but Canadians must consider other more serious threats. These threats would include competition from other countries, using economic means, for natural resources located in seabed or remote land areas, or demand for unrestricted access to trade routes claimed to be within Canadian jurisdiction. Economic activities can threaten Canada's sovereignty and political and economic well-being.

Photo: US Navy

*HMCS **Winnipeg** on exercise with the guided-missile destroyer USS **Mustin** in the Pacific Ocean, 2 July 2009.*

Photo: National Archives of Canada

Officers and men of an unidentified motor torpedo boat of the Canadian-manned 29th Flotilla, Royal Navy, Ramsgate, England, May 1944.

We must keep in mind, however, as Rear-Admiral R.W. Timbrell wisely noted in 1979, that security and sovereignty are not the same thing. As Timbrell states:

> Sovereignty is not the same as security. Without security, sovereignty cannot mean very much…. Moreover, some of the sources that threaten our sovereignty could be our strongest allies for the preservation of security. Whereas our security is bound up with our strongest allies ... our sovereignty is our own problem, to be defended by ourselves alone.[9]

Security in the 21st century means more than military and naval defence. It is a 'whole-of-government' issue that involves, for example, the enforcement of criminal laws, immigration laws, customs regulations, environmental rules, health protection, fisheries and natural resource protection, search and rescue, aerial and marine safety. Security operations involve all levels of governments. This means that the Canadian Forces (CF) are not necessarily the prime responder to a particular security threat.

This is important, and a key element of any future security conversation.

Interests and Defence Policy

With this background, it is time to pose an important question: why does Canada have armed forces? Dr. W.A.B. Douglas posed this question in an article of the same title in *International Journal* in 1975. Politicians, most notably the Prime Ministers of Canada, who correctly assessed "the desires of the electorate"[10] in the early 20th century, used the armed forces as symbols of influence within the British Empire and as symbols of Canadian independence from the United Kingdom. But the political force that had historically wielded the greatest influence on defence policy, the United Kingdom, was replaced during and after the Second World War by the United States. This had major implications on Canadian visions of security and defence – and now politicians used the armed forces as

symbols of influence and independence in relation to the United States.

The size of the contribution of armed forces in the Second World War became an important factor in Canada's struggle for recognition. By concentrating the forces deployed overseas, Canada could retain a significant degree of command and control when operating within larger British or American formations. Neither country wanted such Canadian independence but Canadian military and political officials would not be denied. In the case of the Canada-US relationship, the Permanent Joint Board on Defence agreed in 1943 that "[a]dministrative control and discipline would be a national responsibility. Under certain circumstances tactical command would be exerted by one commander over both United States and Canadian forces."[11] There was therefore a realization in Canada that "no nation would be able to preserve its self-respect unless it was prepared to contribute sufficient armed forces to prevent or resist future aggression."[12]

Part of that sufficiency was the businesslike technical approach and professionalism first exhibited during the Korean War. Since then the professionalism of the CF has continued to increase and has been recognized to be of value by the United States in operations at sea and on land in Afghanistan. It has also been recognized in the air defence of North America where integrated operations are routinely undertaken and command flows back and forth between each state. Canada's active participation, in terms of secondment of personnel and combined deployments of units and formations, is the key to the degree of trust and confidence given to the CF by the US military.

In this discussion, Douglas partially answers his own question. He concludes that:

> It would be true to say that we have armed forces because policy-makers – in the main prime ministers themselves – found them to be useful for achieving national goals, particularly recognition as an independent country. But this is not the whole answer, nor is it possible to arrive at the whole answer until more work is done on the subject.[13]

In addition, he points out that "military tradition … forms part of the Canadian identity."[14] Tradition, however, cannot provide the whole answer to why we have armed forces either. There must be something else. The CF exist because in the world today, "violence and conflict are prime factors in decision-making. The nation needs protection even against vaguely defined threats."[15] As a trading state, Canada needs a stable, orderly world if it is to prosper. The CF have contributed positively to international stability.

There are thus many elements to why Canada has armed forces. Douglas concludes his answer by stating,

> [S]ince Confederation armed forces have gradually become more important in the attainment of national goals; ... they have served as increasingly necessary instruments of an independent national policy by prime ministers who came to believe like Lester Pearson that 'sovereignty is not enough.'[16]

Interests and Contemporary Security Policy

The role of national interests in the determination of Canadian defence and security policy should be a subject that is considered from time to time. And, interestingly, in recent months the matter has arisen in the US Naval Institute's *Proceedings* and the *Canadian Naval Review*.[17] I am referring to two articles that deal specifically with the future role of the Canadian Navy, one written by an American naval strategist and the other by the Chief of Maritime Staff (the Commander of the Canadian Navy). In addition, there are articles in the same issue of both journals that caution Canada not to over-emphasize its sovereignty and thereby ignore its multilateral interests through the denial of the right of transit to the United States and other countries through the Northwest Passage.

In the December 2009 issue of *Proceedings*, Commander James Kraska, a Professor of Interational Law at the US Naval War College, wrote of his strong belief in the freedom of the seas. He also wrote of his deep suspicion of the spread of maritime domain awareness philosophy, knowledge and technology to coastal states that may attempt to restrict the ability of the US Navy to roam their coastal waters and passages at will. He complained that maritime domain awareness "could be used to deter or impede lawful activity in the oceans. Its development has been divorced from a calculation of the greater strategic oceans interest of the United States in preserving global freedom of the seas."[18] He also noted that:

> Some coastal nations have shown a willingness to use (or more accurately misuse) technical, legal, and policy advances in maritime governance as opportunities to enforce excessive maritime boundary claims, market illegal claims of sovereignty or jurisdiction over the oceans, or impose unlawful restrictions on the rights and freedoms of navigation.[19]

Amongst the specific countries that cause him concern are Canada, Australia, China, North Korea, Vietnam and Libya.[20] It is egregious that an officer of the US Navy

would include two of his country's staunchest allies in a group of states that are among the least friendly to his own country. It appears that even traditional friends and allies of the United States must yield their sovereignty to the unilateral demands of the remaining superpower or risk being painted as enemies of that state.

It is interesting to compare this article with his recent article published in the *Canadian Naval Review*. In this second article, Kraska provides advice to Canada on how it should exercise its sovereignty in the Arctic Ocean. His focus is on the dilemma posed by the Northwest Passage. In his opinion,

> Canada has painted itself into a corner.… [O]n the issue of the Northwest Passage, over the last few decades Canada has gradually, if perhaps unintentionally, embarked on a rather unilateralist course by claiming sovereignty over large areas of the Arctic Ocean. Canadian exceptionalism in the Arctic Ocean has weakened the ties between the two countries [Canada and the United States], and provided an unflattering glimpse into how governments in Ottawa – both on the left and the right – have irresponsibly used the Arctic to score political points at home and reject multilateralism abroad.[21]

While there is some merit to the argument that talk about the Arctic has been used to gain domestic political points, Kraska's point lacks credibility because the United States steadfastly refuses to sign the United Nations Convention on the Law of the Sea (UNCLOS). His country subscribes to blatant unilateralism to protect its national maritime interests. He denies that the Northwest Passage is subject to Canadian sovereign jurisdiction, and advocates complete freedom of transit for commercial and naval shipping through and under the passage and for air transit over the passage.[22] The right of transit effectively precludes the country, in whose territory the passage exists, from any jurisdiction other than the right to counter an act of war. However unhelpful his rhetoric may be, Kraska is right to note that the solution is multilateral negotiations under the provisions of UNCLOS to resolve the complex issues facing Canada, other Arctic sea-front countries, and potential travellers through the Arctic Ocean. These discussions may, however, proceed in the absence of his country.

In the same issue of *CNR*, Dr. Stanley Weeks offers a different but predictable perspective for the future of the Canadian Navy.[23] He discusses the process of developing a new naval strategy. The discussion assumes that Canadian national interests have already been considered and that the maritime strategy flows from the defence priorities as identified in the Canada First Defence Strategy, which are: (1) the defence of Canada; (2) the defence of North America; and (3) collective defence.

From an American perspective, he acknowledges that the US Navy has too many tasks and too few ships to fulfil its requirements. This has implications for the Canadian Navy. Weeks observes that,

Photo: USN released

*HMCS **Algonquin** is shown underway in close formation with the **Nimitz**-class aircraft carrier USS **John C. Stennis** and the guided-missile destroyer USS **Ford** during Rim of the Pacific Exercises in 2004.*

Photo: Cpl Dany Veillette, Canadian Forces Joint Imagery Centre

Prime Minister Stephen Harper, Minister of National Defence Peter MacKay and Commander Alex Grant, Commanding Officer of HMCS ***Toronto****, view HMCS* ***Corner Brook****, CCGS* ***Pierre Radisson*** *as three CF-18 Hornets fly overhead during* ***Operation Nanook*** *off of Baffin Island, 19 August 2009.*

Photo: MCpl Andrew Collins

> The Canadian Navy will have a sympathetic friend in the US Navy as it continues to acquire more effective maritime capabilities, particularly in the areas of North American maritime defence and global deployments. But it will be important to address with US naval leaders the upcoming gap in deployable Canadian ships, and especially to preserve the overall numbers of Canadian ships – these numbers are already at a minimum to maintain a globally deployable Canadian naval force.[24]

Thus, Weeks considers present Canadian Navy plans – if implemented in a timely fashion and preserving the expeditionary task group concept – to meet the minimum US expectations with respect to Canada's contribution to the defence of North America and its alliance obligations. It is interesting to note that he acknowledges the navy's lead in maritime domain awareness and its roles in the Arctic and homeland defence. He notes the difficulties posed by the civilian nature of the Canadian Coast Guard. The current security policy complicates the navy's remit because there are no alternatives to the use of naval forces for executing constabulary tasks.

The link of naval policy to national interests was addressed, without elaboration, by Vice-Admiral Dean McFadden – Commander of the Canadian Navy – in his article "Ready Aye Ready" in the December 2009 issue of *Proceedings* mentioned earlier. He described the Canadian Navy as,

> [A] globally deployable sea-control navy, one of the world's finest. We operate in some of the most daunting waters on the planet – Canada's three ocean approaches – where we serve as the custodian of our sovereignty…. Canada's Navy is an outcome of our national interests, as dictated by history and geography.[25]

Vice-Admiral McFadden identifies the relevant national interests as "the need to ensure our jurisdictions are upheld in one of the world's largest maritime estates, coupled with our deep and abiding stake in a stable global order, at sea and ashore."[26] Citing the Canada First Defence Strategy, he notes that the strategy "reaffirms three enduring tenets: defend the country, contribute to the defence of North America, and contribute to global security."[27] However, as he admits, Canadians suffer from maritime blindness and their politicians continue to defer strategic decisions about re-equipping the navy.[28] Therefore, the question, 'why does Canada have a navy?' remains unanswered publicly.

In an interview during the News Network program "Power and Politics" on 18 January 2010, the Minister of National Defence, Peter MacKay, stated that the CF are expeditionary forces and are therefore well positioned to support naval, army and air operations in the Western Hemisphere and around the world. While this statement does not mention the domestic roles of the CF (for example, the support for the Vancouver 2010 Olympics and search and rescue operations), his enthusiastic support for expeditionary activities reinforces the importance attached to operations undertaken with international partners. However, the naval response to the earthquake in Haiti was merely a destroyer and a patrol frigate. As was the case in the Hurricane Katrina humanitarian operation in 2005, the replenishment ship, HMCS *Preserver*, was not available due to refit requirements. Without its own support ship, the Canadian Navy is dependent upon the support ships of other countries to maintain its expeditionary capabilities. This does not reflect well upon the Minister of National Defence and the Prime Minister whose government has proven to be unable to launch a shipbuilding program to date.

However, the statement by the Minister does confirm Dr. Douglas' conclusions about the *raison d'être* of the CF and the Canadian Navy – i.e., they are a symbol of Canadian independence at home and abroad. The professionalism of the soldiers, sailors, airmen and air women is acknowledged worldwide. Most importantly, the CF, including the Canadian Navy, are an essential means for the discharge of our international obligations and enhancement of Canada's foreign influence (to fulfil the invariant of natural alignment and alliances). By having the ability to operate worldwide, the navy has a residual capability to execute the defence of Canada mission in the Atlantic and Pacific Oceans year round (to fulfil the invariants of economic potential and geography).

Photo: MCPl Andrew Collins

A CF-18 Hornet fighter jet, deployed during the 2010 Olympics by the North American Aerospace Defence Command (NORAD), refuels in the air over Vancouver.

The navy is not able to operate in the Arctic except in limited areas during the short summer period. However, if the submarines, Arctic Offshore Patrol Vessels, maritime helicopter and Aurora life extension programs come to fruition, the protection of economic potential and geography will take on a three-ocean dimension. Thus, the navy of the 21st century, through being equipped, trained and structured to satisfy the priorities of the Canada First Defence Strategy, actually serves Canada's national interests.

Conclusions

The challenge of garnering public and political support remains. It is time to start the conversations with the country to answer the following questions:

- Should the navy primarily focus on the defence of Canadian sovereignty and domestic security or should it be primarily employed as an expeditionary force to gain recognition of Canada as a leading middle power in the world?
- Should constabulary and humanitarian tasks (for example, anti-piracy patrols and natural disaster relief) take precedence over traditional military tasks?
- Should substantial sums of taxpayers' money be committed to the renewal of the navy's fleet and revival of the Canadian shipbuilding industry or should ships be purchased from foreign designers and shipyards?
- Should the navy be accorded funding precedence over the air force and army for the next 15 to 20 years while the new fleet is being constructed?

In other words, we need to discuss, if Canada chooses to have a navy, what it should be used for and what level of resources should be committed to it. Let the conversations with the country begin.

Ready Aye Ready!

Notes

1. Stanley B. Weeks, "Considerations for a Strategy of Future Canadian Sea Power," *Canadian Naval Review*, Vol. 5, No. 3 (Fall 2009), p. 27.
2. W.A.B. Douglas, "Why does Canada have Armed Forces?," *International Journal*, Vol. 30, No. 2, "Force and Power" (Spring 1975), p. 263.
3. R.J. Sutherland, "Canada's Long-Term Strategic Situation," *International Journal*, Vol. 17, No. 3 (Summer 1962), pp. 199-233.
4. *Ibid*., p. 201.
5. Prime Minister William Lyon Mackenzie King, quoted in *Ibid*., p. 202.
6. Paul Buteux, "Sutherland Revisited: Canada's Long-Term Strategic Situation," *Canadian Defence Quarterly* (September 1994), p. 5.
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8. Major Jeff Tasseron, "Facts and Invariants: The Changing Context of Canadian Defence Policy," *Canadian Military Journal*, Vol. 4, No. 2 (Summer 2003), pp. 19-29.
9. Rear-Admiral R.W. Timbrell, "Address to the Royal United Services Institute," Victoria, BC, 21 March 1979, quoted in *Ibid*., p. 20.
10. Douglas, "Why does Canada have Armed Forces?," p. 261.
11. *Ibid*., p. 272.
12. *Ibid*., p. 273.
13. *Ibid*., p. 281.
14. *Ibid*., p. 282.
15. *Ibid*., p. 283.
16. *Ibid*.
17. Vice-Admiral Dean McFadden, "Ready Aye Ready," US Naval Institute *Proceedings*, Vol. 135/12/1282 (December 2009), pp. 34-39; and Stanley B. Weeks, "Considerations for a Strategy of Future Canadian Sea Power," *Canadian Naval Review*, Vol. 5, No. 3 (Fall 2009), pp. 23-27.
18. Commander James Kraska, "The Dark Side of Maritime Domain Awareness," US Naval Institute *Proceedings*, Vol. 135/12/1282 (December 2009), p. 57.
19. *Ibid*., p. 58.
20. *Ibid*.
21. Commander James Kraska, "A Way Out for Arctic Diplomacy," *Canadian Naval Review*, Vol. 5, No. 3 (Fall 2009), p. 17.
22. *Ibid*., p. 20.
23. Weeks, "Considerations for a Strategy of Future Canadian Sea Power."
24. *Ibid*., p. 27.
25. Vice-Admiral MacFadden, "Ready Aye Ready," p. 35.
26. *Ibid*.
27. *Ibid*.
28. *Ibid*., pp. 36-37.

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Dangerous Waters: HMCS *Winnipeg* Tackles Piracy in the Gulf of Aden

Commander Craig Baines

In February 2009, HMCS *Winnipeg* sailed from Esquimalt Harbour for what ended up being a unique six-and-a-half month deployment that included a counter-piracy mission and two exercises with two different US Navy Carrier Strike Groups. What follows is a personal account of that experience.

Even though piracy has never really gone away, as evidenced by the problems with pirates in the Straits of Malacca and elsewhere in recent years, it is still shocking to hear of the successful attacks by Somali pirates in the busy shipping lanes of the Gulf of Aden. As a feeder to the Red Sea, the Gulf of Aden represents a fertile hunting ground for the Somali crime organizations which employ disaffected youth as pirates to hijack and then hold for ransom civilian shipping. The ransoms are often in the millions of dollars, with the ship's crew and cargo being used as bargaining chips. Some ships have been held for up to six months as negotiators tried to reach an agreeable sum. Being hijacked is a violent and awful experience that takes a considerable toll on a ship's crew. It is not surprising therefore that the problem of piracy came to the top of the international maritime security agenda in 2008 and 2009.

As a result, a number of maritime coalitions were formed, organized and then sent to the Gulf of Aden to deal with what was no longer an emerging problem but a full-fledged menace to international shipping. In early 2009, NATO made the decision to join the fight against piracy and assigned its Standing NATO Maritime Group 1 (SNMG1) to conduct counter-piracy operations in the Gulf of Aden from early March 2009 until the end of April 2009.

SNMG1 had originally planned to do an out-of-area deployment as far as Australia with port visits in Pakistan and Singapore along the way. It would have been the first time SNMG1 conducted such a deployment and a lot of effort had gone into the NATO plan to execute these goodwill visits and exercises. When SNMG1 was

Photo: Ed Dixon

*HMCS **Winnipeg**'s fo'c'sle party hauls in the forward lines as the warship leaves Esquimalt, to join the Standing NATO Maritime Group 1 (SNMG1) in February 2009.*

Photo: DND

*A purse seining net fouls HMCS **Winnipeg**'s starboard shaft and propeller.*

first assigned to the counter-piracy mission, it was still envisaged that the group would carry on to Australia to complete its visit. However, SNMG1 ended up extending its time in the Gulf of Aden until July 2009 in response to the ongoing threat of piracy in that area.

In 2008, HMCS *Winnipeg* was given the mission to join SNMG1 in early 2009 as part of her previously scheduled deployment. *Winnipeg*'s deployment was shaping up to be quite unique in that she would work with two carrier strike groups in exercises that bracketed the NATO commitment. First she would work with the *John C. Stennis* Carrier Strike Group and the South Korean Navy during Exercise Foal Eagle, and then with the *George Washington* Carrier Strike Group and the Australian Navy in Exercise Talisman Sabre. While the possibility of a counter-piracy mission by NATO was actively being discussed by the time *Winnipeg* departed Esquimalt on 5 February 2009, it was still not definite and was considered only 50 per cent likely.

For the ship's team, this posed a number of challenges. Clearly the ship would have to be prepared for this mission should it come about, but at the same time, there were numerous other objectives to be met and exercises for which to prepare. Fortunately, the ship was scheduled to do air work-ups en route to Hawaii to integrate her Sea King helicopter detachment, so this provided the team with an opportunity to consult with the West Coast Sea Training Organization to develop possible tactics and procedures against the piracy threat (in between battle problems and simulated helicopter emergencies).

Unfortunately, three days out of Esquimalt, during the early morning hours, the ship had a major engineering emergency. The starboard shaft refused to turn and it was suspected that a fishing net or line had become entangled in the propeller. Due to the sea state, it was too rough to send divers down to confirm and possibly rectify the problem. The decision to continue on one shaft until divers could be sent down turned out to be a relatively easy one given the unpalatable alternative of returning home and potentially derailing the entire deployment schedule.

It turned out that a large purse seining net had enveloped the starboard shaft and propeller and it was well beyond the capacity of the ship's diving team to remove it. The good news was that we knew what the problem was, the bad news was that the ship would have to continue all the way to Hawaii on one shaft. Fortunately, the port shaft had escaped being tangled in the net (a small mercy) and there was still enough fuel to make it to Hawaii providing the diesel engine performed well. It would be close, both in terms of time and fuel, but it was doable.

We had time pressure in that we were scheduled to do a 'Black Missile Exercise' upon arrival in the Hawaiian operating area. This would allow the ship to fire up to five evolved Sea Sparrow missiles during a 24-hour period in a simulated air attack involving sub-sonic targets fired at the ship from ashore. The 'Black' part of this exercise was that the ship would not know when it would be fired upon and would need to react to the threat as it occurred. This was a big event for the ship's crew and they had trained very hard to be ready for it. It would have been disappointing for all of us if we had missed this opportunity. It was also a final readiness check that, while not required, would be nice to have prior to proceeding for points west.

Now that the ship was using only one shaft, we estimated that we would have just 10 hours alongside in Pearl Harbor to get the net cut off and then get back to sea in order to make it to the operating area on time. The range could not delay the exercise and if we did not show up on time, our opportunity would be lost.

Thanks to the good work of the ship's divers and the photographs they had taken, an American dive team was able to prepare for the work and was able to meet the ship upon arrival in Pearl Harbor. As we anxiously watched the clock, the dive team worked without rest to get the net clear of the shaft and propeller. Eight hours after arrival, the team was able to remove the net and one hour later we were on our way to the operating area. It was with relief that we arrived at the range on time and it was with even greater relief and indeed satisfaction, that we returned to Pearl Harbor the next day, minus five evolved Sea Sparrow missiles and our readiness check complete.

Four days later the ship was underway and headed for our next port visit to Okinawa, Japan. The plan was to visit Okinawa and then continue on to Pusan, South Korea, as we headed to join SNMG1. It was during this portion of the transit that we received official word that SNMG1 would indeed be conducting counter-piracy operations in the Gulf of Aden. At this point, it looked like *Winnipeg*

would only make it for the last 20 days of a 30-day commitment. Still, whether it was for 20 days or 60, the ship had to be prepared for whatever it might face.

It was arranged with the Chief of Maritime Staff and Canadian Forces Expeditionary Command (who would be our national mission commander) that after completing Exercise Foal Eagle with South Korean and US forces, the ship would head directly to the Gulf of Aden with fuel stops in Singapore and Diego Garcia en route. This would include a night-time high-speed transit of the Straits of Malacca before heading across the Indian Ocean.

Foremost in our minds at this point was developing our concept of operations and the associated tactics and procedures to go along with it. Fortunately, the navy is well prepared for this type of mission given the inherent capabilities it has developed and nurtured for the past 20 years. It was simply a matter of taking our existing competencies and aligning them in the right way to conduct this new mission. Having said that, however, considerable time was still spent in developing our concept of operations and anticipating what we might face so that we would be prepared for any contingency.

We followed a rigorous training regimen on the way to the Gulf of Aden after departing Exercise Foal Eagle to ensure that we could hit the ground running and be proficient in our operations. Integrating the helicopter, dealing with rules of engagement (both national and NATO), practising warning shots, being prepared for possible detainees, refining communications, and preparing our boarding party for a different type of boarding operation were all at the forefront of this training plan. As I look back, I cannot help but be impressed by the work ethic of the crew as we undertook this training as I am not sure anyone really believed that we would actually see, never mind deal with, a modern-day pirate. How wrong we ended up being!

My biggest concern during the training process was not our capability in terms of qualification, but our capability in terms of proficiency. There can sometimes be a great chasm between qualification and proficiency and it was important to ensure that we did not mistake one for the other. If we did run into trouble, we could not afford to be debutantes in what could very quickly become a highly volatile and uncertain situation. While we certainly would have overwhelming firepower, we were not certain how the pirates would react to our presence and we needed to get it right the first time.

Photo: WO Carole Morissette, Combat Camera

***Winnipeg**'s Naval Combat Information Operator, Leading Seaman Matthew Wright, manages the surface plot en route to Diego Garcia in the Indian Ocean.*

Winnipeg was scheduled to arrive in the Gulf of Aden on 2 April 2009. On 31 March, *Winnipeg* received word that the German replenishment vessel *Spessart* had inadvertently been attacked by pirates who mistook her for a civilian ship. *Spessart* defended herself and the pirates were apprehended by NATO forces a short time later. We were due to rendezvous with *Spessart* for a replenishment at sea upon arrival on 2 April, so this really drove home to us the nature and proximity of the threat to shipping in this busy sea lane.

Things started to happen very quickly after our arrival. Only a few days after reporting for duty, *Winnipeg*'s helicopter, Palomino 16, came across a skiff approximately 40 feet in length that was absolutely crammed full of people. Fearing a possible human smuggling situation, which is not uncommon in that part of the world, *Winnipeg* closed to investigate. It turned out the boat carried 51 refugees, including women, children and even a baby, who were trying to cross the Gulf of Aden from Somalia to Yemen in search of a better life. They had been at sea for two days and had run out of food and water. After satisfying ourselves that they were indeed refugees and were all there of their free will, we provided them with food and water and allowed them to continue on their way.

Not only in this situation, but in every major interaction that *Winnipeg* had with pirates, the ship's helicopter was instrumental in resolving the situation. Often the helicopter was the first to detect the pirates or was *Winnipeg*'s first response to a developing situation. The serviceability of the helicopter was excellent and it was always available when it was needed. The crews and technicians performed their duties exceptionally well both during missions and

during maintenance periods that were critical to keeping the helicopter available for taskings. As only one of two operational helicopters in the NATO task group, the Sea King became a true force multiplier.

While *Winnipeg* was involved in a number of piracy-related actions in the Gulf of Aden, the events of 18 April 2009 stand out. *Winnipeg*'s Sea King was called into action to support the pursuit of a skiff of pirates who had just attacked MV *Front Ardennes*. The attack had been stopped by a nearby Royal Fleet Auxiliary (RFA) ship RFA *Waveknight*. *Waveknight* looks like a civilian ship, so it was likely that the pirates did not realize that she was actually capable of intervening. Once the pirates realized that they were not going to be successful in their attack, they headed at high speed towards the coast of Somalia which was approximately 60 nautical miles (nm) away. In their minds, if they could reach the coast of Somalia they would be out of reach.

As *Waveknight* did not have a boarding team, it was determined that another coalition asset would have to stop the pirates and conduct the final takedown. Unfortunately for the pirates, *Winnipeg* was escorting a World Food Program (WFP) vessel at the time only 15 nm off the coast of Somalia and was directly in the path of the fleeing skiff. During the pursuit of the pirates, it was decided that USS *Halyburton* would relieve *Winnipeg* of its escort of the WFP ship thus freeing *Winnipeg* to conduct the interception and boarding of the pirates.

Photo: WO Carole Morisseau, Combat Camera

*Sergeant Andy Gervais prepares for counter-piracy operations off the coast of Somalia from HMCS **Winnipeg**'s CH-124 Sea King helicopter.*

Photo: Cpl Rick Ayer, Formation Imaging Services, Halifax

*FGS **Spessart** provides fuel to HMCS **Winnipeg** off the coast of Somalia a few days following the pirate attack on **Spessart**.*

The pirates had already ignored warning shots from Palomino 16 and seemed determined to make it to the Somalia coast. Night had now fallen making the tracking of the pirates more difficult and complicating the task of intercepting and stopping them. The skiff was approximately 30 feet long and was travelling at about 20 knots. While they knew that *Waveknight* and helicopters were still pursuing them, they seemed surprised when the 440-foot *Winnipeg* loomed out of the darkness at 300 yards. The helicopter had vectored the ship in perfectly and with the ship's navigation lights extinguished, the pirates were taken completely by surprise.

However, even with the appearance of *Winnipeg*, the pirates seemed determined to carry on. I have to admit that I was somewhat surprised by their continued resistance as they were clearly not getting away. While they were more manoeuvrable than *Winnipeg* (only just!), the ship had a speed advantage that they could not overcome. The pirates tried to shake the ship numerous times during the next hour in order to escape into the darkness, but could get no further than 300 yards away. They were only 15 nm from the coast of Somalia, so it must have seemed tantalizingly close. At this point it became clear that *Winnipeg*'s .50 calibre machine guns were going to be required to gain the pirates' compliance. After five sets of warning shots and more manoeuvring, the pirates finally capitulated and *Winnipeg*'s boarding team was called into action.

During the pursuit, the ladder the pirates intended to use was clearly visible to the helicopter but by the time the boarding started, the pirates had jettisoned the ladder and

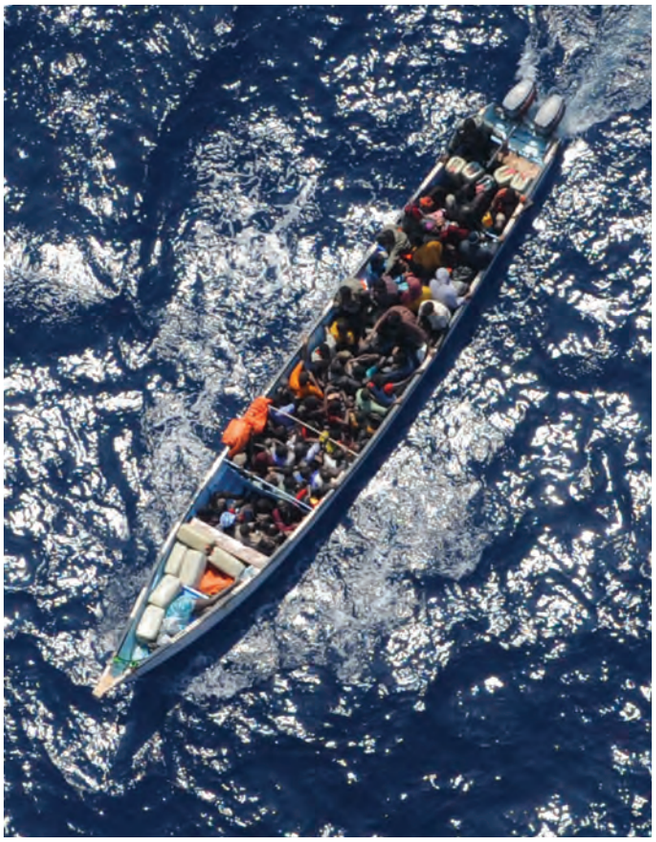

Photo: WO Carole Morissette, Combat Camera

***Winnipeg**'s Sea King investigates a skiff laden with people in the Gulf of Aden.*

the weapons they had used in the attack. This is a common tactic of the pirates in that they attempt to get rid of any evidence before they are boarded. In this particular case, they denied being pirates and only stopped objecting to the boarding when a rifle grenade was found under one of the seats. The Boarding Officer, Lieutenant (N) Mike Baker, noted that they became completely deflated after the grenade was found. After confiscating anything that could be used in support of an act of piracy, *Winnipeg* returned to escort the WFP vessel and *Halyburton* carried on to its next mission.

We were a bit surprised to find out that the pirates were more like street gang members than disaffected fishermen. They often wore numbered jerseys and almost all of them were chewing Khat, the ubiquitous African leaf that is chewed as a stimulant. Typically only one pirate would speak English and he was usually the leader. The boarding team got quite adept at figuring out who the leader was by giving orders in English and seeing who inadvertently reacted.

The pirates were very cognisant that the situation had changed in the Gulf of Aden with the arrival of the warships dedicated to countering piracy, and realized that their freedom of manoeuvre was being curtailed. Even so, they attempted to adapt and carry on with their attacks. They would often disguise themselves as fishermen, and if they saw a warship or helicopter, they would go somewhere else. The mere presence of a warship or helicopter was enough to deter them in almost all cases. However, due to the density of traffic and the size of the Gulf of Aden, they are still able to take advantage of opportunities.

As they adapted, so did the merchant traffic travelling through this dangerous part of the world. The merchant ships know that the longer they can evade the pirates during an attack, the greater the chance that a NATO or coalition asset will be able to intervene on their behalf. During quite a long stretch in May 2009, even though there had been numerous pirate attacks, none were successful due to the actions of the merchant vessels and the ability of the coalitions to react quickly to developing situations.

On 24 May 2009, we were able to turn the tables on the pirates somewhat and stop them before they had even initiated an attack. Palomino 16 had detected two skiffs operating closely together and was able to determine that there was a ladder onboard one of them – a sure sign that they were pirates as fishermen typically do not use ladders to catch fish! They were taken unawares by the helicopter and had been sloppy in concealing their ladder.

As soon as they noticed Palomino 16, the two skiffs separated and attempted to flee in different directions. After firing warning shots, the helicopter was able to vector *Winnipeg* in very quickly to carry out a boarding while it

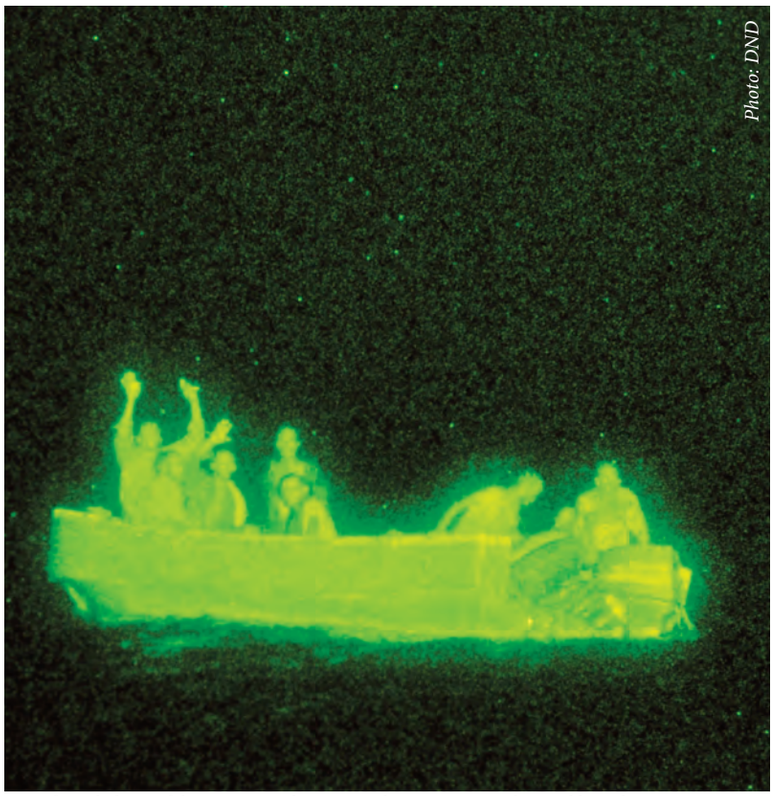

Photo: DND

*An infrared photo of the pirates as they surrender to **Winnipeg**'s naval boarding party on 18 April 2009.*

Photo: SLt Michael McWhinnie, Task Force Public Affairs Officer

Winnipeg *crew members cover the naval boarding party as it approaches a pirate skiff on 24 May 2009.*

Photo: DND

tracked the second skiff. During the pursuit, the pirates had jettisoned the ladder, but this time they had attached it to a buoy (one of the ship's crew wryly suggested that they were running short of ladders in Somalia), which was easily recovered. Upon boarding the skiff, a cache of weapons was found consisting of multiple AK-47s, rocket-propelled grenade launchers, an M-16 and a 9 mm pistol – all of which were confiscated.

After stopping and boarding the second skiff (the helicopter had again fired warning shots to get it to stop), a somewhat humorous exchange took place between *Winnipeg*'s Boarding Officer and the 'master' of the skiff (which was actually a converted sailboat with a diesel engine). The master was adamant that they were not pirates and was effusive in his thanks to the boarding team for scaring away 'those pirates in the other skiff.' Their story was that they had been hijacked by the other skiff and forced to tow it out to the shipping lanes. In fact they said that they were normally 'human smugglers' and not pirates! The absurdity of claiming to be human smugglers and not pirates did not seem to resonate with them. However, it did provide us with a little chuckle. After adamantly affirming that there were no weapons onboard, they expressed surprise when AK-47s were found in their engine compartment and asserted that the 'pirates' must have left them on their boat!

Winnipeg finished her counter-piracy mission in early June after a patrol in the vicinity of the Seychelles and headed east for her next assignment off the coast of Australia for Exercise Talisman Sabre. For the ship's company of HMCS *Winnipeg*, it was a rewarding experience to represent Canada within this NATO coalition and to support the counter-piracy effort against this threat to global shipping. For myself, it was the end of my time in *Winnipeg*. On 22 June 2009 in Melbourne, Australia, I turned over command to Commander Rob Ferguson and reluctantly turned the page on what was easily the most rewarding experience of my career. I will never forget the best part of this opportunity which was working with a great group of Canadians far from our country's shore in support of Canada's interests. *Winnipeg* returned home to Esquimalt in late August 2009 to a wonderful welcome of family and friends.

Winnipeg *received the Canadian Forces Unit Commendation on 22 June 2009 for its counter-piracy efforts as part of SNMG1. Commander Craig Baines is currently a student on a year-long French course.*

Needed: Trust, Truth and Temerity

Sharon Hobson

The Afghanistan mission has profoundly altered the Canadian media's coverage of military affairs. After decades of cursory attention, often directed towards the more scandalous events, news outlets are now taking their role more seriously. Journalists rotate through Afghanistan on a regular basis, learning much about tactics, organization and the personnel who make up the Canadian Forces (CF). Back home, they have grown more familiar with military roles and jargon as they continue to cover the CF in their domestic and expeditionary roles. Military leaders from the 1980s and 1990s would have given a lot for this kind of attention. Instead, their concerns about an under-equipped military were scarcely noted.

The military now has a platform and should use it. While the army has grabbed much of the attention, the navy and air force should take advantage of the media's newfound interest. In particular, the navy is due for some major refurbishing of its capital equipment and should be talking about those requirements now.

One of the lessons of the 1990s is the importance of establishing good relations with the media, before the impact of hard news hits. The first reaction of a journalist who has been surprised is often suspicion or anger. We are not talking about secrets vital to national security but, rather, multi-billion dollar procurements or new policies that should be debated fully in Parliament. There is no reason why top military officials shouldn't be able to lay out the various options by way of background.

Vice-Admiral Dean McFadden, Chief of the Maritime Staff (CMS), has conceded that the navy has not explained itself to Canadians well. He told David Pugliese of the *Ottawa Citizen*, "We have not, as an institution, done a good enough job of explaining [the navy]."[1] Taking personal responsibility, he said:

> I need to do a much better job of explaining what my needs are, both internal to the institution and also externally. Why does this country need a Navy? Why is that important? What is the value of predominately young Canadian men and women choosing service and why should they be looking at the Navy? I've got a big part to play in that. We need to do a better job in explaining our purpose.[2]

Photo: YouTube

TVO's Steve Paikin interviews Vice-Admiral Dean McFadden on Canada's navy, 3 November 2009.

McFadden is trying. He has been doing interviews with journalists and appearing at various public events. But it will take more than this to raise the profile of the navy. It's going to take some clear guidelines from the top brass to encourage openness and transparency with the media.

Doing so will take some courage. The current government is intent on controlling all information flowing to the general public, with the Prime Minister's Office insisting on approving any statements or interviews. The military, by nature having a penchant for secrecy, has embraced the government's *diktat* and has used 'national security' concerns to deny the media access to information and personnel. While reporters embedded with the troops in Afghanistan have had an easier time, their colleagues back in Canada have had to fight for every scrap of information they can get. Gone are the days when reporters were able to get in-depth interviews with project managers and operational staff.

In fact, the government's approach to dealing with reporters' questions fits with the military's increasing desire to manage the media. Dr. Stephen Badsey, a British military-media specialist, has written about this growing tendency within the military to view the media as something to be controlled or manipulated. He has expressed concern over,

> the appearance in military journals of various democratic countries within the last few years of articles written by middle-ranking officers on the military-media relationship which treat the media

Photo: LCdr Pat Jessup

*Media opportunity with Admiral Dean McFadden and James Wright, the Canadian High Commissioner to the United Kingdom, onboard HMCS **St. John's** in Belfast, 31 May 2007.*

> either as an intrusion or as a source of advantage to the armed forces if manipulated or controlled. That such views are appearing in print, even on a small scale, suggests a much wider absence of understanding of the constitutional role of the media as part of civil society and representative democracy.[3]

This understanding is crucial – the media is the military's main link to the public. As well, the media's role is to dig, inform and educate, and provide some oversight to government actions. The media let people know what is going on and put it in context. When the government or military refuses to provide information to reporters, it is refusing to speak to the public.

After eight years of high-profile army operations, it's time for the navy to reclaim its share of the public's interest. With piracy operations and humanitarian relief, there are opportunities for the navy to show Canadians what it does and what it can do given public and political support. But it won't be enough to issue press releases and provide photo ops. MacFadden needs to encourage his staff and sailors to talk openly with reporters about the hard choices facing the navy and the country. Here are some key guidelines he needs to promote.

Get to Know the Individuals in the Media

The military, and the general public, tend to lump all reporters together as 'the media' so they can deal with them as a group. But reporters come in many varieties – print, broadcast or online media. Some produce weekly or monthly while others face daily or, in the case of bloggers, even hourly deadlines. Their audience can be local, national or international, general interest or highly specialized.

Specialty publications, such as *Jane's Defence Weekly* or *Defense News*, cater to knowledgeable readers with a strong interest in military affairs. Reporters for these publications tend to seek operational and technical details or high-level discussions about policy and doctrine. They don't want to know that a ship has a radar. They need to know what type of radar it is, who makes it and what the model number is.

General interest reporters, on the other hand, need to make information understandable to the general public. They don't necessarily want a lot of details or jargon. They need to focus on what will appeal to an audience that is probably not well informed about military affairs, so they will likely concentrate on an economic or human interest angle.

Those who speak on behalf of the military are increasingly dealing with the generalist media. Consider this analysis of 485 articles published about the Canadian military by six of Canada's largest daily newspapers[4] in 2000. That year 12 journalists wrote on the military more than five times, suggesting more than passing interest in the beat. By 2006, the number of articles that contained a reference to the Canadian military in these newspapers was 1,075. But now there were dozens of journalists who wrote at least five articles on the military, most of them non-specialists.

It's important to know that people being interviewed know with whom they are dealing so they don't waste their own time or the reporter's. They can also avoid embarrassment by knowing a bit about the media. Recently I had a conversation with someone in the Media Liaison Office (MLO) at National Defence Headquarters. I had asked questions about the army's Close Combat Vehicle. The Public Affairs Officer told me it would be quicker to get the information from David Pugliese, who, in addition to working for the *Ottawa Citizen*, is the Canadian correspondent for *Defense News* in the United States. He had asked similar questions earlier. I replied that reporters don't like to rely on each other for information, that we need it from the source. We don't share. She said, "even if you're from the same publication?" I said but we're not. "But aren't you with *Defense News*?" No, I'm with *Jane's Defence* (and have been for 25 years). "Isn't that the same thing?" No, it's not, and the MLO should know this.

It's important to get to know the publications and their reporters. Trust is the key element in the media-military

Photo: MCpl Eduardo Mora Pineda, Combat Camera Imaging Services, Halifax

*Prime Minister Stephen Harper announces $3.1 billion for new upgrades to the **Halifax**-class frigates during a press conference onboard HMCS **Halifax**, 5 July 2007.*

relationship and developing it takes time and effort. Reaching out to reporters in good times, making time to talk about what is happening now, and what is on the horizon, will provide a sound basis for future interactions. When things go wrong, a reporter will be looking for answers and perspective, and one of the best sources is someone with whom the reporter already has a professional relationship.

Don't Lie, Don't Delay and Don't Hide

This would seem like an obvious suggestion, but it needs to be said loudly and often. If a reporter asks a question to which the respondent does not know the answer, s/he should say so. If the person is unable to answer the question for security reasons, the reporter should be told that. The worst thing someone can do is to lie or try to mislead journalists doing their job.

Fortunately, lying is quite rare. Instead, people being interviewed often use other ways to evade answering questions directly. Most play with words. For example, they can be overly precise or frustratingly vague – 'I think,' 'to the best of my recollection,' 'I don't believe so...,' being prime examples. Reporters become suspicious when they hear words like that, and start digging elsewhere.

Another tactic is to promise an answer and then delay past the deadline. This, unfortunately, has become a common practice. These days, reporters have to submit precise questions to someone in the MLO, along with the time by which they need the answers. Too often, a day or so later, a reporter receives a message that the information will not be available in time for the deadline. When it is finally supplied, it comes in the form of an email, usually with bullet points (approved by the PMO), and it is usually inadequate in that it either doesn't answer the question or it leaves the reporter with more questions and the prospect of going through the whole process all over again – and no time to do so.

Before the government clampdown on information, it was possible to get a lengthy interview with 'subject matter experts' within DND, either in person or by phone. Reporters did not have to supply their questions to an intermediary, and the person interviewed would usually be available for follow-up questions by phone. The benefit to the military was that this increased the chances that the reporter's story would be factually accurate and provide the military's perspective. If DND purposely delays its response to miss reporters' deadlines, it hurts only itself – the reporter will file a story but without DND's input.

With Canadians spending over $21 billion a year on defence, it is not unreasonable that taxpayers would expect some account of what their money buys. Unfortunately, big numbers seem to make everyone nervous. And when they're nervous, they shut up. For example, at the time of writing, the Cyclone maritime helicopter is again in the news. After numerous delays, a renegotiation of the contract providing Sikorsky with more money and more time to deliver, the program is experiencing more problems. Neither the Canadian military nor Sikorsky will talk about it, which leaves the field open for speculation about motives and outcomes.

Don't Whitewash

When the military does speak, it often provides only limited or selective information. While it is understandable that officials would want to present events in their best light, the long-term effect is that the CF lose credibility. If no one ever admits there is a problem, a shortage, or a failure, then announcements and briefings begin to sound like a whitewash, and reporters stop listening.

Over the past year, the navy has received a lot of attention for its part in counter-piracy operations in the Gulf of Aden and off the Horn of Africa. In particular, in April 2009, HMCS *Winnipeg* helped save a Norwegian-flagged merchant vessel from a pirate attack, and after doing so, received public congratulations from Prime Minister Stephen Harper. The ship's mission in the region was hailed as a great success, and several news stories appeared with details on the ship's swashbuckling adventures.

However, in January 2010, the *Toronto Star* ran a story based on documents received under the *Access to Information Act* which put a slightly different tint on the mission. It appears that things did not run as smoothly as portrayed by the navy. Rather, a post-operation report by the ship's commander revealed there was insufficient equipment for the boarding parties as well as pressure from NDHQ to reduce the air time of the Sea King helicopters, despite them being "integral to every major piracy event that *Winnipeg* was involved in."[5]

These problems were not noted at the time – perhaps understandably – but they highlight the fact that a mission

does not have to be perfect in order to be a success. Conceding that things could be improved helps to *underline* the achievement, not *undermine* it. And over the long term it builds credibility.

As part of its public relations campaign, the navy is embedding journalists on its ships, both counter-piracy operations and off the coast of Haiti in humanitarian relief operations. The navy can expect, and will likely receive, good news stories on these deployments. But nothing goes exactly to plan, and if reporters are to do their jobs properly, they need to know what works and what doesn't.

In this regard, it's instructive to look at the navy's response to the earthquake in Haiti. Two warships – HMCS *Halifax* and *Athabaskan* – were sent, loaded with medical equipment, engineering supplies, tools and soldiers. But what was glaringly missing was a supply ship which could have carried several times the amount managed by these ships. This was a golden opportunity for the naval staff to talk about the pressing need for a new supply ship program to replace the aging AORs and the abandoned Joint Support Ship (JSS) project.

Some observers did point out that the JSS would be much better suited for this kind of mission and that the government needed to move on this acquisition, but that argument would have carried more weight if the senior leadership had weighed in. Obviously they are unable to criticize the government's decision to cancel the procurement project, but they could certainly have pointed out that the navy was doing the best it could in light of its restricted capabilities. And, yes, if we had a supply ship, we could have carried…. Oh, and by the way, the cost of sending and sustaining one supply ship is considerably less than for two warships…. The navy could have made use of the opportunities to talk about shortfalls and mention possible solutions. These kinds of comments help people understand what the navy needs to do its job.

Conclusion

While it is possible to sympathize to some extent with the military's desire to shut the media out and avoid any potential misinterpretation or unwelcome inquiry into the various facets of military life and operations, the fact remains that the media cannot and should not be ignored. If the military will not speak for itself, reporters will go to others – usually critics – who will speak for it. Those most willing to speak will have their own agendas, which will result in an incomplete picture. The navy's best option is to speak for itself.

Although it's not clear how the media affect public opinion, the fact remains that they are the best means of transmitting information to a large audience. And if the military wants public support, it has to keep the public informed. The media are an essential part of that.

Photo: Cpl Rick Ayer, Formation Imaging Services, Halifax

*HMCS **Winnipeg** escorting MV **Abdul Rahman**, a United Nations World Food Program ship, off Somalia, 19 April 2009.*

With the navy involved in operations around the world, providing humanitarian relief in Haiti, fighting piracy and terrorism in the Middle East and countering narcotics smugglers in North and South America, and with the celebrations planned for its 100th anniversary this year, the time is perfect for talking to Canadians about what the navy does and why and how it does it. But Canadians deserve to know the truth about naval operations and plans, not just selective good news and photo ops. It would be a shame if the navy missed this opportunity to reach out to the people it serves because of misplaced anxieties.

Notes

1. David Pugliese, "Defence Watch blog," 28 October 2009, available at http//communities.canada.com/ottawacitizen/blogs/defencewatch/archive/2009/10/28/can-the-canadian-navy-solve-its–public-relations-problems?
2. *Ibid*.
3. Stephen Badsey, "New Roles for the Media," paper presented at "Taking Stock on Civil-Military Relations," The Netherlands, 11 May 2001.
4. *The Globe and Mail*, *National Post*, *Ottawa Citizen*, *Vancouver Sun*, *Toronto Star* and *Montreal Gazette*.
5. Allan Woods, "Navy's Piracy Mission Troubled," *The Toronto Star*, 9 January 2010.

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Making Waves

Never Forget the Submarine
Amphion

History has a nasty habit of repeating itself yet, ironically, our political and military leaders have a nasty habit of forgetting the lessons of history. The submarine is a good example of the cost of ignoring these lessons.

Three times in our short history submarines have posed a threat to our survival. In 1917 and 1918 German U-boats hunted off our shores, and again during the Second World War the U-boats prowled the Canadian coast sinking shipping at random. Despite efforts to build up the navy to counter those threats, the U-boats had the advantage; the increases in anti-submarine capability were a classic case of 'too little, too late.' During the 40-year Cold War that followed, Soviet submarines, armed with nuclear missiles and torpedoes, freely roamed the offshore area. Even though Canadian anti-submarine forces were good, and often found the Soviets, they were not large enough to be a complete counter to the submarine threat.

Today, we are told, there is no submarine threat to our security or to world peace and so anti-submarine forces are not needed. This is arguable. In some parts of the world submarine construction is a growth industry and there are ample opportunities for countries to buy modern submarines. Although the notion of 'rogue states' mounting submarine blockades has probably been worked to death, there are sufficient tensions between countries that the slide into war cannot be overlooked. Iran, for instance, has a political agenda that most of the West finds discomforting and has a small but potent submarine force. According to some sources, Iran is preparing to increase that capability. As either the means of coercion or as a means of warfare, that submarine threat is a potential problem for the West.

Another important factor that is overlooked is the impact of modern technology on submarine capability. As the Swedish Navy has clearly shown to the Americans with its *Gotland*-class, the silent submarine is a reality and enormously difficult to counter. Billions were spent in the Cold War on anti-submarine systems, but the research and development was severely curtailed once that war was over. Myopia set in and a frequent cry was 'there is no more submarine threat.' Unfortunately, this view fails to appreciate that a Cold War anti-submarine warfare operation against Soviet missile-firing submarines is a very different situation from the continuing need to be able to counter more traditional types of submarines that can be used coercively (with the capability to inflict damage if necessary) to prevent the free use of select bodies of water.

Photo: MCpl B. Rodgers, Formation Imaging Services, Halifax

HMCS ***Corner Brook*** *on Arctic patrol during* ***Operation Nanook****, 14 August 2007.*

Canada now has four submarines and the rationale for their continued use is highly controversial. The Canadian media, for instance, have never accepted their use in post-Cold War operations and have completely failed to grasp their potential for a wide range of situations. All this has been well documented and there is no point in reiterating it here. The point to make is that submarines are equal members of the modern fleet. They can do most jobs that other ships can do but they can also do a number of unique things. With the impending drop in overall fleet capability while the frigates undergo their mid-life upgrade (FELEX), the submarines may well have to fill in the capability gaps. This is not new, it happened in the 1980s when political delays in building the frigates caused a troubling drop in fleet capability, much to the concern of NATO, and the three *Oberon*-class submarines had to undertake a greater share of the Canadian commitment to NATO in exercises and contingency plans.

And so we come full circle. The lesson for Canada is twofold: don't ever forget the submarine as a potential threat; and never overlook the fact that the submarine is a valuable part of the fleet mix easily able to fill unavoidable capability gaps.

Milestones in Canadian Naval History

Photo: DND Imaging Services, Halifax

*HMCS **Niobe** in the graving dock at HMC Dockyard, Halifax, Nova Scotia, no date given.*

Photo: MCpl Michel Durand, Formation Imaging Services, Halifax

*HMC Ships **Protecteur** and **Algonquin** followed by HMCS **St. John's** transiting the Gulf of Oman during **Operation Apollo**, 1 September 2002.*

The fleet Canada has today is only the third designed and built for specific tasks in the navy's 100-year history; the other fleets evolved in less structured ways. For instance, the large Second World War fleet evolved from a handful of destroyers and a modest pre-war plan to acquire a total of 18 destroyers and some specialized anti-submarine warfare (ASW) ships into a force of nearly 100,000 men and women manning and supporting some 470 vessels of various types. Before 1939, there wasn't really a fleet at all, and the navy struggled through its early years to maintain a few destroyers and smaller vessels while plans for more ships were consistently rejected by politicians.

The first of the three post-war fleets was made up of the war-built ships retained as a contingency force and later upgraded to meet early Cold War ASW requirements. The second fleet was the ASW force built to counter the increasing Cold War Soviet submarine threat and modernized later to keep pace with new technologies. The present fleet, although designed during the Cold War, is well suited to the post-Cold War concept of sea power and active internationalism. But those fleets were not distinct entities. Transitions from one fleet structure to the next took place incrementally over several years. In fact, change became a constant factor as ships were modernized and fleets restructured to meet the ever-changing strategic situation.

Conventional wisdom holds that Canadian fleet planning over the past century has been directed by senior officers schooled in the Royal Navy (and, latterly, the US Navy) determined to acquire a so-called 'blue water' fleet modelled in that likeness. However, there is another view of the evolution of the various Canadian fleets which holds that Canadian officers favoured neither a British nor an American model. Rather, they sought a uniquely Canadian model reflecting their years of experience on what they understood the country to need, what they could provide, and what politicians would approve.

The brief chronology that follows is a selection of milestones in the Canadian Navy's 100-year history and provides a context for the articles in this centennial edition of the *Canadian Naval Review*. For those who want to read the navy's history in more detail we suggest they begin with Marc Milner's *Canada's Navy: The First Century* (2nd edition; Toronto: University of Toronto Press, 2010) and Richard H. Gimblett (ed.), *The Naval Service of Canada 1910-2010: The Centennial Story* (Toronto: Dundurn Press, 2009) and then move on to the series of official histories and the wealth of books and journal articles that provide firsthand accounts and analysis of specific events, ships and people.

1881 In July, the steam corvette *Charybdis* was given to Canada by the Royal Navy (RN) with the idea that she could be used to start training for a new naval service. She was deemed unsafe and returned to Britain in 1882.

1904 In response to calls for militia reform, Prime Minister Wilfrid Laurier presented *An Act Constituting the Naval Militia of Canada* to Parliament, but the concept was not adopted despite the RN dockyards in Halifax and Esquimalt being transferred to Canadian control. CGS *Canada*, a third-class cruiser, became the flagship of the Fisheries Protection Service of Canada and was used to train cadets and seaman for the future Naval Militia.

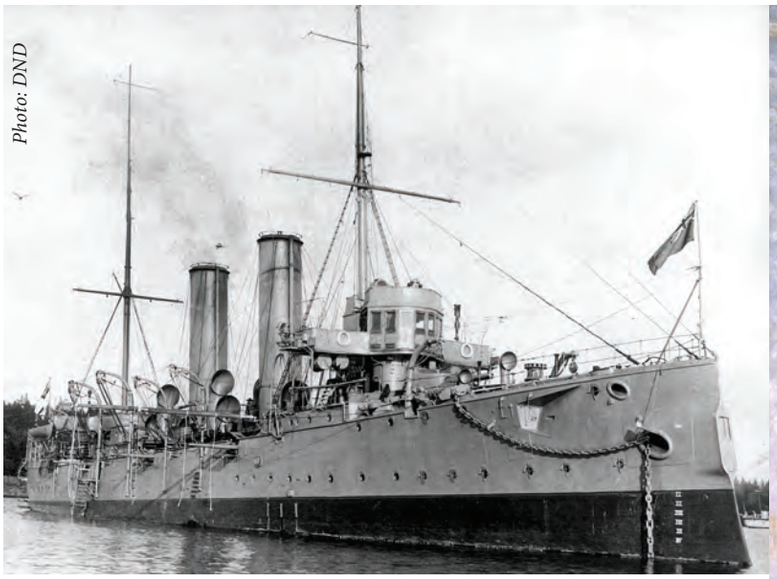
1908 Rear-Admiral Sir Charles Kingsmill, a Canadian who served in the Royal Navy, was appointed to establish a Canadian Naval Militia, based upon the Fisheries Protection Service. The first Canadian naval cadets embarked CGS *Canada*.

1909 During the British *Dreadnought* Crisis, Laurier and Kingsmill avoided being forced into commitments to Imperial defence and accepted the loan of two aging cruisers, *Niobe* and *Rainbow*, until new cruisers and destroyers could be built in Canada.

Credit: National Archives of Canada

Painting of Admiral Sir Charles E. Kingsmill by George Ernest Fosbery.

Photo: DND



***Rainbow** at anchor in Esquimalt, British Columbia, no date given.*

1910 Consensus for a Canadian navy quickly evaporated but Parliament passed the *Naval Service Act* on 4 May 1910 formally establishing the Royal Canadian Navy (RCN). *Niobe* and *Rainbow*, manned by the RN, arrived in Halifax and Esquimalt on 21 October and 7 November 1910 respectively.

1911 The Royal Naval College of Canada (RNCC) was established in Halifax as a step towards creating a national navy. Recruiting of Canadians for the navy proved to be difficult.

1912 Canadian involvement in Imperial defence was fiercely debated in Parliament. The new government, led by Prime Minister Robert Borden, cancelled contracts for new RCN ships and stopped recruiting, opting to pay for three RN battleships instead. Although this plan was quashed in the Senate, the RCN stagnated without a fleet plan.

1914 No. 1 Company Royal Naval Canadian Volunteer Reserve (RNCVR) was formed at Victoria in May 1914, under the oversight of Commander Walter Hose, Captain of *Rainbow*.

At the beginning of the First World War the RCN consisted of two old cruisers, 350 people (plus 250 in the Victoria Naval Reserve) and had no mobilization or expansion plans. The submarines CC-1 and CC-2 were purchased in 1914 from the United States, and the RN sloop *Shearwater* was transferred to the RCN as their tender. The navy conducted coastal patrols on

A painting by Norman Wilkinson, "Canada's Answer," depicting the first contingent leaving Canada for the war in Europe in October 1914. The contingent transported over 32,000 Canadian and Newfoundland soldiers to Britain in 30 passenger liners.

both coasts, guarding against attack by German cruisers, while politicians adamantly refused to be drawn into Imperial defence and the Allied war effort at sea. Canada's contribution was the Army Expeditionary Force.

1917 U-boats attacked shipping on the East Coast and in response coastal patrols were established under Hose. Twelve *Battle*-class trawlers were ordered for patrol and ASW duties – the first major building program for the RCN.

CC-1, CC-2 and *Shearwater* were transferred to the East Coast becoming first RN/RCN ships to use the new Panama Canal, but the submarines were not considered safe for operations in the Atlantic.

1918 RCN Air Service was established on 5 September as the first distinctive Canadian Air Force, based at Baker's Point (Dartmouth), NS, with assistance of the USN. It was disbanded soon after the war ended in November.

1919 Submarines EH-14 and EH-15 (built in Quincy, MA rather than in Montreal where other submarines of that class were built for other navies) were given to the RCN.

Admiral of the Fleet Viscount John Jellicoe was commissioned to study 'Dominion' naval requirements. The Canadian naval staff proposed the creation of a 46-ship navy, over two seven-year building periods (1920-27 and 1927-34) to create a fleet of seven cruisers, 12 destroyers, 18 anti-submarine patrol craft, three submarines and three tenders, all to be manned by 8,500 officers and men. This plan was endorsed by Jellicoe but rejected by the government causing Kingsmill to resign. He was replaced by Hose in 1921.

1920 *Niobe* and *Rainbow* were scrapped, and replaced by the RN cruiser *Aurora* and the destroyers *Patrician* and *Patriot*.

1923 Defence cuts were imposed, reflecting the post-war optimism and the era of naval arms control triggered by the Washington Agreement. *Aurora* and the submarines were paid-off, and operations were limited to training cruises with a small number of port visits in support of foreign policy. RNCC was closed and all officer training was done with the RN. The RCN was reduced to 500 officers and men.

From 1923 to 1931 the RCN consisted of a destroyer and two trawlers on each coast – a force structure reminiscent of the 1904 Naval Militia.

Naval Reserve Divisions were established by Hose in major cities as a way of maintaining a naval presence in Canadian cities. This initiative laid the foundations for naval mobilization in 1939.

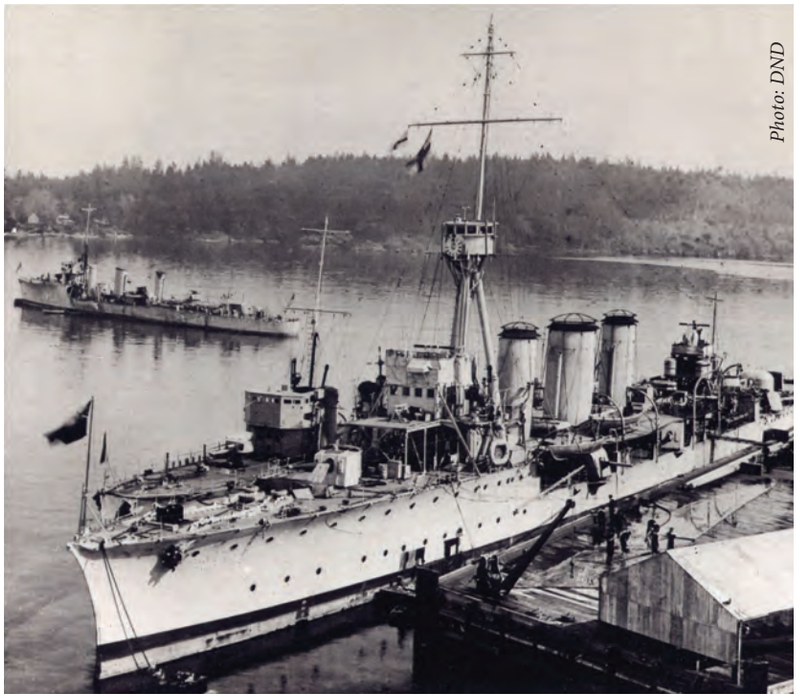


Photo: DND

*HMC Ships **Aurora** (foreground) and **Patriot** and **Patrician** in Esquimalt Harbour, circa 1921.*

1928 *Patrician* and *Patriot* were replaced by *Champlain* (ex-HMS *Torbay*) and *Vancouver* (ex-HMS *Toreador*).

1930 Hose presented a new fleet plan emphasizing the future role of destroyers, rather than cruisers, as the core of the Canadian fleet but the naval budget was systematically reduced from 1930 to 1935, restricting operations and maintenance even further.

1931 *Saguenay* and *Skeena*, the first major warships specifically designed and built (in Britain) for the RCN, were commissioned (22 May and 10 June respectively). They were ordered in 1929 before the financial crisis.

1934 On 1 July, Hose retired and Captain Percy Nelles became Chief of the Naval Staff (CNS) remaining until 1944.

1936 The Canadian Joint Staff recommended that over the next five years the RCN be increased to six modern destroyers and four minesweepers. This assessment was later increased to nine destroyers and eight minesweepers with the necessary infrastructure to defend the two naval ports. Subsequent estimates called for 18 destroyers to provide a full flotilla on each coast.

1937 The RCN bought two destroyers from the RN – *Fraser* (ex-HMS *Crescent*) and *St. Laurent* (ex-HMS *Cygnet*) – to replace *Champlain* and *Vancouver*. Both were paid-off in November 1936.

1938 The naval budget was increased and two more destroyers, *Ottawa* (ex-HMS *Crescent*) and *Restigouche* (ex-HMS *Comet*), were bought from Britain as part of a modest re-armament program. The destroyers began training with the RN's America and West Indies Squadron. A seventh destroyer, *Assiniboine* (ex-HMS *Kempenfelt*), was purchased in October 1939 as a flotilla leader.

1939 The 1939-40 defence estimates included a further increase in the RCN's budget. To meet the long-term objective of operating 18 destroyers and to put pay to lingering interest in cruisers the new plan called for the RCN to buy the latest RN *Tribal*-class fleet destroyer which was able to fulfil many of the cruiser's functions.

The Second World War starts in September. At that time, the RCN consisted of a dozen ships and 1,800 people. Four of the seven destroyers were stationed on the West Coast and were transferred to Halifax in the fall of 1939.

1939-45 Coastal patrols and convoys were started as soon as war was declared with the first convoy to Britain (HX-1), escorted by *Saguenay* and *St. Laurent,* sailing on 16 September. In April 1940 four RCN destroyers started operating in European waters. Coastal patrol and

Photo: Courtesy of the Maritime Command Museum

A Royal Canadian Navy sailor works with the gun's crew, Korean War.

Photo: DND

Chiefs of the Naval Staff (left to right) Victor G. Brodeur, Harold T.W. Grant, E. Roland Mainguy, Percy W. Nelles and Harry DeWolf, April 1950.

escort requirements were then undertaken by requisitioned vessels and by six American *Town*-class destroyers (later increased to eight) provided by the US Navy under the 'Lend Lease' agreement. Two Canadian *Tribal*s were laid down in Britain in early 1940 and orders for two more made a year later. A further four *Tribal*s were built in Canada later. In 1940, to meet requirements for patrol vessels, escorts and mine countermeasures vessels Canadian shipyards started to build small warships. Between August 1940 and October 1944 Canadian shipyards launched over 100 corvettes, some 60 frigates and more than 60 minesweepers. In March 1943, the Canadian Northwest Atlantic Command was set up, covering the area north of New York City and west of the 47th meridian. Rear-Admiral L.W. Murray was responsible for convoys in this area – the only Canadian officer to command a theatre of war.

By the summer of 1943, Allied fortunes had improved considerably. An assault on northwest Europe in 1944 was a certainty, leaving only the defeat of Japan to be undertaken. One of the decisions of the August 1943 Quebec conference was that the RCN would operate capital ships (carriers and cruisers) and carry a greater share of the Allied naval war effort. From late 1943, the number of major warships manned by Canadians increased with the four new *Tribal*-class fleet destroyers, nine other destroyers (some to replaces war losses), two cruisers (*Uganda* – later re-named *Quebec* – and *Ontario*) and two aircraft carriers (*Nabob* and *Puncher*). The RCN also manned landing craft and fast patrol boats.

By the end of the war in 1945, the RCN had expanded to a force of nearly 100,000 men and women manning and supporting ships of all types except battleships. The primary effort was in the Battle of the Atlantic in which the navy sank or shared in sinking 33 enemy submarines at a cost of 24 warships lost and 2,024 casualties.

1945 At the end of the war, an 'interim' fleet of two carriers, two cruisers and 12 fleet destroyers to be manned by 10,000 men was announced, but the RCN was never able to man all the ships. As a result, emphasis was placed on the seven *Tribal*-class destroyers and the aircraft carrier (*Warrior* initially and then *Magnificent* after March 1948), two cruisers were also maintained as training ships.

1946 Vice-Admiral G.C. Jones, who had replaced Nelles as CNS in 1944, died suddenly. Vice-Admiral Reid became the interim CNS until relieved by Vice-Admiral Harold Grant in mid-1947. Under Grant's leadership the RCN was able to regain its political support and start the process of becoming a major ASW force within NATO.

1946-47 An important piece of early Cold War planning was the creation of a North American continental

Photo: Courtesy of the Maritime Command Museum

defence organization. The naval part of the new security system focused on two tasks: countering any Soviet military diversionary lodgements in the Arctic; and ASW operations against Soviet submarines attempting to prevent the re-supply of Europe. At first, Canada did not have enough ships to do more than provide a token contribution. The need to carry a greater share of the collective defence burden was recognized politically, but remained unfunded until 1950.

By mid-1947, the navy had changed the fleet plan and focused on building a modern ASW fleet, but it had neither the manpower nor the money to do this completely. That autumn the naval staff produced a three-part modernization program acknowledging the prevailing fiscal constraints and integrating longer-term requirements for new ships with the immediate requirement to modernize the *Tribal*-class destroyers. The 'ABC' plan, as it became known, was accepted by the Minister, Brooke Claxton, who convinced Cabinet to authorize a modest re-armament that included three new *St. Laurent*-class destroyer escorts.

1949 The onset of the Cold War led to the creation of the North Atlantic Organization (NATO) and the beginning of collective defence planning under a concept that would largely determine the RCN's force structure for the next 40 years.

1950 The Korean War broke out in June. Three destroyers sailed for Korea in July. Maintaining the Korean commitment until 1955 required eight destroyers working in a cycle of operations, transit to and from Korea, and much-needed overhaul. During those overhauls all the destroyers were extensively modernized to re-equip them for both ASW and general-purpose operations as part of NATO. The Korean War triggered a major naval re-armament, increasing the number of *St. Laurent*-class escorts under construction to 14, modernizing the destroyers *Crescent* and *Crusader* and 21 ASW frigates, and raising the manpower ceiling to provide enough people to bring the fleet up to wartime strength.

1953 NATO adopted a nuclear response strategy after the Soviet detonation of a hydrogen bomb. The RCN struggled to modernize the fleet in the face of a series of new challenges including: (1) the marriage of the modern submarine and the missile; (2) NATO's growing demands for convoy escorts; (3) growing national and bilateral demands for escorts to support the new ocean surveillance system (SOSUS); and (4) the development of the ASW helicopter.


Photo: DND

*HMCS **Sioux** bombards the North Korean coast in 1951.*

1954 *Labrador* was commissioned (8 July) and became the first naval vessel to transit the Northwest Passage on her maiden voyage. She was transferred to the Department of Transport in 1958.


Photo: DND

*HMCS **Labrador** in the Northwest Passage in 1954.*

1954 Approval was given for Canada to lease three fully-manned, 'A'-class submarines and base them in Halifax for ASW training. As part of the deal, 190 Canadian officers and men were sent to England for submarine duty. This arrangement (which became the 6th Submarine Division) lasted until the early 1960s when it became obvious that the navy needed to own its own submarines.

1955 *St. Laurent*, the first of the new destroyer escorts, was commissioned (29 October). Over the next 10 years she would be followed by 19 other ships


Photo: DND

of that basic design. The last two ships of the *St. Laurent*-class design (*Annapolis* and *Nipigon*) were built as DDHs and commissioned in 1964.

1957 *Magnificent* was replaced by *Bonaventure* (ex-HMS *Powerful*) which had been modernized with a steam catapult, angled deck and mirror landing aid system. Armed with US Navy ASW aircraft and fighters, she became the nucleus of an ASW task group assigned to NATO.

1959 Approval was given for a major fleet modernization which saw the seven *St. Laurent*-class destroyers rebuilt to carry a medium ASW helicopter (the Sea King), and the building of underway logistic support ships (*Provider* commissioned in 1963, followed by *Protecteur* and *Preserver* in 1969 and 1970). Nuclear-powered submarines were considered but were deemed too expensive and a general-purpose frigate was proposed but cancelled in 1963.

1961 *Grilse* (ex-USS *Burrfish*) was loaned to Canada to provide ASW training for the West Coast ships and aircraft. She was replaced by *Rainbow* (ex-USS *Argonaut*) in December 1968 which remained on the West Coast until paid-off in 1974.


Photo: DND

1962 *Assiniboine* was re-commissioned as the first DDH in June and began trials with Sea King ASW helicopters. The remaining six *St. Laurent*-class DDHs followed at regular intervals.

The Cuban Missile Crisis erupted in October. RCN and RCAF ships and aircraft conducted sustained operations against Soviet submarines in North American waters for 21 days.

1964 The Paul Hellyer reforms began. These included 'unification' and the loss of the traditional naval identity as well as a significant reduction in the RCN's escort commitment to NATO. In December a new fleet modernization was announced that included the building of four new ASW destroyers initially known as 'repeat Nipigons' but later called the DDH-280 (*Iroquois*-class) and two AORs.

1965 *Ojibwa* was commissioned (23 September) which was the first step in creating a Canadian submarine capability on the East Coast. She was followed by *Onondaga* (1966) and *Okanagan* (1967).

1966 In July Admiral William M. Landymore, Commander of Maritime Command (as the navy was called under unification) resigned in protest over the Hellyer reforms and the loss of naval identity.

1967 NATO created the Standing Naval Force Atlantic (SNFL) which became a priority function of the Canadian Navy.

1968 *Bras D'Or* was commissioned as an experimental ASW hydrofoil but the trials were abandoned in 1972 before the tactical trials were complete.

Terra Nova was re-commissioned in May as the first of the four improved *Restigouche*-class ASW destroyers fitted with ASROC and VDS.


Photo: DND

*HMCS **Bras d'Or** gets foil borne on high-speed trials in the late 1960s/early 1970s.*

1969-73 The Pierre Trudeau government naval rationalization heralded the end of the Canadian aircraft carrier era (*Bonaventure* was paid-off in March 1970) and the start of the long process that eventually led to the building of the Canadian Patrol Frigates.

1977 A fleet structure of 24 destroyers was approved by Cabinet in December and authority was given to begin building the Canadian Patrol Frigates (CPFs).

1979-84 Delays in the ship replacement program meant that the aging *St. Laurent*- and *Restigouche*-class destroyers had to remain in service longer than originally planned. To keep them reasonably effective they were given another modernization and life extension (DELEX) that included a simple Link 11 automated data processing system, ADLIPS. NATO expressed concern over the general decline in fleet ASW capability. Beginning in February 1981, the three *Oberon*-class submarines were also given extensive mid-life modernizations (SOUP) to upgrade their tactical ASW capabilities and were assigned to NATO as a partial offset to the decline in surface ship capability.

1981-82 Dockyard modernization was commenced. This was needed to prepare the fleet infrastructure for the CPFs and the modernized DDH-280s. Training programs were re-focused on the systems and operating concepts of the new ships.

The first phase of the CPF contract (design definition) was signed (August).

The early 1980s saw the beginning of a bleak period of constant defence budget cuts that delayed the CPF project and, for a while, restricted fleet operations. For financial reasons it was decided not to re-arm the four *Mackenzie*-class as general-purpose destroyers, which reduced the fleet's operational effectiveness even further. At much the same time, Soviet naval capability was increasing in both the Atlantic and Pacific with increased Soviet submarine activity off the Eastern Seaboard and along the Pacific northwest coast. Later, this led to a NATO restructuring and a political awakening in Canada over the deteriorating world situation.

1984 The *Tribal*-class upgrade and modernization program (TRUMP) was announced (January). *Algonquin*, the lead ship in the program, was taken in hand by the shipyard on 26 October 1987.

The Atlantic fleet re-organized into a formal ASW task group for NATO Exercise Teamwork setting in motion a series of actions that led to the establishment of ASW task groups on both coasts.

1985 The task group concept was further refined during NATO Exercise Ocean Safari. The official announcements of the fleet re-structuring were made in July 1986 and January 1987.

Photo: Courtesy of the Maritime Command Museum

Canadian ships participate in Exercise Caribops off Puerto Rico in the 1970s and 1980s.

1987-9 The navy briefly looked at nuclear-powered submarines (SSNs) in response to political concerns over the Arctic. The SSN program would have replaced eight destroyers (Batch III of the surface ship replacement program) but when the submarines were cancelled for fiscal reasons the destroyers were not put back into the ship replacement program, capping the fleet at 16 destroyers/frigates.

1987 Approval for CPF Batch II was given. The Maritime Coastal Defence Organization as a Naval Reserve primary mission was established.

Fleet re-structuring commenced with *Gatineau* transferring to the East Coast (April) and *Huron* and four Sea King helicopters going to the West Coast (July). The West Coast task group deployed on exercises with the USN in January 1988.

1988 *Moresby* and *Anticosti* were acquired as the beginning of a program to re-develop Canada's mine countermeasures capability. The ships would be manned primarily by members of the Naval Reserve. A plan to build 12 Maritime Coast Defence Vessels (MCDVs) in Canada was announced.

Assiniboine was paid-off to provide people for the CPFs and because after 36 years it was no longer cost-effective to keep her in service. She was followed by *Saguenay* in August 1990. The remaining 14 *St. Laurent*-class variants were paid-off between May 1992 and July 1998 as crews for the CPFs were needed.

Photo: Courtesy of the Maritime Command Museum

1989 The Cold War ended with the tearing down of the Berlin Wall.

Annapolis sailed for the West Coast (August) and *Terra Nova* went to the East Coast arriving in December, providing the West Coast task group with a second helicopter-capable destroyer.

1990 A task group comprising, *Athabaskan*, *Terra Nova* and *Protecteur* sailed for the Persian Gulf on 24 August after the Iraqi invasion of Kuwait for *Operation Friction* after extensive re-equipping (largely using weapons and systems being held for the CPFs) and training for a multi-threat mission with low emphasis on ASW. After some 240 days of conducting support operations, the task group left the Gulf on 12 March 1991 and returned to Halifax on 7 April.

Photo: Collection of Capt(N) John Pickford

As it departs Halifax for the Persian Gulf to participate in ***Operation Friction****, HMCS* ***Athabaskan*** *salutes Canada's Naval Memorial, HMCS* ***Sackville****, 24 August 1990.*

Although the situation in Kuwait had been stabilized, a UN naval force was kept in the Gulf from 1991 to 2001 to enforce UN sanctions. A Canadian destroyer or frigate was always part of this force. *Preserver* also supported UN operations in Somalia in 1992-93, in the Adriatic (*Operation Sharp Guard*) from 1993 to 1996, and in East Timor in 1999-2000.

1992 *Halifax*, the first of the 12 *City*-class frigates, began trials. The complete class was commissioned over the next four years ending with *Ottawa* on 31 May 1996.

1998 The purchase of the four British *Upholder*-class submarines was announced. They would be extensively modernized in both Britain and Canada and put into service as the *Victoria*-class.

2001-03 After the attack on the World Trade Center and Pentagon in September 2001, the navy embarked on *Operation Apollo*, the most intense overseas deployment since the Second World War. Initially it supported Allied *Operation Enduring Freedom* covering the invasion of Afghanistan from the sea and the removal of the Taliban. The Canadian Task Group, designated CTF 150 and 151, conducted maritime interception operations in the Arabian Sea until December 2003.

2002 The navy returned to the Arctic, taking part in 2002, 2004, 2006 and every year thereafter in *Operation Nanook,* a series of joint operations, which saw frigates and MCDVs, as well as *Corner Brook* in 2007, in the Northwest Passage and visit many isolated communities in Nunavut.

2004 At the end of *Operation Apollo*, the navy continued to support operations in the Arabian Sea through *Operation Altair.* This included deploying a single frigate with a US carrier force for six months in 2004, 2005 and 2007.

2005 The Standing NATO Maritime Group 1 (SNMG1) replaced the Standing Naval Force Atlantic (SNFL). Commodore Denis Rouleau (Canadian Navy) was the first commander of the new force.

2008 In 2008 Canada sent a task group and a Canadian commander, as CTF 150, into the Arabian Gulf for three months. Since then Canada has maintained a frigate with SNMG1 to support *Operation Altair* and to conduct counter-piracy operations off the horn of Africa.

2010 *Athabaskan* and *Halifax* deployed to Haiti to provide humanitarian support following a devastating earthquake.

MCpl Robin Mugridge Formation Imaging Services Halifax

Consecration and Presentation Ceremony of the New Queen's Colour to Maritime Command in Halifax, 27 June 2009.

Engineering Excellence in the RCN

Michael Young

In celebrating the centennial of the Canadian Navy, we laud the dedication, innovation and ingenuity of those who, over the previous 100 years, developed the navy into the highly respected and professional force it is today. We also praise the remarkable achievements in technology that have emerged over the years which have enabled the relatively small Canadian Navy to carve its own niche and operate as an equal partner with the US Navy (USN) and the Royal Navy (RN).

Most of the advancements in technology have been the result of innovative engineering effort encouraged by open-mindedness at the senior levels of the naval leadership – together with the invaluable work of the scientific research community. It has been supported by the Canadian shipbuilding and industrial base, a base built from humble beginnings into a major factor in helping the Allies win World War II. In the post-war period, this industrial base, in cooperation with the navy, demonstrated remarkable technical expertise and innovation. None of this would have been possible without an engineering branch of the service which, through hard work and creative thinking, made it all happen.

The branch of engineering directly applicable to the navy when it was established in 1910 was marine engineering. In broad terms, marine engineering deals with the design, construction, maintenance, support and technical operation of ships and their systems. It also embraces the parallel discipline of naval architecture. Naval engineering is a more specialized branch dealing solely with warships. Its practitioners include shipyards, engine builders, mechanical and electrical engineering companies and the myriad of companies that supply components.

In 1910 there was considerable marine engineering expertise in Canada related to steam-propulsion technology. For example, the first practical compound marine steam engine was invented by Benjamin Franklin Tibbets, a brilliant mechanical engineer from New Brunswick, and installed in the Saint John River steamer *Reindeer* in 1845. Much of this expertise was developed in support of the railroads. Steam locomotive technology is essentially the same as that of a ship's steam power plant.

There was also a small but longstanding infrastructure of shipbuilding on both coasts and in the Great Lakes and St. Lawrence regions. Not as sophisticated as that of Britain or the United States (for example, the West Coast yards could not build steel-hulled, ocean-going ships), it could and did produce a variety of small cargo ships and fishing vessels as well as the specialized vessels plying the canal systems of the Great Lakes.

Photo: Courtesy of the Maritime Command Museum

*The engineer officers of HMCS **Niobe** in 1911. The original six RCN engineers are in the back row (left to right) Engineer Sub-Lieutenants Curry, Jefferson, Clark, DeQuetteville and Hollingworth with Napier-Hemy seated in the front row extreme right. The other seated officers were all on loan from the RN.*

There was, however, no Canadian shipyard capable of building the warships that the government needed to form the nucleus of the Naval Service. There was a lack of the necessary subsidiary industries to produce naval equipment and there was limited naval engineering expertise outside the naval dockyards in Halifax and Esquimalt. Furthermore, there was no independent naval architectural expertise or ship design capability. Thus, in order to achieve the government's objective that all of the navy's ships be built in Canadian yards, it would be essential to obtain designs from the Admiralty, plus their expertise and technical support. It was, in the view of the government, a worthwhile expenditure to encourage the development of a sophisticated shipbuilding industry – an early example of the use of defence spending for industrial development which became a fact of life following World War II. The British shipbuilder and armaments manufacturer Vickers Ltd established the Canadian Vickers shipyard in Montreal in 1910 to respond to this objective.

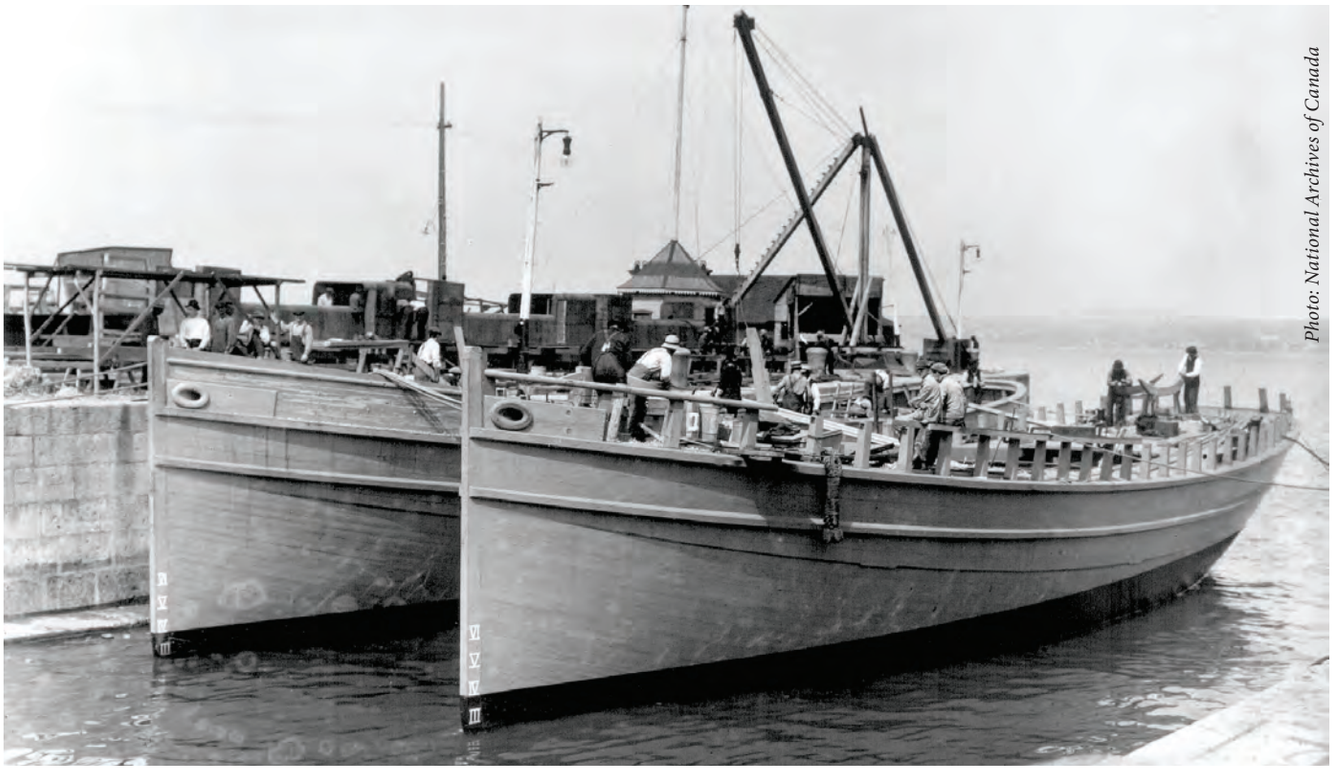


Photo: National Archives of Canada

Photo: Courtesy of the Maritime Command Museum

Two drifters under construction at the Davie Shipbuilding and Repair Co., Lauzon, Quebec, August 1917.

A critical element for developing a viable fleet for the navy was the recruitment and training of a cadre of officers and men. In particular, engineering officers were essential and experienced, qualified men had to be found at the outset. Early in 1910, the British Admiralty had shut down the Royal Naval Engineering College (RNEC) at Keyham, Plymouth as it changed over to a new system for officer training. The Naval Service of Canada would thus be unable to obtain its own trained engineer officers (who would not be fully qualified in their seagoing duties) until at least 1918, even if the Admiralty would allocate sufficient places in its courses.

Admiral Kingsmill, the Director of the Naval Service, sought recruits within the engineering community in both Canada and in England. Six candidates were selected – three from men who were working in engineering firms in Canada and three from England. The three from England had graduated from RNEC in 1908. They had attended as private students and were not granted naval commissions upon graduation. Thus each had gone to sea in merchant ships as junior engineer officers. The first to be commissioned as Engineer Sub-Lieutenant in the Naval Service of Canada was Angus Curry. In addition, George Stephens, a charge-hand, was recruited from the ranks of the Plymouth Dockyard staff to join the cruiser *Niobe* as an engine room artificer (engineering technician). Stephens would go on to greater things in the future. Such was the cadre of the engineering branch of the new navy. All other engineering positions, including those on the Naval Staff in Ottawa, were filled by officers and men on loan from the RN.

The RCN engineer officers completed their professional qualifications in ships of the RN. When World War I commenced, three were still with the RN and two others followed later. One of the original six had resigned earlier but his place had been filled through the promotion of George Stephens. Two were at the Battle of Jutland. One, Engineer Lieutenant Stanley DeQuetteville RCN, was killed when HMS *Indefatigable* was sunk in that battle. The other suffered what we now know as post-traumatic stress and was invalided out of the service in the early 1920s. One benefit to the engineering branch came in 1914 when engineers were moved from the Civil to the Military side of the Navy List – in effect this gave them full status as naval officers.

World War I produced little in technological advancement for the tiny RCN. However, the onset of the war was a stimulus for the shipbuilding industry, especially on the West Coast. In 1916, mounting losses of merchant shipping and limited capacity in British shipyards led the British Imperial Munitions Board (IMB) to place orders in Canadian yards. The simple designs were standardized and manufacture of equipment such as boilers, propulsion machinery and most fittings was well within the capability of Canadian industry. These orders enabled the West Coast yards to make a successful transition to steel-hulled versions.

There was also a pressing need for naval patrol ships. In 1917 both the Canadian and British governments placed orders with yards in Ontario and Quebec for the construction of steel-hulled trawlers and wooden-hulled drifters based on Admiralty drawings. A total of 48 trawlers (12 for the RCN, 36 for the RN) and 100 drifters were ordered initially and an order for a further 24 trawlers was placed in January 1918. All the ships were completed and delivered by the summer of 1919.

One remarkable aspect of this program was the establishment of a single centralized procurement agency. Mr. J.W. Norcross, the Vice-President (later President) of Canada Steamship Lines (CSL), provided the services of his staff and facilities to the government at no charge. Thus Norcross became the first Director of Ship Construction of the Naval Service Department and, due in large part to his efforts, the program was a complete success.

This program was also remarkable in that it represented a significant feat of ship construction for Canada – 72 steel trawlers and 100 wooden drifters built and delivered in an 18-month period. As well, it was the first instance of the construction of warships in Canada for the RCN. It would take another world war before Canadian yards would again build warships.

The contract to build these ships also brought to Canada a remarkable engineer who was one of the Admiralty representatives overseeing the construction of the vessels. Engineer Lieutenant T.C. Phillips RN arrived in Halifax for what was supposed to be a temporary appointment to the RCN. He was promoted Engineer Lieutenant Commander (temporary while holding appointment) the day after his appointment was effective, on 23 February 1917.

Phillips was particularly well qualified. He had entered the RN in November 1915 and was commissioned as an Engineer Lieutenant (Temporary). Prior to joining up, Phillips had been the Assistant Manager of a commercial drydock company in Cardiff, Wales. He was a highly qualified marine engineer with extensive seagoing experience and a licensed marine surveyor. This appointment began a series of other 'temporary' positions with the RCN for some years to come.

In July 1918, the British officer serving as the senior engineer in the RCN (Consulting Naval Engineer) was recalled to service with the RN. Phillips was offered the job. He accepted, transferred into the RCN and on 15 August 1918 Temporary Acting Engineer Commander Phillips RCN became the first RCN officer to hold the senior engineering position in the navy. He held this position until his retirement in 1936.

For the shipbuilding industry the future seemed bright in the immediate post-war years. The expansion of Canadian shipbuilding capacity during the war gave rise to speculation that the industry could be sustained at similar levels in the post-war world. In January 1918 the government announced that it would place orders in Canadian shipyards for a fleet of merchant ships to be known as the Canadian Government Merchant Marine (CGMM). The

Photo: Courtesy of Captain Ray Phillips, RCN (Ret'd)

T.C. Phillips in the full dress uniform of an Engineer Captain, RCN, circa 1936. He was promoted to Engineer Captain on the retired list.

timing of the orders was such that there would be no idle period in these yards after the orders for the IMB had been completed. By October 1918 a total of 25 of these vessels had been ordered and were under construction. By the end of the program in 1922 some 63 cargo ships ranging in size from 750 to 8,100 tons, and displacing 380,736 tons, were delivered. Also a new steel rolling mill was opened in Sydney, NS, and a new shipbuilding facility was opened in Halifax.

The pace of this shipbuilding could not be sustained on domestic orders and Canadian yards were not cost competitive with British or US yards. Much of the problem had to do with factors beyond the shipbuilding industry itself. Virtually all the steel came from outside Canada, primarily the United States. Most of the fittings were also imported. Without a domestic source of supply of such critical items, it was no wonder the Canadian yards had difficulty competing on cost.

Another critical issue was the lack of significant in-house design capabilities in the Canadian yards. Only Canadian Vickers had extensive naval architect expertise on staff and there were no independent naval architectural firms. So it was, or should have been, understandable when Canadian shipowners went offshore for the capability lacking at home. Subsidies to the shipyards would not have resolved these issues. Nevertheless, the fact that a core of shipyards and allied industries survived the Depression of the 1930s meant that Canadian shipbuilders could again contribute to the Allied war effort in World War II.

For the RCN the inter-war years were a time of striving simply to survive. There was little opportunity for innovation or the introduction of advanced technology. The engineering requirements were those of keeping a tiny fleet running and ensuring the training of personnel progressed properly. All major technical responsibility beyond ongoing upkeep belonged to the Admiralty in London. The RCN had no naval architectural expertise nor responsibility for any design processes. In this sense, it was simply an adjunct of the RN.

In late 1927 the Canadian government requested tenders for the construction of two destroyers and both British and Canadian yards made bids. The design preferred was that of the British A-class which displaced about 1,500 tons. The RCN also wanted modifications – a streamlined bridge and oil heating to replace the British electric system for example. The British shipbuilder Thornycroft offered its own design, in addition to offering the standard A-class, a design that was very similar to the A-class but slightly smaller, heavier and of longer endurance.

Canada accepted the Thornycroft proposal despite some noises in Canada that the ships should be built in a Canadian yard and some reservation on the part of the Admiralty about the basic design. The Admiralty eventually approved the design and the contract went to Thornycroft. The RCN was more receptive to new ideas than the Admiralty and thus the ships incorporated many significant and purely Canadian modifications. Not only was the bridge streamlined but it was also widened to permit entirely internal access to the superstructure. The bows and forward plating were strengthened for ice protection and the stability of the ship was enhanced to cope with potential loads on the upper deck in winter from ice and snow. Additionally, the ventilation system was improved to respond to the potential range of operating areas of the ships. All in all they were superb ships. Shortly before the ships were commissioned in early 1931, in a personal letter to the Deputy Minister, Engineer Commander Phillips expressed his delight with the ships. When they arrived in Portsmouth after commissioning they were nicknamed the 'Rolls Royce' destroyers. A later generation of Canadian destroyers would be dubbed the 'Cadillacs' reflecting a much more North American orientation to their design!

In 1936 Engineer Commander Phillips retired and was replaced as Director of Naval Engineering (as the senior engineering position was now named) by Engineer Commander Angus Curry. When war broke out in 1939, Curry had the unenviable task of dealing with the technical challenges of the rapid expansion of the RCN, initiating a massive naval and mercantile shipbuilding program and ensuring the dockyards on both coasts had the resources for the ongoing maintenance and repair of the fleet. One of the early responses, and one which proved the benefit of an indigenous naval architectural capability, was the conversion of the three Canadian National Steamships liners *Prince David, Prince Henry* and *Prince Robert* into armed merchant cruisers. The contract to produce the design and plans was let in October 1939 to Lambert, German and Milne, a company of independent naval architects in Montreal. *Prince Robert* was taken in hand on 9 February 1940 and commissioned in her new guise five months later. By late 1940, Curry and the Chief of the Naval Staff, Rear-Admiral Percy Nelles, were at odds over issues concerning problems involved in refitting and repairing ships in Halifax. Nelles lost confidence in the ability of Curry to resolve the issues and early in 1941 Curry was effectively demoted and despatched to the Dockyard in Esquimalt. Replacing him was Engineer Captain George L. Stephens.

Although the details of the incredible wartime output of Canadian industry have been well documented, it is worth

Photo: RCN

HMCS ***Prince Robert*** *late in the war as an anti-aircraft cruiser.*

noting that between 1941 and 1945 Canadian shipyards delivered 402 merchant ships of variants of a standard design developed by the J.L. Thompson & Sons shipyard in Sunderland, England. During the same period, shipyards in the United States delivered 2,710 'Liberty' ships which were essentially the same design, modified for certain US design practices. Given the much larger size of the US industrial base, the Canadian yards performed remarkably well.

In addition, Canadian yards built 331 major warships – 123 corvettes, 70 frigates and 138 steel minesweepers and trawlers. As well, 100 motor torpedo boats and motor launches were produced plus 72 smaller minesweeping vessels. The build of the four British-designed *Tribal*-class destroyers begun in June 1941 in Halifax Shipyards was incomplete at the end of the war, a reflection of the steep learning curve for building the complex system that this class of ship represented.

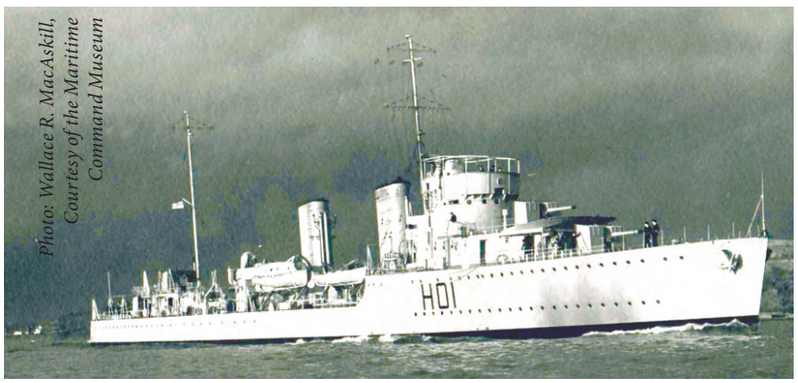


Photo: Wallace R. MacAskill, Courtesy of the Maritime Command Museum

HMCS ***Saguenay****, circa 1937.*

The Constructor Branch (Naval Architect) of the RCN was established in January 1942 when A.N. Harrison was seconded from the Royal Corps of Naval Constructors (RCNC) to the RCN as Director of Naval Construction in the temporary rank of Constructor Captain, RCN. This move was very significant as it enabled the RCN to take over ship design authority from the British Admiralty and to build an in-house design capability. Building such a capability was essential, not only to ongoing wartime requirements but also to produce the remarkable technical achievements of the post-war naval programs.

George Stephens – who had replaced Curry in 1941 – was promoted to Engineer Rear-Admiral in January 1943 and appointed as Chief of Naval Engineering and Construction and a member of the Naval Board. He retired in February 1946 having successfully directed the engineering organization through an incredibly demanding four years of war. Stephens was the first member of the Engineering Branch to reach flag rank and the first to rise from the non-commissioned ranks to Rear-Admiral.

Commodore (E), later Rear-Admiral (E), John Grant Knowlton took over from Stephens. Knowlton was the first Canadian-born officer to hold the job. He entered the RCN as a cadet in 1918, and qualified as an engineer after World War I, thus the (E) designation. His 10-year tenure would be almost as demanding as that of Stephens as the RCN embarked on major building and conversion programs to meet the needs of the Cold War.

Knowlton supervised a reorganization of the Naval Technical Services in 1946. Separate sub-groups were established for Naval Construction, Engineering, Electrical Engineering and Ordnance. The formal establishment of the Electrical Branch of the RCN occurred during this period. This move had long been urged by the electrical engineering community both within and outside the navy. Professor E.G. Cullwick was brought from the University of Alberta – he had served as a RCNVR officer in World War II – to head the branch as a Captain (L). Cullwick would later become the Defence Research Board's head of Electrical Research.

Constructor Captain Harrison returned to the UK in 1948 and Constructor Captain, later Commodore, Rowland Baker (also a member of the RCNC) took his place. Baker's first task was the design of the icebreaker HMCS *Labrador* which he adapted from the US *Wind*-class design. When it came to warship building, Harrison considered that the wartime practice of building warships in Canada according to drawings supplied by the Admiralty would need to continue. He did not believe that building to a Canadian design would be feasible. Baker, on the other hand, was very supportive of the RCN's desire for Canadian design. He managed to persuade the Director of Naval Construction in the Admiralty to provide two Constructor officers on loan. One of these, Keith Farrell, stayed with the RCN and later headed Ship Design. S. Mathwin Davis also joined Baker's team from German and Milne, the consulting naval architects in Montreal. Davis, as well as being a former member of the RCNC, was a Canadian Naval Reserve officer. He remained in the navy, retiring as a Rear-Admiral in 1974.

The output of this team was the *St. Laurent*-class design. It was a radical leap forward, not only for its external appearance but also for many features which were later adopted by other navies. For example, the ship was designed to be fought from an operations room not the bridge, it was fully air conditioned, bunks replaced hammocks, the mast was plated, and full internal access from stem to stern was provided. It has been observed that it was simply a 'Canadianized' version of the British *Whitby*-class. While the starting point of the design was the *Whitby* hull form,

Baker and his team made significant modifications to it to meet unique Canadian requirements so that, except for the propulsion machinery and some weaponry, there was little in common between the two classes. Also the ship was built to North American industrial standards – a first for the RCN. *St. Laurent* was commissioned on 29 October 1955, five years and 10 months from design to commissioning and six months ahead of the first of the British *Whitby*-class ships.

Photos: DND

Engineer Rear-Admiral George Stephens (left), Rear-Admiral (E) John Grant Knowlton (centre) and Constructor Commodore Rowland Baker (right).

Canadian industry was deeply involved in the program. For example, the main turbines were built by John Inglis of Toronto in a new purpose-built plant and gear-cutting machinery for the main gear boxes was purchased from Switzerland and installed in Dominion Engineering in Montreal. Vickers was the lead yard and what became the Naval Central Drawing Office was installed on premises in the yard.

The program was not without its teething problems. It was a massive undertaking for a shipbuilding industry which had not built anything more complex than a frigate. Thus there was a steep learning curve. Inexperience and problems with equipment supply contributed to major cost increases over initial estimates and delays in completion of some of the ships. Nevertheless, the program was a resounding success. What is remarkable is that this was not the only major naval program underway at the time. Conversion of the *Tribal*-class destroyers into anti-submarine warfare destroyers (DDE) and the re-activation and conversion program for 21 of the wartime *River*-class frigates commenced in 1950. In addition, the RCN undertook a wholesale conversion – essentially a rebuild – of the destroyers *Crescent* and *Algonquin* into derivatives of the British Type 15 frigate. Some of the features found in these two ships were incorporated into the *St. Laurent* design, but it may well have been the other way around!

When he retired in January 1956, Rear-Admiral Knowlton was rightly proud of the technical accomplishments of the RCN under his leadership. He had overseen what amounted to an unprecedented revolution in engineering prowess in a very short time. Arguably, his greatest achievement was to build on the foundation laid by Admiral Stephens and create a climate in which innovation thrived and engineering excellence became second nature. This atmosphere provided for innovative technical solutions to demanding operational requirements. The RCN was second to none in its overall technical capability – given the size of the country and its navy – and the related industries were thriving.

In addition to the major shipbuilding and conversion programs, a large array of other technical developments took place. The most notable was Digital Automated Tracking and Resolving (DATAR), perhaps because it ultimately failed to be adopted as it was 15 years ahead of its time and the solid-state technology it needed was still in its infancy. Funded by the Defence Research Board, prompted by Captain (L) Cullwick, it aimed to bring a digital computer to sea. Although sea trials were successful, no further development occurred. The concept would reappear later in modern naval tactical data systems.

The achievement of the *St. Laurent* program cannot be overstated. All but one of the class saw over 40 years of active service aided by a life extension program. The design was marginally improved in the form of the *Restigouche*- and *Mackenzie*-classes. After successful experiments with a *Prestonian*-class frigate, the original ships were converted to helicopter carriers (DDH), involving installation of a flight deck, hangar and the Sea King helicopter, without hull alterations, a major increase in ballast or reduction of the standards for damage control. Some ships of the *Restigouche*-class underwent a less drastic but still complex conversion to improve their fighting capability. And the final ships to be built, *Annapolis* and *Nipigon,* were produced as DDHs from the outset.

On 1 January 1960, the Engineering, Electrical and Constructor Branches of the RCN ceased to exist as specialist entities as the RCN restructured its officer corps. The distinguishing purple, green and grey cloth that had been worn with pride was removed. It was a sad beginning to the navy's 50th anniversary. In fact, the 1960s were not good times overall for the navy as the government

Photo: DND

*HMCS **St. Laurent**'s commissioning ceremony in 1955.*

reduced spending on defence, although a new *Tribal*-class of destroyers and two at-sea replenishment ships were approved. Then came unification and a drought of almost 10 years before another shipbuilding program was approved.

The significant programs underway at the RCN's official demise in 1968 were all completed. The *Tribal*-class destroyers were, and still are in their modernized form, superb ships. They were dubbed 'Sisters of the Space Age' when they were commissioned in the early 1970s, the first major warships anywhere to use all gas-turbine propulsion. The operational support ships *Preserver* and *Protecteur* entered service and soon proved their worth. All were testaments to the legacy of engineering excellence.

Replacements for the rest of the aging fleet, the *St. Laurent*-class and her successors, were slow in coming. The government had changed priorities and funding for naval programs was greatly reduced. This resulted in an innovative, desperate and absolutely essential 'life extension' project for the steam-powered ships. The impact on the naval engineering community was devastating and attrition soared. The situation became so acute that an 'Engineering Get Well' program had to be introduced. Revival of the Engineering Branch as an distinct entity happened when sub-specialization was re-introduced and the Electrical Branch was restored as the Combat Systems Engineering specialty. Fortunately, the training of naval architects, which had begun in the 1950s, had continued and the old Constructor Branch was basically reconstituted as a sub-specialty of Engineering. And, finally, in 1977 the *Halifax*-class frigate program was approved.

The lean years following unification took their toll on the navy's capability for in-house design. No longer could the naval technical community respond fully to operational requirements. The naval leadership took the policy decision to make the frigate program a turnkey operation with a prime contractor responsible for all aspects of the design and build. This policy was applied to subsequent programs such as the modernization of the *Tribal*-class and has become the norm. That the frigates and updated *Tribal*-class turned out to be the best of their kind is tribute to the fact that the naval engineering community, reduced as it was, got it right with the specifications. However, the full in-house design capability is gone and it is unlikely to return.

Now, 50 years after the demise of the purple stripe, there are fewer engineers and naval architects than in 1960 but more than in 1910. The shipbuilding industry is not in much better shape than it was in the 1930s. The Vickers yard in Montreal has closed, along with the Saint John yard where the frigates were built, and the Naval Central Drawing Office was absorbed into other organizations

Photo: Corporal Peter Reed, Formation Imaging Services Halifax

*HMCS **Halifax** launches a Sea Sparrow air defence missile, 20 November 2006.*

long ago. Yet the challenges remain, the modernization of the frigates is on the near horizon and Arctic patrol and replacement support ships are in the planning stage. The submarine program has also been a major engineering challenge but it is showing initial signs of being a significant technical success. Engineering in the navy has come a long way since the 'original six' signed on. Admiral Stephens and Admiral Knowlton would be pleased.

Michael Young is a former Canadian naval officer with a specific interest in naval technical history.

Significant Canadian Warships

Doug Thomas

What are the significant ships to have served in the Canadian Navy over the span of 100 years? Selecting the most noteworthy vessels of the past century is not an easy task. HMCS *Rainbow* and HMCS *Niobe* were our first two commissioned vessels; the precursors to what the government of that time intended to be a force composed of modern cruisers and destroyers. However, modern ships did not materialize. *Rainbow* and *Niobe*, obsolete as they were, remained close to their home ports and were fortunate not to encounter German cruisers.

Some ships would likely have been more noteworthy if they had served longer, or had been acquired earlier – the relatively modern light cruiser HMCS *Aurora* comes to mind. *Aurora* was donated to Canada by the Royal Navy (RN) in 1920, together with two destroyers and two submarines, and served for a mere two years in the RCN before being paid-off due to deep post-war budget cuts. She rusted ignominiously in Halifax Harbour until 1927, when she was sold and broken up for scrap. If she had been a part of the RCN when new, she might have brought her World War I battle honours to Canada rather than to the RN. She was the first British ship in action at the Battle of Dogger Bank, and was present in Scapa Flow at the time of the surrender of the German High Seas Fleet in November 1918. *Aurora*, whatever her RN distinctions, is a mere footnote in Canadian naval history.

What about HMCS *Labrador*, the Arctic patrol ship commissioned in 1954? She was the first warship, as well as the first large ship, to transit the Northwest Passage. Unfortunately, her RCN service was very short-lived and she was transferred to what is now the Canadian Coast Guard after only three years under the White Ensign. She might have made this list if she had served longer. Indeed, she might have been the first of a succession of naval Arctic patrol ships so that this role would have long since been a mission of our service, rather than a new capability being developed.

What about the hydrofoil HMCS *Bras d'Or,* the world's fastest warship in the late 1960s/early 1970s and capable of foil-borne speeds of 63 knots? After successful engineering trials it was decided not to install a combat system into the ship nor build additional units. After some years in Halifax high and dry on her barge, *Bras d'Or* was towed to her current site: a maritime museum on the south shore of the St. Lawrence River. This truly significant vessel was the naval equivalent of the Avro Arrow. Needless to say, she does not make my list – but she might have!

So, if one were to choose the most significant warships during our history, which would they be? Here is my list, arranged chronologically.

CGS/HMCS Canada

The Canadian Government Ship (CGS) *Canada* was employed in training Canadian naval officers before there was a navy! In July 1904 CGS *Canada* commenced service as a fisheries patrol cruiser and training ship. *Canada* displaced 780 tons, was just over 200 feet long, had a good turn of speed for her time, and was armed with four automatic guns in order to police Canadian waters. In February 1905 she left for a cruise to Bermuda and the Caribbean to train young fishermen as naval militia ratings. On this trip, although wearing a blue rather than white ensign, she acted in all respects as a warship representing her country. On her return she commenced fisheries protection duties and because of her speed and the diligence of her commander she became much respected by fishermen.

Rear-Admiral Charles Kingsmill became head of the Fisheries Protection Service (FPS) in 1908 and of the Naval Service of Canada in 1910. The FPS remained under his control and he used *Canada* as a training ship for the first cadets at the Canadian Naval College. She and a number of other government ships, such as *Acadia* – now

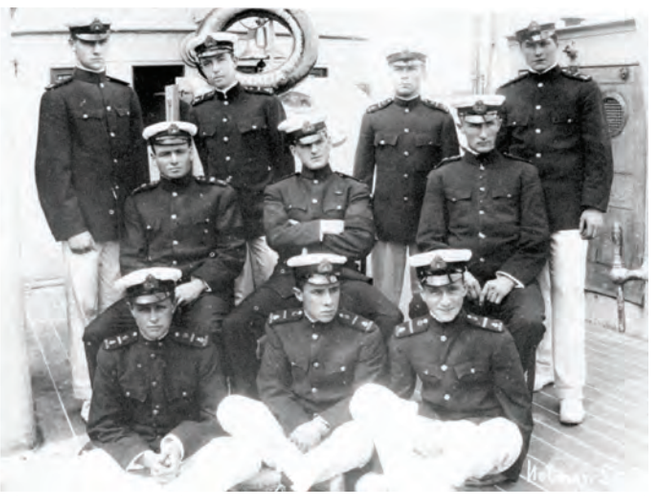


Photo: National Archives of Canada

The original group of naval cadets serving in HMCS ***Canada*** *(back row, left to right), Charles T. Beard, P. Barry German, Victor G. Brodeur, Wright, with Fisheries Officers Fortier, Stewart and Woods (centre row, l to r) and Henry T. Bate, Percy W. Nelles, John A. Barron (front row, l to r).*

Formation Imaging Services Halifax

Photo: Ken Macpherson / Naval Museum of Alberta

Although the date of the photograph is unknown, HMCS ***Saguenay*** *is dressed overall while underway, and may be acting as escort for HM King George VI and Queen Elizabeth during their visit to Canada in 1939.*

a museum ship at Halifax's Maritime Museum of the Atlantic – were transferred to the navy at the outbreak of war. *Canada* was modified for naval service: her foc'sle was raised to enhance sea-keeping; and she was equipped with a heavier gun armament. She was used as a patrol vessel and an escort for lighthouse supply vessels, and was slightly damaged during the Halifax Explosion of December 1917. She was decommissioned after the war, returned to the Department of Marine and Fisheries, and retired from government service in 1920.

The River*-class Destroyers*

After a succession of secondhand RN World War I (WW I) destroyers, *Saguenay* and her sister-ship *Skeena* were the first new ships built to order for the RCN, and were highly regarded improvements on the British 'A'-class fleet destroyer class. During the 1930s these ships exercised periodically with the British fleet, acquitting themselves well in simulated torpedo attacks against capital ships – a typical destroyer role of that period. *Saguenay* and the other 13 *River*-class destroyers acquired from the UK

Credit: Courtesy of the Canadian Naval Memorial Trust

A painting by Robert Banks of HMCS ***Sackville*** *circa 1941.*

during the 1930s and early 1940s were the backbone of the RCN for the first few years of the war, and four of these ships were lost, three of them with heavy casualties. As the war progressed, these destroyers exchanged some of their surface weaponry for new anti-submarine weapons and were often employed to add some 'teeth' and speed to hard-pressed convoy escort forces. *Saguenay* and her sisters were largely worn out by war's end, and sold for scrap soon afterward.

HMCS Sackville

HMCS *Sackville*, Canada's National Naval Memorial, is the sole surviving representative of Canada's many WW II corvettes. The RN had developed a number of designs for small escorts during the 1930s, with the intention of volume construction in the event of war – destroyers were too expensive and complex to build in sufficient quantity. One of the most successful of these designs, based on the hardy Antarctic whale catcher, was adapted to produce the corvette which was constructed to mercantile standards and thus less difficult to construct and repair in small shipyards. In the initial stages, equipment was very crude. Thus, a wooden main gun was fitted for the voyage of at least one corvette from a West Coast shipyard to Halifax, magnetic rather than gyro compasses were installed, and early corvettes either had no radar or one vastly inferior to that supplied to British vessels.

The corvette's engineering plant included locomotive boilers and triple-expansion reciprocating engines, rudimentary systems which made it easy to find people to operate and maintain them. They were no faster than a surfaced U-boat and successes against the enemy were few but at least they provided a morale boost for merchant mariners as they – perhaps with an elderly destroyer or sloop – were often the only convoy escort available. The corvette is what historians have in mind when they write about the Sheepdog Navy – very basic and simple ships, manned mostly by volunteers (RCNVR) with a few ex-merchant marine reservists to provide professional sea-going knowledge (RCNR). It is impossible to ignore the importance of the 123 corvettes which served in the RCN and another 120 in the RN. They formed the majority of the convoy escort force during the first half of the war.

As the war progressed, improvements were made to existing and new construction corvettes. The foc'sle was lengthened to improve accommodations and sea-keeping, fuel capacity and endurance were increased, radar and sonar equipment improved, and Hedgehog ahead-throwing mortars augmented anti-submarine depth charges.

Photo: Library and Archives Canada

*HMCS **Swansea** in rough seas off Bermuda in January 1944.*

But the navy yearned for something more capable than corvettes – they were a stopgap until larger, more capable ships could be procured.

River-*class Frigates*

Seventy frigates, initially termed 'twin-screw corvettes,' were added to the strength of the navy in the last 12-18 months of WW II. Canadian frigates were named after cities and towns, as were the corvettes before them – for example *Halifax* was a corvette and *Montreal* a frigate. Frigates were much more effective fighting vessels than corvettes, and corrected many of their deficiencies. They were 100 feet longer, half-again the tonnage, four knots faster, better sea-keeping qualities, longer endurance and could embark larger quantities of depth charges, important to the successful prosecution of U-boats. A number of them were employed successfully as senior officers' ships in escort groups. Most Canadian frigates were laid-up, sold to other navies, or scrapped after the war. Twenty-one were modernized in the 1950s as *Prestonian*-class ocean escorts, three were transferred to Norway in the 1950s as that country rebuilt its navy and the remaining 18 were deployed to both Canadian coasts. Although they were less capable than destroyers, they made excellent early commands and good training vessels. One of these ships, HMCS *Buckingham*, was used for some of the early ship/helicopter proof-of-concept trials, which eventually led to the adoption of the DDH concept.

Photo: Library and Archives Canada

*The powerful **Tribal**-class destroyers **Haida** and **Athabaskan** steam in formation in the English Channel, spring 1944.*

The Tribal-*class Destroyers*

The *Tribal*-class destroyers were truly impressive vessels, with double the gun armament of *Saguenay*. The first four were built in British shipyards and served in company with RN surface forces in the Bay of Biscay and escorting Arctic convoys, and were heavily involved in fighting in European waters: HMCS *Haida* participated in the sinking of 15 ships and submarines of the Kreigsmarine. (*Athabaskan*, her sister-ship, was unfortunately lost in action with German torpedo boats in April 1944.) The last four *Tribal*s were built in Halifax and not completed until after the war, with *Athabaskan* (II) commissioned in 1948. These ships were the realization of the pre-WW II naval staff's fondest hope: a flotilla of large, powerful destroyers which could be built in Canada.

The *Tribal*s underwent anti-submarine conversions with 'Squid' anti-submarine warfare (ASW) mortars and new sonar equipment, and all except *Micmac* served in Korea. The gun armament was modified to an anti-air warfare (AAW) configuration: two twin 4-inch guns forward and a twin 3-inch 50 aft. The *Tribal*s were the backbone of the post-war RCN until the mid-1950s when the *St. Laurent*-class began arriving from shipyards across the country.

Photo: DND

*HMCS **Fraser** in 1989.*

The St. Laurents

HMCS *St. Laurent* and the succeeding 'Cadillacs' as they were called, a total of 20 ships, were completed between 1955 and 1964 to a distinctively Canadian post-war design. These highly successful ships were fitted with a gas-tight citadel and pre-wetting system for nuclear, biological and chemical warfare operations, had excellent sea-keeping qualities and, with a mixture of British and US sensors and weapons, were highly effective ASW escorts. During the 1960s the initial seven ships were extensively modified with a flight deck, hangar and Canadian-developed Helicopter Hauldown and Rapid Securing Device, known as 'Beartrap,' which permitted the operation of the relatively large *Sea King* helicopter, and a Variable Depth Sonar (VDS).

The second batch, known as the *Restigouche*-class, were armed with a 3-inch 70 British rapid-fire gun forward which had been designed for cruisers and caused many initial teething problems before it became a reliable weapon. Four of this class were modernized with an anti-submarine rocket (ASROC) system which could rapidly propel a torpedo to the vicinity of a submarine contact, new Canadian-developed VDS and hull-mounted sonars, and a computer-controlled underwater combat system.

The next batch were essentially repeat-*Restigouche*-class ships: the four *Mackenzie*s, which were employed primarily as members of the West Coast training squadron and received very limited updates due to financial constraints; and the final two *Annapolis*-class which were completed as helicopter-carrying destroyers (DDHs). Most of these

ships received a Destroyer Life Extension (DELEX) update of solid-state electronics during the 1980s and Automated Data Link and Plotting System (ADLIPS), made necessary due to delays in gaining approval for a replacement program. The last of these ships was retired in 1998, and all have been scrapped or sunk as recreational diving wrecks – except *Fraser* which is currently in Halifax. It is hoped that she might be saved as a memorial to the Canadian contribution to winning the Cold War at sea.

Bonaventure

HMCS *Bonaventure* represents the pinnacle of the development of Canadian naval aviation, achieved through the experience gained by manning the British escort carriers *Nabob* and *Puncher* late in WW II, Canadian pilots and observers who served in the RN in the Atlantic and Pacific, and from operating *Warrior* and then *Magnificent* in the post-war period. This process provided time to plan the acquisition and modification of HMS *Powerful*, a light fleet carrier launched shortly before the end of WW II and left incomplete in Belfast until Canada purchased the ship and work resumed in 1952. HMCS *Bonaventure*, commissioned into the RCN in 1957, was named after the bird sanctuary Bonaventure Island in the Gulf of St. Lawrence. *Bonnie*, as she was affectionately known in the navy, had modern developments such as the angled flight deck, a steam catapult, a mirror-landing aid system, a modern anti-aircraft armament of four twin 3-inch 50-calibre guns and modern American radars. She also had a very capable air group which could be modified to fit her mission – a mixture of ASW *Trackers*, *Banshee* fighters with *Sidewinder* air-to-air guided missiles, and *Sea King* helicopters. She typically had a total of 20 aircraft and a rescue helicopter nicknamed 'Pedro.'

In 1966-67 *Bonaventure* underwent what was planned to be a mid-life refit, returning to her home port of Halifax in September 1967. The refit had incurred cost over-runs due to unanticipated but necessary work required if the ship was to continue as a first-line unit. This raised political hackles both within the Department of National Defence and the government. Defence cuts were being considered and in September 1969 the government determined that the navy's share would be to retire *Bonaventure*. She conducted her last fixed-wing flight in December but then had a brief extension to her service life, employed as a supply ship (AOR) for the annual Maple Spring deployment to the Caribbean in 1970. *Bonaventure* was sold for less than the cost of painting her during the refit, and was towed to Taiwan in 1971 to be broken up for scrap.

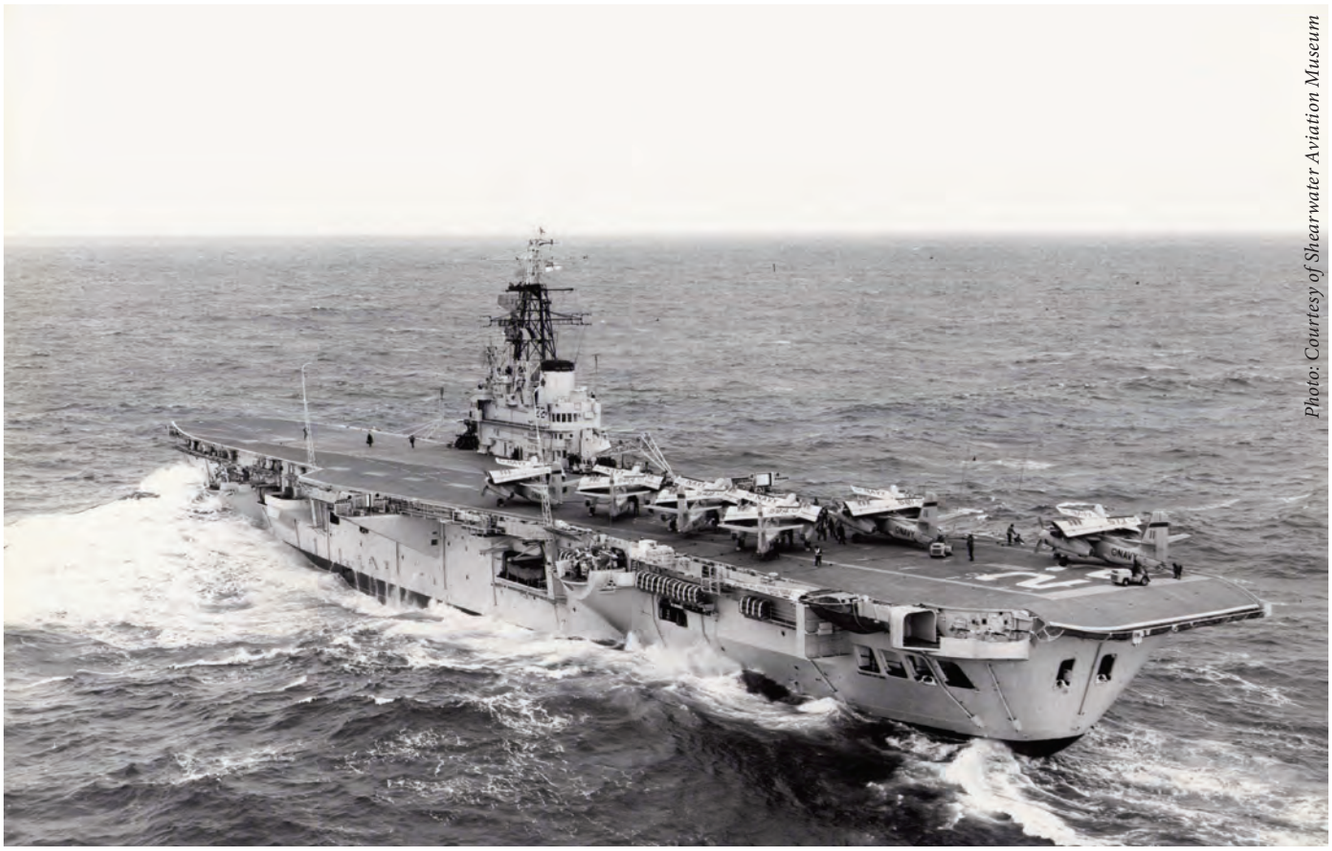


Photo: Courtesy of Shearwater Aviation Museum

*HMCS **Bonaventure** with Trackers.*

Photo: Internet, Chatham World Heritage Site

*HMCS **Okanagan** is launched from No. 7 Slip, 17 September 1966, the last warship to be built at Chatham Dockyard, the yard that built Nelson's flagship, HMS **Victory**.*

The Oberon*-class Submarines*

HMCS *Ojibwa*, *Okanagan* and *Onondaga* were built in England and commissioned between 1965 and 1968. Although the RCN had operated submarines previously, including two purchased in 1914 to protect the West Coast from German predations and two surrendered U-boats briefly commissioned into the RCN after WW II, the 'O' boats were the first truly operational Canadian submarines. Initially they were employed in 'clockwork mouse' training of our ASW forces, but in the 1980s, after the Submarine Operational Update Program (SOUP) which provided updated weapons, sensors, fire control and improved batteries, they conducted offensive patrols and shadowed Soviet ballistic missile submarines operating in the north Atlantic. With their Mark 48 torpedoes, they were Canada's only strategic weapons in that they were capable of attacking and sinking Soviet submarines operating off the Canadian coast.

Protecteur *and* Preserver

HMCS *Protecteur* and sister-ship *Preserver* are improved versions of HMCS *Provider*, the world's first one-stop shopping underway replenishment vessel (AOR). They entered service in 1969 and 1970 respectively. At that time, in larger navies, replenishment ships specialized in carrying and supplying fuel for ships or aircraft, or ammunition, or food and spare parts. The Canadian AORs were capable of providing all of these supplies to warships, and they permitted a task group to keep to the seas for extended periods compared to when the navy did not have its own replenishment vessels. Studies have indicated that the

Photo: Cpl Steve McNeil, Formation Imaging Services, Halifax

*HMCS **Preserver** passing Martinique in 1987.*

Photo: DND

HMCS ***Athabaskan*** *as flagship of the Standing NATO Maritime Group 1 (SNMG1) in 2006.*

Protecteur-class can increase, by a factor of six, the length of time a Canadian naval task group is able to stay at sea and perform operational missions.

These 22,000-tonne ships have proven themselves very flexible in their long lives. They have supported United Nations operations in Somalia and East Timor as afloat joint headquarters, by providing supplies and a base of operations for helicopters and landing craft supporting forces ashore, rest and recreation sites, support to disaster relief operations in the Bahamas and Florida, etc. The intention is to replace them with three Joint Support Ships which will be able to support maritime and land operations.

The DDH-280 (Tribal)*-class*

HMCS *Iroquois* and the second class of Canadian *Tribal*s were impressive ships when commissioned in 1972 and 1973. They represented many firsts for the Canadian Navy: all-gas-turbine propulsion; large hangars capable of housing two *Sea King* helicopters; the first surface-to-air missiles in the Canadian Navy; a 5-inch gun suitable for anti-surface and naval gunfire support to troops ashore; additional space for a command staff, etc. In the late 1980s/early 1990s all four ships were taken in hand and converted under the *Tribal*-class Update and Modernization Program (TRUMP). TRUMP brought vertical-launch standard SM-2 surface-to-air missiles with a range of 50 nautical miles, greatly improved radars, communications and command and control equipment, and other enhancements and updates to become area-air defence and command and control ships. With a Commodore and his staff embarked, they have proven to be highly successful platforms for controlling the operations of national and international task groups. Three of these useful vessels remain in service. HMCS *Huron* was paid-off into reserve due to a shortage of qualified sailors and expended as a target during an exercise in 2007.

Conclusions

There have been some very significant ships and innovative developments in our navy over the last 100 years. In the post-World War II era we have been world leaders in a number of areas as discussed elsewhere in this issue. Those who have served, at sea and ashore, should be proud of the capabilities they have delivered to government policy-makers and I am sure this will continue in the future.

A Standing Commitment: The Standing NATO Naval Force

Rear-Admiral (Ret'd) David Morse

Photo: Cpl Robert Leblanc, Formation Imaging Services, MARLANT

*Sailors aboard HMCS **Ville de Québec** wave farewell as they depart from Halifax to join Standing NATO Maritime Group 1 (SNMG1), 17 July 2008.*

The Standing NATO Maritime Group (SNMG1) is a squadron of eight-10 destroyers and frigates. It serves a number of operational and symbolic functions. In terms of its tasks, SNMG1 spends about 60 per cent of its time underway. While it is underway, it is conducting squadron training exercises and cooperating with non-SNMG1 naval forces in an attempt to make good use of available training and support facilities. It participates in major NATO and national exercises at sea and plays a role in developing and adapting new NATO naval warfare tactics. To illustrate that it is a powerful symbol of alliance solidarity, the force visits various ports, including those of non-NATO countries. During these port visits, force members participate in sporting events and community activities, and thus demonstrate some of the intangible benefits of multinational cooperation.

Canada has long been a strong supporter of collective defence, and in the cold world which followed World War II, it found common purpose with both the United Nations (UN) and NATO. Collective defence found expression in all three post-war services with air and land forces stationed in France and Germany, with peacekeeping missions in varied locations, and with navies engaged in deterrent patrols and exercises.

As the 1950s and 1960s progressed, the rapidly expanding Soviet submarine fleet posed an immediate threat to NATO carrier forces which formed the major part of the retaliatory strategy. The frequent presence of submarines as well as increasing overflight by long-range Soviet aviation across the north Atlantic raised the spectre of a new Battle of the Atlantic threatening the still-recovering economies of Europe. The carriers provided their own defence against air attack but anti-submarine warfare (ASW) remained a major weakness in the alliance. The experience of two world wars clearly demonstrated that collective action would be necessary to counter the submarine and the possibility of a multinational naval anti-submarine force operating under common command was first explored in the 1960s. In 1964 the Matchmaker series of exercises for joint training started with four states (including Canada) assigning frigates to a five-month program. With increased recognition of this maritime vulnerability, NATO undertook a major series of convoy exercises and in 1967, the Defence Planning Committee endorsed the concept of a force-in-being as part of the alliance's flexible response strategy. The Standing Naval Force Atlantic (SNFL) was born. A Mediterranean squadron would follow in 1992 (SNFM).

While the submarine threat is not now the predominant issue, the vulnerability of trading countries to ocean-borne threats remains. Recent NATO deterrent patrols in the Mediterranean aimed at addressing the spread of terrorism and similar NATO action against piracy in the Gulf of Aden and Indian Ocean are cogent examples. As recently as 2008 at the Bucharest Summit, it was noted that:

> The Alliance places a high value on *its expanding and varied relationships with other partners across the globe*. NATO will engage in the following fields: ... advancing international and regional cooperation; supporting consequences management; and supporting the protection of critical energy infrastructure.
>
> NATO will continue to strive to *promote greater interoperability between its forces and those of partner nations; to further enhance information sharing.*

> NATO pursues ongoing efforts to further strengthen information superiority through networked capabilities, including an integrated air command and control system and *increased maritime situational awareness* (emphasis added).[1]

The original objectives of the naval standing forces reflect this emphasis. The objectives were given as ensuring a capability to:

- provide a continuous NATO maritime presence demonstrating the solidarity of the alliance by showing flags of member states operating together in a single force;
- provide NATO with a force-in-being available for rapid deployment in times of crisis, tension or limited aggression;
- provide elements for the formation of a more powerful NATO force if required; and
- contribute to the improvement of NATO naval capabilities through extensive participation in multinational exercises and day-to-day operations.

From 1964 until the confused days following 11 September 2001 and the start of the 'global war on terrorism,' Canada maintained a standing commitment to SNFL. It was a commitment so well respected that in the midst of the 1991 Gulf War, when the entire fleet was tasked to the limit and in an unprecedented move, *Restigouche* was dispatched from the West Coast to take up the SNFL role.

The 1994 Defence White Paper was explicit in the government's commitment to multinational forces. The White Paper noted that:

> The Government is renewing Canada's traditional commitment to participate in the military dimension of international security affairs. By choosing to maintain a multi-purpose, combat-capable force, Canada will retain the capability to make a significant and responsible contribution to international peace and stability, whether within a UN framework, through NATO, or in coalitions of like-minded countries.[2]

The White Paper went so far as to list the commitment to SNFL as a defined element of the mission of the Canadian Forces.

The Gulf situation following the 1990 Iraqi invasion of Kuwait and then operations in the Adriatic during the conflicts in the 1990s in the former Yugoslavia would place enormous challenges on the traditional contributors to SNFL. A series of NATO and Western European Union (WEU) embargo operations in the Adriatic and the Arabian Gulf added demands that many countries found impossible to meet. In the Adriatic alone the combined NATO/WEU operation (*Operation Sharp Guard*) was aimed at the warring factions within the former Yugoslavia. The maritime forces conducted more than 74,000 challenges, nearly 6,000 inspections at sea and just over 1,400 diversions and in-port inspections. The Arabian Gulf operations have demanded deployable resources from 1990 to the present day.

In the SNFL of 1999-2000, one could find ships which were missing essential pieces of equipment, with crews that lacked essential training and readiness standards, and higher priority national tasking always loomed. When SNFL was assigned to relieve the Mediterranean

Photo: NATO

*While attached to SNMG1, HMCS **Winnipeg** escorts a freighter carrying World Food Program supplies to Bosasso, Somalia.*

Photo: Courtesy of the Maritime Command Museum

*The Standing Naval Force Atlantic Fleet (SNFL) in the 1970s with HMC Ships **Protecteur** (middle), **Restigouche** (left) and **Terra Nova** (second from left in the rear).*

Standing Force in the Adriatic operational theatre in 1999, the force required a three-week maintenance period and a further period of work-ups before arriving on station. Just as important, there was little agreement on the need for new competencies such as disaster relief, boardings and constabulary support of missions such as counter-drug operations.

The operational experience of Canadian and other navies had already challenged traditional concepts of operations. In Canada's case, this included:

- the floods in Manitoba in 1997;
- search and rescue, then salvage, operations after the crash of Swissair Flight 111 in 1998;
- Haitian evacuation operations in 1998;
- Gulf War embargo operations against Iraq and Iran in 2000;
- 11 September 2001 itself;
- the sea denial operations in the Arabian Gulf;
- sailors supporting land operations in Afghanistan;
- the January 2010 naval response to the Haitian tragedy; and
- providing back up security at the Vancouver Olympics in February 2010.

These are just some of the many events which shaped and continue to affect Canadian views of maritime utility capability. They speak volumes of the need for navies to reach beyond the previous definitions of sea power and to respond wherever and however the country calls. The experience of SNFL in the Adriatic in 1994 and 1999 and repeated Canadian deployments to the Arabian Gulf emphasized that these new missions demand forces ready and prepared for more than standard deep-water ASW exercises and port visits.

For the Standing Forces to receive priority in the struggle for resources, they must compete against these demands. It is the contrast between a fully tasked naval capacity and the reputation of SNFL/SNMG as a cocktail party tour that has continuously challenged the sense of the worth of the 'standing commitment.'

The transformation of SNFL to SNMG in 2005 was partly in response to this dilemma. The Atlantic Standing Groups now have clear goals for immediate readiness and a response commitment to operations even if they occur out of their traditional areas. The first example of this new posture was *Operation Active Endeavour*, the naval reaction to 11 September and NATO's invocation of Article 5. This Mediterranean operation is designed to prevent the movement of terrorists or weapons of mass destruction. Similarly, SNMG recently deployed with little notice into the Horn of Africa area, responding to recurrent piracy attacks. These developments approach the goal of a high readiness maritime capacity tasked in response to real world events. The forward presence of a worked-up and ready force allowed a timely response which would otherwise have been impossible. Similar effects would not be realized from an ad hoc or hastily assembled force and in this respect, SNMG is a significant improvement on SNFL which seldom left the Atlantic.

Some would argue that the impact of these standing forces is hard to demonstrate. In Canadian experience from Cyprus to Afghanistan, it is clear that the results of military engagement are measurable only after years of effort. The ocean commons are neither unpopulated nor benign. Free use of the oceans rests on agreed and enforced limitations on national privilege. For a country such as Canada whose trade depends on the oceans, staying home is not an option. Participation in the common endeavour of maritime security is part of the price of admission. Navies that rely on their own experience quickly become irrelevant to the world community. Navies that do not deploy lose the capacity to integrate with other navies and must

Photo: NATO

*Standing NATO Maritime Group 1 heads into the Black Sea on 22 August 2008 with HMCS **Algonquin** second from the left.*

Photo: WO Carole Morissette, CF Combat Camera

*HMCS **Winnipeg** (far left), Standing NATO Maritime Group 1 and Pakistani warships in the Indian Ocean at the conclusion of a joint naval exercise, 28 April 2009.*

work hard to regain the trust of others. Navies alongside in home port very quickly become ineffective. There is no substitute for the pressure of a deployment deadline and for the reality of being at sea. Navies that are not challenged will see their operational 'fitness' decline. In times of true need, the navy that stays home will not be ready.

CBC reporter Brian Stewart reporting in the context of the Haitian earthquake in January 2010 reinforces the public perception that readiness will always be expected. According to Stewart,

> Whenever Canada faces a world crisis involving international security or humanitarian aid, *it is almost always the navy that gets the first call*. So it has been throughout the now almost 100 years of the Canadian navy's existence, and so it proved once again in the Haitian catastrophe. Within hours of the earthquake, Ottawa was able to order up a significant naval operation that formed the vanguard of Canada's largest emergency relief mission ever.…
>
> *There's no escaping the fact that almost all global crises involve sea power and that Canada's ships have almost always been part of that power over the decades*, sent to reinforce (and sometimes command) NATO and UN missions from the South Pacific to the Red Sea and the Indian Ocean.
>
> Looking ahead, the *maritime picture looks even more complicated, what with rising new sea powers, the problems of terrorism and piracy, and even new natural catastrophes that possible climate change might bring about* (emphasis added).[3]

It is unfortunate that the lessons of the importance of a naval response, the impact of international participation and the effects of multinational training and interaction must be re-learned by every generation. A brief survey of NATO- and SNFL-related articles in *Canadian Defence Quarterly* and *Canadian Naval Review* shows many of these themes being repeated year after year.

A group of relatively small frigates cannot be expected to command the seas. But they can be employed to demonstrate the resolve of the states which sent them. These ships can also act as a prior commitment bringing participants closer to collective action simply by already being there. They are indicators of the value which states, acting alone or together, place on an issue – whether piracy, terrorism or a natural disaster – and its resolution.

NATO as a whole and states individually will always face too many demands and no standing force can accommodate every mission or provide a complete range of warfare and non-warfare solutions. Similarly, not everyone can afford the training services required for their own readiness. The Canadian Navy has a long history of taking advantage of foreign training opportunities dating from submarine courses with the Royal Navy, to ranges in Bermuda and Puerto Rico, and more recently the Virginia Capes training areas. Training abroad and with other forces has been effective in avoiding massive capital and operating investments. It has had the advantage of access to some of the most current and challenging training services available. It has provided insight into the operations of Canada's major allies and has undoubtedly made for a better navy. Ships participating in the NATO Standing Forces benefit from the added dimension of multinational experience.

Standing naval forces have been an influential and significant part of Canadian naval experience for more than 40 years. Acting in concert with like-minded states and navies demonstrates our commitment to collective action and reinforces our position in the world community.

Photo: DND

Ships of the Standing Naval Force Atlantic (SNFL) visit Halifax, no date available.

Photo: NATO

Notes

1. North Atlantic Treaty Organization, "Final Declaration," NATO Summit, Bucharest, 3 April 2008, available at www.nato.int/cps/en/natolive/official_texts_8443.htm.
2. Government of Canada, White Paper on Defence, 1994, Chapter 5, available at www.forces.gc.ca/admpol/newsite/downloads/1994%20White%20Paper%20on%20Defence.pdf.
3. Brian Stewart, "Just How Shipshape are We?" CBC News, 10 February 2010, available at www.cbc.ca/canada/story/2010/02/10/f-vp-stewart.html.

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Flying Stations

Gordon Davis

Early Years

No recounting of Canadian naval history would be complete without some words about Canadian naval air operations. The beginnings of a Royal Canadian Navy (RCN) air arm date to 1915 when Canadians were recruited to join the Royal Naval Air Service (RNAS). More than 600 naval airmen eventually joined up and formed the basis for a potential RCN air component while serving in a variety of theatres overseas. Important as this contribution to the war effort was, however, it was the U-boat threat to western Atlantic shipping following the imposition of the convoy system and the entry of the United States into World War I in 1917 that led to the establishment in August 1918 of US Naval Air Stations at Dartmouth and Sydney, Nova Scotia, and began naval aviation in Canada – albeit by a friendly foreign navy. The intention was that aircraft and personnel of the US Navy would operate from these bases until they could be taken over by the fledgling Royal Canadian Naval Air Service (RCNAS) which was formed in September 1918 by an Order-in-Council.

Following the Armistice in November 1918 and the rapid demobilization that took place after the war, there was little support for an RCN air capability and the RCNAS was disbanded. To conduct post-war air operations, the federal government established a civilian-controlled air service under the auspices of a Canadian Air Board. This resulted in both Dartmouth and Sydney air bases passing out of RCN control and being transferred to the Air Board. Officially, the RCNAS was finished, but the idea of an RCN air component, born of the RNAS experience and the submarine threat of WW I, remained very much alive.

Courtesy of the Shearwater Aviation Museum

Fireflies preparing to launch.

The Royal Canadian Air Force (RCAF) was eventually established in 1924 from the military wing of the Air Board, with responsibility for shore-based maritime patrol operations, among other quasi-military roles. Meanwhile, Canadian naval staff, plagued by inadequate funding and with the demands of a rapidly expanding fleet, examined but could not follow through on plans for an RCN air component. By 1943, however, the fact that naval air forces were essential to the success of naval operations, particularly convoy operations, could no longer be ignored.

The RCN's experience in WW II drove home the vulnerability of ships without air support. The lack of air cover in the first years of the war gave U-boat wolf-packs the ability to congregate and attack with little hazard to themselves, particularly in the mid-ocean gap. By 1942 the success of very-long-range shore-based RAF patrols in the eastern Atlantic drove U-boats further west to the mid-Atlantic. Here, escort carrier groups of the RN and USN gave proof of the effectiveness of ship-borne anti-submarine warfare (ASW) aircraft.

Prior to and during WW II, Canadian officers and sailors served with the Royal Navy Fleet Air Arm (RNFAA) gaining operational experience. By 1943 proposals for a revival of a Canadian Naval Air Service were well underway and formed an important part of the planning for a 'big ship' Canadian Navy in the post-war period. On 19 December 1945, Cabinet approved the formation of a naval air branch, but authorized only 1,100 personnel – clearly insufficient for the two carriers and four squadrons contemplated. Moreover, in accordance with the British pre-war concept of operations for embarked aviation, the RCN was restricted to air operations from ships, while the RCAF was responsible for all shore-based maritime air operations. In other words, all shore-based flying and support was dependent on RCAF funding. The bitter

Photo: Courtesy of the Shearwater Aviation Museum

*An agreement was made in 1945 to acquire HMS **Warrior** from the Royal Navy.*

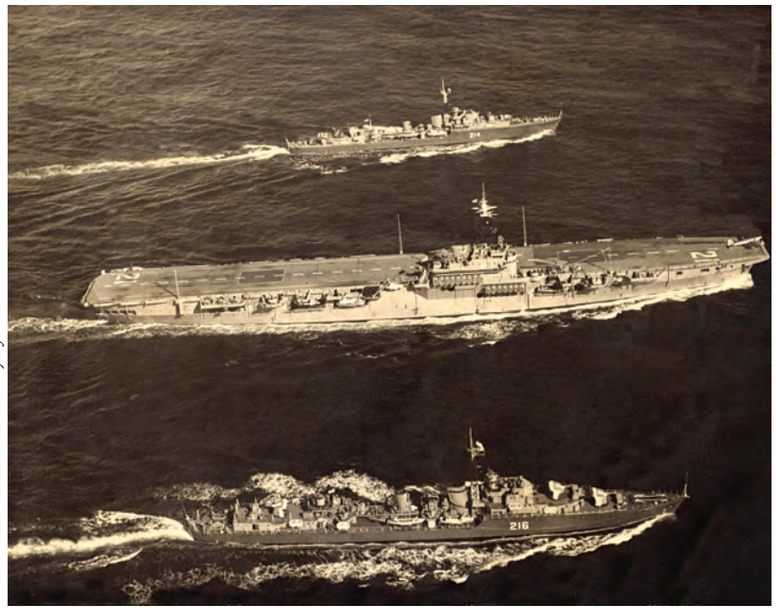

Photo: Courtesy of the Maritime Command Museum

HMCS ***Micmac*** *(top), HMCS* ***Magnificent*** *and HMCS* ***Huron*** *in 1949.*

lessons of command and control of embarked maritime air forces learned by the British in the inter- and early war years were set aside.

Once the decision to operate aircraft carriers was taken by the Canadian government, the next step was to acquire the ships. In January 1944 two RN escort-carriers *Nabob* and *Puncher* were designated for Canada, but by August, *Nabob* had been damaged beyond repair in a torpedo attack and *Puncher* had been re-assigned by the RN. Finally, in February 1945, an agreement was reached to transfer two light fleet carriers, *Warrior* and *Magnificent*, to the RCN from the RN.

Two Decades of 'Carrier' Operations

Over the summer of 1945 the first RCN air squadrons were formed with RCN, RCN Volunteer Reserve (RCNVR) and ex-RCAF pilots and support personnel who were serving in the RNFAA. Robert Hampton Gray of Nelson, British Columbia, might well have been one such pilot. In August 1945 he was an RCNVR pilot serving with the RNFAA in HMS *Formidable*, when he perished leading his section of *Corsairs* against the Japanese at Onagawa Bay. His valour was recognized by the award of a posthumous Victoria Cross, with a recommendation from his Senior Officer that stated "I have in mind firstly his brilliant fighting spirit and inspired leadership; an unforgettable example of selfless and sustained devotion to duty without regard for safety of life and limb."[1] The legacy of Hampton Gray's example of leadership and duty is a thread that runs through Canadian naval airmen to this day.

Four RNAS squadrons were reformed and 'Canadianized' – 803 and 883 equipped with *Seafires*, and 825 and 826 equipped with *Fireflies*. Because of the manpower and resource limits imposed by Cabinet, however, it was necessary to deactivate 883 and 826 Squadrons prior to their repatriation to Canada. When *Warrior* finally arrived from England in the spring of 1946, she had embarked 803 and 825 Squadrons equipped with *Seafires* and *Fireflies* and manned with a full complement of Canadian naval airmen. The RCN finally had its own naval air component.

Upon arriving in Halifax and disembarking the air squadrons to RCAF Station Dartmouth, the difficulties for the RCN associated with operating and maintaining its naval aircraft ashore, wholly dependent on RCAF material and financial support, became obvious. In particular, the hangars and accommodation building were inadequate and in desperate condition, and there were shortages of the most basic supplies. Perhaps more critical was the lack of any winterization in the living spaces on board *Warrior*, a deficiency that made her unsuitable for winter operations in the north Atlantic and would have necessitated her transfer to the West Coast. Under the imposed manpower restrictions, however, it was clear that the RCN would not be able to operate two carriers. So, early in 1948, rather than spending scarce resources to winterize *Warrior* for north Atlantic operations, she was returned to the RN, and *Magnificent*, commissioned into the RCN under the command of Commodore H.G. DeWolf, was transferred to Halifax.

Over the previous two years the RCN air component at RCAF Station Dartmouth had grown to 900 personnel and 56 aircraft, whereas the RCAF was only 250 personnel and two aircraft – the 'lodger' arrangement was clearly out of balance. Soon after the arrival of *Magnificent*, Cabinet took the decision to transfer RCAF Station Dartmouth to the RCN, and in September 1948 the airfield was commissioned HMCS *Shearwater*. Canadian naval aviation had a home it could call its own.

Now that the RCN had both an aircraft carrier and an airfield, support within the navy for its air capability began to grow, particularly in terms of ASW. This was rather an 'if you build it they will come' phenomenon. In 1950 the *Fireflies* were replaced with 75 used *Avengers* from the USN, a decision which must have caused some difficulty considering most of the senior officers in the RCN maintained ties to the RN. However the *Avenger* was able to carry the latest ASW equipment, was easily maintained and was suited to all-weather carrier operations. Then in 1952 the replacement for *Magnificent* was authorized, and work began in Belfast refitting HMS *Powerful* to Canadian specifications, although it wouldn't be until 1957 that *Powerful* would be commissioned into the RCN as HMCS *Bonaventure*.

Meanwhile, in 1951 the RCN's first helicopters (three Bell HTL-4s) arrived and were formed as No. 1 Helicopter

Photo: DND

*Early deck landings aboard the frigate **Buckingham** demonstrated the need for mechanical assistance to secure the helicopter immediately upon landing and to move it onto the deck.*

Flight tasked with shore-based utility duties. These were soon augmented by the arrival of Sikorsky HO4S *Horse* helicopters which were initially tasked with plane guard duties on *Magnificent* and would, in 1955 when fully complemented, form HS-50, the RCN's first helicopter ASW squadron. (Added to this mix were three Piasecki HUP 3s purchased for embarkation on the RCN's new icebreaker, HMCS *Labrador*, for scientific and replenishment work in the north.) Early success in operating a mixed fleet of fixed- and rotary-wing aircraft in the ASW role on board *Magnificent* gave rise to the concept of operating ASW helicopters from destroyers, and in 1956 the first such trials on board HMCS *Buckingham* were undertaken. The success of these trials resulted in the 1962 decision to fit the *St. Laurent*-class destroyer-escorts (DDEs) with a flight deck and hangar in order to operate anti-submarine helicopters to counter the threat of Soviet nuclear-powered submarines. These improved *St. Laurent*-class destroyer-escorts were designated DDHs in light of their capability of operate helicopters.

While helicopters were being taken on at *Shearwater*, and HMS *Powerful* was being refitted to become HMCS *Bonaventure*, fixed-wing Canadian naval aviation was evolving. In anticipation of the arrival of *Bonaventure*, the *Sea Fury* aircraft were replaced with ex-USN F2H3 *Banshee* all-weather fighters. As well, construction of the Grumman CS2F *Tracker* had begun in Canada, modified to Canadian specifications by deHavilland Canada. Everything came together in the spring of 1957 when the RCN took delivery of HMCS *Bonaventure* and conducted flight trials with the *Tracker* and *Banshee*. All the work and preparation had been proven worthwhile – *Bonaventure* and her embarked aircraft were a team.

All was not as copasetic as it seemed however. There had been doubts about *Bonaventure*'s suitability from the beginning. She had been laid down in 1943 as a light fleet carrier for the RN and launched in 1946 but was never completed. In 1952 she was already nine years old, and slow by post-WW II standards. Very early on the RN made an unofficial offer of a *Hermes*-class carrier for the same price as the *Bonaventure* conversion, but this offer was never pursued in spite of the fact that *Bonaventure* would be operationally maxed-out with no growth potential beyond the *Banshees* and *Trackers*. Late in 1962 the USN made a similar offer. A completely modernized *Essex*-class carrier could be made available for a fraction of its value, but the opportunity to increase the navy's 'air' capability was once again declined. One reason for this might have been that the *Banshees* were approaching the end of their service life. If they were not replaced there would be no requirement for a more capable aircraft carrier and this would free up assets for the surface fleet. Whatever the reason, when the *Banshee* fleet was retired in 1962 without replacement, Canadian naval air suffered its first net loss in capability, and the Canadian fleet no longer had an integral, manned air defence capability. The retirement of the *Banshees* marked the beginning of the end of fixed-wing aviation in the RCN.

DDH Operations

The first CHSS-2 Sikorsky *Sea King* helicopters arrived in 1963 to replace the HO4S *Horse*. Although embarked on *Bonaventure* in a very successful ASW combination with the *Trackers*, the earlier trials on board HMCS *Buckingham* to evaluate the concept of operating an anti-submarine helicopter from a destroyer-escort were being acted on. Indeed, a briefing by the Admiral to the senior officers at *Shearwater* in 1965 clearly indicated that the future of RCN aviation would be directed toward helicopters embarked on DDHs. Nonetheless, the mid-life refit of *Bonaventure* went ahead a year later at a cost of over twice the estimated $8 million, so when *Bonvaventure*'s retirement from service was announced only two years later in September 1969, the officers and men of the RCN naval air branch were incredulous. Furthermore, 'unification' had already caused the records of naval aviation personnel to be transferred from 'navy' to 'air force' career managers, and now the last remaining RCN fixed-wing aircraft would be transferred to Winnipeg's inventory. Even HMCS *Shearwater* became CFB Shearwater under air force ownership. Fixed-wing aviation in the RCN was shutting down.

While naval fixed-wing aviation was coming to an end in Canada, the era of rotary-wing aviation was just beginning. By 1966 *Sea King* trials on board HMCS *Assiniboine* had proven that the operation of *Sea King* helicopters from DDH-class ships was safe and effective, and in 1967 an operational Helicopter Air Detachment (HELAIRDET) was embarked in HMCS *Fraser*. The age of operating ASW helicopters from converted destroyer-escorts, DDH operations – conceived and perfected in Canada by the RCN – had arrived. Clearly, naval aviation in Canada was not dead in the water, it had only altered course.

Photo: Courtesy of the Shearwater Aviation Museum

*HMCS **Bonaventure** with aircraft embarked and a helicopter-carrying destroyer replenishing from HMCS **Provider**.*

For the next two decades as Cold War DDH operations matured, the *Sea King* gradually became increasingly obsolete as an ASW weapons system. The RCN had purchased the *Sea Kings*, proven the viability of DDH operations and demonstrated the effectiveness of embarked helicopters as an ASW weapons system. However, with unification and the establishment of Air Command, ownership of the aircraft was transferred to the air force. Support was available to keep the aircraft safe to fly, but there was no money in the budget for a replacement. Low-cost system upgrades had been accomplished with the ingenuity of the crews that flew and maintained the aircraft, but by the time the Cold War came to an end in the early 1990s, the *Sea King* was most effective in the fleet utility role. This, as it has turned out, was not such a terrible thing because the navy itself was de-emphasizing ASW as a primary capability.

The end of the Cold War led to an increase in international instability, and the first conflict that had consequences for Canada was Iraq's invasion of Kuwait in 1990. *Operation Friction* proved that the ingenuity and can-do attitude of previous generations of naval aviators was alive and well in the 1990s. Much has been written about the 10-day transformation of the *Sea King* fleet from an obsolete ASW weapons systems, to a fleet surface/sub-surface surveillance and interdiction helicopter fitted with air-to-ground weapons and anti-air defences. In 1992-1993, off Mogadishu, Somalia, during *Operation Deliverance*, the *Sea King*'s vertical replenishment capability proved essential to the navy in offloading supplies for the army, and then transferring those supplies to the army's forward operating base. In 1993 use of the forward-looking infra-red (FLIR) sensor fitted for use in *Operation Friction* proved a great benefit in finding Somali insurgents manoeuvring at night. Although steeped in a blue-water ASW tradition, *Sea King* air crew and maintainers proved themselves highly capable in littoral operations, and worthy of their naval air lineage.

The *Sea King*'s fleet utility, surface surveillance and interdiction role has been the routine for the past two decades as the navy has been tasked as Canada's first responder to international situations. Having demonstrated a consistent spirit of innovation and adaptation to changing operational requirements, the *Sea Kings* and the crews that fly and maintain them remain a potent tool. This is illustrated in this quotation from the Commanding Officer of *Athabaskan* in the relief efforts off Haiti in early 2010:

> One of the biggest assets that we have is the helicopter. It has flown every day, landing in airports, clearings and farmers' fields to move people and materials where they are most needed. We moved most of the DART medical equipment from the capital to a neighboring city, many soldiers to Leogane, and loads of supplies all over the region. We even flew two critically injured people to the US hospital ship, *Comfort*, ... a floating hospital just offshore. The aircrew is flying 8-10 hours a day and the aircraft never goes anywhere empty. The technicians and landing crew are working in 30 to 40 degree weather to make this happen![2]

Photo: Cpl Johanie Maheu, FIS, Halifax

*HMCS **Athabaskan**'s Sea King lowers humanitarian aid for the people of Leogane, Haiti, 12 January 2010.*

After 47 years of Canadian operations, a replacement for the *Sea King* has been contracted. Although there have been several delays, the new helicopter is scheduled for delivery starting November 2010 with fleet introduction scheduled in 2012. The new Sikorsky CH 148 *Cyclone* promises to expand the operational capability of the helicopter/DDH marriage, and carry on the tradition of providing the Canadian Navy with an embarked air capability, and its primary operational capability.

Notes

1. Vice-Admiral Sir Philip Vian, as quoted in J.D.F. Kealy and E.C. Russell, *A History of Canadian Naval Aviation 1918-1962* (Ottawa: The Naval Historical Section, Canadian Forces Headquarters, 1965), p. 22.
2. Commander Peter Crain, Commanding Officer HMCS *Athabaskan*, "A Few Words from off the Coast of Haiti," letter to Families and Friends of *Athabaskan*, 26 January 2010.

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The Century over the Horizon: Building Canada's Next Navy

Janet Thorsteinson

Early in this naval centennial year, two ships of the Canadian Navy – HMCS *Athabaskan* and HMCS *Halifax* – were sent to Haiti to help in the aftermath of a devastating earthquake. The ships arrived in Haiti just one week after the earthquake and immediately began to assist with the recovery from disaster. On the other side of the world, HMCS *Fredericton* was patrolling the International Recommended Transit Corridor (IRTC) in the Gulf of Aden, Horn of Africa and the Somali Basin, protecting shipping from pirates as part of NATO's *Operation Shield*. Once again, the Canadian Navy was meeting the expectations of its government and people.

The fleet carrying out these missions is rapidly aging and urgently needs replacement. The ships that are available today were built during a time of potential conflict with a powerful adversary. The blast furnace of war – even a *Cold* War – forges new weapons in short periods of time. People, money and resources are drafted into the effort as necessary. In many instances, utility and not perfection is the goal, and process is designed on the run, as a means to an end and not as a goal in itself.

Photo: DND courtesy of the Shearwater Aviation Museum

A Sea King helicopter in low hover with the 'Beartrap' engaged illustrates the conditions for which it was developed.

These are not the conditions we face today. With no massive and compelling threats that dictate the shape of the weapons needed to confront them, the political challenge now is developing the will to commit real money for specific systems today against the possibility that threats, obligations or opportunities to use those systems will materialize in the future. Today, hesitation and delay are status quo, and the government's stomach for risk has been minimized almost to the point of non-existence. Yet Canada's navy and supporting industries have demonstrated again and again the ability to produce innovative and effective systems.

Legacy of Innovation

Richard Gimblett, command historian of the Canadian Navy, has documented how the Canadian Navy's surface combatant fleet made the transition from a Cold War, deep water, anti-submarine role in the north Atlantic to a littoral, anti-terrorist and counter-insurgency role in the Persian Gulf on the strength of advanced, integrated digital communications.[1] During the Cold War, Canadian-developed towed-array sonar and on-board processing meant anti-submarine ships could be spaced more widely, which necessitated satellite communications and an integrated combat suite to manage that lone ship's self-defence.

Canada may not focus on anti-submarine warfare in the post-Cold War years but that experience helped to develop network-enabled capabilities that are essential in national and international naval formations in the 21st century. Whether they are linking ships in task groups, or integrating on-board systems, those advanced digital systems have served Canada well, both in their duties at sea and in stimulating innovation in the companies that built them. As "Sovereignty, Security and Prosperity," the CADSI Marine Industries Working Group report puts it, "[t]hroughout its modern history, the mission systems

Photo: DND

*Lieutenant (N) Stephen Wall, Above Water Warfare Director in HMCS **Winnipeg**, monitors combat information systems during Exercise Talisman Saber 2009 off the east coast of Australia.*

onboard the Navy's ships have been integrated in Canada by Canadian-based companies."[2] This has been beneficial for Canada, the navy and Canadian industry.

The *Tribal*-class upgrade – a highly complex modernization project – converted four anti-submarine destroyers to area-wide anti-aircraft ships. Industry in Canada benefitted from the project, and the Canadian Navy received a state-of-the-art area-air defence ship. As well, the United States – Canada's most important ally by far – was satisfied with the outcome. It meant that Washington had confidence in Canadian industrial ability to integrate and operate the capabilities. And this would allow Canada to purchase the US equipment in a more direct manner, instead of through 'foreign military sales' procedures.

At about the same time, Canadian industry undertook the electronic systems integration for the Canadian Patrol Frigate (CPF) program. Not only did this program make the frigates more effective in their many roles, it had industrial benefits as well. It illustrated a Canadian capability to manage major naval projects. *Leadmark: The Navy's Strategy for 2020* went beyond this conclusion. *Leadmark* states that:

> The integrated combat system of the *Halifax*-class of patrol frigates (CPFs) stands as the envy of other navies. The twelve ships of this class have toured the world as showcases of Canadian technological know-how. Single ships (in rotation) frequently have been integrated seamlessly into USN carrier battle groups deployed to the Persian (Arabian) Gulf in continued enforcement of United Nations resolutions against Iraq.[3]

It is not just the navy, or defence-related industries, that can benefit from innovation. There is pride and prestige at stake but also economic trade and foreign policy influence. As *Leadmark* points out, the frigates have toured the world showing Canadian technological expertise. This supports Canadian trade missions abroad, and (hopefully) helps to secure new contracts for Canadian companies around the world.[4]

As if this wasn't enough, stand-alone capability in advanced digital systems is important for more reasons than this. Even though Western navies excel at operating together seamlessly, navies all have their own internal methods and operating procedures, usually for reasons of national security. As "Sovereignty, Security and Prosperity" explains,

> These procedures become an integral part of the ship's command and control system and are part of the implementation of the mission system design. These operational requirements make it important, if not imperative, for the mission system integrator of a warship design to be Canadian-based and conversant with the way that the Canadian Navy operates its ships.[5]

Foreign companies may be able to meet technological requirements, but they may not be familiar with the Canadian Navy procedures and traditions.

The Course Ahead

Communications, sensor, weapons and other systems for the anticipated Canadian Surface Combatant fleet, which is scheduled to replace the existing frigates and destroyers, are the next great opportunity for this country to exploit advanced research and development. This has many facets

Photo: DND

*HMCS **Fredericton** under construction at Saint John Shipbuilding Ltd.*

which are in existence or under development. According to Harold Merklinger and Ross Graham, the following research already exists:

- task group anti-ship missile and torpedo defence;
- command and control concepts and systems;
- combat and surveillance data fusion and interpretation, including automated decision aids;
- naval fire support;
- fixed and mobile autonomous systems;
- multi-platform cooperative ASW;
- mine and harbour defence;
- novel materials for weight reduction and signature control;
- ship damage control and maintenance;
- systems for long-range surveillance of Canada's maritime approaches; and
- operations research into current and future fleet operations.[6]

Clearly, Canadian defence research is already undertaking much of the work that will be necessary for the future fleet.

In 2009 there were several efforts underway to improve defence acquisition. CADSI worked with the federal government on consultations about the military procurement process in general, and another series of consultations concentrated specifically on shipbuilding. The nation-wide consultations attracted participation in a process that can build and sustain communication. The elements for success are present and, as *Leadmark* affirms, the need exists. According to *Leadmark*, "[t]he existence in Canada of a domestic capacity for the development of leading edge technology with military application, and the ability to repair and maintain naval vessels (as well as aircraft) within our borders are vital elements to ensure the operational effectiveness and independence of the navy."[7]

As the Cold War began in the late 1940s, defence and navy planners quickly realized that a serious threat was posed by the evolving Soviet submarine fleet. They also realized that, given the seriousness of the threat, if Canada did not defend its waters against Soviet submarines, the United States would. The Cold War may be long over, but this continues to be true – if Canada does not secure its waters, someone else will. The old adage, *every country has a navy in its waters – its own or someone else's* applies as much today as it did yesterday. And if we do not design, build and support a Canadian Navy that meets our climate, policy and mission, we risk operating a compromise and cost-control force based on whatever is available or adaptable. We have done better and we can do better.

Photo: MCpl Robert Bottrill, CF Combat Camera

*HMC Ships **Regina** and **Algonquin** on exercise with the American **Oliver Hazard Perry**-class frigate, USS **Curtz**, off the west coast of Vancouver Island during Exercise Trident Fury 2007.*

Notes

1. Richard Gimblett, "Some Historical Reflections on the 'Boom and Bust' Cycle of Canadian Naval Procurement," CDFAI *Dispatch*, Vol. V, Issue IV (Winter 2007), available at www.cdfai.org/newsletters/newsletterswinter2007.htm.
2. "Sovereignty, Security and Prosperity. The Report of the CADSI Marine Industries Working Group," Canadian Association of Defence Industries, May 2009, p. 20, available at www.defenceandsecurity.ca/UserFiles/File/pubs/cadsi-mir.pdf.
3. Department of National Defence (DND), *Leadmark: The Navy's Strategy for 2020*, Ottawa, 2001, p. 64, available at www.navy.dnd.ca/leadmark/doc/part4_e.asp.
4. See Chris Bullock, "A Canadian Naval Strategy for the 21st Century: Constabulary Force or International Player?," Centre for Military and Strategic Studies, University of Calgary, 2009, available at www.cda-cdai.ca/cdai/uploads/cdai/2009/04/bullock00.pdf.
5. "Sovereignty, Security and Prosperity."
6. Harold Merklinger and Ross Graham, "Maritime Research and Development since 1990," in *The Naval Service of Canada, 1910-2010: The Centennial Story* (Ottawa: Dundurn Press, 2009), p. 205.
7. DND, *Leadmark*, p. 115.

After over 30 years in the pubic service, Janet Thorsteinson became Vice-President Government Relations at the Canadian Association of Defence and Security Industries (CADSI).

Photo: MCpl Robert Bottrill, CF Combat Camera

Canada's Eyes and Ears under the Pacific: A History of Submarines on the West Coast

Christian Bedford

Soon, the scaffolding and blocks will be removed from the drydock at CFB Esquimalt, and HMCS *Victoria* will sail out of Esquimalt harbour to re-commence her life as the lead ship of the *Victoria*-class. When that happens (later this year?), a new chapter in the rich history of Canada's Pacific submarine fleet will begin, marking the continuation of a legacy that stretches back to the early days of World War I.

The birth of the submarine fleet in the Pacific took place in 1914, under circumstances that would be seen as highly unusual and even illegal today. With the outbreak of the Great War, politicians in British Columbia became increasingly worried about the lack of maritime security on Canada's West Coast and the vulnerability of numerous strategic assets, including coal mines and ports near Nanaimo and the waterfront cities of Victoria and Vancouver, to name a few. At the time, the Royal Canadian Navy (RCN) had only one aging warship on the coast, HMCS *Rainbow*, which was tasked with monitoring German naval movements as far south as Mexico and Panama.

The Premier of BC at the time, Sir Richard McBride, became aware of contractual difficulties that an American shipbuilder, Seattle Construction and Drydock Company (SCDC), was having with the Chilean government over two submarines SCDC had built for the Chileans. The SCDC president made it known that he was willing to forego the contract with Chile and sell the submarines to the highest bidder. Unfortunately, there were two problems. First, London and Ottawa could not organize the funds to purchase the submarines in time and, second, in 1914 the American government officially had an embargo in place on the provision of war materials to countries at war, which would prevent military sales to Canada. Sensing that a window of opportunity was quickly closing, McBride secretly used provincial funds totaling $1.1 million to buy the SCDC submarines, an amount at the time equal to twice the RCN's entire annual budget.

The submarines were transferred to provincial officials by SCDC, in contravention of the US embargo, under a veil of secrecy at an offshore rendezvous near Trial Island off of Victoria. Following an extensive night-time inspection, the submarines and the money were exchanged. As the federal government had no knowledge of the exchange, the two submarines were technically the property of the BC government, marking the first and only provincial submarine fleet in Canada (and completely contrary to federal and provincial responsibilities as laid out in the *Constitution Act, 1867*). The submarines were taken over two days later, following the sale's ratification by the federal government, and christened CC-1 and CC-2 and, with that, Canada's West Coast submarine fleet was born.

After the war, both submarines were decommissioned and sold for scrap, and the West Coast fleet entered into an extended period when it had no submarines at all. During World War II, shipping in the Atlantic was a priority, and thus a majority of Canadian ships served in the Atlantic fleet searching for German U-boats or escorting supply convoys to Europe. It was not until 1961 that the West Coast received its next submarine. In that year, the US Navy leased USS *Burrfish* (SS-312) to the RCN as it seemed important to have such a vessel on the West Coast in order to train RCN anti-submarine forces. Following a conversion and overhaul at the Philadelphia Naval Shipyard in 1960, the submarine was transferred to Esquimalt and put into service with the RCN. Re-christened HMCS *Grilse*,

Photo: DND

*HMCS **Victoria** in drydock in Esquimalt, British Columbia.*

Photo: Ken Mcpherson / Naval Museum of Alberta

CC-1 and CC-2 in Halifax, circa 1918.

the submarine saw extended action as a training platform in the Pacific. Immediately after joining the Pacific fleet, *Grilse* began intensive training missions with surface combatants – in one 16-month stretch between 1961-62, the submarine spent 374 days at sea, travelling a total distance of nearly 83,000 kilometres. *Grilse* continued in these submarine-hunting exercises for the remainder of the decade, before she was returned to the USN at the end of her lease in 1969, at which point she was decommissioned.

Following HMCS *Grilse*'s decommissioning, Canada's Pacific fleet entered into a long period of dramatically reduced submarine activity, which continues to this day. Owing largely to Cold War politics that emphasized anti-submarine activity in the Atlantic, in the 1970s and 1980s there were only two brief submarine deployments by the Canadian Navy in the Pacific. Under a deal with the USN similar to the one that brought *Grilse* to Esquimalt, the Canadian Navy leased (and ultimately purchased) a *Tench*-class submarine, renaming it HMCS *Rainbow*, in honour of the RCN's first Pacific fleet warship. Like *Grilse*, *Rainbow* was of WW II vintage, having been built in Portsmouth, Maine, in 1944. Her role was also very similar to that of *Grilse,* being used by the RCN for anti-submarine training in the Pacific, as well as exercising with US Pacific fleet forces along the West Coast and as far away as Hawaii. She was decommissioned in December 1974 after only six years of service.

Although Canada had a fairly robust sub-surface force in the years that followed, the new *Oberon*-class diesel-electric submarines were, like the majority of our Cold War-era naval vessels, based in Halifax where NATO commitments and geopolitical realities made their presence more urgent. Canada ultimately purchased five *Oberon*-class submarines between 1965 and 1968 – three for active duty, one for parts and one for training. These submarines were considered state-of-the-art at the time of their acquisition, and served proudly with the Canadian Navy until the final decommissioning of HMCS *Onondaga* in 2000. Despite their service life of over 20 years, only one of the *Oberon*-class submarines, HMCS *Ojibwa*, served with Maritime Forces Pacific (MARPAC) for a brief stint at the end of her service career in 1997.

While the emphasis has generally been placed on Atlantic operations, there has long been a tacit recognition that the West Coast should have a more robust submarine presence. This recognition became more explicit starting in the 1970s when Asian economies began their meteoric rise and trade and immigration from Asia became increasingly important for Canada. It was against this background that the Canadian Navy initiated Project M1642, dubbed the 'West Coast Submarine Acquisition' project, in 1978. As the name suggests, the plan originally called for the acquisition of new submarines for MARPAC. However, as the years wore on and governments changed, the project morphed into a larger effort to replace the *Oberon*-class submarines, which by the 1990s were considered dated when compared to newer submarine designs that featured the now-common tear-shaped hull.

By 1998, 20 years after the original 1978 submarine replacement project was proposed, Canada signed the deal for the four *Upholder*-class submarines that currently make up our submarine fleet. Five years later, HMCS *Victoria* sailed into her namesake city as part of MARPAC, marking the first true submarine capability in the Pacific since HMCS *Rainbow* was decommissioned in 1974. Soon after, in 2009, HMCS *Chicoutimi* arrived at CFB Esquimalt, where, following an extensive re-fit and overhaul, she will join MARPAC and commence operations in the Pacific.

Photo: Cpl Chris Ward, Imaging Services, CFB Esquimalt

*HMCS **Chicoutimi** is rolled off the MV **Tern** following her transit from Halifax to Esquimalt, 6 May 2009.*

With *Victoria* nearing the end of her time in drydock, and *Chicoutimi* expected to be operational by 2013, Canada's West Coast submarine fleet appears set to embark on a new chapter that will see Canadian submarines once again provide the safety, security and surveillance that was originally envisioned by Premier McBride.

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CANADIAN NAVAL REVIEW

Announcing the 4th Bruce S. Oland Essay Competition

The *Canadian Naval Review* will be holding its annual essay competition, the Bruce S. Oland Essay Competition, again in 2010. There will be two prizes for the best essays – a first prize of $1,000 and a second prize of $500. The winning essays will be published in *CNR*. The first prize will be provided by Mr. Richard Oland in memory of his father Commodore Bruce S. Oland, and the second prize will be provided by the Centre for Foreign Policy Studies at Dalhousie University.

Essays should relate to the following topics:

- contemporary and future Canadian naval policy;
- Canadian maritime security;
- Canadian naval operations;
- Canadian oceans policy.

If you have any questions about a particular topic, contact naval.review@dal.ca.

Announcing the 2nd Canadian Naval Memorial Trust Essay Competition

The Canadian Naval Memorial Trust Essay Competition prizes will be award to the best and second best essays written on some aspect of Canadian naval history in the period 1910 to 1990. Essays should either examine the relevance of any lessons learned to contemporary situations or provide a fresh perspective on the origins, course and implications of some event or policy.

A first prize of $1,000 will be awarded by the Canadian Naval Memorial Trust and a second prize of $500 will be awarded by the Centre for Foreign Policy Studies at Dalhousie University.

Submissions for the 2010 CNR Essay Competitions must be submitted to naval.review@dal.ca, by **20 June 2010**. Essays are not to exceed 3,500 words. Longer submissions will be penalized in the adjudication process. All submissions must be in electronic format and any accompanying photographs, images, or other graphics and tables must also be included as a separate file. Photographs obtained from the internet are not acceptable unless submitted in high-definition format.

The essays will be assessed by a panel of judges. The essays will be judged anonymously – at no point during the judging process will the judges know who the authors are. The decision of the judges is final. All authors will be notified of the judges' decision within two months of the submission deadline.