

CANADIAN NAVY

SECURING CANADA'S OCEAN FRONTIERS

Charting the Course from
LEADMARK



National
Defence

Défense
nationale

Canada 

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Chief of the Maritime Staff



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FOREWORD

May 2005

The start of the 21st century has introduced a security environment with significant uncertainty and complexity. It includes the rise of failed and failing states. Global-reach terrorism has exposed some important gaps in many country's defenses post 911 including Canada's. This new environment demanded a bold new vision for Canadian defence, as articulated in Canada's new defence policy "*A Role of Pride and Influence in the World: Defence.*"

The new defence policy demands that the Canadian Forces must be more effective, more relevant and a more responsive fighting force. The Navy's strategic vision, "*Leadmark*", was instrumental in describing the transformation the Navy has already undergone. This 1990s transformation was validated by the deployable, combat-capable, and flexible Naval Task Group used in Op Apollo. The adaptable Task Group will also offer the future joint CF with a mix of assets and capabilities to project influence internationally, whether it is combat, stabilization and/or humanitarian operations, while leading in defence at home at our maritime borders.

Although "*Leadmark*" did not identify all of the vulnerabilities that have arisen since its publication, its strategic tenets still hold true and provide the foundation to address the challenges of the Navy's next transformation. There is now a requirement to address the few shortfalls in "*Leadmark*". "*Charting The Course From Leadmark*" bridges that gap. It is aligned with the future integrated joint roles of the CF, and ready to support and underpin the 'whole-of-government' response to any threat, at home or overseas. This is an exciting and rapidly changing time for the CF, and the Navy will be a key element to this new CF vision.

M.B. MacLean, VAdm, Chief of Maritime Staff

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CHARTING

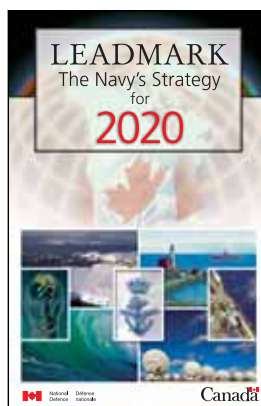
the Course from Leadmark

If the world did not change on September 11th, 2001, perspectives on it certainly did. Those attacks on the continental United States signaled an abrupt shift in the international security environment. For the first time in generations North America was shown to be vulnerable to direct assault — not through some nuclear Armageddon that survivors of the Cold War always held to be a bit inconceivable, but rather by the equally ill-defined yet somehow more personal asymmetric threat of terrorism. Canadians suddenly had to view their military through a domestic lens that clearly has priority over the traditional and historic overseas optic.



Canada's Navy, a Medium Global Force Projection Navy

Three months before 9/11, in June 2001 the Chief of the Maritime Staff published *Leadmark: The Navy's Strategy for 2020* as the intellectual underpinning to determine the capabilities required for the Canadian Navy of 2020 and beyond. *Leadmark* argued that Canada's Navy is a *Medium Global Force Projection Navy*, "a navy that may not possess the full range of capabilities, but has a credible capacity in certain of them and consistently demonstrates a determination to exercise them at some distance from home waters, in cooperation with other Force Projection Navies."



That claim was validated in full in the immediate aftermath of 9/11. Within the month, the Canadian government responded by dispatching the High Readiness Naval Task Group, consisting of a command destroyer, two frigates, a replenishment ship and their embarked helicopters. They joined another frigate already in-theatre, and Aurora maritime patrol aircraft soon followed. This demonstration of national will, incorporating a broad range of capabilities, resulted in the Canadian Task Group being assigned to protect United States Navy (USN) Amphibious Ready Group ships. That mission soon broadened to include the command of warships from a dozen coalition nations in the interdiction of terrorist escape routes throughout the Arabian Sea and prevention of attacks in the strategic Strait of Hormuz. The operation, dubbed "Apollo", was sustained for over two years, from October 2001 through December 2003.



Within a month of the Sept 11 attacks, a High Readiness Naval Task Group was dispatched to fight the War on Terrorism



North America — an island continent

Just as the Canadian experience of Operation Apollo served to validate *Leadmark's* strategic tenets, the Global War On Terrorism also confirmed many of its predictions. With the rise of failed and failing states and non-state actors not beholden to the laws of armed conflict, in combination with their willingness to resort to use of weapons of mass destruction, conflict in the 21st century is more complex and dangerous. That the threat materialised so soon makes the requirement for a strategic Naval vision even more pressing.

Canada faces a number of security challenges. The world continues to be an unpredictable and dangerous place where threats to our well being, interests and prosperity persist. The fluidity of the international security environment makes it difficult to predict what threats Canada will face even five years from now. While conventional estimates indicate that the threat of a more traditional force-on-force confrontation, as part of an alliance or coalition, appears remote in the short term, our force structure must account for changes over a 20-30 year period of operations. Consequently we need to maintain a flexible and adaptive capability. For the current planning horizon, the Navy must remain prepared to deal with the *immediate* threat to Canadians posed by failed and failing states. Failing states are a problem for Canada. They create regional instability and the impotence of their governing structures makes them ideal breeding grounds or safe havens for organized crime and terrorists.

An increasingly interdependent world has forged close links between international and domestic security, and crises abroad can affect the security of individual Canadians in unprecedented ways. Today's front lines stretch from the streets of Kabul to the rail lines of Madrid to our own Canadian cities. The traditional lines between security and defence have blurred: in many ways they have merged.

As a result, the Canadian Navy will continue to perform three broad roles: protecting Canadians; defending North America in cooperation with the

United States, and contributing to international peace and security. To do so, the Navy must be effective, responsive and capable of carrying out a range of operations, including combat.

Canada's long-term interests are best met through forces that can contribute to the resolution of global problems at their source: security in Canada ultimately begins with stability abroad. The Navy must not only maintain a spectrum of capabilities to lead and operate with our allies on the seas during international operations, but it must also develop new joint capabilities. The ability to facilitate a CF response to the challenges of failed and failing states will serve as the benchmark for the Navy. The Navy will continue the transformation of its existing task groups to be the basis of a new standing joint contingency task force providing an adaptable Army – Air Force – Navy force package that can project power across the oceans and into the littorals. This will provide Canada with the ability to respond rapidly to a crisis and provide a degree of insurance against the unexpected in an ever-changing world.

However, the prosecution of overseas operations is contingent upon the presumed security of the Canadian homeland. If North America is an island continent, the sea-lanes passing through our maritime approaches (and the airways above them) are global highways, facilitating not only the trade that is the lifeblood of our economy, but also the import of global terror. Other vulnerabilities exist, but global terrorism will be the defining issue of this time and it has exposed significant gaps in our country's existing ability to deal with it. The problem is made more urgent by the fact that our American neighbours, despite their unprecedented global military dominance, are keenly aware of their vulnerability to terrorist attacks. Whether or not Canadians think of themselves as potential "targets", we must not let our allies be attacked — or even perceive to have been attacked — through our territory.¹ To address many of our vulnerabilities and concerns about the use of Canada as a terrorist operating base, the government has introduced several pieces of legislation (e.g. the Anti-Terrorism Act, the Immigration and Refugee Protection Act, and the Public Safety Act). Additionally, the government entered into several agreements with the United States to ensure the security of our mutual borders while minimizing the effects of these measures on our substantial cross-border trade.

1 A number of authors have argued this point, specifically tying to it the economic importance of keeping the Canada-US border open to trade. A comprehensive and sophisticated examination of the nature of North American security is presented in Philippe Lagassé and Joel J. Sokolsky, "The Evolving Security Environment and the Canadian Forces: What Military Capabilities Will Be Most Important?" (A Paper Submitted to The Assistant Deputy Minister (Policy), 12 May 2004).



HMCS VILLE DE QUÉBEC and the NATO Fleet depart New York. We must not let our closest ally be attacked — or even perceive to have been attacked — through our territory.
(Photo Credit: MCpl John Mason, CFB Halifax, Formation Imaging Services)

One of the key conclusions of the new perspective on security was that no single government department or agency could effectively deal with the threat or consequences of a terrorist act. Therefore, it is necessary to develop and implement a means of ensuring a coordinated ‘whole-of-government’ response. The newly created Department of Public Safety and Emergency Preparedness (comparable to the US Department of Homeland Defense) works towards this goal. It will improve coordination and bring vital services and responsibilities together under a single minister responsible for the core functions of security and intelligence, policing and enforcement, corrections and crime prevention, border services and integrity, immigration enforcement, and emergency management.


Recognizing that the boundaries between security at home and defence abroad are blurring, the Navy will also work with other elements of the Canadian Forces to examine new command and control structures for the Canadian Forces — a command and control structure that recognizes this new threat continuum and treats Canada as a single integrated theatre of operations. This new outlook holds the potential to increase the effectiveness, agility and responsiveness of the CF in Canada, by bringing the best available military resources to bear on a contingency, wherever it occurs, nation-wide.

In a further move to enhance Canadian security and develop a means for an integrated government response to threats and attacks the Government of Canada has also enacted the first integrated National Security Policy (NSP). This policy sets three core national security interests — protecting Canada and Canadians at home and abroad; ensuring Canada is not a base for threats to allies; and contributing to international security. Although the NSP recognizes the need for international security, for the most part it seeks to fill the gaps in domestic and continental security against non-state actors that have been revealed over the years.



To enhance Canadian security and develop a means for an integrated government response to threats and attacks, the Government of Canada has enacted numerous pieces of legislation and introduced numerous strategy positions, including the first integrated National Security Policy

The immediate aftermath of 9/11 focused attention on the security of our land links to the United States — our land frontiers. Beyond those, however, the Arctic, Pacific and Atlantic Oceans form a shared continental perimeter, and our “Ocean Frontiers” are very long and exposed. The danger of future miscalculation is real and is a risk we cannot afford. The government recognizes this. Key among the initiatives of the NSP, and of particular interest to the Navy, is the Maritime Security Plan (discussed later in this document), which seeks to redress many of the gaps in our domestic marine security.



Canada's maritime approaches will be vital to our security in the 21st century and we must exert unambiguous control over them. At the same time, the stabilization of failed states so that they do not become breeding grounds for terror will demand our national capacity to react to crises overseas. These objectives are not mutually exclusive. Indeed, the nature of sea power makes them complementary. We can no longer take comfort in the security of our geography. Today's Navy must be capable of protecting Canadians at home and working closely with the United States in the defence of the North American continent. The Navy must also provide Canada with the means to strengthen the international institutions we value, such as the United Nations, by deploying around the world with our friends and allies as part of a multilateral approach to resolving international problems.

Although *Leadmark* did not identify all of the vulnerabilities that have arisen since its publication, its strategic tenets remain valid. They chart the course for shifting attention and resources to securing Canada's Ocean Frontiers.

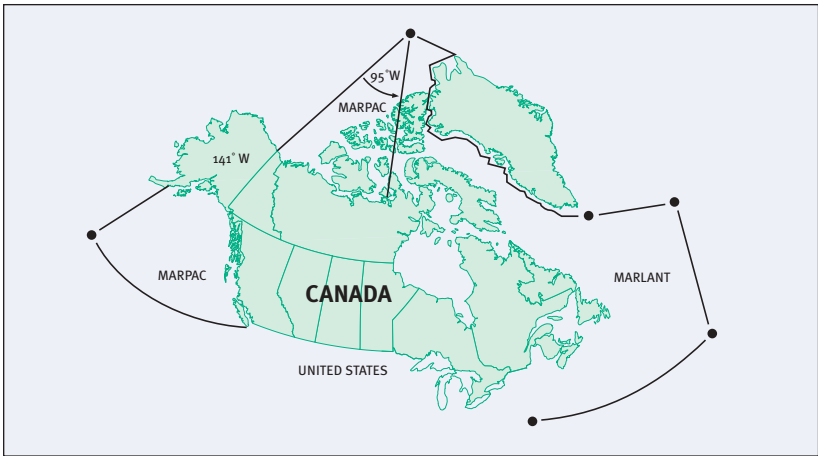
A PROVEN

Track Record

Before proceeding to bridge those gaps, it is fitting to define the foundation from which to build. Critical analysis demonstrates that, beyond identifying the threat posed by the likes of Al-Qaeda as one of the major factors driving the 21st century security environment, *Leadmark* got most other things right. Perhaps most fundamental is recognition that Canada's naval history is one of continued transformation, relevance and strategic success, despite — or perhaps because of — occasional setbacks. The rust-out of the fleet in the 1980s allowed the Navy's focus through the 1990s to fix upon re-constituting the Task Group concept as the basis for Canadian naval development and operations. That concept holds that the training and deployment of maritime forces should normally be in a force package made up of a variety of ship, submarine and aircraft types rather than as single units. The inherent adaptability that comes from tailoring the force structure to the precise nature of the mission allows Canadian naval forces to do more than just show up at the scene of a crisis. It allows them to contribute immediately and materially to its resolution, as our operations in the Persian Gulf (Arabian Gulf) post-9/11 demonstrates.

Another building block stems from the size of our offshore estate, and the varied and challenging nature of the waters in Canada's four disparate maritime areas (the Atlantic, Pacific and Arctic Oceans, and the Great Lakes). This demands the maintenance of adequate numbers of vessels and these vessels must be sufficiently large to provide the stability necessary both for safe navigation and the operational effectiveness of their crews and weapon systems. The result is an oceanic navy that offers surveillance coverage and threat response on prolonged operations off our coasts as appropriate, and on global deployments as desired.

While *Leadmark* identified little new, it did provide some *vision* by which the Navy could quickly and effectively react to the demands of government in response to the Global War On Terror. The flexibility of sea power allowed Canada to remain engaged with great success in prosecuting the anti-terrorist campaign, while maintaining the desired distance from the subsequent conflict in



The size of our offshore estate demands an oceanic navy for prolonged operations off our coasts and on global deployments

Iraq. In taking the war to Al-Qaeda, assisting the American and Coalition efforts ashore and leading the effort to shut down the terrorist escape routes from southwest Asia, the Navy increased Canada's security at home. The important coalition command of 8 nations' ships, submarines and aircraft — Task Force 151 — stands as the first operational-level command exercised by any Canadian officer since the Second World War. It is a singular national achievement.

An independent study commissioned by the Navy to assess Operation Apollo against the eight strategic principles of *Leadmark* observed that each of them was achieved to a remarkable extent:²

- ***The ability to influence events at a distance:*** there are few places farther from either of our coasts than the Arabian Sea, yet the Canadian Navy sustained operations of significant forces in that distant theatre for the better part of two years;
- ***Contributing to general freedom of the seas:*** marine traffic through the Strait of Hormuz typically amounts to about 250 transits daily. The close escort and general protection by Canadian ships provided for the free flow of merchant traffic, and as a result of the decreased risk, actually saw insurance rates decline during the course of the Iraq war;

2 Adapted from Richard Gimblett, *Operation Apollo: The Golden Age of the Canadian Navy in the War Against Terrorism / Opération Apollo : L'âge d'or de la Marine canadienne dans la guerre au Terrorisme* (Ottawa: Magic Light, 2004), p. 156.



Close escort of Merchant shipping and Maritime Interdiction Operations: Contributing to the general freedom of the seas.

- **Acting as a ‘joint enabler’ of land and air operations:** the close Canadian escort of the US Amphibious Ready Groups contributed directly to the effectiveness of their operations ashore in Afghanistan, while the task of “keeping the backdoor open” to the free transit of Coalition vessels into the Persian Gulf (Arabian Gulf) provided indirect support for the continuing War Against Terrorism;
- **The capacity to conduct a wide range of operations:** the Canadian Navy performed a classic sea control operation — using the oceans to one’s advantage while denying them to opponents — in the Arabian Sea theatre. It spanned all levels of warfare ranging from command of a multinational task force, through compiling a Recognized Maritime Picture, anti-submarine tracking and interdicting suspicious vessels, escorting valuable coalition traffic through vital chokepoints, to the at-sea replenishment of Canadian and coalition warships;



HMCS Toronto, operating with Japanese, US and British ships in the Northern Persian Gulf (Arabian Gulf), part of the USS George Washington Aircraft Carrier Task Group.

(Photo Credit: Japanese Defence Force)



A Royal Navy Frigate refuelling from a Japanese Defence Force AOR: The utility of working with allies. (Photo Credit: MCpl Colin Kelley, Formation Imaging Services Halifax)

- ***Possessing forces that are versatile and combat capable in order to do so:*** the inherent flexibility of the warship types that constitute the Canadian Task Group allowed for an easy shift from one type of operation to another by forces in-theatre, with no need to either enter port or return to Canada to re-equip;
- ***The utility of working in combination with alliances or coalitions:*** Canadian and coalition warships, under Canadian command, maintained Coalition integrity in the War On Terrorism, even as the US turned its attention to the war on Iraq;
- ***The merit of interoperability with the USN:*** the unique access of the Canadian Navy to communications connectivity with our American allies provided the gateway that allowed less-equipped navies to contribute to the global effort. It was also the key to the significant Coalition command appointment; and,
- ***The need for an indigenous capacity to support independent operations:*** the availability of a locally established Forward Logistics Site and an at-sea replenishment vessel considerably facilitated national supply lines and extended the ships' time on patrol.

The experience of Operation Apollo is that military power is not just the ability to project force against foreign opponents. It is the ability to control and dominate all of its air, land, sea and cyber dimensions. The impressive track record of Canada's Navy confirms the success of its transformation through the past decade. With continued investment it can retain its world-class status and lead the transformation of the Canadian Forces into the 21st century.

THE FUTURE

Security Environment

While the forces of globalization were at work for some time prior to 9/11, the events of that day have acted as a catalyst in confirming that the world is governed by a much less ordered and predictable set of inter-dependent circumstances. Domestic, continental and international security are all increasingly integrated, and states can no longer isolate themselves from developments elsewhere. In essence, the post-9/11 security environment is defined by two characteristics: surprise and uncertainty. The attacks upon the US were not a surprise. It was known who would attack, as it had been forecast for over a decade, and it was known why, with radical, religious inspired anti-Western sentiment the reasoning. It was the uncertainty of the “what, where and when” that made it a surprise. To counter these two characteristics, future forces must have speed and endurance — the speed to get to a crisis situation, and then the ability to endure once on station. Op Apollo proved the need for both. Under this overarching construct, four fundamental factors emerge:



- Conflict requiring military action by Canada can happen very rapidly with little or no prior warning;
- The specific nature of any given conflict will be uncertain in terms of location and the nature of the opponents;
- Longstanding formal alliances, at least for the conduct of specific military operations, while still valid, may be replaced by *ad hoc* “coalitions of the willing” assembled at short notice for a specific mission; and,
- In an age where public opinion is driven increasingly by near real-time media broadcasts and the Internet, governments will be pressured to be seen to act quickly and decisively.

As a result, there will no longer be a long lead-time or a gradual escalation of events that will permit measured and deliberate planning, preparation, training, and force generation. Rapid reaction forces will need to be maintained at very

high states of readiness — which means a considerable investment in training, maintenance, and sustainment.

The new security environment also demands that the Navy continue its transformation with renewed vigour and focus — embracing new technologies, concepts, and doctrines if it is to remain modern and maintain the ability to work closely with allies and other governmental and non-governmental agencies.

Domestic Maritime Security Environment

The 9/11 attacks brought home the grave level this asymmetric menace represents, as one of the greatest security challenges facing the world today and that it has the potential to become even graver in the future. It is clear that a greater emphasis must be placed on the defence of Canada and North America than in the past. This must be the Canadian Forces' first priority, and the Navy has a key role to play, as the oceans are Canada's first line of defence.

Terrorists may be at a substantial disadvantage when confronting organized military forces but they will continue to rely on a variety of asymmetric warfare methods. These involve a very wide range of activity — from the smuggling of “network cells” and their weapons of mass destruction to the laying of mines or the hijacking of passenger liners and other high value shipping. While the provision of domestic maritime security has been an enduring responsibility for the Navy since its creation, the new asymmetrical threat posed by terrorists has caused a heightened awareness of this responsibility and will require the Navy to adjust its tactical thought and the balance of effort between domestic and overseas obligations.

Global Maritime Security Environment

The future security environment will continue to see the development of an increasingly “one ocean” world. Accordingly, it will be in Canada's strategic interest to contribute and lead in the security of the world's oceans — usually acting in a coalition with like-minded maritime nations. Initiatives such as the Proliferation Security Initiative (PSI) that seek to detect, track and interdict vessels on the high seas that may be carrying terrorists and their weapons make a tangible contribution to increasing international security.³

3 Elinor Sloan, “Key Canadian Military Capabilities to Meet Future Security Challenges” (A Paper Submitted to The Assistant Deputy Minister (Policy), 11 May 2004), pp. 10-11.



Proliferation Security Initiative will see closer operational ties with the USN and US Coast Guard

The impact of failed and failing states will also shape the future security environment. The Canadian Navy will continue to play a key role in reintegrating these nations back into the global community; not only in the types of missions it undertook in OP Apollo, but also by developing a new range of capabilities designed to lead the CF transformation into a more fully integrated joint fighting force whose capabilities are greater than the sum of its parts.

In the future, the naval operating environment is likely to become increasingly complex. Naval Commanders will be confronted by challenges similar to those of the “three-block war” faced by their counterparts ashore — indeed, that concept is not far different from the classic trinity of naval military-diplomatic-constabulary roles. Modern naval forces must be prepared to mount very different types of operations simultaneously across the spectrum of conflict, with ships undertaking combat, stabilization and humanitarian relief operations all within the same confined theatre of operations.

Clearly, our Navy is unlikely to be able to operate “everywhere all the time”. Therefore, we will need to focus on those regions of the world where our national interests are greatest or where the requirement for some sort of maritime intervention is most needed. Assessments of expected security challenges for the next few decades point to the Asia-Pacific, Middle East, and Caribbean as regions where Canada’s naval forces are most likely to be engaged away from home.

Other Considerations

The adoption of the third phase of the United Nations Convention on the Law of the Sea (UNCLOS III) will permit many states to expand their maritime economic zones dramatically. In the case of Canada, the additional territory beyond that now claimed as part of our 200 nautical mile offshore

Exclusive Economic Zone (EEZ), equals roughly the same landmass as the three prairie provinces *combined* (see map — the total offshore estate will be nearly as great as our continental landmass). The expanded claims may introduce new sources of tension over oceanic resources — primarily fish stocks but potentially mineral deposits — even between states with whom we are otherwise on friendly terms. While these will remain primarily matters to be resolved through peaceful negotiation, they will benefit from the use of naval forces as a demonstration of our national interest in defining marine boundary lines. The sovereignty challenges are unique to each ocean area.⁴

To meet these challenges, the National Security Policy (NSP) promulgated by the Canadian government includes a significant maritime dimension. Of the six key security activities identified under the NSP — Intelligence, Emergency Planning and Management, Public Health Emergencies, Border Security, Transportation Security, and International Security — the Navy has a direct involvement in the last two, and indirect involvement in the others. In international security, the Navy's expeditionary capability will continue to provide meaningful options to respond anywhere in the world accessible by sea, when and where the Government chooses to demonstrate its interest or apply its national power.

It is under the heading of Transportation Security that the Navy's direct role in the domestic security of our Ocean Frontiers will be greatly increased. The NSP starts from the premise that the emergence of a single integrated defence and security environment means no single agency or element of government possesses all of the capability to safeguard or protect Canada, Canadians and Canadian interests. Rather, it stipulates a "whole-of-government" approach, describing a number of inter-agency initiatives in which the Navy will be expected to provide leadership to better manage and coordinate solutions. As part of the Transportation Security activity, the NSP lays out a six point Marine Security Plan:

- Clarifying responsibilities and strengthening coordination;
- Establishing marine security operations centres;
- Increasing CF, RCMP, and Canadian Coast Guard on-water presence as well as Department of Fisheries and Oceans aerial surveillance;
- Enhancing the interoperability and capabilities of military and civilian fleet communications;

4 More often than not, these are economic challenges from Canada's erstwhile allies: in the Arctic, the US, Russia and Denmark as well as all nations with nuclear-propelled submarines; on the "Nose and Tail" of the Grand Banks, the European Union; and on the Pacific coast, over-fishing, narco-traffic and illegal immigration.



Canada's National Security Policy, issued in April of 2004, includes a significant maritime dimension."

- Pursuing greater marine security co-operation with the United States; and
- Strengthening the security of marine ports and facilities.

It is only in the last of these that the Navy does not have a direct contribution to make, as port security is a policing function. In the other five areas the Department of National Defence (DND), through the Navy, will play a major and often leading role.

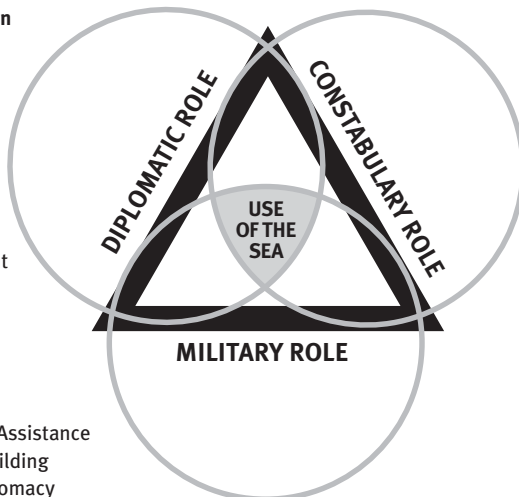
The model developed in *Leadmark* to illustrate 21st century naval roles and functions provides for all of the naval responses demanded by the government's new security policies. It is based upon internationally recognized scholarly theory that conceives "use of the sea" as the unity underlying a trinity of *roles* — military (Defend), diplomatic (Support) and constabulary (Secure) — which inter-relate across the spectrum of conflict, with the diplomatic and constabulary roles drawing their relevance from a solid military foundation. To reinforce the idea that navies rarely conduct their everyday functions strictly within a single domain, *Leadmark* identified overlapping circles representing spheres of corresponding subsidiary activities or *functions* to reflect concepts in common usage amongst the major maritime powers. Observers will note the close similarity to the evolving concept of the "three-block war".

Warfighting combat capability — to "**Defend** National and Allied Commitments" — endures as the primary role, because of the simple truth that, while forces equipped and trained in military operations can be employed on constabulary duties, the reverse is not true. And to be sure, the other sides of the triangle never were ignored: the Canadian Navy on numerous occasions has played an invaluable part in the diplomatic service of "**Support** Canadian Foreign Policy." As well, ships frequently conduct constabulary functions such as fisheries patrols and the interception and apprehension of vessels engaged in illegal activity — illegal immigration, narco-traffic, etc — as required to "**Secure** Canadian Sovereignty."

FIGURE 1
CANADIAN NAVAL ROLES AND FUNCTIONS FOR THE 21ST CENTURY

Support Canadian Foreign Policy

- Preventive Deployments
- Coercion
- Maritime Interception Operations
- Peace Support Operations
- Non-combatant Evacuation Operations
- Civil-Military Cooperation
- Symbolic Use
- Presence
- Humanitarian Assistance
- Confidence Building
- Track Two Diplomacy



Secure Canadian Sovereignty

- Sovereignty Patrols
- Aid of the Civil Power
- Support to Other Government Departments
- Search and Rescue
- Disaster Relief
- Oceans Management

Defend National & Allied Commitments

- Sea Control
- Sea Denial
- Fleet in Being
- Maritime Power Projection

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

With the greater emphasis now given to the application of naval capabilities in securing Canada’s Ocean Frontiers, the central tenet of “use of the sea” continues to speak to the value of the Navy as an arm of government policy, and the “Defend-Support-Secure” trinity remains the underpinning of Canada’s naval strategy. Part of the naval advantage is that practically all of the naval capabilities have applications for domestic as well as foreign or expeditionary contingencies. **The high readiness, multi-purpose, combat capable and adaptive fleet as called for in *Leadmark* permits the Navy to shift the balance among the domestic and international imperatives, when and as required, in a rapid and seamless manner.**

EMERGING

Naval Missions

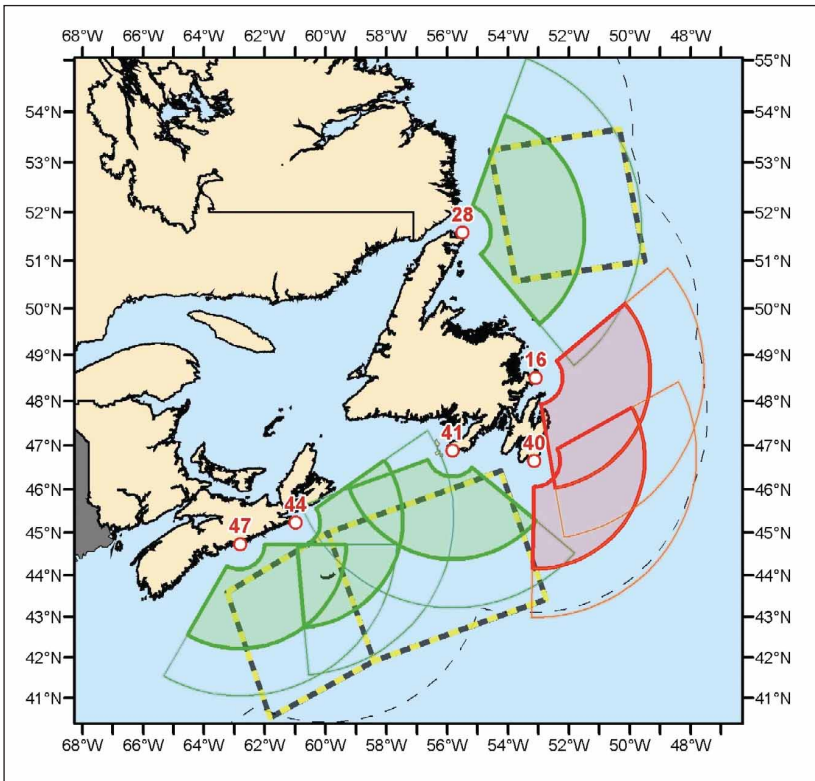
The shift of Canadian naval priorities from the traditional expeditionary focus to a greater involvement in domestic marine security is not an unnatural move, especially in the globalised ocean battlespace of today. The simple truth is that the variety of missions performed by our Navy in the Arabian Sea in the Global War On Terrorism are in many ways identical to those required to ensure security in our home waters. The command of multinational formations has direct application to domestic joint inter-agency coordination; the interdiction of escaping Al-Qaeda terrorists required the same search and boarding capabilities to be exercised in surveillance and interdiction off our own coasts; coalition operations in the littorals of southwest Asia had the same stabilizing effects as does establishing presence in our Exclusive Economic Zone. The mutual respect that our Navy has earned in the conduct of intensive operations overseas with the United States Navy will ensure the preservation of our national interests in securing our continental perimeter.

These striking parallels underscore the fact that the operations undertaken by our Navy in recent years are but variations on past themes in the Canadian naval experience. They point to continuities as well as changes in the “emerging” missions for which our Navy must prepare:

Coordination of Government Maritime Security Operations

The new focus on domestic security exposed the need for a coordinated federal approach to surveillance, information management, and operational response in our maritime areas of responsibility. The Navy’s experience in handling complex multidimensional threat situations, and its responsibility as the sole national employer of armed force at sea, make it the natural leader of a “whole-of-government” approach to ensure a seamless transition between an event and full crisis response. The naval missions will be to coordinate the day-to-day fusion of all-source

information to generate “domain awareness”⁵ of our maritime areas, and to assume control when a response is demanded beyond the capacity of any other agency (e.g., the RCMP or the Coast Guard). Although some jurisdictional issues may arise, few changes are anticipated outside of the establishment of new processes, such as a maritime equivalent of the existing Air Incident Protocol. Extreme events may require the transfer of operational control of assigned government fleet assets to the Navy to mount a “whole-of-government” response. This new, joint, inter-agency model will provide the basis for pursuing closer cooperation with the United States in collective marine defence and security.

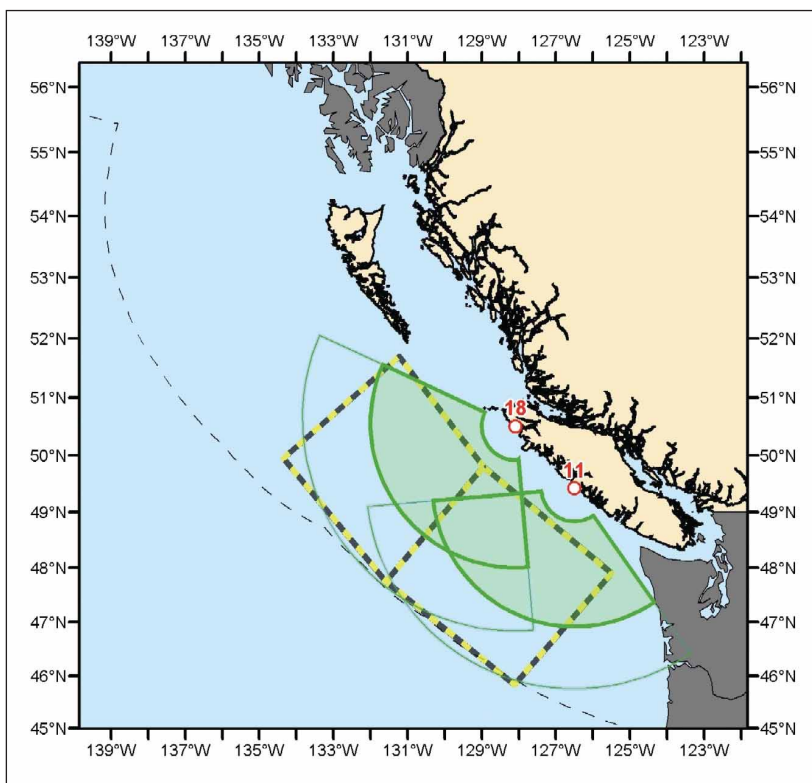


Current High Frequency Surface Wave Radar sites shown in red, proposed sites shown in green

5 Maritime Domain Awareness is the effective understanding of anything in the maritime environment that could adversely affect CANUS security, safety, economy or environment. “*Bi-National Planning Group: Interim Report on CANUS Enhanced Military Cooperation, October 13, 2004.*”

National Maritime Presence

Although hardly an “emerging” mission, the requirement for greater presence in Canadian waters will place new demands on the Navy. On a typical day, there are some 1700 ships in Canada’s Atlantic, Pacific and Arctic areas of responsibility, and likely many more non-reported contacts further away from our major regulated ports or vessel traffic management systems. Naval at-sea presence reassures Canadians and friends, deters adversaries and lawbreakers, provides better mobile surveillance coverage, adds to warning time, seizes the initiative to influence events at a distance, and triggers the capability to surprise and engage adversaries well before they can cause harm to Canada and Canadians. The increase in sea-days directed by the National Security Policy for all government fleets will require more effective coordinating activity to ensure that resources are applied where needed, with no duplication of effort. It also points to



Over 1700 vessels per day transit through Canada’s waters

the continued requirement for increased naval capacity to conduct this enhanced domestic role without sacrificing the expeditionary capability required to counter threats to our national security as far away from our borders as possible.

The Navy, in concert with the Army and Air Force, will also continue to explore new ways of improving CF surveillance and response in the North through: incorporating improvements such as first-year ice capability in new warship designs; and the smart use of new technologies, such as uninhabited aerial vehicles, satellites and radars, in order to improve surveillance of our vast Arctic maritime region.

Forward Security

For all the renewed emphasis on domestic maritime security, the fact remains that Canada enjoys the respect of the global community and exercises influence in world affairs due to the active engagement of the Canadian Forces in the resolution of international crises. As forward

security is the notion that Canada is made more secure by seeing to the resolution of global problems — particularly those of failed and failing states — at their source, before they can expand to threaten the Canadian heartland. This is another mission that is not so much “emerging” as it is gaining new dimensions. The number of flashpoints where the Navy can contribute directly to the Canadian government’s international engagement policy is increasing. Beyond the Coalition Task Group Command and Proliferation Security Initiatives discussed above, forward security also encompasses options ranging from the dispatch of naval forces to demonstrate concern over a developing situation, to participation in naval peacekeeping in disputed waters, to the suppression of piracy along international sea-lanes, and to the enforcement of sanctions against rogue states for failure to comply with United Nations resolutions.



A member of a ship's Boarding Team inspecting a merchant ship during Op Apollo



A Boarding Team inbound for inspection. Canada conducted over 60% of all interdiction boardings during Op Apollo

Maritime Interdiction

A development of the coalition operations led by the Canadian Navy in the Arabian Sea is the need to intercept and inspect shipping suspected of transporting weapons of mass destruction, terrorists, illegal immigrants and narcotic drugs in the maritime approaches to North America before they can threaten our territorial waters. The volume of shipping into Canada's ports makes it impractical to conduct comprehensive searches alongside and points instead to the greater utility of interception and inspection at sea where the potential effect of such threats is reduced. The international equivalent is the Proliferation Security Initiative, a developing multinational effort to interdict vessels on the high seas believed to be transporting missiles, weapons of mass destruction and associated equipment. The proliferation of weapons technology is a significant threat to international peace and security, and preventing it requires high levels of intelligence sharing and military cooperation. Canadian leadership in this emerging tactic is a realistic mission for the Navy owing to its global reach and interoperability with allied nations, and one entirely consistent with Canada's policies on law of the sea,

non-proliferation and anti-terrorism.⁶ Maritime Interdiction operations have also proven to be an invaluable tool for the enforcement of economic or military sanctions imposed upon failed or failing states by international organizations such as the UN.

Task Group Command

A key feature of the Navy's present capability is its ability to exercise command of formations of coalition warships in complex operations both domestically and overseas. The Navy's demonstrated leadership in this area has an importance that extends beyond mere direction of operational employment. It also encompasses the strategic dimension of coalition building by ensuring the active and effective engagement of all participating forces. Given the high level of interoperability of Canada's Navy with the US Navy, as well as our national predisposition to multilateral solutions, the mission of coalition task group command is a selective and strategic application of Canada's global advantage especially suited to our Navy. It is a confident international role based on a sophisticated relationship with the United States and multinational cooperation with



The proposed Joint Support Ship — capable of refueling, Task Group Command, troop transport, medical support and disaster relief

6 Elinor Sloan, "Key Canadian Military Capabilities to Meet Future Security Challenges" (A Paper Submitted to The Assistant Deputy Minister (Policy), 11 May 2004), pp. 10-11.



Canadian Coast Guard RHIB and HMCS VANCOUVER conducting Inter-Agency Ops

other like-minded partners, while showcasing Canadian high-tech capacity in command and control systems. The trend towards “coalitions of the willing” engaging in maritime operations as a preferred response to international crises makes this an increasingly important mission.

Sea-Based Joint Operations

The Navy has a key role to play in the Canadian Force’s transformation into a joint fighting force that is more effective, relevant, and responsive both at home and abroad.

- The Navy will provide the CF with the ability to integrate maritime, land, air and special operations forces to provide “focused effects” — the ability to deploy the right mix of forces to the right place, at the right time, producing the right result;
- The Navy will become more relevant by adapting its capabilities and force structure to deal with the threats posed to Canada at home and abroad; and
- The Navy will increase the responsiveness of the CF by providing the capability to respond quickly in the event of a crisis in the littorals of Canada and the world, make a rapid transition to joint operations once there, and sustain such deployments for extended periods.



Future domestic challenges may blur the operational lines between the Navy, RCMP, Canadian and US Coast Guards

Joint transformation will require the Navy to undertake new missions requiring new capabilities, such as: the provision of sealift to move Canadian troops and their equipment to world trouble spots; new joint command and control and logistic support capabilities; new weapons systems to provide support and protection to land forces ashore; and new capabilities to support the insertion and support of Special Operations Forces ashore. The Navy will influence the battle space at sea, in the littorals and across the beach in support of Canada's joint fighting forces.

The Navy will develop these capacities and capabilities to deal with the challenges presented by the future security environment. Canada's peace-keeping legacy was boosted initially by the Navy's swift reconfiguration of an independent capacity to sealift peacekeepers and their equipment to Suez and Cyprus. Recent international crises continue to illustrate the benefits of the ability to mount and direct forces from the sea, whether independently or through coalitions. While the Navy does not expect to conduct traditional amphibious operations against heavily fortified and defended beaches, the focus of future CF expeditionary operations demands a basic level of amphibious capability. In responding to the challenges posed by the future security environment — particularly in failed and failing states — the CF will need the capability to rapidly deploy a high readiness joint force consisting of the appropriate mix of maritime, land, air, and special forces elements, organized under a single integrated command structure, to any region of the world where they are needed. Sealift capacity will give the CF the strategic reach it requires to put forces ashore: 70% of Earth's population, 80% of national capitals, 80% of major cities are within 100 miles of the coast. Moreover, a modest amphibious capacity will provide the CF with the ability to put forces ashore in areas where there is limited and/or damaged ports or airfield infrastructure.

The future of Canadian sea-based operations also includes options ranging from support to non-government organizations (NGOs) delivering humanitarian assistance, to Special Operating Forces in a joint context conducting

non-combatant evacuation operations. In a domestic context, the possibilities range from better management of disaster relief efforts in our own littorals to anti-terrorist operations conducted by the RCMP. Operating the standoff command and control and headquarters functions, regardless of locale, is another strength of the utility of amphibious capabilities.

Sea-Based Logistics Support

Given the nature of modern naval operations, the Navy will continue to need an at-sea replenishment capability for its ships and ship-based aircraft. Canada needs support ships because our ocean areas are vast and the Navy must be able to operate in remote ocean areas that are located far away from Canadian port facilities. Support vessels let us make the most out of our fleet, enabling the Navy to keep its ships at sea and on patrol, instead of in port and re-supplying. Internationally, the distances involved in transoceanic passages, combined with the difficulties and risks inherent in relying upon foreign nations to re-supply a nation's warships overseas, make seagoing support ships essential to any internationally deployable joint CF force. Support ships give Canada independence, by enabling the government to send our warships to any part of the world without first having to negotiate logistical support with other countries. Without them, Canada would have to rely on the goodwill of other nations to re-supply our ships at sea.

Additionally, the Navy must look to expand this capacity. As an enabler of Joint CF operations abroad, the Navy must also develop capabilities to support CF joint operations by: expanding its capacity to host a deployable joint forces headquarters, and expanding its medical and materiel support capacities to provide logistics and personnel support to forces operating ashore.

Great challenges exist in adapting to these emerging missions. Having a potential significant domestic threat complicates security problems considerably. The vastness of our offshore areas of responsibility and the continental expanse separating our coasts mean that supply lines are not measurably shortened, even as competition with other domestic priorities will increase. Jurisdictional issues are a significant challenge, with "clean" naval lines of communication replaced by questions of immense importance to our form of democracy, such as the span


of control between civil and military arms.⁷ And if the reporting relationship between the Canadian Navy and Coast Guard requires clarification, as the NSP seeks to do, closer cooperation with US agencies is even more complex, given the complexity of the relationship between the US Navy and the US Coast Guard.⁸ Indeed, if securing our Ocean Frontiers could be left on a navy-to-navy basis, the diplomatic niceties would be relatively simple.

But of course it is no longer a simple navy-to-navy world; indeed, the frequent reference to “joint and inter-agency” models underscores that it is not even an isolated maritime security framework. The conduct of military operations has been undergoing change since well before the events of 9/11, and recent operations in Afghanistan and Iraq made the extent of this transformation readily apparent. Unlike in the past where massed force was applied in a sequential manner by separate services, the new paradigm is a joint warfare concept. Discrete air, land, and naval campaigns no longer exist. Future conflict will tend to take place in a single integrated battlespace, overlaid by a network-centric information system that gathers real-time data from far-reaching resources, turns that data into information, all made available to operational and tactical decision makers for rapid and appropriate action. Within this single battlespace, the ability to act first — before the adversary — provides a strategic advantage. All of the services must have the same multi-dimensional operational and tactical “domain awareness”. With advances in weapons technology, any of them could be called upon to bring about a desired effect. Joint interoperability is thus a key ingredient for future success.

Recent experience also confirms that a growing number of overseas security operations will take place within the complex littoral zones of the world — the land-sea interface of the world’s oceans. The international sea lanes all start and terminate in the littorals, the “chokepoints” they funnel through are by definition found in them, over 80 per cent of the world’s population lives within 100 miles of the coasts, and most of the growing and extremely competitive economies of the Asia-Pacific region are located in the littorals. This complex environment where air, land, and maritime activities all interact constitutes the Ocean Frontiers of other nations, not all of them friendly to Canada. If our deployed naval forces are to be successful, they must be capable of projecting

7 *Canada’s Coastlines: The Longest Under-defended Borders in the World*, (Ottawa: Report of the Standing Senate Committee on National Security and Defence, October 2003 / www.sen-sec.ca).

8 Philippe Lagassé and Joel J. Sokolsky, “The Evolving Security Environment and the Canadian Forces: What Military Capabilities Will Be Most Important?” (A Paper Submitted to The Assistant Deputy Minister (Policy), 12 May 2004).



their influence and power in these domains. They also will have to be capable of protecting themselves from threats — both conventional and asymmetrical — above, on, and beneath the waves, and from ashore.

The various challenges reflected in these emerging missions and their complex operating environment must be overcome. Many of the capabilities described by *Leadmark*, experienced and confirmed in Operation Apollo have applications in domestic missions. It is the Navy's duty, therefore, to provide government with options and choice in both the domestic and the international domain. Deploying the Navy offers government many options in the exercise of our foreign policy, and Canada can gain great diplomatic and even security advantage from the exercise of those options. The security of our home waters and their extension to the continental perimeter, in contrast, is not a matter of choice, although the responsibility is just as great. The gaps in the capabilities needed to reduce our vulnerabilities must be bridged.

STRATEGIC

Imperatives

The emerging missions described above do not demand the complete re-equipping or re-structuring of Canada's Navy in some revolutionary way. Rather, the Navy views its continued transformation as an on-going, evolutionary process, blending existing and emerging systems and structures to create enhanced capabilities. The Navy Canada needs to bridge the gaps in our vulnerabilities requires a range of capabilities with a number of common attributes:

- ***Must be Relevant to Canadians*** — the first priority of the Navy will be the defence of Canada. While the Navy will continue to undertake familiar roles, such as marine search and rescue, disaster relief, and support to other government agencies such as the RCMP and the Department of Fisheries and Oceans, the Navy will also: expand that network to include other government agencies working to improve Canada's response to a maritime threats or developing crisis in our Exclusive Economic Zone and along our coasts; increase our efforts to ensure the sovereignty and security of our maritime approaches, including the Arctic; and make sure that we are making the best use of the human and financial resources we are given.
- ***Must be Able to Act*** — the fundamental ability of naval forces to change roles quickly and efficiently offers great flexibility in dealing with complex missions. This capacity for action can add to the success of inter-agency crisis management, whether domestically or internationally. The Navy's efforts to be more effective will focus on integrating its capabilities with those of the Army, Air Force and Special Operations Forces to produce a joint fighting force capable of working with our international allies to deal with global security problems at their source.

- ***Must have the Right Capabilities*** — vessels with the right mix of equipment and capabilities must be complemented by appropriate supporting shore infrastructure. The lesson of the past is that the greatest flexibility, especially in times of limited budgets, comes through retention of general-purpose capabilities relevant across the range of military operations, rather than a narrow focus on niche capabilities.
- ***Must have Critical Mass*** — a range of capabilities means nothing if they are not possessed in sufficient quantities to sustain operations. This pertains not only to personnel and platform numbers, but also to training and maintenance standards, readiness levels, and force re-generation capacity.

EVOLVING

Capabilities

The principles of Canadian naval vision established in *Leadmark* have been validated by recent operational experience; the basis for implementation of that strategy remains the Core Competencies and their constituent components also identified in *Leadmark*. For example, the Navy’s high level of communications interoperability with the United States Navy is reflected directly in its ability to exercise both tactical and operational level command of coalition and national forces. Equally fundamentally, patrol and surface warfare skills — including boarding capabilities as well as the engagement of sea-based or ashore targets — are as critical in the enforcement of domestic policies as they are on operations with our allies world wide. These Competency Components were described in *Leadmark*, shown below:

Figure 2

Relation of Naval Competency Components to CF Capability Areas			
Basic Naval Concepts	Core Competencies	Competency Components	CF Capability Areas
<i>Float</i>	<ul style="list-style-type: none"> To generate and maintain credible combat forces. 	<ul style="list-style-type: none"> Force Generation Sustainment (Resource Maintenance) 	<ul style="list-style-type: none"> Generate Forces
			<ul style="list-style-type: none"> Sustain Forces Corporate Strategy and Policy
<i>Move</i>	<ul style="list-style-type: none"> To provide sea-based service support and coordination. 	<ul style="list-style-type: none"> Sustainment (Operational) Sealift 	<ul style="list-style-type: none"> Sustain Forces
<i>Fight</i>	<ul style="list-style-type: none"> To know what is going on in real time and to be able to act with a wide range of force options. 	<ul style="list-style-type: none"> C4ISR Self-Defence Organic Air Force Defence Sealift Naval Fire Support Gateway C4ISR Tailored Capabilities for OOTW 	<ul style="list-style-type: none"> Command & Control Conduct Operations Corporate Strategy and Policy

Notwithstanding the success of Op Apollo, the *Fight* needs to be revisited. While there is no doubt that these capabilities worked well in the Arabian Sea, it was not necessarily a hostile environment. It could, however, have escalated to one, and for this eventuality in the future, Canada's Navy must be prepared to be fully combat capable across the entire spectrum of warfare, from "Diplomatic Presence" to "Maritime Power Projection," as demonstrated by Defend-Support-Secure triangle above. Thus the table needs some revision, with the addition of the following competency components:

Sea Control

Sea Control is defined as the ability to carry your, and your allies', commerce across the seas. A sea controller must limit the capabilities of the enemy to deny that freedom of the seas.⁹ Whether in littoral waters or in the blue ocean, control of the sea can be broken down into the three core warfare disciplines — anti-air, anti-surface and anti-submarine warfare. These components are the building blocks and the most demanding and



Command and Control — the Recognised Picture

⁹ Alfred T. Mahan, "On Sea Power," 1890

difficult to achieve — but done well, all the others fall into place. If done poorly, then competence in the others is irrelevant. Excellence in these three disciplines can only be accomplished with excellent situational awareness. Compiling the Recognised Air, Surface and Subsurface Picture is a challenge. The Navy must maintain and expand its ability to sort out the important from irrelevant, the hostile from friend, in order to assure success in all domains. This is the C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance & Reconnaissance) input into the puzzle. This success can then be achieved by a layered defensive and offensive posture, either defensive against threat missiles, attack aircraft and torpedoes, or offensive to ensure freedom of manoeuvre for own forces.

International Influence

The continued shift in focus of most stabilization operations to the land-sea interface of the world's littorals demands a range of sea-based capabilities. For the Navy to be effective in this dynamic battle space it must possess capabilities that influence, support and produce integrated battlespace effects to operations at sea and ashore. Advances in missile and very-long-range gun technology are leading to a resurgence of the traditional naval role of firepower support to the battle ashore. Layered, long range near-land and over-land air defence provides additional coverage against a range of air attacks to forces both at sea and ashore. And of the three warfare disciplines, the underwater battle is still the one that is most exploitable by an adversary. Thus, a submarine that can deny the enemy the use of



Power Projection from sea to shore — an evolving capability

his own waters while the surface and air forces support those ashore is a most useful and deadly asset. These are then all supported by indigenous sealift, ensuring the timely arrival of large quantities of military equipment for disembarkation in fighting order. Finally, to coordinate this effort, an afloat joint headquarters offers the deployment of a robust command and control architecture in a relatively secure forward environment.

Furthermore, additional emphasis needs to be placed upon the following core competencies to ensure the domestic realities of the future security environment are equally addressed:

Use of C4ISR to Improve Responsiveness

C4ISR is a compendium of those systems required to establish “domain awareness” or a “common operating picture” (COP). Of all the transformational issues presently being researched and developed, perhaps the most critical is the use of these systems to collect, analyze and communicate information, to plan and coordinate operations, and to provide the capabilities necessary to direct forces to achieve assigned missions. With that situational awareness, the at-sea commander can choose the terms and time of the battle. The Canadian Forces C4ISR operating construct requires “network enabled” command and control architecture to facilitate all levels of joint, interagency and multinational integration. This architecture must readily support the civil system during domestic security operations. For the Navy’s part, this will require the expansion of the existing marine reporting and communications networks to allow the secure and timely exchange of critical domain awareness information with other government partners. The improved C4ISR responsiveness effort also will have to encompass a robust, deployable joint command and control architecture to ensure interoperability amongst the various services, other government departments and agencies, and with the USN and other Allies.



Transformational technologies are required to provide full situational awareness for the at-sea commander

ISR

Within the specific ISR component of the C4ISR construct, and as already exists in the blue water domain, the Navy will have to continue to develop an ability to conduct Intelligence,

Surveillance, and Reconnaissance coverage of air and maritime activities. This must extend to a distance of several hundred nautical miles beyond our shores if we are to fulfill the evolving needs of domestic security. For expeditionary operations, similar awareness must extend from the sea to the littoral and hostile shore. These efforts must include data fusion and dissemination. In addition, the Navy must cooperate with the other environments of the CF, other departments and agencies of the Canadian government and our Allies to ensure that a robust, deployable ISR system (including human intelligence elements) is available to provide coverage over an area of interest. Our present capabilities in ISR will be augmented in the future through such advances as satellite surveillance, shore based High Frequency Surveillance Radars, and unmanned airborne, seaborne and subsurface vehicles (UXVs).

Self-defence

Anticipated technological developments suggest that naval forces will have to counteract ever advancing underwater threats including submarines, mines and unmanned underwater vehicles, and increasingly sophisticated air threats including anti-ship missiles and unmanned air vehicles. A lesson from Operation Apollo is that wherever future deployments may take Canadian Naval Task Groups, they will encounter potentially hostile foes armed with modern weapons. Forward deployed vessels, such as those on solitary Proliferation Security Initiative patrols in the littorals of rogue nations, will be prime targets and especially vulnerable.

Autonomous Intelligent Systems (AIS)

Given the pace of technological evolution, the future maritime operating environment could soon be populated with unmanned and completely independent combat machines identified as Autonomous Intelligent Systems. Because emerging technologies generally have been manifested first at sea, it is likely that initial introduction of AIS will be in the maritime environment. Such new technology will precipitate a revolution in the conduct of conflict, impacting every domain of operations, with especially profound implications in the areas of ethics, law, logistics and leadership sciences and skills.

Operational Depth and Readiness

It is important to remember that timelines matter in a crisis. A combination of high readiness and mobility means substantial seaborne capabilities are normally the first forces to arrive at the scene of a crisis. In order to adequately respond, the Navy needs adequate capacity — basically, enough ships, submarines and aircraft — to provide the government the choice, voice and options to act immediately, sustain for as long as needs be, and then to generate and regenerate the forces for the duration of the crisis and beyond for the next contingency. Force generation (maintenance, training, trials) consumes almost 70% of available ship days, whether at sea or alongside. This leaves only 30% of available ship days to meet standing and contingency operations. Fleet size, thus, must be four times the requirement to meet assigned governmental tasks. This number has historically and repeatedly been determined to be 18-24 major surface combatants to meet the demands of government ordered operations, be they domestic or international. At the same time, a balance of rapid reaction, high readiness and normal readiness capability packages are required. Rapid reaction forces must be ready to deploy in hours or days, to be sustained by those follow-on forces at lower initial readiness, and then reconstituted and regenerated as required.

Research & Development

With most naval capabilities fundamentally rooted in technology, the Navy must continue to evolve and transform, both to mitigate technological surprise by future opponents, and to participate effectively in interoperability with allied forces, especially the US Navy. Although the Navy cannot afford an independent program, neither can it react passively to technological change. The technological evolution of the fleet is a recognized capability in itself, and will be conducted through strategic partnerships among Defence Research and Development Canada (the R & D arm of the Canadian Forces), civilian industry and academia.

With these additions, the Basic Naval Concept of *Fight* now reflects a force capable of meeting the challenges of the future security environment, across the full spectrum of warfare:

Figure 3

Relation of Naval Competency Components to CF Capability Areas			
Basic Naval Concepts	Core Competencies	Competency Components	CF Capability Areas
<i>Fight</i>	<ul style="list-style-type: none"> To know what is going on in real time and to be able to act with a wide range of force options. 	<ul style="list-style-type: none"> Sea Control International Influence C4ISR Self-Defence Organic Air Force Defence Sealift Gateway C4ISR Tailored Capabilities for OOTW Automated Intelligence Systems Depth and Readiness R&D 	<ul style="list-style-type: none"> Command & Control Conduct Operations Corporate Strategy and Policy

FLEET MIX

2025

For navies, transformation necessarily is an evolutionary process. On-going fleet renewal is a constant quest for balance between the high cost of naval systems and long delivery time, offset by the potential long life of major warships. Most nations that require naval forces, like Canada, have a limited resource base. Few share the operational demands of our maritime areas of responsibility, and a government with a positive, activist international agenda. As often as not, critical decisions as to the capabilities, type and size of the forces are best answered by the selection of general-purpose assets capable of a wide range of operational roles. In the present technological era, nothing answers as many force employment calls as the modern destroyer or frigate. This single platform can provide the government with voice, choice and options. As single units they offer an impressive array of capabilities, and when operating in a group they are powerful enough to control and dominate any large sea area. Those single-ship capabilities also ensure they are net contributors to any coalition force — a ship that is not fully capable must be defended by others. Canada's present Navy is a general-purpose fleet centered on such ships.

The special demands of domestic maritime security, however, present a paradox to Canadian naval force planners. While our offshore operating environments require vessels of oceanic reach, the current absence of conventional threats means that the full range of combat capabilities typically are not required for domestic missions. A frigate with a crew of 225 may not be the most efficient offshore sovereignty patrol vessel. Yet regardless of where that fully capable ship is deployed, it is a necessary insurance against future threats. In pre-9/11 days, the Navy possessed just enough warships to conduct the government's missions; now, and in the future security environment, there are not sufficient of them to meet both the domestic and the expeditionary mission requirements in the event of simultaneous domestic and international crises. Further, given the useful operational lifespan of a modern warship of between 25-30 years, as well as a 10-15 year design and acquisition period, naval thinking and plans for

force development must consider a period of up to 45 years. To bridge the gaps in our vulnerabilities, and to remain capable of fulfilling the complete range of emerging naval missions, Canada requires a sustained, long-term acquisition and modernization program to deliver a combination of assets. While retaining general-purpose structure, the evolving Canadian fleet may see the acquisition of discrete ship types for certain of those missions. The future force structure, including the supporting shore infrastructure, is anticipated to comprise the following:

Maritime Security Operations and Coordination Centres (MSOCs)

The existing Maritime Operations Centres in Halifax and Esquimalt provide a secure foundation for their transformation into inter-agency all-source data-fusion and dissemination centres, monitoring all three oceans (with possibly a new centre for the Great Lakes). The regional MSOCs eventually will co-locate staffs from other government departments, and will be linked to the CF's National Defence Command Centre (and the new Government Operations Centre in Ottawa which is being formed under a separate National Security Program initiative). The primary objective is to facilitate enhanced domain awareness. Although the MSOCs will provide the Navy with the capability to assume full operational control of all assigned government fleet assets in mounting a whole-of-government response to an emerging crisis or on-water threat, more often the Navy will act in a supporting role to other government operations. The potential exists for expansion of the MSOCs into a "naval NORAD" that would include also US Homeland Security Maritime Agencies.



SCSC — multiple threats, multiple capabilities

Single Class Surface Combatant (SCSC)

The move to a common major surface platform as older destroyer and frigate hulls are retired will rationalize the retention of a wide range of combat capabilities, while enhancing significant cost-savings through commonality of equipment and training, as well as new reduced manning concepts. Modular "plug and play" systems will allow for adaptive mission fits

to individual units, providing different yet complimentary variants throughout the fleet. For example, while all ships would be fitted with common state of the art communications and self-defence weapons systems, certain units would be optimized for command and control or specific warfare areas such as near-land and over-land air defence or land attack. The overall aim will be to provide a general-purpose combat capable fleet that offers a flexible and scaleable force package.

Task Group Logistic Support and Support to Land Operations

This innovative advanced support ship concept will not only retain the critical ability to re-supply ships at sea, it will also incorporate a number of new cost effective joint enabling capabilities. The Joint Support Ship (JSS) will provide logistic support for a broad spectrum of maritime operations for deploying and supporting forces wherever and whenever the entirety of the CF Contingency Task Force is not required. It will meet the Navy's requirement for at sea replenishment while at the same time providing the CF with a greater flexibility and responsiveness in mounting adaptive joint force packages. JSS will incorporate the capacity to support forces ashore and include: a purpose-designed roll-on/roll-off sealift function with flexible self-load and unload functions to independently transport materiel for land forces; and configurable command and control facilities for an afloat joint or inter-agency headquarters rear-linked to regional and national operations centres. Adding these joint capabilities while satisfying the Navy's at-sea replenishment requirement will provide the CF with an expanded and versatile range of options in response to Canada's collective response to crisis management. The Navy will also have to consider options to further enhance its ability to support the pre-positioning or deployment of land and air elements of the Contingency Task Force and wider support to land operations which could include the future sea-basing of a fully integrated national or multi-national joint command element as well as the capability to deploy tactical uninhabited aerial vehicles.



UAVs may provide significant on-station time for offshore and Arctic patrols

Enhanced Offshore/Inshore Patrol Capability

The present structure and capacity of any of the government fleets cannot meet the emerging increased demand for vigilance, presence and responsiveness in all areas of Canadian maritime jurisdiction. An enhanced governmental (not necessarily Navy) capability is required that will allow for the patrol of offshore and inland waters and the interdiction and seizure of ships at sea, as well as to provide general presence, search and rescue, and crisis support to outport and northern communities. Although a frigate is considered to be the ideal platform to provide the increased patrol capability, the Navy does not possess enough of them to accommodate the increase in tasking. While requiring a basic combat control system to ensure interoperability with other Canadian and allied warships and the ability to control aircraft and UAVs, the reduced conventional threat levels in home waters means that a vessel filling this role need not be as fully combat capable as a Single Class Surface Combatant and need only be crewed for joint domestic operations (e.g., RCMP or JTF2 for boarding, search and seizure). Other basic capabilities would include the ability to operate in the vicinity of the Arctic ice pack, and have sea keeping and endurance sufficient to operate in the prevailing weather conditions of the North Atlantic and Pacific Oceans.



HMCS VICTORIA — quiet, capable and lethal, domestically or abroad

Patrol Submarine (SSK)

The SSK is an exceptionally valuable addition to both domestic security and expeditionary operations, requiring the attention of a disproportionate number of enemy forces to counter it, while providing a robust assertion of sovereignty in the underwater dimension. Domestically, they can offer the same presence and deterrence capabilities as surface ships, while their covert nature allows them to catch transgressors in the act. Similarly, in expeditionary operations, their ability to hide in the littorals makes them especially suited for Special Operations Forces; additionally, they complement the task group as the best anti-submarine platform.

Organic Air

Self-contained aerial assets are an essential naval capability, extending the range of the shipborne and task group sensors exponentially. Future organic air capability may come in a number of guises, with the following among the options currently under development:

Maritime Helicopter Project (MHP) — the existing Sea King helicopters have proven to be extremely versatile and valuable to the Navy over their many years of service. Most recently, during the Campaign Against Terrorism in the Gulf of Oman and Persian Gulf (Arabian Gulf), they demonstrated the invaluable contribution of organic air support to naval operations in the complicated and congested battlespace of the Littoral region. Indeed, the capabilities provided by the Sea King helicopter made it an integral part of the tactics



The Cyclone H92 — extending the reach of at-sea sensors, enhancing the capabilities of surface ships

employed in escorting high value, high-speed vessels through the Straits of Hormuz and other choke points. As it nears the end of its operational life, it will be replaced by the *Cyclone H92*. This aircraft will continue to offer the Navy essential operational capabilities including Surface Surveillance and

Control; Subsurface Surveillance and Control; and Utility Operations, all extending the reach of its controlling ship by hundreds of kilometres.

Uninhabited Aerial Vehicle (UAV) — technology has advanced to where it is conceivable that UAVs will be used to complement shipborne helicopters within the near future, and to some extent, replace manned aircraft as the Navy's principle organic air asset in the future, perhaps as a follow-on to the MHP. Not all naval missions today or in the future will require the use of full-sized aircraft. Significant savings in crews and airframe hours can be achieved through the operation of UAVs for general surveillance, as well as tactical targeting, and eventually, even delivery of precision weapons. The UAV also allows for a surveillance capability that does not endanger human life — a very important operational and political consideration.



Tactical UAVs launched from ships can complement shipborne helicopters, and may replace manned aircraft for surveillance and combat missions

Certain of these assets already are in service today and will receive incremental upgrades to enhance their viability throughout their life cycle (e.g., the submarines and the MOCs); others are the object of mature acquisition programs about to enter service (e.g., the *Cyclone* and the JSS); while the requirement for still others has only recently been identified and require further study (e.g., a capability to fill the Offshore and Inshore-Inland domestic security gap); and others still will be nearing the end of their service lives in 2025 and in need of replacement (e.g., the CPF and Submarines). Their order of introduction is subject to a number of force employment and development considerations needed to implement the CF Concept of Operations. These all can be related to the “Defend-Support-Secure” diagram on page 18.

SECURING

Canada's Ocean Frontiers

Transformation is a process of strategic re-orientation in response to anticipated or tangible change to the security environment, designed to shape the nation's armed forces to ensure their continued effectiveness and relevance. Originally defined in the mid-90s in response to a uni-polar world, its relevancy and need was made more urgent by the attacks of 9/11. In Canada, because the Navy already had somewhat transformed through the 1990s, it was ready and able to meet government's desire to take the fight to the enemy, just as envisioned in *Leadmark*. Now the Navy's Vision is to continue to transform its expertise as a medium global force projection navy. The proven success abroad will be retained and applied to the demands of domestic maritime security, with the Navy ready to act as the lead in joint inter-agency Canada-US efforts to secure North America's Ocean Frontiers. Broadly, the tenets of *Leadmark* remain valid today and into the foreseeable future.

As has occurred so often even in the recent past, government may find the Navy is the best initial element of the Canadian Forces to deploy when Canada is asked to participate in overseas coalition efforts. Closer to home, reliance upon another country to enforce Canadian law in our jurisdiction, or to protect Canadians and Canadian interests abroad, would be an abdication of our sovereignty. At the same time, Canada must live up to its historic assurance that our maritime approaches will not be a source for anyone to threaten our American allies. The Navy plays a key role in safeguarding Canada's maritime approaches by:

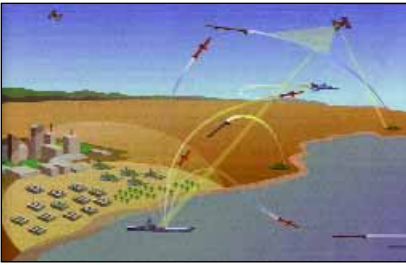
- Conducting and coordinating surveillance of Canada's coastal areas;
- Fusing information derived from surveillance systems and intelligence agencies to understand **who** is operating in our waters, **why** they are there, and **what** they are doing; and,
- Providing government with the capability to find, intercept and board suspicious vessels at sea, and if necessary, apply a gradual level of force, up to and including lethal force.



ISR, Joint Capability



Common Operating Picture



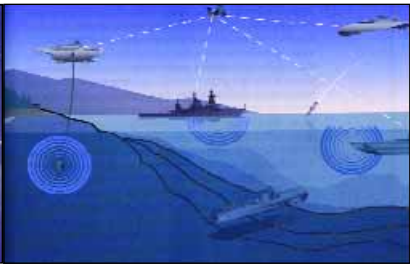
Joint Fires Capability



Afloat Logistic and Sealift Capability



Layered Defence



Shallow Water ASW, Limited MCM

Over the past decade, the Navy expanded its traditional emphasis on general security in the Atlantic and Pacific basins to include the strategic sea-lanes of the Arabian Sea. To participate fully in Canada's National Security Policy, including active engagement in our internationalist role, the Navy must re-align its general-purpose expeditionary capabilities to encompass our more immediate perimeters. The nation will profit from the Navy taking a leadership role in initiating a whole-of-government organizational re-alignment:

- The existing two-ocean (Atlantic and Pacific) capability to evolve into a more extensive security engagement with other departments and agencies to increase our focus in the Arctic and give greater support into the Great Lakes;
- The existing two maritime coastal operations centres to evolve into Regional Joint and Interagency structures;
- Operational constructs to evolve into regional structures for the security and defence of Canada,¹⁰ and,
- Expeditionary, multinational and national operations to be based upon the self-sufficient multi-purpose Joint Task Group construct.

The challenging marine environments that exist off our coasts require an oceanic navy that is poised for rapid response and capable of defending Canada, protecting Canadians and securing Canada's offshore interests. With continued investment directed towards refinement and enhancement of existing capabilities, not only will the identified vulnerability gaps in our domestic marine security be addressed, but Canada will also be provided the strategic choice to deploy and sustain expeditionary naval capabilities in support of Canadian foreign policy objectives. A robust general-purpose fleet provides many opportunities to project Canada's global advantage and further a sophisticated relationship with the United States, while ensuring the security of the approaches to our island continent. Canada's Ocean Frontiers need be vulnerable no longer.

10 These operational constructs comprise the formations and area commands that should evolve into national Joint and Interagency Commands (East, Central, West and North) for security and defence purposes.

THE NAVAL

Vision and Strategy for 2025

In June of 2001, *Leadmark* articulated ***Naval Strategy for 2020*** that called for “combat capable forces that are responsive, rapidly deployable, sustainable, versatile, lethal and survivable, ready to provide the government with a wide range of relevant policy options across a continuum of domestic and international contingencies.” In addition to those tenets of the *Leadmark* Vision and specifically for the future security environment:

The Canadian Navy will have combat capable forces that can control and defend Canada’s ocean estate, protect Canadians and secure Canada’s off-shore interests. It will be fully interoperable with all Government departments to resolve any maritime domestic crisis, ready to assume a leading role in the implementation and execution of Canada’s National Security Policy. It will seamlessly and jointly operate with the Army and the Air Force to bring lethal and offensive punch to a hostile shore. The Navy must be fully capable of bringing the battle to the enemy as far from Canada as necessary, assisting the Army on the ground, the Air Force in the skies, its allies and coalition partners on the high seas or in the littoral waters of a hostile nation.

NAVAL STRATEGY

for 2025

Generate multi-purpose combat capable forces to meet the assigned domestic and international missions

Expand the fleet capability in C4ISR to link with Other Government Departments and the USA

Modernize the present fleet capabilities for Operations Other than War and Anti-Submarine Warfare

Expand the fleet capability required for joint expeditionary operations with special regard for the future security environment, capable of conducting Sea Control and projecting power ashore in support of the joint battle

Conduct operations in the Global War on Terrorism