



The Future of Canada's Navy:
Strategic Initiatives and
Requirements

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Morning Session

Remarks to Conference

**Vice Admiral Drew Robertson,
Chief of the Maritime Staff, Canadian Navy**

Vice Admiral Drew Robertson opened the conference by thanking its sponsors and welcoming its participants. He noted the two major themes of the conference: the Navy Canada needs and Investment in the Navy as Investment in the Nation.

Today's Canadian Navy, comprising around 13,600 sailors at home and abroad, has demonstrated global leadership by promoting our values wherever the government decides. It is characterized by high tempo and expertise from our waters to the Persian Gulf.

How can we position the Navy to face the challenges of the 21st century? Our aim should be to set the stage by reflecting on a set of assertions regarding these challenges.

A Point of Strategic Inflection

Vice Admiral Robertson argued that Canada and its allies are approaching a point of strategic inflection. Different concepts of defence abound and uncertainty is not going away. The deepest problems of the international system are not soon to be solved. We must understand what changes and what does not. The Cold War consensus has no contemporary equivalent; containment, as an organizing principle, no longer applies to the post-9/11 world.

The U.S. cooperative strategy for 21st century sea power, integrating the Coast Guard, the Navy, and the submarine corps, is commendable. The thrust of their policy comprises a framed policy debate that ties this cooperative strategy to the U.S. way of life. What direction does our nation need to go in? We must go beyond asking what our national power will be used *against* to ask what it will be used *for*.

The Canadian Way of Life

According to Vice Admiral Robertson, the Canadian Navy is essential to the Canadian way of life. The Navy's ability to control events at sea is vital in our country, one of the most challenging maritime states. Globalization is gradually making neighbours of all countries. Mariners – professionals who have long operated in this context, have readily known these challenges.

A fighting Navy is vital for Canada and its allies despite the lack of formal naval battles. It must be ready to face strategic rather than tactical or operational challenges. Our Navy's ability to control events in contested waters gives currency to our national objectives. Maritime power is as much about preventing conflict as it is prevailing in

combat. Canada has now sent 23 ships to Arabian Peninsula since 9/11. Leading like-minded nations to protect international commerce and guard against piracy in various places, such as the coast off the horn of Africa. A commitment to the Navy is commitment to international peace and security.

Promoting and Defending the Global System

Indeed, as stated by Vice Admiral Robertson, we are at a point of strategic inflection. We must promote and defend the increasingly interdependent global system and work against those who seek its destruction. This effort must be undertaken in conjunction with economic and political efforts towards enacting a grand strategy; we must actively shape world realities instead of reacting to them. There is palpable optimism for what maritime nations can achieve and a preference for collective and multi-lateral action. How will the Canadian Navy help shape global reality by engaging in this multilateral grand strategy?

Panel #1: The Navy Canada Needs

Moderator: Dr. Philippe Lagassé, University of Ottawa

Dr. Lagassé introduced the panel by outlining the existential and financial challenges facing Canada's Navy.

The most misunderstood topic of Canadian defence history is the following question: Why does Canada need a Navy? Canada is surrounded by three oceans. Our coasts provide an attractive approach to those who seek to challenge us; asymmetric military, economic and political threats abound. This asymmetry is reflected in the types of threats we face: nuclear, chemical, and biological weapons would likely come to Canada by ship. Our ability to board and search these ships is vital.

Furthermore, economic disruptions to international trade could have disastrous spill over effects on our way of life. Canada cannot be complacent about the global maritime commons. Our political sovereignty requires a vital navy.

However, the question remains: Why do we need a navy? Would a stronger Coast Guard not suffice? Should not the responsibility for the global maritime commons fall to other nations? This scepticism must be addressed and invalidated. Past, present, and future issues must be tackled, including: how and why we project Canadian power and influence; how we confront global emergencies and what information the Navy provides regarding overseas developments. The role of a rejuvenated Navy in global peace and stability post 9/11 is being called into question due to costs. Security and containment are now the major issues.

When dealing with the political dimension of decision-making, it is valuable to remember that cabinets must weigh the costs and benefits of security. We must speak to them in dollars and cents – fiscal terms – in order to communicate effectively. Budget constraints

are inevitable, especially with an approaching recession. We must prove the financial returns of the Navy, i.e. how much we earn with every dollar spent.

Joel Sokolsky
Dean of Arts, Royal Military College of Canada

Setting the Context

Dr. Sokolsky began by noting the importance of setting the context for the debate over Canada's Navy. Strategic matters since 9/11, future threats, the debate in the U.S. caused by Iraq, insolvency on Wall St, and the U.S. relationship with Canada all weigh heavily. The conclusion is that Canada essentially has gotten it right since 9/11, but we still need to define a way ahead for Canada and its strategic interests.

What do we mean when we say Canada has 'gotten it right'? Canada has realized that failed and fragile states and terrorism are the major threats today. The '3D' approach (defence, development, and diplomacy) was also a wise response. However, there is little light between ours and Bush doctrine. The viability of regime change as a policy in cases of failed and failing states, terrorism and weapons of mass destruction must be challenged – it can easily be construed as ethnocentric. Our interests, broadly defined, based on free trade and globalization, democracy and human rights; but the dominance of the West has lead to some of the threats logged against us, and, of course, to future threats.

The Cold war was about promoting democracy and our values. If we want to see the stability we want, at sea and elsewhere, the continuance of U.S. (perhaps dominant) power will be necessary. Canada does not bend to U.S. will, but we recognize our national interest is tied to theirs. Consequently, we should worry about their hesitance to meet the security obligations of the future.

Identifying and Addressing Threats

Dr. Sokolsky remarked that certain threats stand out: failed and fragile states, terrorism, and threats to states based on democracy and free markets. They are manifest in various guises beyond Islamic terrorism: piracy and violations of human rights are but two examples. Pre-emptive action – military or humanitarian – may be increasingly necessary. Not taking care of Afghanistan following the Soviet withdrawal was a mistake that cannot be repeated. We should decided as to who gets atomic weapons – a measure of discrimination is needed in deciding whose possession constitutes a threat.

According to Joseph Nye, democracies do not differentiate between value and interest-based interventions. Our leaders must decide whether the price paid for interventions is worth paying.

Difficulties in Iraq and Afghanistan are prompting this debate in the U.S. The wise thing is to re-assess interventions; however, post-Vietnam malaise and self-defeating criticisms would be bad for the U.S., Canada and their allies. A problem of the unilateral Bush doctrine is that it has damaged multilateralism. In the future, a more multilateral approach is necessary. The failure in Iraq is due to the assumption that you can change a society. But you cannot want democracy more than they do. Neither the U.S. nor other western publics will sustain the losses associated with protracted counter-insurgencies. Long-term solutions with sacrifices will not be supported.

Another criticism of Iraq lies in the lack of a broad interagency approach with the State Department in the lead, similar to Canada's 3D approach. The unilateral approach of the Secretary of Defense is evidence of this criticism's validity. However, since 9/11, the U.S. has been very multilateral with different and new allies. There is increasing evidence of broad, multilateral cooperation. The U.S. generally prefers multilateralism and will continue to favour it.

Options:

Dr. Sokolsky outlined two major options for moving forward:

- Move to a deterrent and containment approach with no regime change. As advocated by Krautheimer, this options entails a combination of ballistic missile defence and other deterrents
- Maintain the emphasis on multilateralism. International military cooperation in the west is a great tool for stability. Navies' ability to work together in formal and ad hoc ways is very important.

There exists a continued need to be proactive but with less use of force. Aid ships, hospital ships, and assistance where the U.S. and its allies are invited flow from this approach. Many countries still welcome the stability provided by western military forces.

Providing a Global Presence

According to Dr. Sokolsky, a global presence is required to convince those who fear globalization. However, there exists a certain reluctance on the part of the U.S. public for this type of commitment. We must be willing to assist where the U.S. is unwilling or unable. It is in our interest to provide help to them, realizing that we cannot help every part of world – selectivity is required due to budgetary constraints.

Finally, we must recognize the value of practicing democracy at home and not *imposing* it abroad but *promoting* it. What does this mean for Canada and its strategic future? We got it right after 9/11. Canada is a closet realist country – we follow our national interest. Our activities will not always be unambiguously supported: as necessary as the mission in Afghanistan is, debate will continue. Our strategic future must confront terrorism and

instability. Canada will have to provide a global presence to maintain its status as a G8 country. Protecting North America will continue to be important. Having a Navy able to project power and influence in pre-emptive humanitarian and security actions abroad is vital. The majority of international trade is at sea and populations tend to live close to ports, oceans and seas. A 3D approach drawing heavily on use of sea will require a certain selectivity of action.

It is cliché to say that the future is uncertain. The way in which we meet the threats outlined will depend on our global presence, manifest through our global expeditionary capability. Whether for armed, airborne, or naval operations, our contribution to global security must be maintained regardless of the threats and interests we face abroad. Our visible commitment is our obligation as a global nation.

**Vice-Admiral (Ret'd) Ron Buck,
Former Vice Chief of the Defence Staff and CMS**

Vice Admiral (Ret'd) Rob Buck argued that a maritime force has always protected Canada. According to him, it is a flexible instrument of containment and security. What will we call upon it to do in the future? He posited its capabilities for our country going forward.

Capabilities to Defend Interests

According to Vice Admiral (Ret'd) Buck, the right mix of Canadian military capability requires flexibility in a globalized world. Canadian realities must be understood and dealt with. Historically, our sovereignty has been physically threatened. The British Imperial Navy, eventually, became insufficient for the protection required – this led to the Naval Act of 1912.

Most Canadians do not link their way of life to international trade, terror, and security. The issue is one of threat perception: every one of our allies has been threatened, except us. We don't feel under threat of attack. We will, eventually, be subject to a terrorist attack, but Canadians do not believe it. We have not been prepared to maintain large forces.

Canada will remain a country of resource choices. Defence will always compete against other interests for funding. A realistic, cooperative approach is needed for creating the Navy we need. Sovereignty is still at issue in matters of fishing and the arctic. Direct international competition will arise. We expect our navy to be present in that competition. Canadians believe that their Navy should be there to help in disaster events. The Coast Guard is not a military force, but a different force. When an attack with a WMD comes, failure will not be an option. The Canadian Navy, if it is not up to the task, will be seen to have failed, not just by those who choose not to resource its requirements.

There is no overstating the importance of resources and trade. Canada needs a proper presence to operate in and over three oceans in an effective manner. Surveillance and intelligence have different requirements in each ocean: we must create the right mix and platforms.

The Domestic and the International

Vice Admiral (Ret'd) Buck argued that Canada's Navy has preferred the away game to the home game; but both are equally important. He posited that purely domestic operations are no longer an option.

Terrorism is a reality in light of potential terrorist access to weapons of mass destruction. Will the approach of the West in Iraq, Afghanistan, and East Timor be our only response? In all likelihood, no. Classical military roles have blurred and a broader range of combat and operational capabilities is needed. Canada is seen as wealthy, multilateral country. We will continue to participate in alliances with other nations due to the need to continue to exchange information and operational responsibilities.

Canada had a niche role as an anti-sub Navy in WWII. Luckily, our current fleet was designed with greater capabilities in mind. It has been used from the Adriatic, to the Indian Ocean, to East Timor in combat to humanitarian operations. A broad range of missions must be possible. Naval leaders must offer capabilities that political leaders will want to act on. Niche capability lessens overall capability. A broad but reasonable capability is necessary. The 1994 white paper ignored the issue of readiness. We must now deal with the erosion of our naval force: we have a hollow force not being adequately sustained. Responses are needed in days, not months; our lack of vanguard capability is leading to irrelevance.

Issues to Consider

According to Vice Admiral (Ret'd) Buck, Canada is an important global leader, relatively independent of U.S. power. There is an expectation that our Navy will participate in a range of capacities. However, the military capacity is only relevant when you are there. If it is not reliable, it cannot make a difference. According to him, certain issues must be considered:

1. Resources are finite: military capability is expensive. Stable resources are vital. The recommendations of the Senate Committee on National Defence and Security should be followed.
2. Canada's Navy must be open to a broader role: it must keep its combat role, but be ready to assist beyond the classic military context.
3. It must be ready to deliver at home and abroad.

Capabilities should include:

- Surveillance and control of maritime boundaries, with international co-management options.
- More flexible use of reserve personal on broader basis with the right platform mix.
- A developed force size and structure.
- An enhanced cross-boundary arrangement with the U.S Navy and Coast Guard.

Canada has lacked an 'intermediate' fleet. A balance must be struck between Atlantic and Arctic needs. Frigates and destroyers can do double-duty. Both domestic and international activities must be done properly.

Canadians want Canada to participate internationally. This requires a nuanced understanding of the breadth and depth of our capability. Size and mix must be balanced against the resources available – both will dictate the durability of capability. The Canadian military needs to demonstrate the consequences of the decisions it takes. We must maximize inter-operability with ourselves and allies with an ability to react quickly.

Is Canada prepared to pay the bill? We must be prepared to give the government the best recommendations – an unsustainable fleet will not serve Canada's interests.

Commodore Kelly E. Williams
Assistant Chief of the Maritime Staff, Canadian Navy

Commodore Williams began by noting the importance of bridging the discussion between Canadian and U.S. perspectives.

The notion of control of the world's oceans is still important, as is the notion of having overwhelming power to guarantee our freedom. The sea unifies and makes all activities tactical activities. The Battle of the Atlantic allowed things to play out, with victory owing, eventually, to domination of the sea.

Important Naval Considerations

Commodore Kelly's presentation was extensive. He noted certain considerations that stand out. Two statistics that are especially important when thinking about the world are the following: 70% of the globe is covered by water and 80% of humanity lives within 100 miles of world's oceans. When looking at the earth at night, where there is light there's people, competition and conflict.

There are over 95,000 vessels at sea at any time. As much as 90% of global commerce travels by sea. Global air travel is highly regulated: all passengers and cargo are known to the western world. However, with as many as 95,000 ships at sea at anytime, getting every ship manifest is next to impossible. The Navy's strategic function is to project

influence and power and deliver maritime security. We need to know what and who is traveling across the grid of maritime seaways.

National sovereignty is an outcome of surveillance, presence, and control. One cannot be achieved without a balance of capacities in others – it is a defining feature of who we are as a nation. Canada straddles this economic maritime highway which provides the economic lifeblood of Canadians.

There is a revolution underway in Halifax: the Navy has taken the lead in implementing the whole-of-government approach to maritime security. It has been building capacities to deliver an integrated national security picture of what is happening off our coasts. The evolution of NORAD indicates that we are miles ahead of everyone else in building an integrated picture and working quietly with our partners. We are actively building the awareness, trust and confidence to deliver on maritime security from the domestic perspective, as Vice Admiral (Ret'd) Buck and Dr. Sokolsky discussed.

Globalization: Emerging Demands

Commodore Williams describe the basic impact of globalization on seapower, sovereignty and arctic peoples. Changes to way their way of life are evidenced through a general move to urban centres and the resulting affect on aboriginal culture. As much as 50% of our future wealth lies in this region: it is therefore vital to Canadian industry, and, consequently, the Navy.

We need to be able to deliver on the demand Canadians have placed on their Navy. This demand on capabilities is driven by our environment. The notion of general purpose capacities and capabilities is a useful one. National sovereignty will be extended by 31% over the coming years while the Navy's capacity will diminish without increased funding. AOPS will help but they are not the only answer.

What is new in this era of globalization? There is a marked increase not only in the volume of trade, but equally in its velocity. Just in time delivery is one result: later arrivals in Vancouver now mean later delivery to Windsor and a general slowdown in economic production. The speed at which yearly trade over the bridge from Windsor to Detroit – totalling about 118 billion dollars every year – takes place can have a dramatic impact on the global economy.

Not all ships on these increasingly busy seaways are 'good guys'. A recent draft resolution in UN Security Council by the U.S. and France proposes "all necessary means" in order to combat piracy. U.S. food operations to Somalia have been frequently disrupted by piracy. The Canadian Navy in the Gulf of Guinea has conducted difficult, a take down of a ship with pre-paid drugs destined for Montreal – the Navy impacts the lives of Canadians on day-to-day basis.

The World's Oil Choke Points: Competition and Conflict

Commodore Williams asked the following question: If food is the target of piracy, when will oil become their target? Who is keeping these maritime highways open? Vice Admiral (Ret'd) Buck pointed out that maritime security needs a fighting Navy in order to deliver on the security that is required.

The future maritime security environment is growing increasingly tense. Lloyd's of London was asking recently for the highest-ever insurance rates for ships going through Straits of Malacca. A ground-based missile system hit a ship off the coast of Lebanon some months ago. Trends in governance and food and water security point to increased future competition and conflict.

There are significant consequences ahead for coastal states as more countries start to compete for maritime resources. The future of terrorism "from the sea" is still unknown. Our ability to control events at sea depends on our sovereignty. To deliver on increased demand, we must push for inter-operability. Vice Admiral (Ret'd) Buck noted the difference the Navy makes in both winning and preventing wars. Our ability to win and prevent wars hinges on the trust and confidence we have in our naval capacities. Communications will play a role in reducing conflict – a role that is increasingly necessary. The Canadian approach to maritime security can be shared among allies with reduced capacity – this can help to promote confidence and trust, positioning Canada as a provider of confidence and trust to others.

Building a Country

Commodore Williams argued that building a Navy is not only an act unto itself, but, rather, an act of deliberate nation-building.

Our constabulary role does not exclude a combat role. Moving forward requires deciding on what we are going to do and what we are not going to do. We need to say no to a constabulary-only focus. It accords neither with our Navy's past nor with the expectations Canadians have of it today. They demand delivery both domestically and internationally. With three coasts, we must deal with three demands with three capacities for delivery.

The Navy's future fleet will remain a fighting fleet with an ability to control events at sea, balanced across a wide spectrum of needs. It will do so in a cooperative manner, sized and postured to deliver on two lines of operation: domestic and international. But time is needed to rebuild Canada's Navy. HMCS PROTECTEUR – designed during the time of Prime Minister Diefenbaker – is still in service in the Persian Gulf, addressing our present needs. This example requires us to consider future needs and to plan for them. Delivering on future requirements demands compromise and a focused effort.

We are not just building a Navy, but a country.

Question and Answer Period

Commander Derek Moss asked the following question: the word “joint” is often used to secure greater funding. Has the right mix balance of capabilities changed?

Commodore Williams answered by saying that the joint or combined approach is at the heart of military thinking. All officers and sailors are starting to see significant differences in the security environment. How joint are our operations? What capabilities matter in delivering what is needed? Developing balance in capability is critical. Is the Navy able to do it all? No. But it can start to build interoperability with the Army and Airforce to pursue experimentation of Canada’s unique capabilities to deliver in future actions.

Peter Kitchen of CDR asked the following questions: the current government has expressed that it wants a more active role in the recognition and protection of Canadian arctic sovereignty with a predominant role for Navy. What tools do you have currently and what do you need to effectively protect sovereignty? As for issue of interdiction in Canadian waters, what does the Navy think the issues are and can they intervene?

Commodore Williams responded by stating that the impact of global warming on the arctic is striking, as evidenced by the opening of the North West Passage. From an economic perspective, this will mean that the North West Passage will be open to trade in the future. The Navy is currently contending with limited capability and capacity to operate in the ice. The Coast Guard is the lead agency in icebreaking operations in the arctic. It will take a while to determine the unique capabilities the Navy will need, but the process has started. It will likely include a deep water port and arctic offshore patrol vehicles.

Vice Admiral (Ret’d) Ron Buck added that the military alone cannot protect and promote Canada’s arctic sovereignty. A whole-of-government approach is necessary. It remains an issue of national commitment and strategy.

Louise Mercer from ADGA Group asked whether a communications framework between Navy leaders and public at large has been established. She noted the difficulty of communication between these two groups. This is especially relevant in light of the critical link between Canada’s Navy and the Canadian identity. She asked how the Navy can help to drive public opinion, which in turn drives political action.

Vice Admiral (Ret’d) Ron Buck answered by discussing the historical perspective. He added that local residents in the Navy are good links to their communities. The Navy needs to harness them as a means of communication. Naval reserves are critical as key levers to perform this role.

Commodore Williams agreed that communicating is important, but argued that language is most important. He stated that connecting with Canadians at the gut level is key in a frank, direct manner. It will take time. Much happens at sea that is not necessarily seen by Canadians. Once they know what the Navy does, they will come to appreciate it more.

Dr. Sokolsky discussed the concept of the free society. The Navy's message is getting across, but, in a democracy, it is not the only message. This is the nature of the public process in a democracy. It may take a tragedy or a major incident at sea to catch the public's attention.

Afternoon Session

Senator Hugh Segal

Senator Segal began his presentation by speaking to key underlying biases that inform his observations on the current challenges facing the Canadian Navy:

- He conveyed to the audience the gulf that often exists between the Navy's necessary strategic capabilities and the imperatives of fiscal planning. While the financial dimension represents a real limitation to naval development, Senator Segal maintains that it must not be the exclusive driving force. It is the responsibility of naval representatives to communicate to duly elected representatives Canada's core strategic interests and the resources necessary to satisfy those interests. This must be done before policy has been entrenched.
- He emphasized the degree to which a robust naval capacity is necessary to defend Canada's various territorial, economic and environmental interests. Canada's strategic context warrants development beyond the current 33-ship Navy. Upgrading and modernizing the existing vessels can only go so far.
- Canada has committed to many global initiatives in support of international stability, each of which has relied heavily on naval deployment. This is because the Navy represents the quickest, most multi-capable military and diplomatic instrument available to the Government of Canada.
- Absent the real ability to project Canada's presence abroad, there is no way to advance the values of democracy, rule of law and social justice on a global scale. National security and economic prosperity depend on this capability.

The Current Context

Senator Segal continued on to outline the recent efforts made to compensate for cuts to the defence budget late in the Martin government and now in the Harper government. While this has brought some modest progress, he insisted that far more is necessary to equip the military, in general, and the navy, in particular, with the necessary capabilities to act upon Canada's strategic interests. Dramatic growth is needed.

A domestic environment that does not seem to fully appreciate the value of a functioning military further challenges the Navy. The perception that the military is financially insatiable and lacking in substantial worth to the public is quite prominent. Further, there are debates over the degree to which federal attention should be directed to military development at the expense of other constitutionally entrenched federal responsibilities. Senator Segal countered the argument that defence should be scaled back as a federal

funding priority by emphasizing Canada's traditional role of acting beyond its "geopolitical footprint" in the global community.

Real threats exist on the international stage though they are differently configured from the existential threats of the early- to mid-twentieth century. Senator Segal delivered a list of ominous scenarios to which the Canadian military could be required to respond. For example, a Canadian cruise ship is taken hostage by nihilistic terrorists who have no interest in negotiation; or natural disaster befalls a Caribbean country requiring immediate evacuation and rapid assistance. How would Canada respond? These scenarios have clear implications for the Canadian Navy, but is the navy, at present, outfitted to meet the challenge?

A Dynamic Presence

Senator Segal outlined the three strategic imperatives that he sees as fundamentally important today: 1) that the Navy possess a multivariate, robust capacity, 2) that the Navy enjoy a sustainable and *independent* capability to perform its tasks as necessary and at Canada's sole discretion, and 3) that the Navy have at its disposal real tactical options for deployment. Fulfilment of these strategic imperatives is necessary for Canada as it seeks to achieve a dynamic presence in the world. The bar is constantly being raised as countries such as Russia and China dedicate significant resources to developing their respective navies. Anticipated limitations of the US Navy place a greater onus on allied forces to contribute to protection of international waters. Other specific and necessary developments include, but are not limited to: up to ten multi-capacity task-groups deployable at the same time and the naval platforms to support such groups, broad-reach amphibian capacity, sea bases.

Until Canada possesses net capacity and global reach that also for action in humanitarian, diplomatic and combat missions, Canada is not mounting the naval presence it needs and that today's world dictates. Senator Segal praised what the Navy has been able to accomplish in the face of its challenges; however, he insisted that it is insufficient. He concluded with a numerical statement: that a rational, balanced defence policy would see naval expenditure double in the next decade.

Panel II: Investment in the Navy is an Investment in the Nation

Dr. Richard Gimblett

CMS Historian

Dr. Gimblett introduced the afternoon panel by emphasizing the need to take stock of the *full* investment involved in growing a navy. This requires not only attention to shipbuilding and a long-term timeline but also a consideration of the costs involved in securing the necessary facilities and up-keep. Dr. Gimblett highlighted the central challenge to a long-term investment in the Navy; As Canadian hulls are generally in service for 40 years, planning must take into account the need for flexibility over a range of sea power functions in order to maintain the relevance of the fleet. There is a caveat

that accompanies the necessary flexibility—overgeneralizing the capabilities of the fleet may detract from the Navy’s ability to confidently participate in the global missions to which it has become accustomed.

Dr. Michael Hennessy
Professor and Head of Department
Royal Military College of Canada

Dr. Hennessy’s presentation provided the audience with a historical perspective on the complicated process of Navy development. His observations were framed by his observation that to build warships in Canada is a major national – not just naval – technological enterprise. The Canadian Navy’s experience in growth campaigns over the past century is instructive for force development in response to contemporary challenges.

Dr. Hennessy made explicit the important role in Navy Development of some rarely considered government branches, departments and agencies including Treasury Board, the Office of the Auditor General, the Department of Finance, and the Department of Trade and Commerce.

A Century of Building, A Century of Challenges

The design of ships for the Navy has undergone transformation over the course of the century as the employment of those ships has evolved. Whereas they were initially conceived of for protection of territorial waters, the experience in the Second World War and since has re-oriented employment of the ships well beyond territorial waters.

The major classes of ships that have been built in recent past have been at the cutting edge of design. Advanced electronics, weapons systems and machinery have been supplied by offshore companies; the technology that was (and continues to be) used was made available to Canada by the US and the UK as a result of Canada’s special defence relationships with these two countries.

In order to carve out its desired function, the Navy has been confronted with necessary strategic choices regarding its capabilities. For instance, the HMCS *Laborador*, an icebreaker, was moved from the Navy to the Coast Guard, symbolically making a clear distinction between the two institutions and their functions in the post-World War era. This move can be seen as making space for the Navy to conduct high seas missions. The Navy also opted out of building large troop lift for the army, external pickets at sea, and conducting a weather ship.

In making the transition to implement shipbuilding campaigns there has been significant state support to private industry. This has been carried out through specific policies aimed at distributing contracts to various actors in the industry across Canada—policies that, despite difficulties, attempted to respond to both political and strategic imperatives. Also accompanying such growth campaigns is the need for a naval design staff with an

oversight capacity and creation of a naval testing establishment, engineering testing establishment, a centralized naval drawing office, and a Centre of Excellence in shipbuilding.

In the past, Canada's pursuit of naval growth campaigns has faced many challenges in terms of securing naval technical expertise, administration, oversight, cost control, and auditing. Projects have drawn political tension, attention from the Auditor General, and have pitted "region against region" or "shipyard against shipyard". All shipbuilding has gone over-budget and over-schedule. As a result of these challenges, future efforts to take on such projects will be met with scrutiny.

Forging Ahead to the Future

Future projects will, nevertheless, be carried out. These projects will require action beyond the naval in-house capacity and will involve significant collaboration with external government agencies and actors. Collaboration will involve the awarding of contracts according to careful evaluation of shipbuilders – their track records; overheads; existing in-house designs, engineering and architectural capabilities; managerial expertise; regional labour costs; and regional fiscal planning initiatives. In pursuing these initiatives, the Navy must establish clear standards of work in both design and construction and an efficient design process with little room for time-consuming backtracking.

As Dr. Hennessy noted, future campaigns will be confronted by the constant paradox to procurement and building: a project is most *cost-effective* when it executes pre-existing designs and technologies; however, the product of this is a ship that is obsolescent upon completion. In contrast, navies desire "tomorrow's ship" today—a very technically complicated and expensive desire. Expectation management has become a necessary feature of any Navy development project. There is such a high degree of compromise involved in the process that disappointment is bound to arise from the final outcome.

Examples such as that from the CPF program out of St. John Shipbuilding illustrate the savings in construction time through repeat work. The first vessel built took 5.2 million man-hours; this was reduced dramatically to 2.2 million hours by the end of the 9-ship run. This is a valuable historical lesson.

In order to serve its national interest and live up to commitments to such bodies as NATO, the Navy will continue to take on growth campaigns. A persistent reality over the course of these campaigns, as outlined by Dr. Hennessy, is the difficulty in synchronizing project cycles and political cycles. While design and construction belongs to a drawn out timeline, political imperatives compress time and make it extremely difficult to generate public support and sustain governmental attention.

Vice Admiral (Ret'd) Peter Cairns
President, Shipbuilding Association of Canada

VAdm Cairns provided the audience with a comprehensive survey of the current environment for shipbuilding. He reviewed the major challenges both on the domestic and international stages and called for a serious review of the procurement process and more attention to the shipbuilding industry in Canada amidst what he sees as a perpetual downward trend in Navy development.

A Host of Challenges

The arrival of Asia-Pacific actors on the shipbuilding scene has dramatically altered the complexion of the industry. This transformation has forced North American and European shipbuilders to further specialize in complex and highly technologically advanced ships in order to play to their strength and retain market power. Despite specialization, profitable niche market will attract other capitalists and eventually the advantage to be accrued will be competed out.

In 1986, there was a rationalization of Canadian shipbuilding. This reduced the industry by 40 percent. Since then suitable policies to encourage the industry growth that would allow it to compete on the global stage have not materialized. As a consequence, there has been very little shipbuilding in Canada in recent years. To a certain extent, timelines play a role in this; shipbuilding projects that are undertaken occur approximately every 20 years and the product is kept in service for another 40 years. Nevertheless, VAdm Cairns spoke to a clear downward trend.

Due to its scale, the CPF project should provide valuable guidance to future procurement projects in Canada. It has, for the most part, exceeded the capabilities of other frigates and has provided impressive service in return for the investment. At the time of the CPF project, St. John Shipbuilding was Canada's most modern shipyard; however, the progress accumulated over the course of the program disintegrated and eventually the shipyard was shut down. Such a trend in the industry – a reduction of in-house support – represents a significant loss for Canada and its maritime defence.

An opportunity on the horizon

Canada is at the cusp of a massive need for ship replacement—in the Navy, Coast Guard, and Marine Atlantic fleets. This overhaul has an estimated cost of \$50 billion over the next 20 years. Bids are currently in review to initiate this process of replacement. In anticipation of this projected opportunity, VAdm Cairns pointed to some barriers to be overcome. These barriers take many forms including: a steep learning curve in the industry due to multi-sectoral loss of expertise, the difficulty in gauging the building capacity of shipyards, and the inability of many shipbuilders to secure bonds under which to carry out their work. Despite the outlined barriers, VAdm Cairns expressed confidence that the shipbuilding industry will be able to meet the need over the coming decades.

Indeed, as Dr. Hennessy described, Canadian shipbuilders have demonstrated an ability to improve in efficiency through repetition.

VAdm Cairns noted that the projected boom in procurement represents a unique opportunity to streamline the government process into a logical build strategy—some form of a continuous build strategy, which brings as benefits steady work, investment by shipyards, new and more modern ships for the Navy and the coast guard, and growth in Canada’s wider economy. Any attempt to reform the system must involve a multi-pronged approach. Challenges have been met with policy solutions in other countries (in the US and the UK) in the form of the establishment of centres of excellence and industry-government partnerships. Other policy options have been highlighted, by the Shipbuilding Association of Canada for example, such as a pre-qualification approach.

One of the foremost challenges in rhetoric is the need to confront the myth that it would be cheaper to conduct shipbuilding offshore. While there is some immediate financial truth to this assertion, it fails to take into account the following issues: 1. Offshore shipbuilding platforms options that Canada can trust are also currently busy; therefore, the process could be equally prolonged there. Nevertheless, Canada is not willing to contract out to lower quality, cheaper options, 2. There is no cost-benefit to Canada, especially in terms of job creation and wider economic gain. Indeed, the future direction of naval procurement has broad implications—not simply for the Navy and the shipbuilding industry, but for the broader Canadian economy.

Admiral (Ret’d) Robert Natter
US Navy
President, R.J. Natter & Associates, LLC

Adm Natter spoke to the tradeoffs that exist between naval force development in the form of new construction as opposed to updating and technology insertion. There is a need for a well-balanced or “mixed” approach to growth in the Navy—a balance between the two forms of development. This is not only necessary, but it is also likely to be the only affordable option in both the American and Canadian contexts.

The Navy has an important role to play in power protection, support of forces ashore, and in the protection of national interest within territorial waters, economic zones, and passages. Without the ability to surveille, track, interdict, board, or repulse a country’s sovereignty and leverage in a negotiation setting is severely challenged

Adm Natter described the reality of a wartime context in which new roles for the Navy are created in addition to pre-existing responsibilities. The challenge here is in supporting the Navy in acquiring these additional responsibilities whilst re-capitalizing other branches of the armed forces.

Striking a Balance

Of utmost importance is the insertion of new technologies to ensure that a capable Navy is being developed. In order to achieve this form of re-capitalization in an affordable manner, there must be a balance between new construction and updating of existing forces. To be sure, a certain amount of risk accompanies any technology insertion; therefore, such endeavours must be complemented by adequate management. As an example of update projects, several Iowa class battleships have been successfully updated with new technology in the form of land attack Tomahawk missiles. These ships were used for naval gunfire and Tomahawk strikes in the First Gulf War. He also pointed to a Canadian case in the modernization of Halifax class ships.

New construction projects involve greater leaps in technology, increased risk and commensurate increased cost. The US example of Spruance class destroyer and the move from steam to gas-turbine propulsion systems is illustrative of this process. If risk is properly managed, technological developments in new construction may serve as the foundation for future development.

Technological advances must be made in order to be adequately prepared to meet threats in the international environment. But the introduction of technological advances will always be limited by financial constraints. Nevertheless, there is room to more accurately assess and distribute available resources between new construction and technology insertion.

Adm Natter pointed to the Japanese approach to naval development as a prime example of a dynamic and robust development campaign. In Japan, one new ship is built every year. Every ship is updated as necessary and decommissioned after 16 years of service. This process has ensured that the Japanese Navy remains the most advanced Navy in the South Pacific.

Commodore Richard Greenwood Director General Maritime Engineering Project Management Canadian Navy

Cmdre Greenwood engaged the audience in his presentation on the quality-performance-cost-risk equation involved in developing to a naval requirement. His presentation highlighted the pivotal role of requirement formulation; discussed the many challenges of warship design, integration and production; explored the main characteristics of the world shipbuilding industry; and outlined alternate opportunities and option in naval development campaigns.

The complexity of modern naval systems and their increasing costs make it advisable that a longer term, more strategic view of naval projects be taken. These campaigns must not be viewed as discrete projects, but rather as a part of a larger program for naval capability

sustainment. Cmdre Greenwood highlighted that observations are founded on three key points: 1) continuous concept development activity is necessary to ensure that the Department can act as an informed customer with respect to cost-capability tradeoffs, associated risk, and requirements formulation, 2) rigorous customer-supplier engagement in the early stages of project definition allows for more opportunity for the owner/operator to act assertively in the cost-capability compromise, and 3) an attempt to stabilize and phase federal fleet building demand allows the shipbuilding industry the opportunity to better develop capabilities to meet that demand.

Pivotal Nature of Requirement Formulation

Cmdre Greenwood began with the point that requirement is not absolute, it is relative to the various and unpredictable array of threats, to the variable and unpredictable affordability, and to ambition. Requirements are traditionally formulated in a top-down fashion (national → defence → maritime, etc), providing limited opportunity for feedback up the chain. For every choice that is made in favour of a given requirement there must be an accompanying displacement of another requirement to the unaffordable side of the ledger, either in terms of quality or quantity of that requirement. Cmdre Greenwood cautioned that it is not always immediately apparent what that trade-off is and what potential consequences it poses.

Planning is necessary in the pre-design stage that establishes a requirement that is internally consistent, coherent, feasible and affordable. Absent this planning, the design cannot fulfil the purpose for which the requirement was articulated.

Cmdre Greenwood emphasized the long-term implications of decisions in the design stage of shipbuilding. Total life-cycle costs are largely determined by the choices made in the design of the vessel. Design decisions also affect cost in that early-stage decisions, when the process is still fluid, are relatively inexpensive. In contrast, decision changes on requirements later down the line are far more intrusive to the process and as a result more expensive. As an informed customer, one may be well positioned to understand the trade-offs being made. Cmdre Greenwood sees the warship development process as particularly in need of greater customer involvement.

Warship Design, Integration and Production

Though there has not been a significant change in the physics impacting upon ship design, Cmdre Greenwood observed a distinct change in the design challenge itself due to the changing opportunities that technology development presents.

Cmdre Greenwood called for requirement-specific design and cost studies to explore balance between the many trade-offs involved in naval development. An alternate, but undesirable approach is to employ a hands-off, contracted optimization. Early expression of value judgment from the client is necessary to proceed with an efficient development process. Such an expression requires a deep understanding of the costs and risks involved.

The World Shipbuilding Industry

Cmdre Greenwood undertook a nuanced characterization of the modern shipbuilding. Different industries appeal to different priorities, fulfil different niche markets, make specific assumptions regarding the costs and risks of production, operate according to varying degrees of design and production agility, have unique standard lines to minimize design change risk. To be sure then, there is no *one* world shipbuilding market against which the Canadian industry can be easily compared or within which Canadian requirements can readily be filled.

Cmdre Greenwood encouraged a change of mindset regarding the maritime industries. They must be seen as potential national outlets for ship systems integration expertise and as vehicles for the many components and subsystems that Canada is currently producing, or could produce. He also encouraged that the maritime industry be considered beyond the confines of shipbuilding. Shipbuilding represents the core of the maritime cluster, but there are other, financially significant dimensions as well.

Alternate Opportunities

Cmdre Greenwood reviewed various positions on alternate arrangements in naval development. An example of an alternative is that of design outsourcing. It has been proposed that maintaining the building component in Canada and purchasing blueprints could expedite the production process. Cmdre Greenwood highlighted key limitations in this approach, notably that it takes a toll on combat currency and does not necessarily respond to technology development – it falls into the trap of “building yesterday’s ship today”. There is a distinct loss of leverage on the end product.

There is an opportunity for the development of a long-term sustainable model for ongoing development and production of naval capability. Cmdre Greenwood outlined the following characteristics such a model might include: an informed customer, a stable model for flexible interaction with industry for balanced development and communication of requirement, a serial process to support strategic continuity in government build requirements, and an increased platform commonality to allow progressive capability upgrade and technology insertion and decreasing logistic support costs.

Question and Answer Period

A question was put to the panel as to whether it is possible to maintain a viable Canadian naval shipbuilding industry, and whether this is a priority for the Navy, or for the Canadian government. The question was addressed by assessing the strategic worth of the shipbuilding industry. Whereas the industry was once guarded on the basis of its service to the domestic merchant fleet, this is no longer a sufficient argument in Canada. A more ready defence of the industry lies in its service to Canadian warships. The other dimension for consideration is the requirement for industry protection – this dimension is

assessed by the Canadian government. The question was then furthered through an exploration of whether turning to offshore construction (a supposedly more economical form of construction) is a viable option. In response, it was expressed that quality assurance is not necessarily the limiting factor in pursuing offshore options; rather, national interest is the key consideration—in terms of economic loss as well as long-term costs of service and upkeep. There was a suggestion that construction functions can be offshored while maintaining service functions. This suggestion was met with scrutiny by VAdm Cairns.

A question was put to Adm Natter as to the division of responsibilities between the coast Guard and the Navy in the US. Specifically, this question probed how the construction is divided between shipyards. Adm Natter responded by explaining that the differentiated role of the Navy and the Coast Guard requires quite disparate ships and would, ideally, require construction in separate shipyards. Political considerations weigh heavily on this matter. The suggestion that the two fleets could operate off of a common hull is largely rejected on the basis of functionality.

Based on the discussed commonalities in North American strategic thinking, a question was posed as to the existence of opportunity for more complementarities in ship design and construction. Cmdre Greenwood referred to past efforts at joint procurement programs in which the challenge of compromising national requirement has served as a severely limiting factor. There is, however, prospect for inter-ally help and further cooperation based on mutual understanding of programs.

Vice Admiral (Ret'd) Bruce MacLean
Former Chief of the Maritime Staff

VAdm MacLean wrapped up the conference and reflected on its many messages. A major observation of his was that an overarching and ever-present challenge to the formulation of solutions to the Navy's problems may be the sheer volume of intellect and expertise on the matter. It is of fundamental importance that this abundance not act, as it has in the past, as an impediment to progress. There is no question, as Adm Buck indicated, that Canada will have a navy, even though there are pronounced challenges in articulating its purpose to the average Canadian; however, the complexion of that navy is still uncertain.

There is continuity over time in terms of the complexion of the status quo Navy and the plans for future Navy development. This continuity, however, highlights a distinct inability to put this long-described product in to play. To be sure, there have been acute and tangible developments—for example, the establishment of the AOPS. But these developments must be viewed as a part of a longer term, consistent concern with action on the Arctic front, not necessarily as a success of naval growth.

Adm MacLean highlighted the degree to which Canada and the US have played a unique role in the NATO context given that both countries have far more experience and display far more of a willingness to operationalize beyond the confines of its waters. He

attributed this characteristic to the highly adaptable nature of each country's navy. Canada has demonstrated a clear understanding that in order to pursue its interests in a global environment, the approach taken must be flexible. This quality is, and must continue to be, consistent across the many functions of the Navy regardless of how those functions—be they cooperative offshore or constabulary functions—are allocated resources.

The JSS is positioned to become the critical enabler for the Navy of the future. That Canadian policy is predicated on building ships is a complement to this. The question remains, however, as to the timeline of such an initiative.

As much as it is exciting to map out directions for growth in the Canadian Navy, recent history has seen an orientation dominated by efforts to preserve the existing structure, not grow it. What has been termed a looming "silent crisis" risks escalating into a "perfect storm" should certain conditions intersect. An incremental model will continue to be necessary to navigate this environment.