



CANADIAN NAVAL REVIEW

VOLUME 4, NUMBER 2 (SUMMER 2008)

**One Fish, Two Fish, Three Fish ...
No Fish: Canada's Navy and the
Global Fisheries' Crisis**

**Obsolescence Challenges and the
Canadian Navy**

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

**A Canadian Perspective on the
Cooperative Strategy**

**Submarine Procurement and the
Victoria-class Acquisition from an
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The *Canadian Naval Review* has two primary objectives:

- provide a respected, arm's-length focal point for discussing a broad range of issues relating to navy professional development; and
- provide a forum for naval, academic and public discussion of all aspects of naval and maritime policy.

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Photo: DND

A Canadian Patrol Frigate firing a missile.

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Editorial: Naval Education

George Santayana's observation that "Those who cannot remember the past are condemned to repeat it," is probably overworked; yet, it holds a fundamental truth: the sum of our experiences shapes not only our attitudes but also our outlook on life. Santayana prefaced that observation with a more telling point, "When experience is not retained ... infancy is perpetual." From this, one could draw a conclusion that maturity and education go hand-in-hand.

When we started planning for the *Canadian Naval Review*, we agreed that the new journal's purpose was to provide a forum for discussing naval and maritime security policies and be a general source for information about naval history, activities, and current issues.

Our attempts to educate both the navy, and Canadians generally, over the last three years were guided by the belief that in explaining contemporary naval issues and by providing a modest insight to Canadian naval history we would challenge the naval community to look inwards at itself and at its heritage as well as its future. This is how we thought a navy educated itself. We attempted to echo the examples set by *The Naval Review*, founded in 1913 as a forum for Royal Navy officers to debate policy, and by the *Proceedings* of the United States Naval Institute which for more than 130 years has been what its present Chairman described as "the prodder, conscience, and constructive safe haven for ideas that keep pushing the establishment not to be content to accept only the little challenges when the big challenges are out there."

Have we been successful?

It is troubling when one is told by naval people that they know of *CNR* but have not been able to find a copy or had time to read it. This would tend to make one think that *CNR* may have failed in its education mandate. While we produce an intellectually stimulating journal every quarter, and one that is richly illustrated, we do not seem to have made any significant inroads into the navy's basic education. Nor, unfortunately, have we been able to generate much interest from the larger naval community out of uniform.

What went wrong?

Rather than asking ourselves "How does a navy learn?" maybe we should have been asking ourselves "Why does

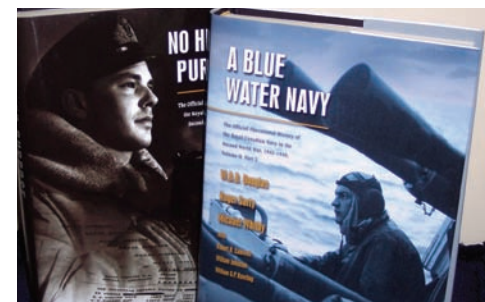


Some basic Canadian naval reading.

the navy need to be educated?" Within that question is an uncomfortable assumption: that the navy and, by default, the naval community has largely forsaken its history and believes there is nothing to learn from the experiences of the last 100 years or, for that matter, from the historical experiences of other navies. I would not go so far as to say that the navy has become anti-historical, but it certainly has not developed the type of interest and respect for its own history that allows it to draw lessons from past experiences and develop a distinctly Canadian naval heritage.

It might seem that the navy is guilty of what John Hattendorf described as a "tendency to think that all that went before is irrelevant and useless, especially in an era of transformation and change." The Canadian Navy has been in an era of transformation and change since its birth in 1910. If people would only take the time to read the history of the navy, especially since the end of the Second World War, they would find a near-constant story of the struggle of the admirals to balance the demands of money, or more frequently the lack of it, and new technologies to keep their navy relevant in a constantly changing world situation.

The view that everything has changed and history is no longer relevant is nonsense. For instance, the struggles of the naval staff to plan the future fleet in a political environment that is not fully convinced of the need for a multi-purpose, combat-capable



The new official history of RCN operations during the Second World War; but how many will read it?



fleet parallel the concerns and efforts of their predecessors in the late 1940s, the 1960s and the 1970s. It seems that every time the navy's basic rationale for its continued existence is challenged, the naval staff 'circle the destroyers' and embark on a major public relations exercise that trots out the standard explanations. How many times have we heard that the navy's role is to protect national interests and sovereignty at sea, protect trade, oppose international lawlessness, and so on?

What seems to be missing is an unconditional acceptance that the navy is a useful part of the national fabric and that the country would be in a worse condition without a navy. My critics will argue that the navy is well represented in Canadian society. If that is so, then why is it so difficult to gain public (and media) support for its continuance? Is this a reflection of the national 'maritime blindness' that concerns the navy?

This is very likely. Today, public concepts of the Canadian military tend to be driven more by the images of 'boots on the ground' in Afghanistan than by the warships patrolling Middle East waters providing the back-up to the ground war. This is a classic example of Colin Gray's explanation of the strategic need for navies and air forces to be the 'enabling forces' that allow the ground war to be fought and won. But where have we seen a discussion of what would happen if there were no navy? Has anyone actually explained in a way that can be understood by all just what would happen if the navy were to become a glorified coast guard or even if it were to be disbanded? To some this is thinking the unthinkable and a threat to the navy's continued existence. That too is nonsense; the difficult issues need to be discussed publicly; it is part of the education process.

In the era of collective security of the Cold War it was much easier to explain the need for a 'blue water' Canadian Navy because it had specific tasks assigned to it within NATO and Canada-United States contingency plans. Today's more complex world doesn't run along the same concepts of military planning; rather, military forces are maintained in contingency against a range of essentially unpredictable crises at home and abroad. It is not enough to say that the navy's role is to protect national interests; it is much more than that. A modern navy is an 'on call' force by which its government can respond to threatening situations whenever the need arises – in home waters or elsewhere.

Apart from the few that understand these things, this strategic concept is lost on Canadians. Why? The main reason is because far too few people have taken the time to explain it in simple terms. And those terms I suggest



Do they really understand the significance of the events they routinely commemorate?

are enduring terms that have applied to the political use of military force, including navies, for hundreds of years. Yet, the navy itself seems unable to render those strategic concepts down to simple English and explain them in ways that anyone can understand. If their efforts had been successful there would be no need to keep on repeating the rationale. Educating Canadians on the need for a navy needs to start from first principles rather than with a high-pressure advertising campaign.

Maybe the time has come to build another national naval coalition much along the lines of the one built by Admiral Fred Crickard in 1994 during the public defence review when the navy was attacked by the so-called peace groups. Such a coalition needs to draw in the navy, the naval community at large, industry and the academics, and start explaining the fundamentals of a Canadian naval tradition complete with its history, its strategic foundation, and the useful lessons that can be drawn from that 100-year history. In such an endeavour CNR could play a valuable role in naval education writ large. But, to do that, CNR needs more support from the rank and file of the navy, from the naval community, and from those industries with vested interests in the Canadian Navy. We cannot do it alone.

Simply, CNR has to stop being seen as just a pretty face in the PR process and become what it set out to be: a respected educational tool. A key part of the new mandate should be to ensure that the past is not forgotten particularly those pieces of our collective experience that can teach us something we can take forward in building a better society. George Santayana was absolutely right on both counts: our history and our experience matter and indeed shape our future while allowing us to mature. 🍷

Peter Haydon

Winner of the 3rd Bruce S. Oland Essay Competition

One Fish, Two Fish, Three Fish ... No Fish: Canada's Navy and the Global Fisheries' Crisis

Kate Bigney and Alexandre S. Wilner

As the Canadian Navy prepares for its centennial celebration, it is worth revisiting the spirit in which the navy was formed. In 1909, George Foster urged Ottawa to establish a sovereign navy: "In view of [Canada's] great and varied resources, of her geographical position and national environments ... Canada should no longer delay in assuming her proper share of the responsibility ... to the suitable protection of her exposed coastline."¹ With Foster's entreaties in mind, Prime Minister Sir Wilfrid Laurier tabled the *Naval Service Act* a year later in 1910, mandating the establishment of Canada's naval force. Like other navies, Canada's navy was to provide the state with the tools it needed to protect its maritime interests.

Importantly though, the Canadian Naval Service was further charged with safeguarding the natural wealth of Canada's oceans. Besides providing maritime security, the fledgling force was to conduct hydrographic surveys, take tidal and ocean current measurements, establish a communicative service and assist in protecting Canada's abundant fisheries.

It's in the navy's fourth mandate – fishery protection – where we expect to see a substantial operational shift in the coming decades.

Linking Canada's naval and fishery protection activities wasn't new. Before 1910, most of Canada's maritime activity was conducted by the Canadian Department of Marine and Fisheries (CDMF) which operated a fleet of roughly 30 vessels, eight of which were armed. The department conducted fishery patrols off Canada's coasts and in the Great Lakes regions, its armed vessels operating as warships and its fleet, as an organized maritime force. During the 1887 fishing season *The New York Times* reported that CDMF vessels boarded over 1,000 American fishing boats in and around Canada's 'three-mile' Atlantic

maritime zone. Colourfully, the *Times* quips, "Canada, if not in a belligerent mood, was determined that no helpless mackerel ... [having] succeeded in crossing the three-mile limit line, should be disturbed by the crew of any vessel that sailed under the Stars and Stripes."²

It's in the navy's fourth mandate – fishery protection – where we expect to see a substantial operational shift in the coming decades. Since 1910, but especially in recent decades, environmental uncertainties, along with highly proficient fishery technology, global population growth, insatiable appetites, and weak resource management systems have rocked ocean environments. Speaking of a fishery crisis has become commonplace. As global fish stocks plummet, resource protection becomes a national priority and, we posit, a potential security issue. Recent studies suggest that a nexus is emerging between ocean conservation and national security.³ In this article we offer three scenarios linking marine resources and national security. With specific reference to Canada's Atlantic coast, we map out the concomitant implications for the Canadian Navy.

The State of the Oceans

The world's fisheries are facing a multi-pronged threat. The United Nations Food and Agriculture Organization (FAO) estimates that over 50% of global fish stocks are fully exploited and nearly 25% are currently *over-exploited*.⁴ Additionally, while global fishery production has remained steady at roughly 85 million tonnes per year since the 1980s, fishing *effort* has risen substantially.⁵ That's more fishermen, for fewer fish. Combine that with a drop in the number of larger, meatier predatory species, and fishing down the food web becomes the norm. Even jellyfish are now sought. The loss of marine diversity means not only a loss of fish to eat, but also spells instability for marine ecosystems and ecosystem services more generally.⁶

The fishery crisis is exacerbated by a number of factors. Illegal, unreported and unregulated fishing (IUU) is

perhaps the most damaging. With weak international enforcement regimes, over-harvesting and under-reporting is commonplace. The result is a muddying of catch statistics the world over and ill-informed management systems. Over-capacity further feeds the crisis. Fishing vessels are simply too large, too numerous and too technologically advanced. In addition, chronic government subsidies create 'perverse incentives' to continue harvesting unsustainably.

At the regional level, control over fish stocks is mandated by the UN Convention on the Law of the Sea (UNCLOS). Fish located within 200 nautical miles from shore fall under national jurisdiction. For Canada, the 200-mile Exclusive Economic Zone (EEZ) represents the outer reaches of its maritime resource border. Of course, fish don't seem to notice. There are approximately 25 commercially viable species and a number of moratoria species that straddle the Atlantic Canadian EEZ, migrating back and forth over the line. These stocks attract fishing fleets from around the world to Canada's maritime doorstep. In 2003, for instance, foreign fishers caught over 15,000 tonnes of fish protected under Canadian law just outside the EEZ.⁷ A similar pattern can be seen around the world, straining national and regional resource management and enforcement capacity.

In Canada, domestic fishery production is roughly one million tonnes per year.⁸ This figure has remained constant since the early 1990s despite the near extinction of the north Atlantic cod. The collapse of the cod industry resulted

from a confluence of events, although the introduction of freezer trawler technology (which substantially increased fishing capacity), and decades of poor management (characterized by a disregard for scientific evidence and community-based knowledge) were principal drivers.

With the cod's disappearance, Canada's East Coast fishing industry shifted its efforts towards the exploitation of invertebrate species (lobster, snow crab and shrimp) which had benefited from the elimination of their principal predator. These species continue to draw foreign trawlers to Canada's eastern maritime border, the so-called "roving bandits" of the sea.⁹ The same scene is playing itself out the world over. Since this serial depletion cannot go on forever, what role might the Canadian Navy play in the coming decades? We offer three scenarios.

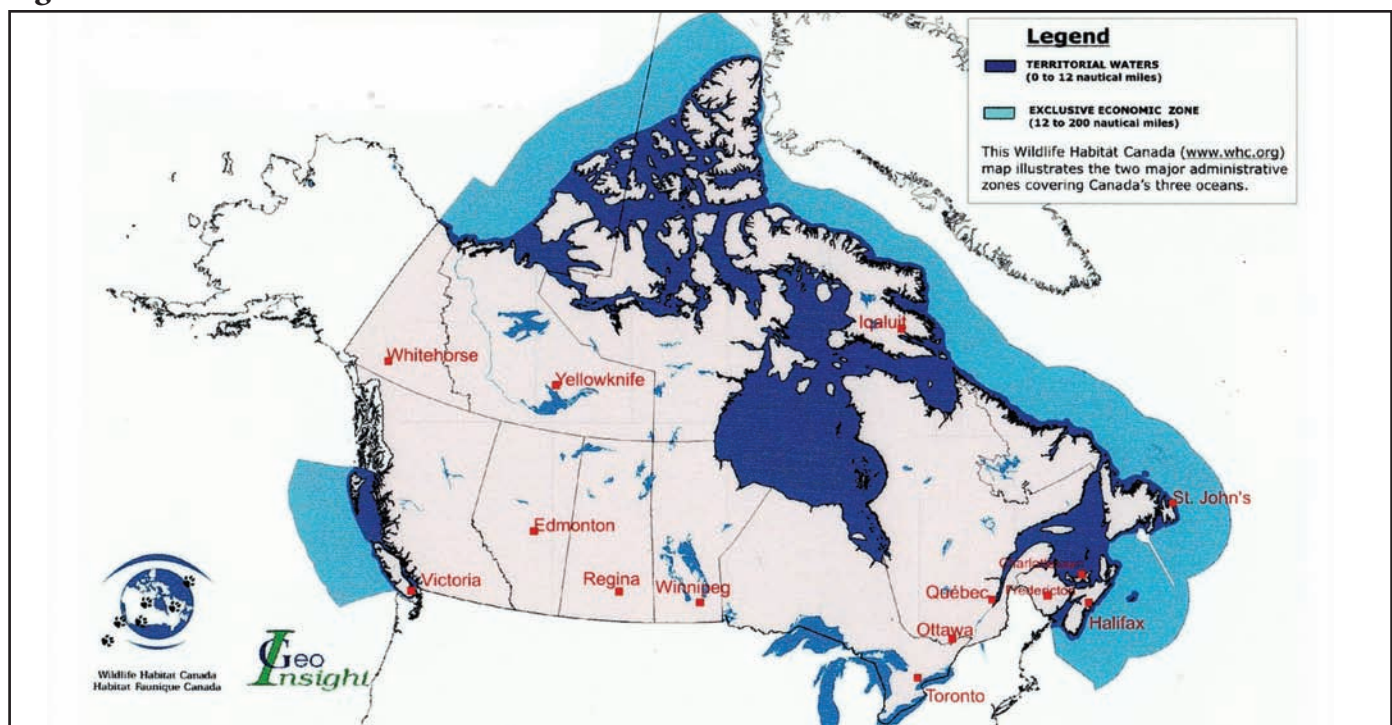
Scenario 1. Fighting Over the Scraps: How Collapse Leads to Conflict

This first scenario is the most intuitively logical: the less of a resource is available for exploitation, the higher the risks of acute competition, crisis and conflict. Much has been written linking resource scarcity to conflict.¹⁰ Generally, the chain of events is as follows:

Population growth and higher resource consumption → deteriorated environmental conditions → increasing scarcity → pronounced competition → greater risk of resource conflict

So long as ocean fish remain a desirable resource, dwindling stocks will spur greater competitive pressure

Figure 1. Territorial waters and the Exclusive Economic Zone



among fishermen, their fleets and governments. Crisis and conflict become reality. Why? Because the marine environment is an interdependent and open one: fish swim past political borders; access to the ocean's resources is free to all; and one state's over-fishing is another's loss.¹¹ With fewer fish, the problem is exacerbated.

From there it isn't hard to imagine governments taking punitive action against illegal fishing occurring just outside their jurisdiction, tightening the rules governing ship and catch inspections, expanding powers of detention, seizure and arrest, blockading ports, tampering with foreign trawling equipment, and restricting access to fishing grounds, all the while relying on naval power to bring the message home.

It's already happening. Consider these examples:

- A Russian vessel fires upon a Japanese trawler off the Kuril Islands, killing one fisherman (2006).
- Japanese ships chase Chinese fishing boats from the Diaoyu Islands (2005).
- An American Coast Guard ship is authorized to fire upon a Russian fishing vessel using illegal drift-nets off Alaska's coast. A five-day chase ends only after the Americans uncover and point their guns toward the trawler (2000).
- The Philippine Navy intensifies patrols of its fishing territory after detaining Chinese nationals for fishing within its national waters (2000).
- New Zealand assigns a naval frigate to the Southern Ocean to deter 'pirates' from over-harvesting the Patagonian toothfish (1999).
- British authorities seize a Spanish trawler for exceeding fish quotas, prompting British fisherman to blockade Gibraltar's border with Spain (1999).
- South Africa detains 18 Spaniards for using illegal nets off its coast (1995).
- Argentinean cutters fire on Taiwanese vessels near the Falkland Islands (1986).
- British, Norwegian and Icelandic trawlers engage with naval and Coast Guard vessels during various episodes of the 'Cod Wars' (1958, 1972, 1973, 1975). At one point, Britain deployed over 20 naval frigates to protect its fishing fleet.

Canada isn't immune to the fishing fever. It too has relied on the projection of maritime force to protect its resource. In 1992, to enforce Canada's cod moratorium, Canadian ships seized the *Kristina Logos*, a Panamanian trawler, for illegal fishing. Three years later, Canada arrested two American boats dragging for scallops in the Grand Banks outside the EEZ. And of course, there was the dramatic seizure of the

Spanish trawler, the *Estai*, in 1995. In an unprecedented show of force, Canadian ships fired across her bow, before boarding and towing the trawler to Newfoundland. The event sparked a spiralling crisis: Spain sent a naval patrol boat to the Grand Banks; Canadian ships cut the nets off a Spanish trawler, the *Pescamero Uno*; Spain responded by announcing plans to send a more robust naval force towards Canada. The Europeans balked only after Canada threatened to move against another 17 trawlers. Brian Tobin, then federal Fishery Minister, summarized Ottawa's action as "a first step in instilling in [Canadian] waters and around the world an effective enforcement regime."¹²

While there was a lull in conflict at Canada's marine border in the late 1990s after the *Estai* incident, the fishing woes hadn't permanently abated. In 2004, Canada seized two Portuguese fishing boats using illegal nets and shut its ports to vessels from the Faroe Islands and Greenland. And since 2003, Canadian inspectors active with the Northwest Atlantic Fisheries Organization (NAFO) have conducted nearly 1,000 on-board inspections, issuing almost 100 citations to over 60 vessels from 11 countries.¹³

As stocks decrease and fishing pressure increases, the navy might well have to play a larger role in protecting Canada's ocean resources. This isn't to suggest a constabularization of the navy, but the navy might be required to act upon "violations detected while carrying out its fundamental military role."¹⁴ To that, other functions associated with fishery protection – surveying fishing areas, monitoring fishing efforts and controlling violators – might be added. So long as foreign trawlers continue to fish in and around Canada's maritime border, the navy's services will be required.



A Cambodian trawler being boarded by the Australian Customs Services.

Photo: Australian Customs Services

To a certain degree, the Canadian Navy has already taken a more active role in resource protection. Between 2003 and 2006, Canadian vessels on fishery patrols logged 2,400 days at sea, of which the navy was responsible for roughly 400. Department of Fisheries and Oceans (DFO) officers routinely rely on the navy for transport while conducting their duties and ship boardings carried out by naval vessels have risen consistently. Under the collapse-conflict scenario, these trends continue.

Scenario 2. Relinquishing the Scraps: Why Collapse Leads to Indifference

Conflict over resources is not a certainty. The nexus between scarcity and conflict is complex and multi-faceted, and scholars have found little empirical support for a simple scarcity-conflict relationship and even less evidence that wars between states are caused by scarcity alone.¹⁵ Other factors are almost always involved. As a result, avoiding resource conflict remains a possibility.

In this scenario, states rely on adaptive mechanisms to diminish the consequences of dwindling resources. Better management techniques, technological ingenuity, developing resource alternatives and diversifying dependency can limit the likelihood of conflict. To that end, a diminishment of global fish stocks might actually lead to less, not more, conflict. If so, the Canadian Navy may be off the hook in terms of fishery protection.

The argument rests on a number of rationales. First, a declining stock might well reach a point where fishing it no longer makes economic sense. Fishing is a costly endeavour. When a viable catch is no longer certain, fewer fishermen will risk the expense. After all, few consumers will want to pay hundreds of dollars for a pound of salted cod or now for crab or shrimp. If there are less fish in Canadian waters (or near them), then it will not make economic sense for a lot of fishing vessels to be in the area. Fewer fish means less foreign competition.

Second, if the fishing industry paid the 'real' costs of steaming across oceans to exploit a dwindling resource – with an elimination of fuel and vessel subsidies, for instance – global competition over remaining stocks would certainly diminish. Third, where feasible, freshwater species might in some cases substitute for ocean species. In Canada, walleye, trout and pike have begun to take a bite out of the traditional ocean fish market. Fourth, certain types of aquaculture may help fill the gap, using appropriate technologies and farming species whose diets are further down the food web. Finally, resource scarcity might induce better management policies that help stabilize long-term resource viability. There's nothing like a resource crisis to spur government action.



Photo: US Coast Guard

Chinese fishing vessels being boarded by US Coast Guard for illegal fishing in the North Pacific.

For the Canadian Navy, this scenario spells a diminished role in fishery protection. The navy might occasionally assist DFO and Coast Guard officials in protecting the resource but with less fishing pressure, fewer foreign vessels to track and a diminishment in the likelihood that other navies will involve themselves, a more robust fishery protection role for the Canadian Navy becomes less likely. Instead, other agencies with mandates based on policing the resource take full control over the fishery portfolio, leaving the navy to its military affairs.

Scenario 3. Managing the Scraps: Why Collapse Leads to Cooperation

Canada's fishery enforcement regime is centred on the EEZ boundary. Yet the EEZ is an administrative rather than a natural delineation. To address the governance of marine species outside national jurisdiction, the UN's Law of the Sea established a set of Regional Fisheries Management Organizations (RFMOs). The North Atlantic Fisheries Organization (NAFO) was one of the first RFMOs constructed and has had some success in managing international fisheries in the north Atlantic.¹⁶

In this final scenario, multilateral governance, through NAFO and its parallel organizations, is strengthened as a result of resource decline. It's the upside of down. An international problem requires a multilateral response, spurring government action. Crisis is the catalyst for better multilateral governance as states work to avoid global resource catastrophe. In NAFO's case, reform will almost certainly involve new governance structures and a strengthening of its enforcement capability with substantial assistance from member-state navies.

The precedent already exists. After the 1995 *Estai* incident, Canada was instrumental in strengthening NAFO. The organization accepted both an armed boarding capability and an enhanced vessel monitoring capacity, and members were given a freer hand to protect their stocks. These developments, along with Canada's moratoria on a number of species, all but eliminated foreign fishing *within* Canadian waters. Nonetheless, these developments had almost no impact on managing *international* waters.

That came with the UN Fish Stocks Agreement (UNFA) in 2002 which set out to address the harvesting of sensitive stocks in international waters, ensuring their long-term sustainability. Under UNFA guidelines, states can board, inspect, seize and prosecute vessels suspected of fishing illegally, can exclude vessels from access to certain fishing grounds, and can employ the “precautionary principle” in setting conservation measures.¹⁷ Besides these enforcement measures, UNFA’s basic premise champions sustainable harvesting over national sovereignty. A similar concern for long-term sustainability infuses a variety of other international agreements, including the FAO’s Code of Conduct for Responsible Fishing (1995), the International Plan of Action for the Management of Fishing Capacity (1999), the International Plan of Action to Prevent, Deter and Eliminate IUU Fishing (2000), the UN’s Johannesburg Plan of Implementation (2002), and the High Seas Task Force (2003), to name a few. Each attempts to cobble together guidelines for a more robust and multilateral management system at the international level. As the resource crisis becomes more acute, these international measures will continue to expand.

A shift towards multilateral management will require a more persuasive response to illegal and unregulated fishing in international waters. Just as Canada polices its EEZ, a redesigned NAFO – or another organization altogether – might do the same in international waters. And yet, like all international organizations, NAFO relies on the participation of its members to function properly. Any attempt to add teeth to multilateral governance will require active engagement of member-states. As with any environmental crisis, managing global fisheries requires a careful balance between global priorities and national ones. That means greater Canadian involvement in NAFO and a potentially larger role for Canada’s navy to assist NAFO in regulating international waters.

Conclusion

A scientific consensus has emerged concerning the decline of global fish stocks. National and international efforts to address the crisis have nonetheless struggled to gain ground. While new natural resource management techniques, policy mechanisms, regulation and governance approaches are being developed, successful implementation is slow coming. As a result, resource protection is fast becoming a national security priority. What impact these developments will have on the Canadian Navy is less than certain, although we identify three possible scenarios: increased conflict; decreased conflict; and improved cooperation.

While our list is neither exhaustive nor exclusive, it does

offer a glimpse of a variety of outcomes resulting from the emerging nexus between ocean conservation and national security. What is certain is that the conflict between national and international priorities, between roving bandits and national fishery protection, will surely have an impact on the Canadian Navy’s future role. 🍷

Notes

1. Government of Canada, Debates of the House of Commons, 11th Parliament, 3rd Session (1910/1911), available at <http://www.collectionscanada.gc.ca/primeministers/h4-4061-e.html>.
2. *The New York Times*, “Canada’s Fishery Navy,” 10 September 1888, available at <http://query.nytimes.com/mem/archive-free/pdf?res=9A0DEFDD1F38E033A25753C1A96F9C94699FD7CF>.
3. See Boris Worm and David Vanderzwaag, “High-Seas Fisheries: Troubled Waters, Tangled Governance, and Recovery Prospects,” *Behind the Headlines* (CIC), Vol. 64, No. 5 (2007); and Captain (N) Laurence M. Hickey, “Enhancing the Naval Mandate for Law Enforcement: Hot Pursuit or Hot Potato?” *Canadian Military Journal*, Vol. 7, No. 1 (2006).
4. Government of Canada, “Overfishing and International Fisheries: Governance,” 2006, available at http://www.dfo-mpo.gc.ca/overfishing-surpeche/g_state_e.htm.
5. The Sea Around Us Project 2008, The Fisheries Center and The Pew Charitable Trusts, “Global Marine Landings by Taxa (EEZ and High Seas),” available at www.seaaroundus.org.
6. See Boris Worm, et al., “Impacts of Biodiversity Loss on Ocean Ecosystem Services,” *Science*, Vol. 314 (3 November 2006), pp. 787–790.
7. Canada, Departments of Fisheries and Oceans (DFO), “Government of Canada announces new measures to combat foreign overfishing,” 6 May 2004, available at http://www.dfo-mpo.gc.ca/media/newsrel/2004/hq-ac45_e.htm.
8. Canada, DFO, “Overfishing and International Fisheries and Oceans Governance: Background,” 2006, available at www.dfo-mpo.gc.ca/overfishing-surpeche/media/bk_strategy_e.htm.
9. Fikret Berkes, et al., “Globalization, Roving Bandits and Marine Resources,” *Science*, Vol. 311 (17 March 2006), pp. 1557–1558.
10. See for instance, Thomas F. Homer-Dixon, *Environment, Scarcity, and Violence* (Princeton: Princeton University Press, 1999); Norman Myers, *Ultimate Security: The Environmental Basis of Political Stability* (New York: W.W. Norton & Co., 1993); Paul F. Diehl, “Environmental Conflict: An Introduction,” *Journal of Peace Research*, Vol. 35, No. 3 (1998).
11. John A. Baden and Douglas S. Noonan, “Democracies Don’t Fight: Except over Fish,” *Seattle Times* (27 November 1996).
12. Quoted in John DeMont, “Fish War Ends,” *Maclean’s Magazine*, 24 April 1995; Allen Springer, “The Canadian Turbot War with Spain: Unilateral State Action in Defense of Environmental Interests,” *The Journal of Environment Development*, Vol. 6, No. 1 (1997).
13. Including ships from Estonia, Spain, Portugal, Lithuanian, Latvia, France, Japan, Russia, Iceland, Poland and the Faroe Islands. See, Canada, DFO, “Citations” (October 2007), available at http://www.dfo-mpo.gc.ca/overfishing-surpeche/en_citations_e.htm.
14. Hickey, “Enhancing the Naval Mandate for Law Enforcement,” p. 41.
15. Nils Petter Gleditsch, “Armed Conflict and Environment: A Critique of the Literature,” *Journal of Peace Research*, Vol. 35, No. 3 (1998); Marc A. Levy, “Is the Environment a National Security Issue?” *International Security*, Vol. 20, No. 2 (1995); and Wenche Hauge and Tanja Ellingsen, “Beyond Environmental Scarcity: Causal Pathways to Conflict,” *Journal of Peace Research*, Vol. 35, No. 3 (1998).
16. As of 2007, NAFO members included Bulgaria, Cuba, Denmark, the European Union, Iceland, Japan, Norway, the Republic of Korea, Russia, France, Ukraine, the United States and Canada.
17. See A.W. May, Dawn A. Russel and Derrick H. Rowe, “Breaking New Ground: An Action Plan for Rebuilding the Grand Banks Fisheries,” Report of the Advisory Panel on the Sustainable Management of Straddling Fish Stocks in the Northwest Atlantic (2005).

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Obsolescence Challenges and the Canadian Navy

Brent Hobson

The Canadian Navy relies on systems and ways of operating that are based on advanced technologies acquired from a variety of different sources including national and international commercial firms, and through foreign military developments. In today's world, the navy faces real challenges trying to combat the programmed obsolescence that has become the mantra of the commercial sector. At the same time, Canadian forces also face new threats and adversaries, at home and abroad, who are prepared to use many of the same technologies against Canadians in novel ways.

The intention of this article is to introduce the reader to the topic of obsolescence, identify the challenges the Canadian Navy is facing, and look at the factors and trade-offs that must be considered by Canadian naval planners when addressing obsolescence issues.

Norman Friedman, in his paper, "New Technology and Medium Navies," identifies four types of obsolescence:

- **Technological.** This is the most common understanding of the term, meaning a piece of equipment or a particular system is no longer supportable.
- **Mission.** This refers to a change in a strategic threat that results in a change to a navy's stated missions – i.e., the end of the Cold War making the requirement for open-ocean anti-submarine warfare escort obsolete.
- **Economic.** This refers to a system or equipment that has become too expensive to operate further – e.g., steam propulsion plants in Western navies.
- **New Threat.** This refers to the emergence of an overwhelming new threat that changes the scope of warfare.¹

This article will examine these types of obsolescence and identify the challenges faced currently by the Canadian Navy.

Technological Obsolescence

The main challenge in this area is the most obvious – i.e., dealing with advances and developments in the technologies that support the principal naval areas of war-fighting. This situation is not new to the Canadian Navy and this problem has been a constant challenge over the last hundred years. What is new today is the pace of technological change. As indicated in Figure 1, components such as computers, software and communications equipment



Information management at sea.

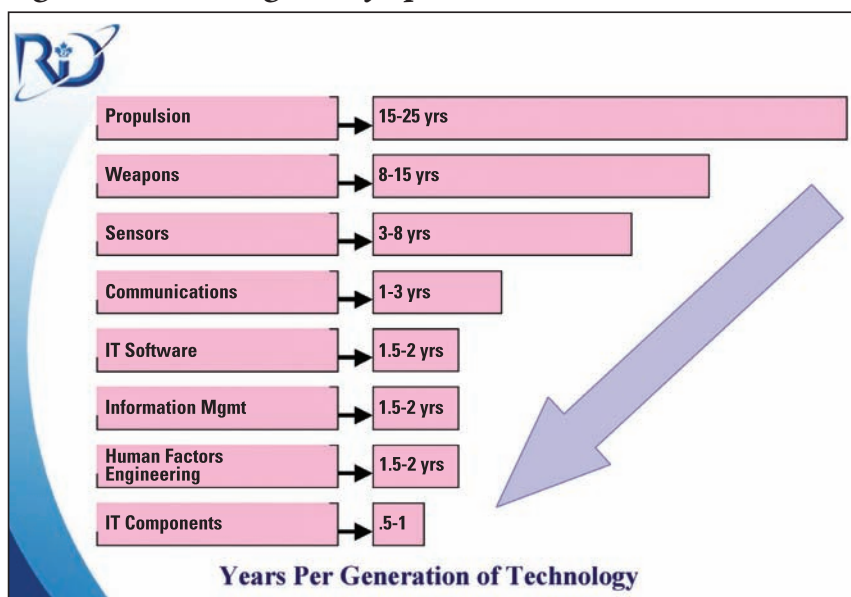
currently have commercial lifespans of less than three years. Even in the areas of propulsion and weapons, the computing and networking functions of these systems are increasingly driven by information management technologies with very short lifespans.

This poses a problem for the Canadian Navy. Historically, it has taken a decade or more to develop, acquire and field new military capabilities.² This has led to today's reality that, in some instances, when a system is finally installed by the navy, it is already two to three generations behind the current market version.

This problem is exacerbated by the fact that military organizations no longer dominate many critical defence technology markets. Commercial research and development (R&D) investment, driven solely by profit potentials in the civilian marketplace, now outstrips military R&D spending on militarily relevant technologies, such as communications and computers.

Another significant challenge for the Canadian Navy in terms of technological obsolescence results from the core strategic direction to "improve ... interoperability with allied forces, particularly the United States, through smart investments in evolving technology and doctrinal concepts, training opportunities, and exchange and liaison programs."³ This poses a problem in that the Canadian Navy's principal allies (United States and United Kingdom) are upgrading far more frequently than Canada. As an example, the US Department of Defense (DOD) plans to spend \$75B (US) in fiscal year 2008 on research, develop-

Figure 1. Technological Lifespans



Source: United States, Naval Research Advisory Council, "Life Cycle Technology Insertion," July 2002, available at www.onr.navy.mil/nrac/reports_chronological.asp.

ment, test and evaluation alone – approximately 10 times more than the whole Canadian defence budget.⁴ The desired level of interoperability simply will not be obtainable unless the Canadian Navy can find a way to match (or adapt to) the flow of new technologies into allied systems.

Mission Obsolescence

In the most recent Defence Policy Statement, the Canadian Forces were assigned three broad roles:

- protecting Canadians;
- defending North America in cooperation with the United States; and
- contributing to international peace and security.⁵

It can be argued that these roles have not changed for a very long time. What *has* changed is the range of the missions that the Canadian Navy has faced since the end of the Cold War, and the missions forecast for the near future in support of these roles. These missions have included control of shipping operations in the Persian Gulf, support for police action in Haiti, disaster relief in New Orleans, as well as the standard sovereignty and support to other government department operations in the Atlantic and Pacific coastal waters. Planning is currently underway for the navy to provide support to amphibious operations and strategic lift support for the army, and to conduct greatly enhanced Arctic sovereignty patrols.

The major challenge for Canadian naval planners, with regard to mission obsolescence, is to be able to define the shape and composition of a fleet (fleet mix) that can remain viable over this wide range of changing missions, consid-

ering that the lifespan of a typical navy hull is 30 years. Factors to consider in fleet mix include trade-offs between mobility, sea-keeping, endurance and survivability. In particular, survivability must take into account the environmental conditions in all of the potential operating areas, as well as the different weapon threats the ship may face on each mission.

Economic Obsolescence

For the Canadian Navy, the largest challenge in this regard stems from the 'boom-bust' cycle of investment which has marked maritime capability development over the past few decades. During the short boom/high-spending phases, the navy's approach has been to push for as large a ship as possible and to fill it with as much equipment as the boom funding will allow. The war-fighting systems have, for the most part, been wholly

provided by one commercial supplier (the systems are then often referred to as proprietary systems). The biggest problem with these systems is that there is no option for the navy but to deal with the original company for all support. Traditionally, this has resulted in the navy having to deal with a series of monopolistic supply arrangements for its most crucial systems.



Photo: DND

Older technology has to be replaced.

The boom periods have been followed by longer periods of low sustainment budgets leading to support issues and sub-optimal operational capability. These bust periods have left the operational community having to make do with dated technology that lags behind the operational requirement. This is a particularly acute problem for the navy for several reasons. First, given the complexity of integrating all the electronic systems that comprise a warship, navies are inherently technology-driven. There is a limit to the capability that can be made up through superior tactics, doctrine, training and experience if the technology, vis-à-vis the opponent/requirement is inadequate. And, second, the systems at the ship level are extremely complex and costly compared with those of the army and air force. They cannot simply be replaced.

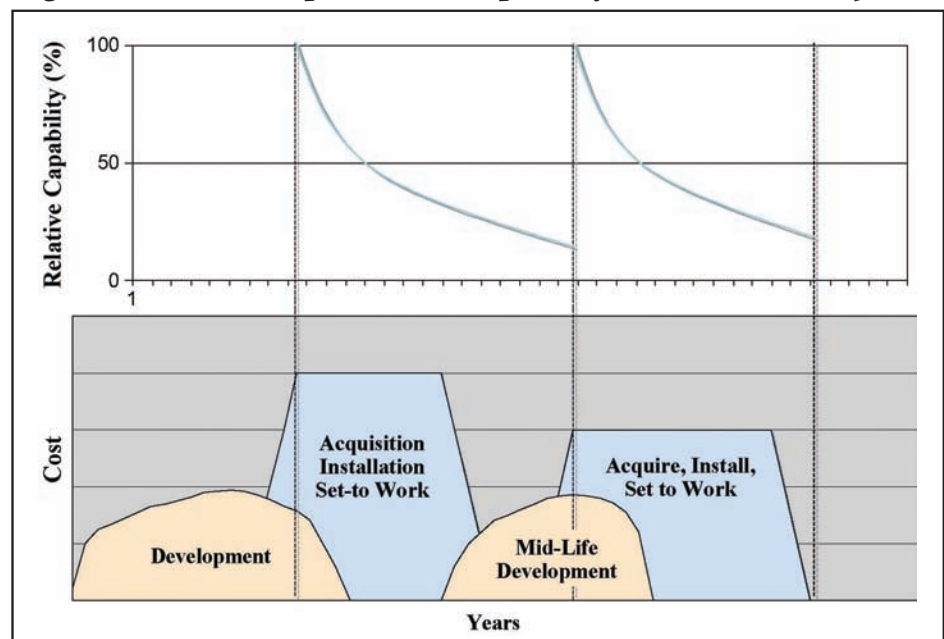
Figure 2 indicates the costs and operational impacts of this boom and bust process on the navy.

Today, as a result of this approach, the navy is left with a portfolio of aging ships outfitted with dated, largely proprietary systems. These systems are either obsolete or quickly becoming obsolete, and they are extremely difficult and expensive to upgrade.

Given the range and rate of change of the missions navies are assigned, it no longer makes any sense to try to capture all known and future requirements for the next 15 years (until mid-life refit) during the boom cycle. One approach to address this challenge would be to replace the boom-bust planning with a concept that emphasizes designing ships with expansion space to allow for future planned and unplanned additions. Hull steel is one of the cheapest components of a new ship and hull size is a major constraining factor that remains constant over the 30 year lifespan of the ship.

In addition to designing expansion space into ships, mission support systems should be designed to be modular so that the ship could be reconfigured to meet specific mission requirements. Then if any particular mission becomes obsolete, only that module would be affected rather than the entire ship. As Dr Friedman stated in his keynote address to a conference at Dalhousie University in June 2006, “[t]he more modular the ship, the easier the adaptation. It might be added that sheer size makes for

Figure 2. Cost and Operational Impacts of the Boom-Bust Cycle



easier adaptation and also for greater durability against the stresses of the sea.”⁶

New Threat Obsolescence

Our current adversaries are exploiting technological improvements in innovative ways often unforeseen by their inventors. This in turn has greatly accelerated the change in the potential threat and in the operational requirements to counter it. Relatively unsophisticated opponents can either surpass or avoid Canadian Navy capability through the employment of simple or disruptive technology and/or tactics. An example of employment of disruptive tactics using low-tech capabilities was the attack of the USS *Cole* in port in Yemen.

The best known example of innovative use of technology by our adversaries was the 11 September 2001 attacks on the World Trade Center and the Pentagon. These attacks changed the face of warfare for the post-Cold War world.



The new concept of operations demands new technologies

Photo: DND



The way of the future: joint and cooperative. HMCS Iroquois and a Sea King helicopter with a US Navy ship in the background.

Events since have only further confused the picture. This situation has left the Canadian Navy in the same quandary as the rest of its Western allies. Is the 'war on terrorism' to become the norm or a short aberration? What innovative uses of technology and tactics will our adversaries come up with next time? What will follow Afghanistan and Iraq and how should naval planners prepare for future threats? Flexibility and adaptability are the keys.

Conclusions

This article has examined challenges faced by the Canadian Navy in each of four areas of obsolescence. However, there is another dimension to this topic and that is the time-frame. For each obsolescence type, the navy must also deal with the timing of the particular set of factors that will unite to result in a particular equipment or system approaching obsolescence. It is therefore necessary to have a framework for quantifying and addressing the future obsolescence issues. Currently, the navy is utilizing the Canadian Forces' framework known as the Horizons Concept in which all requirement and obsolescence issues are divided into three different horizons:

- Horizon 1: immediate requirements 1-5 years in the future;
- Horizon 2: short-term requirements 5-10 years out; and
- Horizon 3: long-term requirements 10-30 years away.

This rough division allows the assignment of different resource levels of planning and funding resources to each horizon to be able to focus and prioritize obsolescence issues.

It is obvious that obsolescence is a much more complex problem than initially thought. Canadian naval planners must look at obsolescence issues from four different areas in three different time-frames. Ship hulls have a very long lifespan but virtually everything else associated with the

ships is now changing at a much faster rate than during the Cold War era. Defence technology evolution is driven by the commercial world of the micro-processor. As well, the international and national political situations are inherently changeable due to the emergence of new enemies and new threats. The old economic logic of boom-bust is no longer able to keep up with the rapid rate of change in the other areas.

How then should the Canadian Navy proceed? In reviewing the different obsolescence challenges that could appear in any of the three time horizons, the only common thread is uncertainty. Opponents, missions and requirements no longer have the same lifespan encountered during the Cold War. The old boom-bust approach to planning and acquisition must be dropped in favour of a new paradigm focused on flexibility, modularity and growth space. In doing so, the navy will be able to accommodate unexpected requirements as well as the regularly planned upgrades. 🇨🇦

Notes

1. Norman Friedman, "New Technology and Medium Navies," Working Paper No. 1, Royal Australian Navy Maritime Studies Program, August 1999.
2. Janet Thorsteinson, Acting Assistant Deputy Minister, Acquisitions Branch, Public Works and Government Services Canada, Testimony to Standing Committee on National Defence and Veterans Affairs, Evidence Number 57, 15 November 2005.
3. Canada, Department of National Defence, *Leadmark: The Navy's Strategy for 2020*, 18 June 2001, p. 24.
4. United States, Department of Defense, Office of the Undersecretary of Defense (Comptroller), National Defence Budget Estimates for FY 2008, 1 April 2008, available at http://www.defenselink.mil/comptroller/defbudget/fy2008/fy2008_greenbook.pdf.
5. Canada, Department of National Defence, Defence Policy Statement, 2005.
6. Norman Friedman, "Transformation and Technology for Medium Navies," Keynote Paper, Maritime Security Conference, Transformation and Technology: A Canadian Maritime Security Perspective, Dalhousie University, Halifax, June 2006.

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

Senator Hugh Segal



Photo: DND

A Canadian Naval Task Group and accompanying New Zealand Frigate.

The navy we need for this century must be able to meet critical strategic challenges, with the reach and depth necessary to do so. The multi-polar world, with an America likely less willing to engage globally in the way that she has, will necessitate a multi-theatre naval capacity for middle powers like Canada. This strategic imperative needs to be addressed in a fashion that is realistic about the Canadian fiscal and geopolitical context.

Recent, fixed, pre-announced multi-year two per cent spending increments do not reflect core strategic interests or security – they reflect the work of number crunchers in a fiscally responsible government. They are important, but they should not define strategy and capacity. Relative to the difference between necessary strategic capacity and number-cruncher preferences, senior naval and military officers have a sworn duty to serve by telling the duly elected government the truth about the difference between the two. Legislators of all persuasions owe the public the same duty.

As a broad expansive country exposed on three oceans, with perimeter patrol duties throughout the hemisphere and interdiction obligations on environmental, fishery, national security and sovereignty interests, as well as alliance obligations around the world, a nation of our size requires a naval capacity that is robust and flexible.

There is a reason that major commitments Canada has made, whether humanitarian, like Hurricane Katrina, or in support of UN or NATO decisions in the first Gulf War, the fight against terrorism, or the effort to contain Saddam Hussein when he set aside UN inspections, all began with or relied upon a naval deployment. It was the quickest, most multi-capable military and diplomatic instrument available to the government of Canada at the time. And it still is.

Canada's capacity to influence diplomatic, political and economic events in our own country's interest, and in a way that reflects our values of democracy, rule of law, freedom and social justice, is not enhanced when we have no way to project Canada's presence abroad or in our own hemisphere. Security, patrol and instability pressures in all parts of the world – being able to deploy from a standing start much closer to target theatres – added to the 33 platforms we need for existing obligations, argue strongly for a 60-ship navy and a coherent multi-year capacity ramp up. Strategic redundancy is not a luxury. It is an operational priority in defence of Canada.

As a Conservative in the Senate, I am delighted with the massive re-investment, begun by Prime Minister Martin, which has now become serious under Prime Minister Harper. But it is decades overdue. And improving on a

diminished and geopolitically way less-than-robust base line of human resource and marine platform capacity should not be confused with adequacy. We are quite frankly, starting from a diminished base, deeply disconnected from our strategic requirements.

Some on the left (Rideau, Polaris Institutes), will argue that we are spending too much on defence already. But there are few areas of the constitution where the federal government has more *exclusive* jurisdiction than national defence. There are always those at Treasury Board and Finance who are susceptible to the view that the Department of National Defence always wants more, the demands are endless and no positive yield to the rest of the economy emerges from defence or diplomatic expenditure. Federal dollars should be spent first on exclusive federal constitutional obligations. Without national security – which in terms of inbound vital trade and external bound exports embraces multi-theatre sea lane presence and capacity – government fails its core task.

How or with what would we respond, as a sovereign state to the following challenges: a Canadian registered and owned cruise ship, or one with hundreds of Canadians aboard, is taken over and held hostage by a nihilistic terrorist group disinterested in a negotiated outcome; a major Russian passenger plane goes down in our Arctic region; a major Canadian embassy hosting a substantial trade event in a foreign country is overtaken by terrorists

with hundreds of Canadian and foreign guests and staff held hostage; a natural or man-made disaster befalls one of our Caribbean Commonwealth neighbours requiring rapid evacuations and massive assistance; we receive intelligence reports of toxic or thermonuclear container contents, shipped by non-state actors on a series of ships to various Canadian and American ports; liquified natural gas tankers aimed for our east coast are attacked by rogue forces from non-state actors with modest but sufficient destructive capacity?

We are not a military power. But history teaches us that when our allies or principles are attacked, we engage as a free and independent democracy. And, when we do, we give the best we have and do a job greater than our geopolitical footprint might suggest.

Outgoing Chief of the Defence Staff (CDS), General Rick Hillier, has spoken of the Vimy effect where Canadian troops – airmen, soldiers and sailors – used technical and innovative means and instruments to achieve tactical leverage on occasions when our allies had not yet broken through. It is all about leverage – and no national instrument produces more leverage than high-end, well-trained and technically acute naval capacity.

What are our strategic maritime imperatives? There is a virtual triangle of strategic priorities, above, beneath and upon the seas.



A Multinational Naval Force with Canadian ships integrated with US Navy vessels



A CC-177 Globemaster III of 429 Squadron, Trenton.

Canada must be able to patrol and protect our own three coasts, which means a robust and articulated ability to insert troops anywhere on that shoreline, interdict ships of any registry above or beneath the seas when Canadian security or environmental interests are threatened, and to have sufficient deployable naval and air capacity to provide search and rescue and perimeter defence in our own marine territory. In concert with allies and hemispheric neighbours we have a duty to be able to provide coastal defence and stabilization capacity at any time, with surface and sub-surface assets.

On a global basis, our naval assets must be able to quickly come to the aid of Canadian shipping, Canadian citizens, allies at risk, and be able to deliver and execute escort, humanitarian and combat missions with above-sea, beneath-sea and surface assets with a mix of capabilities genuinely suited to these contingencies.

Consistent with our parliamentary democracy, our UN and NATO membership and NORAD obligations, we need the capacity to have tactical options in support of our strategic obligations. We no longer can only survive with the singular choice of sending troops or assets from airfield to airfield. We must have the option to pre-position humanitarian or diplomatic assets in theatre, adjacent to theatre or insert special forces or evacuate high-value friendly or hostile targets as circumstances may require. Broad reach amphibian capacity is vital to genuine 'robust flexibility' and the choices flexibility allows.

This is about a navy with the assets and flexibility to genuinely maximize the choices available to the duly elected government of Canada and the military high command in the face of realistic threats and contingencies. If a diminished naval capacity actually limits choices, it is less than the asset it should be or the asset our national interest requires.

The nature of non-state actors and their linkages to major powers like Iran, the broad geopolitical reach of troubling issues in Asia and the Middle East, the broad trade routes that have an impact on economic interests and our support of the doctrine around the 'responsibility to protect' and the exposure of our allies, argues for robust capacity. That is the kind of capacity that helps Canada prevent war; a diminished capacity invites unwarranted adventurism from others. It means we can have up to 10 multi-capable task groups deployed in different parts of the world, including off our own coasts, we are able to use the CF 18s that already have reinforced undercarriages and tail hooks necessary to be deployed on mobile naval platforms of our own or our allies, and we have multi-purpose sea-based heavy lift and combat-capable helicopters to deploy as necessary.

No Cabinet should ever be without options to provide air cover, evacuation or re-supply to Canadian troops, diplomats, humanitarian workers or Canadians abroad in challenging, difficult or confused combat or pre-combat contexts. If we cannot insert special forces, cover, re-supply, evacuate or provide air-to-surface cover support for Canadian troops without depending on others, we should simply not deploy. That is my definition of a real "Canada First" defence policy.

Canadians at a St. Petersburg Conference earlier this year heard Russian naval officials speak of five new naval task forces for which steel is to be cut this year. The growth of the People's Republic of China's navy raises the bar on our Pacific operational exigencies. The values that reflect the best of globalization – the rule of law, the relatively free movement of people, goods and capital, democracy, diversity, respect for individual civility – have seen millions transit from poverty to middle class optimism in places like China and India. These are what we must

represent, defend and champion. That requires a dynamic presence that can be diplomatic and friendly or resolute and disciplined – and always combat ready in symbolizing who we are and what values we both share and are prepared to defend.

The US Navy may well have fiscal trouble maintaining its present fleet or field of operations in the coming years. In the past it has been argued that since the USN ‘commands the seas,’ allied contributions are not important. But we may not be able to rely only upon the USN to provide the global public good of secure sea lanes, which is why the USN is pressing for a Global Maritime Partnership (GMP). This means that a very good case can be made for Canada to augment its high seas and maritime projection capabilities.

Enhanced presence in every global region, more seamless engagement on our own three coasts, naval air capacity for both diplomatic, international order and civility and joined-up naval, air, land and expeditionary ability, well resourced, trained, drilled and based at coherent and integrated centres like Esquimalt, Shearwater-Halifax, and deployed on a staged readiness basis at sea are vital to Canada in the world we now address.

We need as well, coherent strategy to embrace a use of sea-basing. If we are serious about both special forces, mixed humanitarian and security missions, expeditionary capacity that does not start days or weeks from potential

zones of interest, we need to take sea-basing seriously. Canada does not have a range of bases worldwide or a massive multi-platform fleet placed strategically on the world’s oceans. But that should only argue more intently for sea-basing capacity to mount joined-up operations not limited by airfields or traditional coastal base availabilities. Sea-basing may require the JSS answer, or multiple lighter Australian-style supply and command options. But it cannot exclude air capacity that facilitates insertion, enhanced patrol, humanitarian interventions or evacuation capacity.

While interoperability with American naval task forces is an important vehicle for collective security worldwide, and while Canada’s ability to discharge the command and control function at the head of large multinational fleets in the Gulf, the Adriatic and elsewhere is fact, a “Canada First” defence capacity must include a Canadian task group naval reach independent and sustainable over long periods of time at great distance from our shores. Whether it be on the South China Sea, the Arabian Sea, the Persian Gulf, the Mediterranean, the mid-Atlantic, the north Pacific or off our own coasts, a steady, multi-capable, fighting navy presence with the right platforms, above, upon and beneath the seas is vital to Canada’s global reach.

The reality of the low-intensity contingencies imperiling our national security in ways that put our economic security, consular or environmental interests at risk is



HMCS Labrador in the high Arctic in the 1950s.

Photo: DND



HMCS Calgary in Sydney harbour.

no longer constrained by the bipolar discipline of the East-West divide of the Cold War. The restraint and containment strategies, along with the matching and robust investments NATO made were core factors in the USSR's embrace of another approach to its internal and global priorities.

The re-investment by Russia in new naval capacity, the growth of the Chinese naval reach, the increasing and coming reliance on vital shipments by sea of everything from liquefied natural gas, food stuffs, national resources, manufactured goods, the coming intensity in offshore explorations and extraction of natural resources, all reflect a new geopolitical reality. There is no analysis of the challenges we face in the Arctic – on our expeditionary and special force exigencies, in our sub-surface needs for defence, training and sovereignty measures, of our interoperable missions with allies, of our need to sea-base for reasonable flexibility – that can embrace our present platform number as sufficient. A 60-ship fighting navy is the only way to ensure that every subsequent modernization or new procurement does not thin out the existing fleet to levels so low as to make any reasonable mix between tasking and capacity impossible without Canada largely withdrawing from the seas.

Halifax-class modernization, frigate life extension, the Maritime Helicopter Project, the Aurora Modernization Project, the Joint Support Ship, the Arctic patrol ships are all vital investments of public funds for which the government deserves credit. And while technology enhancements, coastal patrol air capacity and new Arctic coastal presence ensure a technically more acute mix between existing capacity and existing missions, they do not enhance net capacity and reach overall.

Until the Chief of the Maritime Staff can get updates

from large, flexible and combat-ready task groups off our northern Pacific and Atlantic coasts, the southern American hemisphere, the south Pacific, the Asian waters of the Pacific, the Middle East and the Bering Sea, all on the same morning and have that kind of capacity to put at the disposal of CDS and the government of the day along with the contingent capacity at home and at sea-basing locations, we are not mounting the naval presence Canada needs and today's world necessitates.

Standing on guard for Canada can no longer only be the positioning of assets on our coasts that can be deployed in training, allied operations or simple coastal patrols. It requires a well-modulated, cooperative, joined up presence in marine zones and international waters far away from our shores. A rational defence policy based on the right mix of technically adaptable assets and reach would see naval expenditures double in real 2008 dollars in the next decade or so. That's where we should be headed.

The Second World War tells us that great countries, strong democracies and good people can ramp up when they have to. But in the face of multi-polar, mixed and uneven intensity, the challenge of asymmetrical threat arrays for us and our allies, not being ready, not being flexible and present in key theatres, not having the diversity and number of platforms we really need is simply an invitation to the adventurism and aggression of others, and avoidable Canadian casualties at home and abroad. The Canadian Navy is about both fighting and containing 'over there' while protecting our own three coasts. That matters more today than ever. 🍷

Note

* This article is based on a speech made 29 April 2008 at the Ottawa Congress Centre to the Navy Summit 2008.

The Honourable Hugh D. Segal, CM, is the Senator for Kingston-Frontenac-Leeds.

A Canadian Perspective on the Cooperative Strategy

Captain (N) Serge Bertrand

Introduction

It is evident from the headlines we read daily that the deepest problems of the international system are weaving new patterns of crisis and conflict in an increasingly interdependent but highly troubled world. A range of profound security challenges has emerged in this opening decade of the 21st century, conspiring together to create great uncertainty and volatility in world politics.

It is perhaps for this reason that the kind of foreign policy consensus that existed in the United States during the Cold War has yet to emerge. No equivalent has been written to George Kennan's famous Long Telegram of 1946,¹ which not only alerted Americans to the true nature of the Soviet regime, but also more importantly, argued to what purpose Western power should be applied in denying the Soviet Union its malevolent ambitions. Hence was born the idea of containment, and it served as the organizing principle for an American-led grand strategy until the Soviet system collapsed nearly 50 years later.

Is terrorism itself properly the object of American grand strategy, as it seems to have been over the past several years?

For many, a new grand strategy for a post-Cold war world appeared to crystallize on the cool clear morning of 11 September 2001. Terrorism, as manifested in the particularly virulent form of Al-Qaeda, had clearly become a menace that required a vigorous response. However, several years on and two costly and protracted conflicts later, is terrorism itself properly the object of American grand strategy, as it seems to have been over the past several years?

It is clear that the three American maritime services – the US Navy, Marine Corps and the Coast Guard – have concluded otherwise. The aim of this article is to examine this question in the context of “A Cooperative Strategy for 21st Century Seapower,” unveiled 17 October 2007 at the International Seapower Symposium in Newport, Rhode Island.²

While its authors may blush at the comparison to Kennan's Long Telegram, my sense is that the Cooperative Strategy, at the very least, has framed elegantly a coming

policy debate by reminding Americans of the enduring role maritime power has played, not just in securing their place in the world, but also, as its authors contend, the American way of life. This is strong stuff indeed, but it is necessary if the maritime services are to succeed in getting policy-makers to look beyond the security challenges that confront them now in Iraq and Afghanistan, to those that lie well beyond, and to have them avoid the trap of believing that the world's dangers will always look the way they do now.

The United States is approaching a point of strategic inflection, even as Americans go about selecting a new President to lead them this year. This inflection point is driven at least in part by the sacrifices being made in Iraq and Afghanistan, during which Americans will need to ask of themselves what direction their nation needs to go, not just to win the war on terrorism, but rather to secure the peace thereafter, and to debate in earnest what American power is *for* rather than what it is *against*.

This is a debate in which Canada, as well as other close friends of the United States around the world, has a deep and abiding interest, and one that ultimately will shape profoundly our Canadian Forces.

The Central Problem for American Power

Not many would dispute that globalization is among the most important forces re-shaping the international system. The American maritime services appear to have determined that globalization may well be the organizing principle for a new American grand strategy. As they declare in the opening paragraph of the introduction of the Cooperative Strategy, “[o]ur nation's interests are best served by fostering a peaceful global system comprised of interdependent networks of trade, finance, information, law, people and governance.”



World Trade Center on fire 11 September 2001.

Photo: Internet

It seems natural for seagoing professionals to have arrived at this conclusion. As the noted British defence academic Geoffrey Till pointed out recently in an article entitled “New Directions in Maritime Strategy? Implications for the US Navy,” published in the *Naval War College Review*, “seapower is at the heart of the globalization process in a way that land and air power are not.”³ However, what makes the Cooperative Strategy remarkable in my view is not so much the guidance that it provides to maritime force planners and developers, nor that it establishes potentially new and broader understandings of traditional notions of sea control, interoperability and situational awareness through a greatly expanded construct for the constabulary and diplomatic uses of seapower. Rather what makes this document remarkable is how optimistic it is. It reflects the purposeful optimism of a state that will remain unchallenged at sea for decades to come, with all the geo-strategic freedom that brings. This is a fact that remains as powerful in shaping events in the first half of this century as it did in the latter half of the last.⁴

Clearly, while globalization re-shapes the international system itself, the challenges it presents to a large fraction of the world’s peoples will also be a principal driver in shaping the political trajectory of the coming decades. While it is simply not possible to predict the choices other states will make in pursuing their perceived interests in the years and decades to come, the United States must be prepared for a range of possible futures that are considerably more bleak than the one the Cooperative Strategy aspires to promote.

In short, the Cooperative Strategy holds that American security in the long run hinges on achieving an appropriate



A Canadian Surface Task Group.

balance between two basic strategic postures:

- on the one hand, leading the international community in collective action to defend and promote the interdependent world system that globalization is creating, including addressing the challenges globalization poses for those populations beyond its reach; and
- on the other hand, maintaining the capacities to defend American interests against injury and defeating any potential adversary who would wish to cause the United States harm.

Implications for Maritime Diplomacy

We usually think of strategic engagement and maritime diplomacy in terms of relations among states, where maritime power is used primarily to assure, compel or deter decision-makers, from captains at sea to captains of state.⁵ This essentially realist view continues to remain salient because state actors will continue to predominate in the world’s oceans in the coming decades. Indeed, a gradual intensification of the traditional diplomatic uses of seapower is likely to take place, given:

- first, the enclosure by coastal states of a vast majority of the world’s commercially exploitable ocean resources through the UN Convention on the Law of the Sea;
- second, the ever-growing stake these resources will play in a world that is becoming increasingly challenged by population expansion and resource depletion; and
- third, the increasingly pronounced psychological investments coastal states are making in these enclosures, and specifically those relating to national identity and sovereignty.⁶



NATO Standing Naval Force (SNMG 1) in September 2006.



A Canadian AOR refuels a US Navy destroyer.

However the preceding discussion would also suggest that the realist interpretation of maritime diplomacy might no longer suffice. The maritime services seem to acknowledge this in elevating humanitarian assistance and disaster relief as core missions, on a par with strategic deterrence and sea control. Indeed, missions such as these invite us to think about maritime diplomacy and strategic engagement in much broader terms. They suggest that maritime power should be applied to shape and influence whole populations, rather than just their leaders, towards a more fundamental purpose than the immediate defence of the global economic and trading system. They also suggest that the great common in which maritime forces need to operate is not simply the oceanic one to which Alfred T. Mahan once referred, but rather a “greater common” of the world’s peoples,⁷ and of the crucial role these populations will play in enabling globalization, unless they remain its victims as too many of them are now.

The implications of this line of thinking are profound and pervasive, ranging from maritime force structure decisions and force employment postures, to the orchestration of national means in support of these broader policy objectives. They also include the creation of a framework for cooperative strategic engagement that allows sovereign states around the world to contribute to the extent that their means permit.

Invariably, states will interpret the Cooperative Strategy through the lens of their national interests, as well as

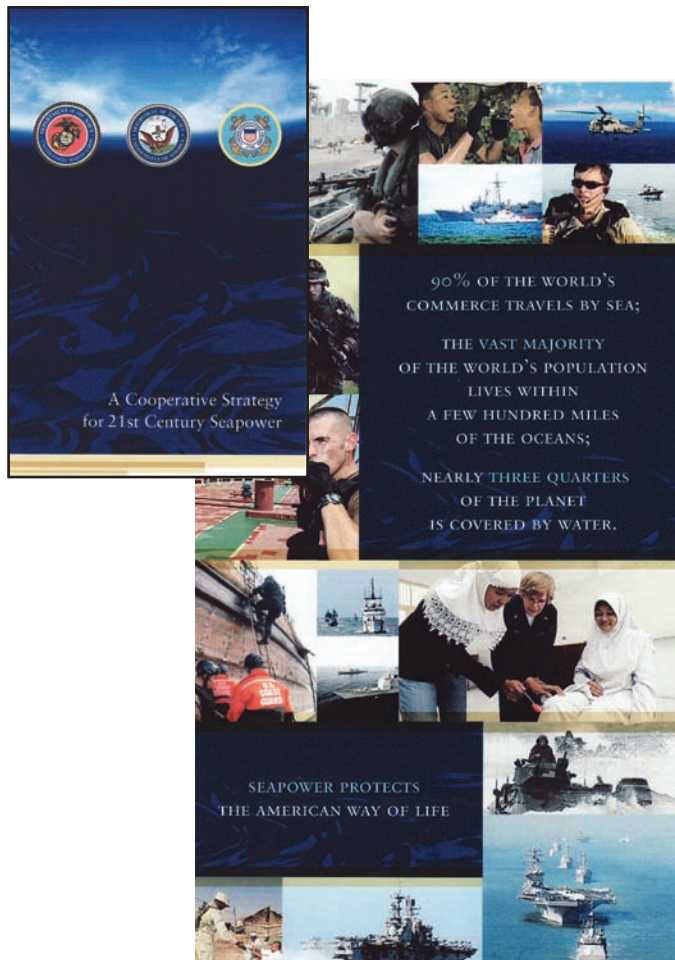
their place in the world. What is viewed as ‘contributing to the common good’ by the United States and Canada will be viewed elsewhere as privileging the status quo between ‘us and the West.’ This is a very powerful critique. The current international order is highly favourable to Western economic interests narrowly construed, and our broader political, diplomatic and economic efforts must work constructively to ensure that globalization’s positive effects are projected much further and more widely than they are now.

Clearly, these are issues that are well beyond the reach of the world’s navies unless as part of a greater strategic effort. But there is much that navies can do in creating the pillars of trust and understanding upon which a larger strategic effort can stand.

This brings us back once again to the earliest days of the Cold War. The grand strategy that Kennan inspired was successful at least in part because the United States chose to act upon it within the constraints of an international system that it had created with others in the aftermath of the Second World War. For friends of the United States around the world, it is re-assuring that the maritime services recognize that American power works best when it works collectively, rather than when it works alone. Indeed, when power is put towards such ends as appears to be embraced by the Cooperative Strategy, it is the only framework for strategic engagement that is likely to endure.



A Canadian Naval Task Group – the means of projecting influence.



A Cooperative Strategy for 21st Century Seapower.

Concluding Remarks

In closing, the Cooperative Strategy appears to resonate broadly with Canada's commitment to international peace and stability, and the Canadian tradition of active intervention in defence of the institutions, norms and values that underscore the international system. It reflects Canada's strong preference for collective and multilateral action, and provides a solid framework in which it can play a larger role in the wider world, commensurate with its gifts as a country. In short, there is much in the Cooperative Strategy that commends it to Canadians.

The point of grand strategy is not so much to adjust to the world's realities but rather to re-make them. This is still within the reach of the United States, even if its power is likely to diminish in relation to others as the century advances into middle age. In this regard, what the Cooperative Strategy signals to both friends and potential adversaries alike are the choices the United States would prefer to make in leading the international community in the first half of this century. It signals that the United States wishes to lead us towards a more highly integrated and interdependent global system in which all states and peoples of the world are enriched, rather than the much darker alternatives that may come to pass should globalization fail. 🇺🇸

Notes

1. George Kennan's famous Long Telegram was originally dispatched from Moscow in 1946 as a diplomatic cable when he was working there for the US Ambassador. One of the most widely cited and influential documents of the early Cold War, it was published in *Foreign Affairs* with the title "The Sources of Soviet Conduct." Although the author was identified merely as X, most foreign policy specialists and policy-makers were well aware the article was Kennan's.
2. Chief of Naval Operations, Commandants of the US Marine Corps and US Coast Guard, "A Cooperative Strategy for 21st Century Seapower," October 2007, available at <http://www.navy.mil/maritime>. This is the first time the three American maritime services have signed a common strategy doctrine.
3. Geoffrey Till, "New Directions in Maritime Strategy? Implications for the U.S. Navy," *Naval War College Review*, Autumn 2007, p. 30. Readers will note my indebtedness to the themes Till develops in this article and a subsequent piece entitled, "A Cooperative Strategy for 21st Century Seapower: A View from Outside," *Naval War College Review*, Spring 2008, pp. 25-38. Both documents are available at <http://www.nwc.navy.mil/press/review/review.aspx>.
4. See George Friedman, "The Limitations and Necessity of Naval Power," available at http://www.stratfor.com/limitations_and_necessity_naval_power, which explains the strategic role of the USN in relation to American/Western grand strategy. A longer-term perspective is to be found in Arthur Herman's *To Rule The Waves: How the British Navy Shaped the Modern World* (New York: HarperCollins, 2004).
5. See James Cable, *Gunboat Diplomacy 1919-1979* (New York: St Martin's Press, 1981), pp. 41-86; and Edward Luttwak, *The Political Uses of Seapower* (Baltimore: John Hopkins University Press, 1974), pp. 3-11.
6. Ken Booth, *Law, Force and Diplomacy at Sea* (London: George Allen & Unwin, 1985) remains one of the best treatments of this subject. See pp. 137-43, 153-164, 199-217.
7. Till, "New Directions in Maritime Strategy," p. 35.

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Submarine Procurement and the *Victoria*-Class Acquisition from an Historical Perspective: Having Submarines is the Point!

Lieutenant Jason M. Delaney



HMCS *Chicoutimi* arrives in Halifax on the *Eide Transporter*.

Since the arrival of the first *Victoria*-class submarine in 2000, there has been considerable discussion about the value of these submarines and the relative merit of a submarine service as a whole to Canada's national defence. In fact, operating a submarine service has always been a convoluted affair in our country, approaching what some might call a stigma. Certainly the submarine service has never shared the same esteem among Canadians as in other maritime states even though it is held in high regard by our allies.

In the aftermath of the fire aboard HMCS *Chicoutimi*, the Standing Committee on National Defence and Veterans Affairs reviewed the *Victoria*-class acquisition, and the submarines themselves were referred to as "lemons" in the popular media. In addition to this, they have also been ridiculed for a lack of under-ice capability and criticized for requiring costly modifications necessary to bring them to full 'Canadianized' operational status. In light of this disrepute it would seem useful to take a look at submarine procurement as a whole, only this time from an histor-

ical perspective. To quote the late Rear-Admiral Samuel Mathwin Davis, "it has all happened before,"¹ and the controversial *Victoria*-class acquisition is part of a much larger saga.

The purpose of this article is neither to argue for having a submarine service nor to prove the value of the *Victoria*-class in comparison to other conventional alternatives. Rather, the intent is to put the *Victoria*-class acquisition into the larger historical context of submarine procurement in Canada. At the risk of sounding too simplistic, submarine procurement is all about procuring submarines – whether for training purposes or an operational role, and whether conventional or nuclear powered. All submarine procurement proposals and programs come from the same place and have a legacy that has occurred in a virtually seamless transition of programs since the mid-1950s; so much so that files overlap from one project to the next. The question has never been about which submarine is the best for what role – in each case, that has always been known – it has been about purchasing submarines to



The three Canadian *Oberons*.

establish and sustain a submarine service because having submarines is the point.²

In his 1987 article about the nuclear submarine proposal, Rear-Admiral Davis pointed out that the navy had looked into the acquisition of modern, capable submarines some 30 years earlier as the Royal Canadian Navy (RCN) first began to cope with the growing Soviet submarine threat. Up until that point, post-war submarine procurement had been about securing access to allied submarines because they were needed to act as training targets for anti-submarine (A/S) escorts in the aftermath of the Battle of the Atlantic. Within this context, the RCN began shaping a small post-war A/S niche but it had not yet formed its own submarine service.

The *Oberon* submarine acquisition during the early 1960s effectively established a Canadian submarine service with three conventionally-powered diesel-electric submarines that would be used for A/S training; however, it began as something much more. The project actually began in the late 1950s as a nuclear submarine proposal that developed out of an initiative from within the technical service branch to develop nuclear power as a means of warship propulsion. This was due, in large part, to the US Navy's nuclear propulsion revolution under Rear-Admiral H.G. Rickover, which was considered the greatest innovation in naval technology since steam power eclipsed the age of sail.

The desire to develop this new form of propulsion within the RCN eventually merged with the warfare branch's need to address the emergence of nuclear submarine primacy. The result was a platform-specific procurement proposal that was sanctioned by the Naval Board recommending the acquisition of nuclear submarines. Unlike other proposals, this one was conceived of specifically for an operational

sub-surface warfare capability first and as training aids for surface units second – a revolution in naval planning at the time in and of itself.

In early 1956, the growing naval threat to North America and the Western world was believed to be the expanding submarine force of the Soviet Northern Fleet. The best method to meet this threat was the use of A/S surface ships in combination with A/S aircraft. The concept of submarines engaging other submarines in the undersea environment was still considered too risky, although it was being

developed. Despite this, the Chief of the Naval Staff (CNS), Vice-Admiral Rollo Mainguy, knew that the key to the RCN developing its own service lay in promoting the versatility of the submarine, especially as a main combat unit.

The mid-1950s was a time of great innovation with respect to submarines and undersea warfare. Underwater sensors, fire-control systems and communications technology were all under rapid development ushering in new concepts and capabilities. As Western navies began to grasp the implications of submarines designed specifically for extended submerged operations, the concept of submarine versus submarine combat followed. Before this was accepted into mainstream thinking, however, it was up to a few imaginative naval planners and decision-makers to promote the idea.

One particular forward-thinker who shared Vice-Admiral Mainguy's views was Captain Patrick Francis Xavier Russell, a figure who has not yet received much attention but who had an important role to play in the efforts to develop the post-war navy. As the Director of Undersea Warfare (DUSW), Russell completed the pivotal *A/S Weapons Systems Effectiveness Study* in 1957, which was among the first staff papers to advocate utilizing the submarine in combination with aircraft as the most effective system against enemy submarines. This concept would later prove complex because of communication problems between a submerged submarine and aircraft, but it was innovative just the same.

Russell's arguments, conclusions and recommendations were convincing enough to serve as the basis for the creation of a submarine service approved by the Naval Board later that same year. Surprisingly, not only did the board agree with Russell's study, it was mentioned during

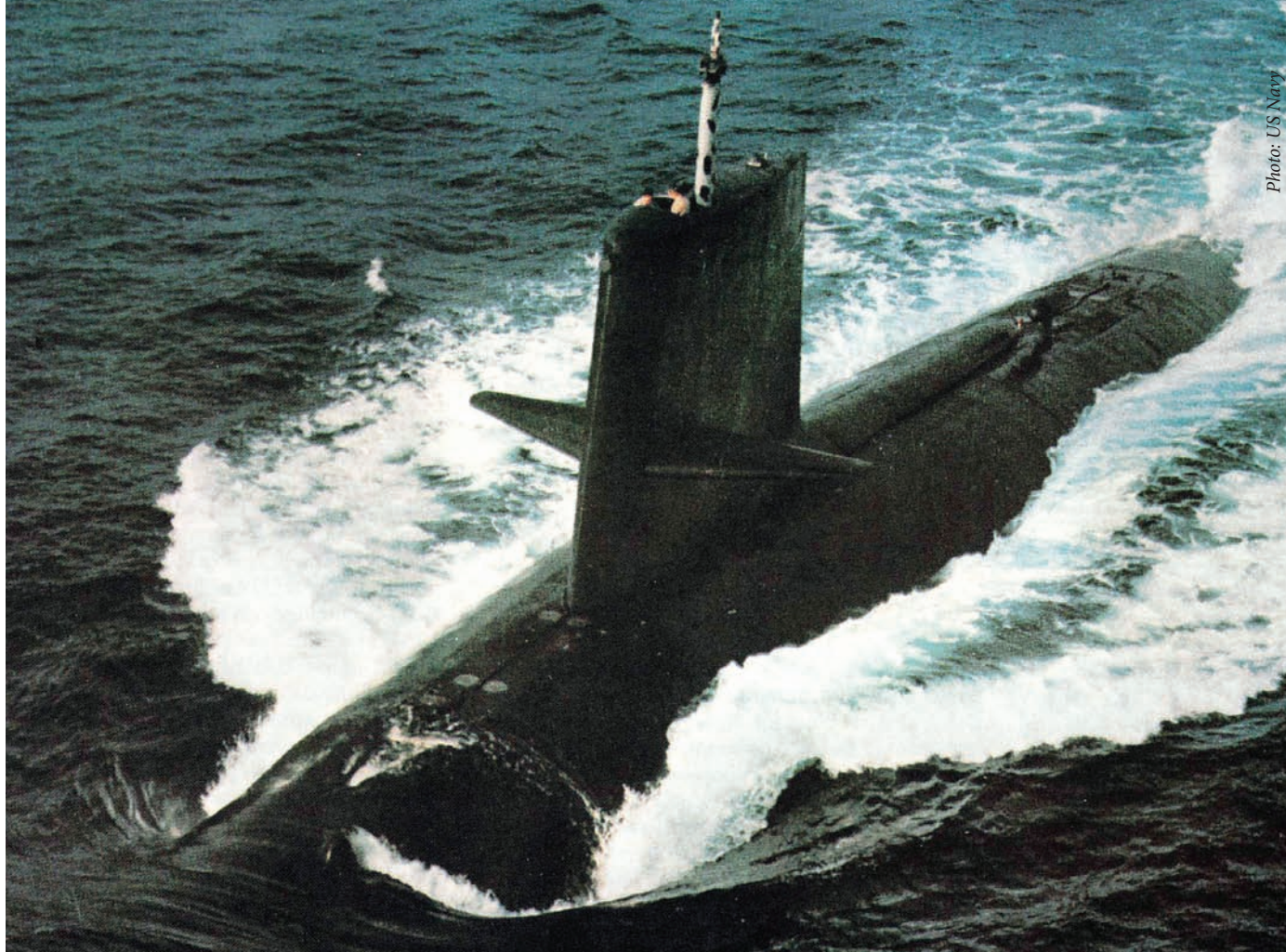


Photo: US Navy

USS Skipjack.

discussion that the growing effectiveness of the submarine in conjunction with fixed-wing aircraft warranted a substitution of a portion of surface A/S ships with submarines to meet NATO force goals.

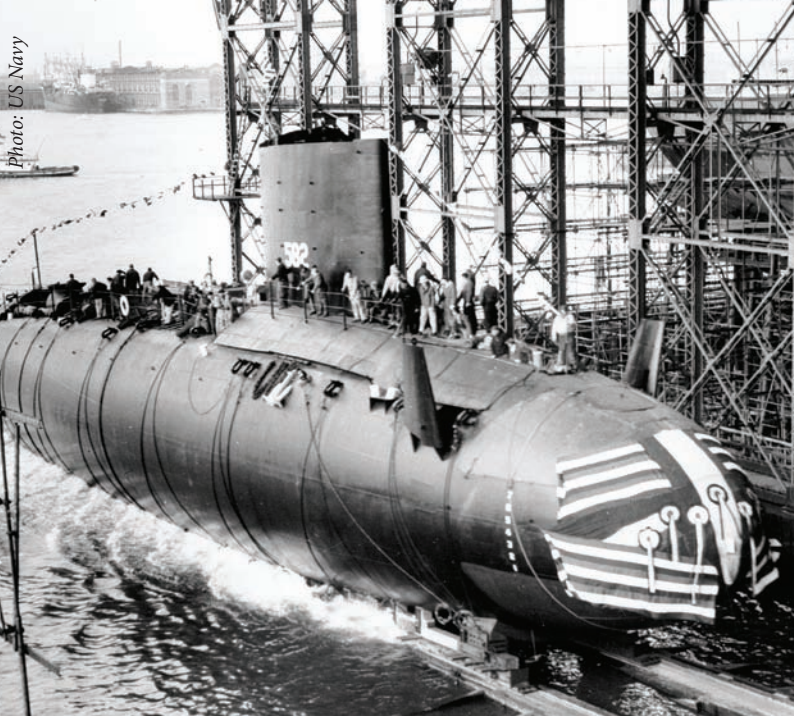
Thus the procurement program that led to the establishment of Canada's submarine service was a product of the Naval Staff's main thrust to establish an operational sub-surface capability in addition to the more traditional role of providing target services. The problem was that the operational requirements inherently required the acquisition of nuclear-powered submarines because the performance specifications and anticipated threat could not be fully met by submarines powered by conventional means.

In 1958, Vice-Admiral Harry DeWolf, who had replaced Mainguy as CNS, embraced the concept fully. Unfortunately, as the idea gained popularity, supporters of the program became captivated by the capabilities of nuclear propulsion. Almost overnight, the introduction of the world's first nuclear submarine, USS *Nautilus*, upset the delicate anti-submarine warfare (ASW) balance as it proved to have few limits and a clear advantage over contemporary methods. These capabilities caused the ASW crisis of the mid-1950s. Conventional torpedoes and targeting systems were rendered obsolete when confronted with the fast, agile nuclear submarine that could dart in and out of contact, outrun torpedoes and overtake surface

combatants without having to reveal itself by snorkelling or surfacing to recharge batteries.

Within this context, the initial drive for a modern and capable RCN submarine service led to the formation of the Nuclear Submarine Survey Team (NSST) in 1958. Among other things, the establishment of this group drew criticism that the RCN and Prime Minister John Diefenbaker's government were attempting to establish a nuclear submarine service before the navy had enough experience to operate a conventional one.³ The NSST completed its report the following year and recommended the procurement of the US Navy's revered *Skipjack*-class (SSN 585) Generation II nuclear attack submarine – the first class to combine the *Albacore* teardrop hull design with the highly successful S5W nuclear reactor.⁴ However, it quickly became clear that the program was not feasible financially and the shift was made to find a conventional alternative. This resulted in the formation of the Conventional Submarine Survey Committee (CSSC) in 1960. The new committee determined that the best available conventional alternatives were the American *Barbel*-class (SS 580), if operational capability was the main determinant, and the British *Oberon*-class or O-boat, which was considered less capable but more affordable.

The O-boat design was based on the traditional German Type XXI U-boat configuration developed near the end



USS *Bonefish* – one of the *Barbel*-class submarines the Canadian Navy wanted to build.

of the Second World War. This design utilized a high bow, flat upper deck and twin propeller shafts for better performance and sea-worthiness while operating on or near the surface. The *Barbel*, on the other hand, was designed as a revolutionary high-speed attack submarine prior to the US Navy's decision to have an all-nuclear submarine force. Built for submerged operations, the *Barbel* was a conventional predecessor to the *Skipjack*-class with an improved teardrop hull design for increased hydrodynamic performance. Combined with the single-screw propulsion configuration, the design was built to reduce drag and increase power-to-performance efficiency. Consequently, it was expected to run faster submerged, have a tactical turning diameter less than half that of the *Oberon*-class and capable of an additional six hours of submerged operations.

Both designs had a similar surfaced speed of around 15 knots, however, the *Barbel* was reported to have a submerged speed of 23 to 25 knots.⁵ In contrast, the *Oberon* could only manage a few additional knots more submerged than its maximum surfaced speed due to its traditional design. Another major difference was in terms of maximum diving depth. The *Oberon* could operate to 600 feet, whereas the *Barbel's* hull was made of high yield (HY-80) steel and had other innovations allowing it to have an established safe operating depth of over 700 feet and a maximum crush depth of over 1,000 feet.

The CSSC carried out the study to “investigate the technical, personnel and financial aspects of procuring, operating, manning, and maintaining conventional submarines in the RCN.”⁶ The Chairman was Commander (E) Robert Stephens who had no submarine experience but was the first nuclear-trained Technical Officer in the RCN and had served as a member of the Nuclear Submarine Survey Team,

indicating the level of overlap between programs. Since nothing had changed in terms of concept or requirement, the only thing that had to be determined was the choice of a conventional alternative to establish the service.

The committee completed its report on 30 June 1960. In the report it advocated the building of nine *Barbel*-class submarines in Canada. However, the recommendation came with a caveat – if cost were to become the overriding factor in the procurement decision, then the Royal Navy's *Oberon*-class should be acquired from the ship construction program in progress in Britain if three or less were purchased.

After numerous submissions, delay and frustration over three years, the program was virtually stalled under Diefenbaker's minority government until fall of 1962 when three *Oberons* were included as part of the ship replacement program. The deal was not finalized, however, until a year later when the newly-elected Liberal government agreed to purchase the O-boats as part of a strings-attached agreement with the British government. The decision provoked heated debate and criticism within the government and the navy causing some fractures within naval headquarters because it neither involved nuclear propulsion nor offered the desired operational A/S capability.

Like the *Victoria*-class, the O-boats came into service under a cloud of doubt. In the media, they were attacked as being “not the greatest ships in the world,” and ‘informants’ whispered to the press that there were problems with the



Photo: DND

HM Submarine *Alderney* in Halifax in 1952; the beginning of the post-war Canadian submarine experience.



Photos: Internet

FNS Saphir (left) and a British Trafalgar-class SSN (right); contenders for the 1987-89 Canadian nuclear-powered submarine program.

lead ship, HMCS *Ojibwa*, under construction in Britain.⁷ But the comparison does not end there. For various domestic and international reasons, both programs were stalled at the political level for three years before they were signed as part of a reciprocal trade agreement, indicating the degree to which political whim can have an impact on major military acquisitions.

But military procurement decisions are always going to involve interests other than military-strategic concerns because they involve large sums of federal money in a highly politicized environment. Rather than criticizing whether this decision was the best one or debating the true value of the O-boats, it was generally felt that the RCN had managed a small victory because the first step in establishing a submarine service is, in fact, to have submarines. Naval planners continued to plan for a more robust service and considered the purchase to be an interim phase. Accordingly, it was recommended that nine more 'advanced-type' submarines, either conventional or nuclear, be acquired at a later date to give the service the desired operational capability. Herein lies the crux of the matter – the 'advanced-type' submarines that were part of this plan never materialized.

Submarine procurement plans evolved into the Canadian Submarine Acquisition Project (CASAP) in the 1980s that shifted to the nuclear submarine proposal in 1987

after being politically hijacked by the government of Prime Minister Brian Mulroney.⁸ In the aftermath of this program's cancellation in the 1989 budget, the navy carried on from these earlier efforts and formed the Canadian Patrol Submarine Project (CPSP) in 1991 which resulted in the *Victoria*-class acquisition. So it was that the navy was forced to make do with the venerable O-boats for more than 30 years.

With the end of the Cold War came the dawn of a new era of security and defence requirements. This does not mean, however, that there is less of a need to maintain a capable submarine service. In fact, some may argue that there is more need now than ever before. The problem is that operating a submarine service is a complex and specialized endeavour belonging to a category of naval operations that is closely guarded and proprietary in nature. It involves science and technology, daring and mystery, with countless secrets known only to the 'Silent Service.' A state cannot develop a capable submarine service overnight and learn the lessons necessary for sub-surface warfare and survival. It is developed through trial and error, triumph and tragedy in exercises and on operations. Only by maintaining submarine forces-in-being can the necessary experience be accumulated and sustained.

When the First Canadian Submarine Squadron was stood down in 1996, a commemorative patch was made with a

surfaced O-boat pictured in the centre over top of which is embossed “1st Canadian Submarine Squadron – Gone But Not Forgotten.” The tradecraft, lessons learned and standard operating procedures developed by our submarine service comprise a vital corporate knowledge that needs to be maintained and passed on to the next generation of submariners operating the next class of submarine. Fortunately, our service benefited greatly from Royal Navy training and experience including the vaunted ‘Perisher’ course, which placed our O-boat Captains among some of the best in the world. It is the loss of this experience that would perhaps have more of a detrimental effect on our submarine service than the acquisition of a less capable platform.

From an historical perspective, the navy is once again operating another British bargain, and that bargain is being criticized in the media. Some may believe that what is needed are even more advanced submarines with the latest technology and more capabilities. But is the submarine service not better off than it was before? After three decades of service, the O-boats needed to be replaced, and in this capacity, the *Victoria*-class submarines are a good next logical step. They incorporate modern hull design, have state-of-the-art noise reduction, targeting and detection as well as communication technologies and are generally more capable and compatible alongside modern allied fleets than the O-boats. In many respects, the *Victoria*-class submarines are the ‘advanced-type’ modern submarines recommended in the Naval Staff’s plans of 40 years ago. Indeed, the *Victoria*-class has more in common with the earlier American *Barbel*-class than its own British predecessor.

Furthermore, the value of a submarine service is greatly increased by the team with which it operates. When working in conjunction with surface and air assets as well

as remote sensing and a reliable maritime intelligence network involving other government departments, a conventional submarine can have a considerable impact as a patrol submarine. The timely exchange of information can vector the submarine to specific areas of interest providing effective coverage and capability in Canada’s vast home waters or in company with allied navies on foreign operations.

So what is the value of this quick look at the history of submarine procurement? Perhaps it will provide a more positive perspective on the issue. Ultimately, if one wants to understand where our submarine program is today, it is essential to know how far it has come. In the end, the submarine service is better off than it was before but with understandable glitches – something that was also experienced with the *Oberon*-class acquisition.

Assuming the strategic importance of maintaining a submarine service in the modern era, and appreciating the fact that operating obsolete submarines will render an obsolete capability, the important thing is that the *Victoria*-class submarines are both modern and capable. After more than four decades of operating its own service, the navy now has another platform to allow it to grow beyond what it has been in the past. Essentially, the first step in developing and maintaining an effective submarine capability is to have them; therefore, having submarines is the point. 🍷

Notes

1. Rear-Admiral S. Mathwin Davis, “It Has All Happened Before: The RCN, Nuclear Propulsion and Submarines, 1958-68,” *Canadian Defence Quarterly*, Vol. 17, No. 2 (Autumn 1987), pp 34-40. See also S. Mathwin Davis, “Submarine Acquisition in the RCN: from Nuclear to Conventional, 1955-65,” Centre for International Relations Occasional Paper No. 25 (Kingston: Queen’s University, 1988), DHH, 88/51.
2. This article is based on larger research using department files.
3. The only experience the RCN had in operating submarines at the time was participation in manning the submarines of the Royal Navy’s 6th Submarine Squadron that had been stationed in Halifax since 1955 under Heads of Agreement with the Admiralty.
4. *Barbel* and *Skipjack* were the first operational applications of the hydrodynamic teardrop hull design first tested in the experimental submarine USS *Albacore*. Norman Friedman, *U.S. Submarines since 1945: An Illustrated Design History* (Annapolis, MD: The Naval Institute Press, 1994), p. 61.
5. There is a discrepancy over the submerged speed of the *Barbel*-class. Staff documents from the period as well as *Jane’s Fighting Ships 1965-66* report a maximum submerged speed of between 23-25 knots. This high submerged speed was probably the expected ‘theoretical’ speed of the submarine at the time given the success of the *Albacore* experiment, which achieved a top speed of over 30 knots submerged in the mid-1950s.
6. NPCC, item 196-2, 12 July 1960, NPCC project file M-1. DHH, 79/246, folder 175.
7. “British Built Subs Less than the Best?” *The Ottawa Journal*, 3 November 1966, p. 35.
8. Jason M. Delaney, “Naval Procurement: An Analysis of Governmental Decision-Making,” MA thesis, University of Waterloo, Department of Political Science, 1999.

Lieutenant J.M. Delaney graduated from the University of Waterloo with a Master of Arts Degree in Political Science and currently works for the post-war naval history team at the Directorate of History and Heritage.



The four ex-Royal Navy *Upholder*-class submarines.

A Managed Approach to Fleet Acquisition

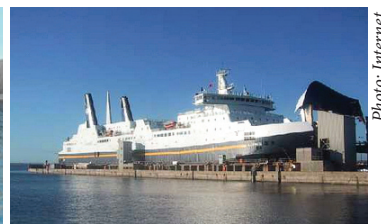
Janet Thorsteinson



CCG Icebreaker *Henry Larsen*.



Artist's impression of the Arctic Offshore Patrol Vessel.



Marine Atlantic Ferry *Caribou*.

The government recognized the importance of Canada's sovereignty in the 16 October 2007 Speech from the Throne which opened with the following statement:

Canada is built on a common heritage of values which Canadians have fought and died to defend. It is a country that continues to attract newcomers seeking refuge and opportunity, who see Canada as a place where they can work hard, raise families and live in freedom. Our Government is resolved to uphold this heritage by *protecting our sovereignty at home* and living by our values abroad. (emphasis added)

The government is taking action to address maritime security by allocating over \$9 billion in the next 10 years to recapitalize Canada's naval and marine fleets. With a coastline of over 200,000 km, Canada needs ships to ensure its national security, safety and sovereignty. Some of the many projects on which these funds are to be spent include:

- Arctic Offshore Patrol Vessels;
- Coast Guard refits;
- Coast Guard mid-shore patrol vessels;
- Coast Guard research and survey vessels;
- ferries for Marine Atlantic;
- *Halifax*-class frigate modernization;
- destroyer replacement;
- Joint Support Ships; and
- *Polar*-class Arctic icebreaker(s).

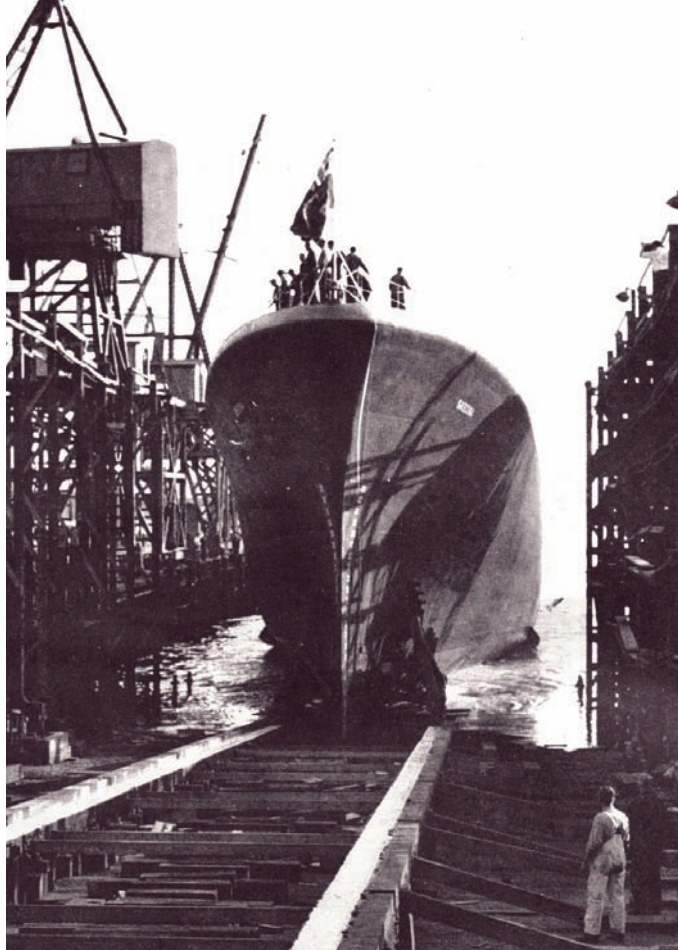
That's the good news, and not a moment too soon given that many of Canada's federal fleets are at an advanced age and inadequate to meet new threats to our maritime environment. Folks in Ottawa are anxious to get their piece of the puzzle built right away, ahead of other platforms, and certainly ahead of any potential change in government and/or change in federal budget priorities that could suspend or outright cancel programs.

These concerns are not unwarranted given the vagaries of party politics in Canada and the very public examples of similar outcomes from times past. For example, when the Liberals assumed power in 1993, Prime Minister Jean Chretien cancelled the helicopter purchase. The battleground for the navy may switch from how to get the money committed from the central agencies to how to get certain programs contracted ahead of other programs and ahead of any change in political winds. Given the way Ottawa has worked in the past, a battle of this nature may result in no ships for anyone, anytime soon.

Further complicating today's procurement environment is the reality that there is neither the capacity in the domestic industry nor in the federal government to develop, manage or implement all of these programs at the same time. I offer two ideas to address these conflicting realities. The first is for all federal political parties to resolve, in the name of sovereignty and national security, to rebuild Canada's maritime capability based on a long-term, stable and predictable funding base in a way that maximizes Canadian technological and industrial participation in shipbuilding. This option, while desirable, is politically improbable and difficult to sustain in any change of government.

The second option is for the government to mitigate the impact of spending spikes by instituting a planned and managed production schedule of the proposed fleets. I believe that staged production would result in a better return on investment for all stakeholders in these intended procurements: the government; the Canadian Navy and Coast Guard; Canada's shipbuilding and marine industries; the national economy; and Canadians, as citizens seeking security and as taxpayers looking to receive the greatest benefit for the taxes they pay.

Government would be better off because it could more effectively manage financial, contractual and production



The golden years of Canadian shipbuilding – a St. Laurent-class destroyer being launched in the 1950s.

scheduling risks. It could also better support the build out using its policies and programs based on the following five conditions:

1. a clearly articulated, publicly available, long-term analysis of the federal maritime requirements across requisite departments and agencies;
2. adequate and predictable funding to meet these requirements over the life-cycle of the fleets of ships;
3. effective and efficient policies including those related to the procurement processes;
4. pragmatic project specific procurement objectives within a strategic security and industrial framework; and
5. effective use of federal programs to leverage and nurture domestic industrial capabilities in Canada.

Staged production would allow the government to utilize fully its existing shipbuilding policy and industrial and regional benefits program to nurture domestic industrial capabilities in areas of national security. In this context, it is opportune that multinational companies receiving other major federal contracts have obligations to invest in the Canadian economy.

Scheduled construction would turn short-term spending on maritime vessels into a long-term federal investment

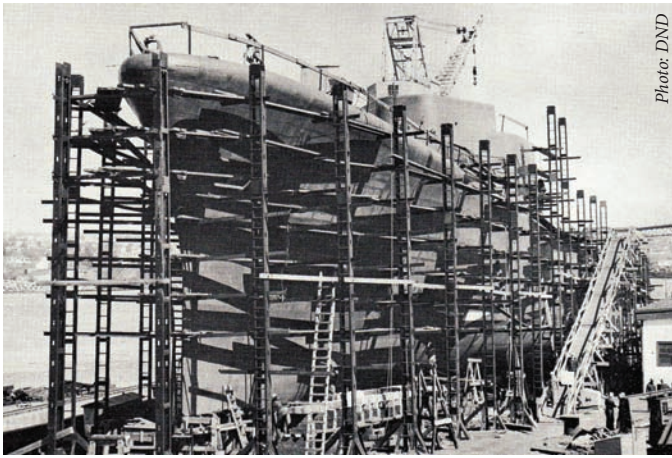
in a way that ensures decades of high-quality work in sometimes under-employed sectors and regions of the Canadian economy. It will also ensure that competent, domestically available industrial support will be available to the Canadian military and coast guard for the life of these fleets.

Canada's navy and maritime forces deserve the equipment they need to do the work assigned to them by the government, of that there can be no ambiguity. And they must have it as quickly as is reasonably possible. But decades of under-funding cannot be remedied by a simple flick of a switch, and efforts to do so could expose the navy and coast guard to unwanted troubles.

With over 30 years of experience in the federal public service, some of that as the Executive Director of Military Procurement, I am aware of the challenges faced by government departments in simultaneously managing multiple projects from inception through the full life-cycle of the purchased equipment. This will be particularly true of the long list of intended projects currently being considered, within an aggressive time-frame, to refit the Canadian Navy, the Coast Guard and Marine Atlantic. Standing up project offices and staffing them with qualified project managers, risk managers and procurement experts will be a huge challenge and failure to meet this challenge will mean that the effective management and delivery of the projects will be at risk. Staged production would facilitate a suitable learning curve and appropriate use of experienced military and government personnel to manage these projects thereby reducing risk, litigation and ultimately facilitating program approvals and production timelines.

Canadian industry has a long and well-earned reputation of building excellent ships. According to the Canadian War Museum, during World War II, more than 126,000 men and women were employed, the shipyards built 4,047 naval vessels and 410 cargo ships, and at its war-time peak in September 1943, the industry was able to deliver the 10,000-tonne SS *Fort Romaine* in 58 days from the start of construction. The industry is certainly not as large as it once was but it still has had recent successes. A recent example of domestic industrial capability was the construction of the *Halifax*-class frigates. When they were designed and produced in Canada in the 1990s, they were recognized as world-class warships and they brought an important operational capability to a middle-power navy.

A strong and viable shipbuilding industry, as well as a dynamic marine industrial sector, is an essential element of Canadian sovereignty. From shipbuilding and systems fit up to maintenance, upgrades, repairs and overhauls, Canada needs a competitive domestic industrial base to



A St. Laurent-class destroyer under construction in the mid-1950s.



HMCS Fredericton under construction in the early 1990s.

address its maritime needs. And, it needs to be able to sustain that base through the life of the fleets with the requisite technical skills, capabilities and capacities as well as the intellectual property.

But multiple and simultaneous maritime projects will require an industrial capacity that Canadian industry, at the outset, will simply not be able to meet. The consequence will be that valuable work will be exported which could have otherwise been performed in Canada in regions of the country that sometimes struggle.

Governments have recognized the significance of the shipbuilding industry to Canada through the establishment of Industry Canada's Shipbuilding Policy. This policy requires essentially all shipbuilding to be done in Canada through a competitive procurement process. The exception is construction of highly specialized vessels where domestic capability neither exists nor could reasonably be created. For example, new submarines, hovercraft or the like would be built offshore.

In order to meet Canada's marine and naval requirements, Canadian industry has developed capabilities in two broad categories. First, there are shipyards that carry out construction, repair and overhaul, and in-service support. Second, there is a marine sector that carries out integration functions, design and engineering functions, and the supply of materials, software systems and equipment to outfit the vessels themselves. These sectors are key to meeting Canada's needs.

To be an effective and competitive partner to the government in meeting its new marine requirements, industry will need time to expand its capacity and some of that may entail forming alliances with other enterprises some of which may be offshore. Staged production would provide the time required for these alliances to be formed.

There is no greater role for government than to protect citizens and their homeland. Taxpayers expect that their money will be spent in ways that provide military and security forces with the equipment they need and, at the same time, deliver maximum benefit to the economy. Greater taxpayer return on investments will occur through managed production of Canada's new fleet requirements. For thousands of Canadians whose livelihoods have been interrupted by the boom-and-bust spending practices of the past, a staged approach to revitalizing Canada's navy and maritime forces will enable them to find careers in their home region.

In Conclusion

There are significant benefits to all stakeholders from a long-term, phased design and construction program. For instance, such an approach provides the time and business acumen for:

- the long-term development of people, knowledge and skill bases in both the trades and management;
- the improvement of all facets of the design and build process;
- investment in modern equipment, facilities and information systems; as well as
- the development of surrounding secondary industry and community education programs.

Through a new approach to managing its planned reinvestment in Canada's maritime forces, the federal government will be helping all stakeholders and Canadians will enjoy the benefits for decades to come. 🇨🇦

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



Making Waves

CH-148 Cyclone Encounters Head Winds

John Orr

A zapper that went the rounds a few years ago depicted a Sea King and read “Flying yesterday’s aircraft tomorrow.” This is a rather unkind, but accurate, reflection of the state of Canada’s maritime helicopter fleet which, according to recent press reports, is slated to be extended in service even further into the future and may well reach beyond 2013 – 50 years after the Sea King entered Canadian service.

There has been a recent public brouhaha between Sikorsky Aircraft Corporation and the government of Canada about the replacement for the Sea King Helicopter, the CH-148 Cyclone. According to a May 2008 article in *The Globe and Mail*,¹ this brouhaha apparently revolves around delays in the Cyclone delivery schedule and whether the Cyclone can meet the requirement for an endurance of two hours and 50 minutes in an anti-submarine (dipping) mission. The article states that Sikorsky’s solution is to upgrade the engines and transmission and install a five-bladed (rather than four) main rotor at an increased cost of \$200-500 million CAD and a further delay of up to 30 months in aircraft delivery.

The Cyclone is a militarized version (H-92) of Sikorsky’s S-92 Helibus which was designed as a medium-lift utility helicopter and intended primarily for civilian roles. The S-92 is currently operational with a variety of commercial operators and civil government agencies in offshore oil support, VIP transport and search and rescue missions. Sikorsky has promised that the S-92 will reduce routine maintenance requirements by 80% and operating costs by 40% from the norms of previous-generation helicopter fleets.² Commercial operations of the S-92 began in 2004 and Canadian operators include CHC Helicopter Corporation and Cougar Helicopters Inc., a subsidiary of VIH Aviation Group. The aircraft has had a successful introduction and, as reported in *Fortune* magazine, there is a two

Photo: Sikorsky



Artist's impression of the Cyclone helicopter.



Photo: DND

Flying yesterday's aircraft yesterday; a Sea King helicopter operating with the fleet during CARIBOPS in the mid-1980s.

year backlog in orders for the S-92 which is described as “the favourite of the oil industry.”³

So if the S-92 is meeting the requirements of commercial operators, why is there a problem with the delivery of the Cyclone and why is the discussion of these problems taking place in public?

Regarding the delays in the delivery of the Cyclone, the simple fact is that the militarized H-92 is a much more complex platform than the civilian S-92 from which it is derived. This is not only due to the requirement to provide an operational mission suite, no mean feat in itself, but also due to a variety of engineering changes such as the introduction of a fly-by-wire flight control system and a blade-fold system. That such a complicated weapon's system has encountered delays should be no surprise, as regrettable as that may be.

If the article in *The Globe and Mail* is correct, Sikorsky's motivation in combining an extension of delivery dates with a promise of increased performance (and a request for further funding) appears to be an attempt to rectify a situation in which it may have over-promised on its delivery schedule and will be obliged to incur the penalties spelled out in the contract. This is none too appetizing a prospect given that Canada is the lead military customer for the H-92.

As to why Sikorsky's attempt to re-negotiate the Cyclone contract has been leaked to the press, apparently by Public Works and Government Services Canada (PWGSC), there is no easy answer. PWGSC's conversion to the concept that a contract is a contract, while laudable, is more than a little



Still flying yesterday's aircraft; a Sea King in the Persian Gulf.

suspicious and probably has a great deal more to do with the funding situation of the government than any interest in ensuring that taxpayers get what they contracted for. As Senator Colin Kenny, among others, has repeatedly pointed out, DND is seriously under-funded in its capital account and crunch time is rapidly approaching as the bills are due to be paid on a variety of items on the department's shopping list.⁴ Modifying or delaying any capital project could free up funds to address other concerns.

The reported threat by the former Minister of Public Works, Michael Fortier, to find "another way to replace the Sea Kings" opens the truly nightmarish possibility that the whole Maritime Helicopter Project (MHP) process could be resurrected – yet again! This smacks of previous attempts to shut down MHP altogether or to find an alternative (cheaper) platform to fill the requirement rather than any attempt to resolve the current Sea King situation.

Extending the life of the Sea Kings would no doubt be an administrative and logistical challenge and will perpetuate the current weakness in the operational capability of the Sea King. However, the estimated life expectancy of the Sea King has been extended a number of times in the past and while operational systems have reached or exceeded their 'best by' date, the Sea King can continue to operate at sea albeit with limits on its availability and operational relevance. In other words, maintaining the Sea King in service for up to another 30 months is not a show-stopper.

So whither the Cyclone? The S-92 is demonstrating a commendable record in commercial service around the world. With the militarized H-92 program, Sikorsky is experiencing difficulty in meeting an ambitious delivery schedule due to the complexity of the platform as noted above. While regrettable, a delay in delivery, even of up to 30 months, is an inconvenience rather than a true impediment. As to the merits of the alleged Sikorsky proposal to improve performance at an increased price, the pros and cons are best left to those who have the full picture.

The threat to re-open MHP and choose another platform is a fruitless exercise fraught with peril. It opens the

possibility of a flood of lawsuits and is guaranteed to cause even further delays. It also appears to be a move designed more to address the shortfall in capital accounts than the operational capability of the Sea King.

It is time for both sides of this dispute to take a deep breath and, if necessary, return to the bargaining table, this time in private, to ensure that the Canadian Armed Forces and the Canadian taxpayer get the aircraft that they need. 🍷

Notes

1. Daniel Leblanc, "Ottawa refuses to pay extra for helicopters; Sikorsky must live up to \$5-billion contract, Public Works Minister says," *The Globe and Mail*, 1 May 2008, p. A8.
2. Sikorsky Aircraft Corporation, Press Release, 3 April 2007, available at <http://www.sikorsky.com/sik/about_sikorsky/news/2007/20070403_1.asp>. Eugene Buckley, President of Sikorsky Aircraft, also promised that he would build a helicopter that didn't leak.
3. Telis Demos, "Copter Crisis," *Fortune*, Vol. 157, Issue 10 (12 May 2008), p. 20.
4. See Colin Kenny, "Our military badly needs repair," *The Globe and Mail*, 10 June 2008, p. A17; and David Pugliese, "Military contracts fizzle," *The Ottawa Citizen*, 10 June 2008.

A Better Model for Boarding Teams Lieutenant-Commander Angus Topshee

Toronto's recent deployment with Standing NATO Maritime Group One (SNMG1) highlighted the requirement for a review of the way that the navy trains and mans its boarding teams. *Toronto's* boarding team was active throughout the deployment and, as a result, the 20 core members of the team spent the majority of the deployment away from their departments and out of the normal watch rotation. While this practice ensured that the team was always ready to deploy and could spend its time working to maintain its fitness and training, it had a significant impact. Departments were required to make do without key personnel, a demand that was even more significant when one considers that members of a ship's boarding team are often among the top performers in their departments. At the same time, boarding team members struggled to complete training packages or achieve qualifications within their trade so that they could continue to advance their careers. Boarding team members also frequently express guilt about the fact that the other members of their departments are working harder and/or standing watch more frequently to compensate for the fact that the boarding team is out of the watch rotation.

These competing demands can be balanced reasonably well by a high readiness (HR) ship on a deployment such as *Toronto's*, but become unmanageable for a ship conducting normal HR or standard readiness (SR) operations when courses, postings and other demands make it virtually



Photo: DND

A traditional naval boarding operation.

impossible to maintain and properly equip a fully trained, 20-person boarding team.

Adding to the challenge is the fact that the navy does not train its teams to conduct many of the activities that boarding teams are actually conducting these days. Shockingly, neither the Basic nor the Supervisor's course actually instruct personnel in the conduct of the traditional boarding and search of a vessel, let alone the approach operations which have become far more common on deployment. The 'classic' boarding operation is taught only during team training and ships struggle even to provide sufficient trained personnel for this course, let alone keep the team intact until the next opportunity for team training comes around at least a year later. Sea training staff members typically include a number of these classic boarding operations during work-ups but they are not training or evaluating boarding teams in the conduct of approach operations. Although they have been a feature of operations in the Arabian Gulf for many years, approach operations are only now starting to be incorporated into naval publications and doctrine.

Boarding teams are a critical component of naval operations and a new model is required to ensure that they are as effective as possible. Rather than creating part-time teams that cannot hope to achieve the optimal level of

training and experience to be truly effective, the navy should create a dedicated 50-person boarding cell or unit on each coast. These units would be capable of providing three or four deployable teams of 10-12 personnel each. Ships would continue to send sailors on the boarding party course to provide a basic capability for times when they are not assigned one of the deployable boarding teams. On deployment, the dedicated boarding team would conduct all approach operations.

For the 'classic' boarding and full search of a ship, the dedicated boarding team would be augmented by search teams ('Bravo' wave) from the ship's company. The demand on ship's personnel would be reduced to a much more manageable 10 or so personnel and the overall effectiveness of the team increased because the dedicated teams would be free to focus on developing the highest possible level of expertise in boarding and approach operations. They would also be able to develop specialized equipment and tactics to continue to augment the scope of boarding operations that the navy can undertake. For example, different methods of insertion such as fast roping and boarding ladders could more realistically be taught, and it might even be possible for these dedicated boarding teams to contemplate opposed boardings or operations designed to free ships whose crews have been taken hostage by pirates or terrorists (a relatively common scenario off the Horn of Africa).

There is no doubt that it would be very difficult to identify and spare the 50 personnel on each coast needed to form these units, but the navy's manning problems are not going to become any easier to solve as we move towards HCM/FELEX and all the other new projects come on line. The navy is commencing the wholesale replacement of its existing fleet: what better time to consider how we should address the manning issues this will inevitably bring?

Moving now to dedicated boarding teams and units would provide more flexibility in the future to reduce manning levels of ships because it will allow the navy to man its ships with a core crew while not depriving them of the critical capabilities provided by a boarding team. Not only would we thus resolve manning issues but, by virtue of their dedicated nature, we would ensure that our boarding teams achieve a higher level of effectiveness and are ready to deal with whatever surprises the future will inevitably bring. 🍷

Personnel Shortages: Do These Policies Make Sense?

Poseidon

There are significant shortages in numbers of naval personnel, for example in most of the Non-Commissioned Members (NCM) technical trades (sonar operators, naval weapons technicians, etc.) and in the Maritime Surface and Sub-Surface (MARS) officer classification which provides those who command ships and direct their operations.

There are current Canadian Forces-wide policies that will likely make the situation worse in the near future. One is the application of “Universality of Service” according to which many who have been injured – not necessarily on CF operations – or have some illness such as diabetes or asthma must leave the service by 01 June 2009. The rationale is that CF personnel must be able to serve wherever they are required – such as Afghanistan or at sea – and if that will not be possible due to permanent disability they should leave the CF and make way for healthy individuals to be recruited and trained. While I do not disagree that this makes sense, the reality is that the CF cannot train the numbers of new recruits that have been accepted, and it is still well under the authorized trained effective strength. Surely it makes sense to at least extend the service of those who have skills and knowledge to make a contribution? Perhaps some would be useful in training the new recruits.

Another policy is to restrict the careers of “late bloomers.” I recently spoke to an experienced Lieutenant-Commander who had been told in his early 40s that he would not be considered for any more sea jobs or promotion because he had too few remaining years to serve – not, please note, due to his age. This individual had left the navy for five years and returned, got a degree, and became command-qualified. As service personnel may now serve to age 60, he should have sufficient years remaining to command a ship and make an important contribution to the navy both afloat and ashore. Surely everyone does not have to fit a career pattern intended to create our future admirals? 🍷

Comment about “Those Innovative Danes” Commodore Mike Cooper (Ret’d)

Ever since reading the excellent article “Those Innovative Danes!” in the Spring 2008 issue of CNR, I’ve been meaning to comment. I was invited to visit *Absalon* during her visit to Halifax last year when the chief of the Danish Navy’s Materiel Command, a Rear Admiral, hosted coffee (and Danish pastries, of course) followed by a briefing and a tour of the ship. Doug Thomas states in his article

that “The *Absalon*-class ships are built to naval rather than commercial standards.” I was under the impression that the reverse was true. It certainly appeared so in the crew’s dining area, for instance, where there were no pipes or wiring visible. All the bulkheads were tastefully panelled with simulated wood grain panelling. The accommodation spaces and officers’ cabins similarly lacked the customary austere, utilitarian naval ‘decor.’

Absalon is truly an innovative ship. In my opinion such a ship, or a variant thereof, with so much flexibility could be a useful addition to the Canadian fleet, but it would appear that by the time of *Absalon*’s visit to Halifax the government and/or CMS staff had already decided against pursuing any thoughts of an expeditionary support ship and it looked as if they were taking pains to ensure that there was no official interest in the Danish ship. I say this because there were no serving flag officers present at the Danish Admiral’s briefing and tour; in fact I believe the senior serving officer present was a Commander although it may have been a Captain (N). Even later at a buffet lunch and display of Danish defence products on the flex deck the only senior officers present were two BGenerals from Militia Area Headquarters (conspicuous in their combats!).

After having seen the LPD USS *San Antonio* in Quebec City recently I can only conclude that those who were advocating such an addition to the Canadian fleet must have been dreaming in technicolour! A ship of *Absalon*’s size, capability, flexibility and cost would be much more in keeping with the Canadian Navy’s role and manageability.

By the way, did you know that *Absalon* (1128-1201) was a Danish clergyman and statesman who founded Copenhagen? I believe the Spanish Navy has some sort of equivalent to *Absalon* that may be of interest. Also by the way, did you know that in Denmark Danish pastries are known as Austrian pastries? Yours Aye. 🍷

Response from Doug Thomas: Commodore Cooper, thanks very much for your comments on the article, and your views on *Absalon* and her visit to Halifax. According to *Jane’s Fighting Ships*, *Absalon* and her sistership HDMS *Esbern Snare*, are “built to DNV Navy standards.” Certainly the Danes are original thinkers when it comes to building naval vessels, and baking pastries too. Perhaps our navy has much to learn about interior decoration of warships as well.

The View from the West: Watching Dragons Learn to Swim

Kerry Lynn Nankivell*

As China experiences the convulsions of explosive economic growth, the maritime domain surrounding the Middle Kingdom experiences the inexorable effects of increasing power. Conventionally characterized as a quintessentially land-based power, the People's Republic of China is embracing the fundamental facts of global power: global economic and political power based on land must be underpinned by formidable maritime capability. As the Chinese landmass becomes transformed by skyscrapers, high-speed rail and a modern road network, the government has sought to safeguard that transformation with a naval modernization program capable of building a People's Liberation Army (Navy) (PLAN) commensurate with Chinese power.

Naval Power in the Global Economy

Before considering the impressive changes underway in the Chinese Navy, we need to consider the motivation behind the modernization. There is some truth to the proposition that China's naval modernization – indeed its overall military build-up – betrays its long-term goal of regional, if not global, hegemony. According to this theory, in the best case, a powerful Chinese maritime capability presents a serious challenge to the existence of an autonomous Taiwan, and in the worst case, presents an existential challenge to the Asian continent as we came to understand it in the 20th century.

But although there are concerns about what Chinese naval modernization means in the long term for the seascape of the Asia-Pacific region, there are real economic and political imperatives pulling Beijing inevitably toward the establishment of credible naval power. Thus, even if we assume that China's aims in the region are benign and its only interest is the well-being of its population based on continued economic prosperity and peace with its neighbours, China would still require impressive naval power.

China depends on the sea for its continued economic viability. When China embarked on economic revitalization under Deng Xiaoping in the 1980s, it employed a strategy based on export-led growth. This meant that not only did Chinese workers and investors have to produce the products that Westerners consume, but also that the Chinese government had to invest in the kind of infrastructure necessary to deliver those goods to market. Innovations in shipping and communications were simultaneously revolutionizing the way in which goods were moved by sea to customers on far-away continents. All of this worked to China's advantage,

thanks in large part to the ability of the government to command huge amounts of capital for major infrastructure projects in the country's ports. Starting primarily with coastal areas in Shenzhen and in the seaside metropolis of Shanghai, China opened its ports to the world and became a global manufacturing powerhouse.

In 2008, China's growth continues to be supported by its impressive share in industries ranging from toys to textiles. And as the country has grown in economic viability, its economic engine has needed to search further abroad for increasingly scarce inputs. The export-led explosion has, over the course of three decades, led to an opposite but equal thirst for the import of the raw materials that keep China's economic engine running. In 2007, to give one example, 150 bulk carriers brought enough iron ore through the port of Shanghai to feed the production of 22 million tonnes of steel by one manufacturer alone. This kind of frenetic offloading is the daily pace in Shanghai for imports of raw materials ranging from nickel, timber, copper to potassium.

Of course, the literal fuel of China's economy has also forced Beijing to look to the sea. In 1993, China became a net importer of oil and by 2007, China had leapfrogged to the third spot among oil importers, behind only the United States and Japan. Although China has fought hard to negotiate pipeline deals with Russia to secure an overland route for oil imports, the reality of geography impels Beijing to rely on the world's sea lanes for its access to oil. Today, China imports about 30% of its oil from Africa (primarily Angola and Equatorial Guinea) and the rest from the Middle East and Russia. While there are some overland routes through the Asian continent, the majority of Chinese imports have to sail across the Indian Ocean and through the chokepoint at the Strait of Malacca to reach Chinese ports. To monitor the sea lanes and take preventative action to stave off potential interruptions to the flow of energy and goods at sea China needs a modern capable force that boasts credible force projection and significant surveillance and reconnaissance capabilities.



China's maritime area of interest.

A Modern Navy to Match

China's modern economy therefore demands the development of a modern navy to match. The primary target of China's initial push for naval modernization has been the submarine fleet. As early as 1996, the US Office of Naval Intelligence (ONI) published an unclassified report identifying the PLAN as "the most challenging submarine force outside Russia throughout the next decade." At the time, China possessed the third largest submarine fleet in the world, but its submarines were mostly outdated. However, a cultural revolution was underway in the PLAN. Senior naval planners in the 1990s were beginning to gain some supporters in the Central Military Commission (CMC) in arguing that China needed to revamp its maritime strategy. Naval planners have persuaded the leadership that China needs to move away from a coastal-oriented defence strategy to one that establishes a security perimeter out to the so-called first island chain, represented by the Kurile Islands in the north, through Taiwan and out to the Philippines and Indonesia in the south. Such a strategy would not only ensure China's territorial integrity and national unity (by enclosing Taiwan and islands claimed in the South China Sea), but would provide a comfortable distance between the mainland and the navy's first line of defence.

In the decade since ONI first highlighted China's submarine capability as a feature of interest, Beijing has made significant progress toward building a credible, multi-dimensional submarine fleet. China has increased its fleet of diesel-electric submarines, both in number and in credibility. China first acquired *Kilo*-class submarines from Russia and reportedly used them as the basis for the indigenous design of two further generations of quieter subs, the *Song*- and the *Yuan*-class. Analysts suggest that the PLAN has already constructed 13 of the former and one of the latter. The total diesel submarine fleet is believed to be about 50 boats which is not much different than in 1996, but the new design and construction of Chinese diesel-electrics and the retirement of the 1950s-era *Romeo*-class boats has meant a real transformation in the overall fleet credibility.

At the same time, China has also been establishing a nuclear submarine fleet. Little is known about the recently constructed *Shang*- and *Jin*-class submarines but at least one of each vessel was designed, built and completed sea trials in the six-year span of 2001-2006. The *Shang* SSN is believed to be primarily designed for anti-surface warfare, such as might be useful against an aircraft carrier battle group, while the *Jin* is thought to be designed to maintain a credible nuclear second-strike capability. Both boats were developed and built in Chinese shipyards, although US intelligence analysts have long accused Russia of providing nuclear-power technology to the Chinese to

bring the vessels on line in short order. Satellite evidence also indicates that the PLAN is constructing at least three new submarine bases, one of which will be underground and is already under construction at Hainan Island in the South China Sea.

But submarines have not consumed all of the modernization agenda. In the last decade or so, China has also designed and put to sea some impressive surface ships, including the *Luyang I* and *Luyang II* destroyers (two of each had been delivered by 2005) and the *Jiangkai* frigates (two delivered in 2003). In 2004, the PLAN took delivery of two new *Fuchi*-class replenishment ships and a new fast attack craft. The transformation in capability is impressive and alarming, but so is the speed and efficiency with which the ships were designed and manufactured. Together, it suggests that China has made real leaps in shipbuilding technology and management techniques with which to support its ambitious, well-funded naval modernization plans. Clearly, China is embracing the concept of maritime power, pushing full-steam ahead with a modernization plan that has affected all aspects of naval planning, procurement and positioning.

The Dilemma of Dual Use

The dilemma for analysts of China's naval modernization is determining the intention behind it – an aggressive, threatening modernization program looks a lot like a benign modernization program aimed only at safeguarding the state's hard-earned economic success. There are worrying signs that Beijing's use of maritime power is not intended only for a best-case global scenario. The modern submarine force, with the capability of waging modern anti-surface warfare against a carrier group, is clearly being put together with the possibility of conflict with either the United States or Japan, or both, in mind. This is further underlined in the design and manufacture of the *Jin*-class nuclear-powered submarine, the purpose of which seems to be the maintenance of a nuclear-second strike capability which would severely weaken the nuclear advantage the United States currently holds.

Although China has some decades to go before being able to claim parity with the formidable US Navy, even if it continues at this breakneck pace, there seems little doubt that this is where Beijing ultimately aims to go. 🇨🇳

Notes

* The comments provided here are the author's views only and do not represent the official policy of the Canadian Forces or Department of National Defence. The article is part of the Maritime Force Pacific Headquarters' Program for Asia Pacific Studies intended to add to knowledge about the Asia-Pacific region in which it operates.

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Plain Talk: Procrastinating on Procurement

Sharon Hobson

The defence procurement process needs fixing but the government doesn't appear willing to do much about it. At the time of writing, at least three of the navy's key projects were encountering problems: the Joint Support Ship (JSS) project; the *Halifax*-class Modernization-Combat Systems Integration (HCM-CSI) project; and the Maritime Helicopter Replacement project (although not technically a navy project – it falls under the auspices of the air force – it is essential to the navy being able to exploit the full capability of its surface fleet).

While the government is to be commended for moving ahead on numerous big equipment projects – sorely needed after years of Liberal stalling – it takes more than money to get large, complex projects from the drawing board into the hands of the operators. The procurement process must be open, the requirements well defined, and the risks shared. Above all, there should be a clear line of accountability.

In the 15 years that the Joint Support Ship (JSS) project has been on the drawing board, the concept has been re-thought, re-worked and re-scheduled. The project was finally announced in June 2006, with a budget set at \$2.1 billion for the acquisition of the ships, and another \$800 million for 20 years of in-service support. At that time, the army was in the process of junking its tanks and buying medium-weight mobile gun systems, but that, of course, has now changed. The competing companies will have to modify the ships to carry tanks, plus cope with the rising costs of steel, copper and iron ore.

The government, however, has made only a minor modification to the JSS budget. Consequently, it should be no surprise to learn that industry has informed the Department of National Defence (DND) that it can provide only two ships, not three, for the money budgeted. Given that Canada has three coasts, that the ships will have multiple roles, and that the navy has to factor in down-time for regular repairs, two ships will simply not be enough.

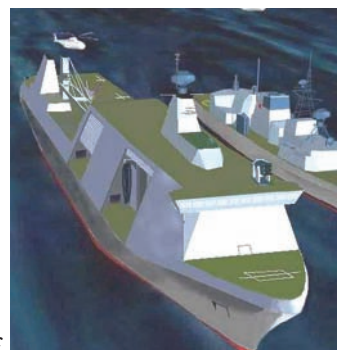
The navy's other major ship program may also be headed for trouble. General Dynamics Canada (GDC) has informed the government that it does not intend to bid on the \$1.1 billion *Halifax*-class modernization contract "in light of unviable commercial terms and conditions." Company spokesperson Amy MacLeod says that in this case, "commercially unviable" means "a combination of

tight budgets compounded with commercial conditions that increase the industrial risk to unacceptable levels."

With the withdrawal of GDC from the competition, Lockheed Martin Canada (LMC) remains the sole bidder for the contract. LMC is the original equipment manufacturer, integrator and maintainer of the current combat management systems for the *Halifax*-class. While LMC will still have to meet the requirements in order to be awarded the contract, there remains the question of whether Canadians will get the best value for their money now that there is no competition.

Finally, there's the continuing saga of the maritime helicopter replacement. The first of the 28 Cyclones was supposed to be delivered no later than 48 months after contract signing – in other words, November 2008. The ambitious schedule demanded by the government, and agreed to by the manufacturer, Sikorsky, has fallen by the wayside, and the helicopters won't start arriving until late 2009, at the earliest, and more likely 2010-11. That's 25 years after the replacement project was officially announced!

Moreover, Sikorsky has apparently told the government it needs another \$250-\$500 million to complete the contract. While some of this is probably attributable to the company's aggressive bidding, some of it can also be laid at the feet of the military which has been demanding an increasingly militarized helicopter. (The Cyclone is based on the civilian S-92.) The government, however, is



Artist's impression of the new Joint Support Ship.

Photo: DND



HMCS Regina firing a Harpoon missile.

Photo: DND

playing hardball, refusing to hand over any more cash, and has even suggested it may cancel the project if negotiations with the company fail.

These are just the navy projects that are in trouble. There are also air force and army projects that are in trouble – two contractors have opted not to bid on unmanned airborne vehicles, and the sole bidder for the MilCOTS Military Support Vehicle System has been deemed non-compliant.

In February 2008 the Standing Committee on National Defence produced a report on defence procurement that contained some commonsense recommendations for fixing a system that is in trouble. These included working from a clear statement of capability deficiency and an understanding of what the equipment is *not* intended to do (to avoid “statement of requirement creep”), involving industry at an early stage of any project, adopting strategies to minimize risk, producing a defence ‘industrial base strategy,’ making public a defence capability plan by 31 March 2008, and having the government consider establishing a DND procurement agency.

The government’s response, tabled in June, contains soothing words and an occasional promise of future action, but the bottom line is that not much is going to change any time soon. For example, in response to the call for a clear statement of what capability deficiency the equipment will correct and what it will not do, the government says

DND has a well-established process for defining capability deficiencies, which it refines and improves on a regular basis. In most cases, Statements of Capability Deficiency and Statements of Operational Requirement, once approved, are ‘frozen.’ However, as a result of evolving operational needs or detailed analysis during the definition phase of a project, it may sometimes be necessary to amend them.

Okay, but how about explaining that to the general public? How about being accountable to the Canadian taxpayers, and explaining why and how the requirements have changed and how that is going to affect the budget and schedule?

In regard to the committee’s call for early industry involvement, the government says, “[t]he Government supports early industry involvement *where appropriate*” (emphasis added). What does that mean? When would it not be appropriate to engage industry in the early stages of an equipment program?

As for minimizing risk,

The Government continues to improve its management of risk ... and is implementing a new policy

on the management of projects that establishes the requirement for deputy heads to consider the risk and complexity of projects and the capacity of the organization to manage project risk. The policy is currently being piloted by four departments, including DND, and *is expected to be fully implemented across the Government of Canada by 2011-2012* (emphasis added).

Quite apart from the depressing news that the new policy – whatever it entails – will not be in place for another four years, this says nothing about reducing the risk that is being imposed on industry.

Vice-Admiral (Ret’d) Peter Cairns, President of the Shipbuilding Association of Canada, has said “the terms and conditions that the government is requiring companies to meet and the amount of risk that the companies are required to take on themselves are becoming very onerous.” In fact, he recently wrote in *Canadian Sailings* that requiring the contractor to take all the risk “seems unreasonable at best and stupid in the extreme.”

The government dismisses the call for a defence capability plan by pointing to its vaguely worded – and completely inadequate – “Canada First Defence Strategy” as being the basis for careful defence planning. The government alludes to a “comprehensive investment plan” which it says is being written but it gives no promises to make it a publicly available document.

As for a defence industrial strategy, don’t hold your breath. DND and other departments “are working together to build a better alignment between Canada’s defence industrial capability and Canada’s military requirements.” The multi-phase process to produce some kind of industrial strategy does not come with a time-line.

And the call for a defence procurement agency? Forget it. The government states:

We can and will do more to simplify and shorten processes while maintaining appropriate safeguards and controls to ensure that Canadians obtain best value from defence spending, and that defence acquisitions are done with as much transparency as possible and subject to adequate checks and balances.... PWGSC, DND and other partners are committed to improving the efficiency of the procurement process within the current structure.

I’m sure the navy will find great comfort in all these fine words as its capabilities dramatically decline over the next 10 years. 🍷

Sharon Hobson is an Ottawa-based defence analyst and Canadian correspondent for *Jane’s Defence Weekly*.

Warship Developments: To Buy or Lease?

Doug Thomas

The Canadian Navy and its political masters go through a great deal of angst every time they must buy new ships for the navy. Currently they are attempting to replace the Operational Support Ships (AORs) – *Provider*, *Protecteur* and *Preserver* – with three new Joint Support Ships (JSS). Another contract which is being fast-tracked is the building of six to eight Arctic Offshore Patrol Ships (AOPS), with the first one due for commissioning in five years.

There are several issues that cause this ‘churn,’ but the multi-billion dollar cost of new ships must be #1. It seems as though the navy has to justify its existence every time a major shipbuilding program is in the works. The navy appears to have unlimited O & M funds to keep old ships soldiering on well past a reasonable lifespan: *Protecteur*, with her elderly steam propulsion plant and large crew, will have been in service for 40 years next year! The modern, projected JSS would have greatly enhanced capability, a ship’s company about half as large, and it would be much more efficient to maintain and operate with a modern automated diesel propulsion plant. Indeed, retaining dockyard infrastructure to maintain one steam propulsion plant on each coast, and training sea-going personnel to safely operate their antiquated boilers and steam turbine makes little sense.

Another issue is building naval ships in Canada which considerably inflates the cost due to wages. We should bite the bullet on this one and either accept that we are subsidizing a national strategic industry (shipbuilding) and that there is a built-in cost to do that, or we should decide that some naval vessels could be built overseas in order to save money. Perhaps ships with an auxiliary role – support, coastal patrol, training – could be built elsewhere if there was a significant saving? The Danish Navy had the hulls of its two new *Knud Rasmussen*-class Arctic patrol ships built in Poland, and they were then towed to Denmark for final fitting-out. The Royal Navy’s Military Afloat Reach and Sustainability (MARS) Programme requires up to six fleet tankers (more basic and less-capable than an AOR or JSS) to support its new aircraft carriers. None of the four bidders for this contract have indicated that they will build these ships in the UK: there is a limited budget to build these tankers and there have been considerable cost over-runs on ships recently built for the RN and Royal Fleet Auxiliary (RFA).



HMS Clyde with a Merlin helicopter.

Is There Another Way to Acquire Modern Serviceable Ships for the Canadian Navy?

Several years ago the Royal Australian Navy (RAN) required a new tanker to replace HMAS *Westralia* which had suffered a major engine room fire and was overdue for replacement. Thinking ‘out-of-the-box,’ the RAN quickly identified through commercial contacts a candidate ship, and the government engaged the service of a ship-broker to protect its identity and negotiating position. For about \$40 million (AUS) Australia bought a brand-new double-hull tanker (MT *Delos*) from its Greek owner, one week after it completed post-construction sea trials in South Korea. For the next year *Delos* was chartered out through Teekay Tankers Inc. (one of the world’s largest tanker operators) earning money for the Australian treasury while a plan, contract and materials were put in place to convert this ship for naval use. A subsequent contract was let to an Australian shipbuilder.



RFA Argus.



HMAS Sirius refuelling HMAS Toowoomba.

Some of the specific modifications included: the installation of a replenishment-at-sea rig for abeam refuelling; various accommodation modifications for RAN personnel including heating, ventilation, air conditioning, fresh water and sewerage; a helicopter landing deck aft (no hangar); RHIBs and a related crane; and provision for navy lifesaving and damage control. The cost of buying this ship and converting it for naval service was about \$100 million (US). Once completed, the ship's company of about 60 personnel was transferred from HMAS Westralia to the new HMAS Sirius, ensuring a seamless transfer of operational capability to the RAN. Granted, it is not as flexible or capable as an AOR or JSS. But the JSS program is in trouble – \$3.1 billion (CAD) will no longer build three ships that meet the Statement of Requirement.

The Royal Navy has been innovative in buying certain merchant ships for support roles and also more recently leasing purpose-built vessels for duties other than war-fighting. RFA *Diligence* (see CNR, Vol. 4, No. 1 (Spring 2008), p. 33, for more details) has been a highly successful forward repair ship for well over two decades in locations such as the Persian Gulf and Falkland Islands. RFA *Argus* was a French ro-ro container ship before she was acquired in 1988 for naval duties as an aviation training ship. As is the case with most large ships possessing upper deck space and lots of internal volume, *Argus* is very flexible: her ro-ro deck is used as a helicopter hangar, she can do underway replenishment, has been used as a command ship, and more recently was refitted as a 100-bed, three-operating room, hospital ship.



USMSC Prepositioning Force Vessel.

Another RN innovation is the leasing of four offshore patrol ships, HM Ships *Mersey*, *Severn*, *Tyne* and the improved OPV HMS *Clyde*. These ships were built to order by Vosper Thornycroft Shipbuilding, and are leased for five year periods. Maintenance support is also provided by a contractor for the lease period. At the end of each five year lease, the RN can turn the ship back to the supplier (rather like a leased car), renew for another five years, or buy the ship outright. These vessels are built to commercial standards with some military features, and are armed with 30 mm and other light weapons. They all have helicopter flight decks, but no hangar.



HMAS Sirius refuels USS Essex during Exercise Talisman Sabre in June 2007.

The point of bringing up these examples is to say that there *are* ways of getting some of the ships needed for Canada's navy short of buying them as we have in the past. The commercial shipping world provides opportunities that should be considered, especially when acquiring support and patrol ships. Large shipping firms, such as Maersk, Sealift Inc., American Overseas Marine and others, lease ships to the US Military Sealift Command (MSC). They are used in the Afloat Prepositioning Program which has such ships deployed close to the areas where land combat is underway or anticipated, as they carry vast quantities of materiel required by the US Army and Marine Corps. They could also be used for the Maritime Prepositioning Program which would form an important component of the sea-basing concept. These ships are manned and maintained by the contractor, but could have a small naval party on board to control operations, man and operate helicopters, operate hospitals, or a myriad of other support activities.

In a similar manner, Canada could lease ships modified or built specifically to perform the JSS or AOPS function and include in the lease whatever core manning and vessel maintenance it required. It is my understanding that there is a great deal of flexibility in the market, and the all-in cost might be surprisingly low compared with the way we do 'business' now. 🇨🇦

Maritime Security Conference Explores Navy-Coast Guard Interoperability

Ken Hansen

The 19th annual Maritime Security Conference took place at Dalhousie University 12-14 June, drawing 135 distinguished speakers and delegates. Participants from Canada, Norway, Britain and the United States examined the many rapidly changing strategic factors that are influencing the choices being made today to shape the future of Canada's fleets.

The conference, "Breaking the Box: Making Strategic Choices for Maritime Security Needs in the Twenty-first Century," was centred on three key questions:

- What is the strategic outlook for Canada?
- What are the factors that are prompting change elsewhere and suggesting change here?
- What balance of functions, characteristics and interoperability should be struck between the navy and the coast guard to fulfil their roles?

"Breaking the Box" referred to a passage from Peter Haydon's discussion paper "Why Does Canada Still Need a Navy," which was issued in 2007 as a means of focusing attention on national maritime capability to assert sovereignty and defend vital interests.

Panels provided strategic assessment through expert opinion and international examples of changing navy-coast guard organizations. The discussions indicated that the rate of change in the security environment is greater than the capacity to implement institutional restructuring. Nowhere is this clearer than in the Arctic, although the rate of change is also prodigious in the Far East. The pace at which the world's climate is changing is nothing short of breathtaking; a factor that was central to more than one presentation. Recognizing that the north is becoming an area of increasing strategic importance and economic potential, the lack of a navy-coast guard concept of operation for cooperation in the Arctic took on special meaning. While the representatives of both organizations expressed willingness to cooperate, there is no clear consensus as to how areas of responsibility should be established and whether or not overlapping capabilities is a beneficial concept.

Senator Colin Kenny was clear in his recommendations to the conference: the Canadian Coast Guard needs to acquire a constabulary role, including new legal powers and operational capabilities; the navy and the coast guard both need to be expanded significantly and re-balanced between the coasts, with the ice-breaking capability focused on the coast guard; and a national strategy aimed at developing a continuous shipbuilding program on both coasts is essential to our maritime security.

While several other speakers argued for similar changes to those suggested by Senator Kenny, or showed how the new security environment has provoked similar adjustments in their countries, the resource challenges and capability limitations of both fleets indicate that fundamental strategic change will entail major upheavals and will only come as the result of government direction. Until this happens, Canada's sea services will continue to struggle to meet their current obligations. Cooperation seems to be the best avenue for achieving interim enhancement of existing capacity, with full interoperability a mid-term goal. There are many impediments to the attainment of this goal, but the need for such change is based on real requirements that are recognized by both organizations.

The proceedings closed with the announcement of the theme for the 2009 conference which will continue this exploration of maritime interoperability from American, Canadian and Mexican perspectives. The discussion paper for this conference is by Dr. Frank Harvey entitled "Canada's Addiction to American Security: The Illusion of Choice in the War on Terrorism" (published in *The American Review of Canadian Studies* (Summer 2005), pp. 265-294), which explores the Canadian search for the right balance between interoperability and institutional autonomy in bilateral and international security arrangements.

Details can be obtained from Commander Ken Hansen, Centre for Foreign Policy Studies (ken.hansen@dal.ca), or the Centre's website at www.cfps.dal.ca. 🍷

Navy Veteran Honoured for Lifetime of Service

Jerrod Riley

National Deputy Director, The Navy League of Canada

Commander (Retired) Alec Douglas CD, PhD, RCN was honoured 28 May 2008 as recipient of the Robert I. Hendy Award for Maritime Affairs. The award, issued by The Navy League of Canada, recognizes individuals who have accomplished feats or achievements of national or international significance in the area of maritime affairs.

Commander Douglas joined the Royal Canadian Navy in 1951 and enjoyed a lively career at sea. He served in Her Majesty's Canadian Ships *Ontario*, *Swansea*, *Quebec*, *Penetang*, *Outremont*, *Ottawa*, *Kootenay* and *Fort Erie*. He also served as the Squadron Operations Officer for the Seventh Escort Squadron during the Cuban Missile Crisis. This story is one of the many great yarns Commander Douglas is eager to share, and it was largely for his detailed accounting of naval history that the Navy League chose to recognize him with this award.



Alex Douglas (left) receiving the Robert I. Hendy Award for Maritime Affairs.

While serving in the navy he also earned a Master's Degree in History from Dalhousie University and a Doctorate in History from Queen's University, eventually becoming Director of the History Directorate at National Defence Headquarters, a position he held until his retirement in 1994. He has taught at the Royal Military College, Duke University, Cambridge University and Carleton University, and become one of our most prolific writers of naval history. His works include: *Out of the Shadows: Canada in the Second World War* (with Brereton Greenhous); *The Creation of a National Airforce: The Official History of the RCAF, Volume II*; *The RCN in Transition. 1910-1985* (editor); *No Higher Purpose: The Official History of the Royal Canadian Navy, Volume II, Part I*; and *A Blue Water Navy: The Official History of the Royal Canadian Navy, Volume II, Part II* (both with Roger Sarty and Michael Whitby).

The Navy League of Canada (established in 1895) works to improve Canadians' understanding of the importance

of our oceans to the security and prosperity of our country. It has a presence in 260 Canadian communities and is best known for its work with the Sea Cadet and Navy League Cadet programs, which have 15,000 members nationwide. In recognizing the work of Commander Douglas, the League's Honourary Chairman, Rear-Admiral (Retired) The Honourable Fred Mifflin PC, CD noted Dr. Douglas' dedication to the study and preservation of Canada's rich naval heritage, proclaiming "Dr. Douglas' work to promote understanding of the importance of the Navy within our national history also helps to assure a future for our Navy. The more Canadians understand what the Navy does for them, the more likely they are to provide the moral and material support the Navy needs to keep doing its job." 🇨🇦

Book Reviews

The Galloping Ghost: The Extraordinary Life of Submarine Legend Eugene Fluckey, by Carl LaVO, Annapolis, Maryland: Naval Institute Press, 2007, 206 pages, index, black and white photos, ISBN 978-1-59114-456-4.

Reviewed by Ann Griffiths

As the subtitle reveals, this book chronicles the life of Eugene Fluckey, a much-decorated American submariner. Fluckey won four Navy Crosses, the Medal of Honor and the submarines he commanded sank more Japanese tonnage than any other submarines in the Second World War. He began at the US Naval Academy in June 1931 and left the US Navy as an Admiral. LaVO takes us through Fluckey's time at the Naval Academy – including a miraculous (and mysterious) improvement to his eyesight rooted in his stubborn refusal to allow bad eyesight to end his career in the navy before it began. We learn about Fluckey's early postings as the world slid into war in Europe and Asia. And we learn about his decision to put in for submarine duty, a decision which was based in part on the fact that as a redhead he burnt easily in the sun and figured that in a submarine he would have less chance of sunburn! It could have been a disastrous decision – the casualty rate for submariners (22%) was higher than any other branch in the US military (p. 129).

Fluckey began his submarine duty aboard *Bonita* but it is his exploits as the young Commanding Officer of *Barb* for which he is known. He was also known for his energy, enthusiasm and ability to make the submarine an effective weapon against the Japanese. He took risks but his crew had confidence in him so they never balked at the risks. Fluckey took suggestions from everyone and his innovative leadership allowed him to increase the efficiency and effectiveness of patrols. Under his command *Barb* destroyed numerous vessels and made audacious assaults – in one instance, he sent a party ashore to blow up a rail line, and in another *Barb* located and entered a secret harbour and under cover of darkness blew up enemy ships there. It was with these exploits in the war in the Pacific that he began his illustrious career.

LaVO has picked a good subject for his book – Fluckey was a talented, canny submariner and apparently an extremely likeable fellow. He was also a man of some contradictions. He passionately hated the Japanese. He wrote to his wife: "... what a great pleasure it is to eliminate Japs. Funny thing, ... I could never steel my heart enough to kill a rabbit – but these slant eyes aren't man nor beast, so it's a different

matter" (p. 95). And yet after the war, he and his wife set up, raised money for and continued to support an orphanage in Japan (and another in Portugal). Fluckey was a proud American and loved everything that his country stood for, and yet he hated Vietnam War protestors for expressing their opposition to the war – he referred to them in a letter as "hippies, kooks and peaceniks heavily aided, abetted and tainted by the Communists" (p. 166). As well, despite his love for his country as a beacon of democracy and freedom, he was, oddly enough, a very close friend and admirer (and a pallbearer at his funeral) of Portuguese dictator Antonio de Oliveira Salazar who ruled Portugal with an iron fist from 1932 until his death in 1968.

The Galloping Ghost is a well-written and interesting book – how could it not be with Fluckey as the subject matter – and yet it is somehow unsatisfying. There is no analysis of actions, no commentary about events, no discussion of the contradictions of the man, simply a recounting of events – this happened, then that happened and then that happened. Readers are left to pick out the contradictions and ironies of the subject themselves. As well, the time spent discussing certain incidents seems arbitrary. Thus, the descriptions of some of Fluckey's most audacious attacks on the Japanese receive roughly the same amount of space as the discussion of the merit badges he earned when he became an 'ambassador' for the Boy Scouts after the war. This gives us a good sense of the person as well as the submariner, but it makes the book somehow neither fish nor fowl. Submariners will want more information about the patrols for which he earned his reputation and less about his life outside the navy. General readers interested in the iconic Gene Fluckey might want the reverse. It would have been helpful, too, if the author had included a chronology of the significant events mentioned in the book so readers could refer to it to find the dates (which are sparingly given in the text).

I am undoubtedly being unfair to the author. I should accept this as simply a well-researched and detailed account of the life of a legendary US submariner. But, try as I might, I still feel unsatisfied by it. Nonetheless, I recommend *The Galloping Ghost* to anyone who is interested in the life of Gene Fluckey. 🍷

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Visit Broadsides, our online forum, and join the discussion about the navy, oceans, security and defence, maritime policy, and everything else. Visit <http://naval.review.cfps.dal.ca/forum.php>.

The Straits of Malacca: Gateway or Gauntlet? by Donald B. Freeman, Montreal, McGill-Queen's University Press, 2003, 288 pp, maps, bibliography, \$65.00, ISBN 0-7735-2515-7.

Reviewed by Doug Thomas

This book is an exploration of the past and present significance of one of the world's busiest and most hazardous shipping channels. Donald Freeman is well qualified to write this very thorough book as he is professor and chair of the Department of Geography at York University and has brought together secondary sources as well as some original material from the region through his research of local archives.

For centuries the Straits of Malacca, a narrow waterway between the Malay Peninsula and the Indonesian Island of Sumatra, has been both a major conduit for long distance trade between Asia and the West and one of the most dangerous areas for commercial shipping. Freeman examines the significance of the Straits as both a trade gateway and a chokepoint that has forced generations of mariners to "run the gauntlet." He has chosen to examine the interaction between the physical environment of the Straits area and the peoples who live and work in that vicinity.

A glance at a map clearly shows the strategic importance of the Straits of Malacca to a region comprising about one-half of the world's population, and three of its largest

economies (China, Japan and India). Speedy and safe passage by merchant shipping through this chokepoint is essential to delivery of energy supplies from the Persian Gulf and efficient international trade.

The author states in his conclusion that the Straits of Malacca "must be examined from diverse perspectives: as a gateway to trade that involves geographic, historical, economic, political and anthropological perspectives and as a gauntlet to shipping that involves physiographic, climatological, hydrological and technological considerations. The study of change – the historical perspective – enlivens the interdisciplinary approach and gives it a sense of context and continuance." Certainly, this study has stressed the themes of change and evolution in the roles and the growing significance of the Straits. Indeed, in the current era of globalization and Asian regional resurgence, it will not be a surprise if, in a few short years, the Straits of Malacca surpass the Straits of Dover to become the world's busiest and most important seaway.

This book appears to be well-researched and is full of detail. It is not an easy read – I would be surprised if it is not used as a textbook in university geography or perhaps shipping economics courses – but it is certainly thorough and I found the many maps very useful. For those requiring a detailed examination of this important shipping route, I highly recommend Freeman's book for inclusion in personal and institutional libraries. 🍷



Announcing the Winners of the 3rd Annual Bruce S. Oland Essay Competition

First Place

One Fish, Two Fish, Three Fish ... No Fish: Canada's Navy and the Global Fishery Crisis

Kate Bigney and Alexandre Wilner

Second Place

Northern Strategy Deficit: What to do with the Arctic Offshore Patrol Vessel?

Commander Scott Bishop

Third Place

An Undersea Identity Crisis: Evaluating Roles for Canada's Submarine Fleet

J. Matthew Gillis

Peter Mitchell Essay Competition 2008

The Sea Power Centre - Australia (SPC-A) is conducting the 2008 Peter Mitchell Essay Competition, which is open to all members of British Commonwealth navies (full time and reserve) of commander rank and below who have served at least 20 days in the 12 months prior to 29 October 2008.

Full details of the competition can be found at www.navy.gov.au/spc/mitchell.html; and enquiries should be directed to seapower.centre@defence.gov.au.



Four Restigouche-class destroyers in the early morning mist in Halifax in the late 1950s.

Yesterday's Navy

