CANADIAN NAVAL REVIEW

VOLUME 5, NUMBER 4 (WINTER 2010)

A New Era or the Great White Norm? Comparing Perspectives on Canadian Arctic Sovereignty

Future Canadian Security Challenges and Some Responses

The Amphibious Emergency Capability

The Canadian Navy and its Future Organic Air Capability

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

The *Canadian Naval Review* has three primary objectives:

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

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

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Credit: US Navy photo

*HMCS **Protecteur** participating in a strike group sustainment exercise off the coast of California photographed aft of the USN aircraft carrier USS **John C. Stennis**, 15 November 2009. Blue Diamonds of Strike Fighter Squadron (VFA) 146 Hornets are pictured in the foreground.*

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Could 2010 See Canada's Navy Rise Like a Phoenix?

The Chief of the Maritime Staff (CMS) is rightly aware that today's Canadian Navy needs to communicate, communicate and communicate. If it fails to communicate it will fail to justify its value to the people of Canada, fail to justify its future planned force structure and fail to redefine those enduring military capabilities which set it apart from the army or air force.

Could the stage be set for a naval comeback after its recent years in the doldrums? The year 2010 provides the navy with a rare opportunity to showcase itself to the world – 2010 is its centennial year, and it is the year before Canada withdraws from Afghan combat operations. Will this be enough for Canada to rediscover its status as a maritime country and for the navy to take up the baton of primacy in national operations? In my opinion, this is a unique opportunity – at the time of celebrating the old, the new is forged. The result could be a new navy built around capability rather than platforms, a new navy in tune with the political elite and at one with the security concerns of the people of Canada.

There is much to be positive about and considerable evidence to illustrate that Canada is rediscovering the importance of the maritime domain. In late July 2009, the Minister responsible for both defence and the Atlantic Gateway announced to a 200+ audience the federal government's commitment to building and maintaining a fleet of ships that will deliver national maritime security and services. This proactive and multi-agency approach outlined a political-industrial framework which will deliver the most comprehensive peacetime federal shipbuilding program in Canadian history. Minister of Defence Peter Mackay opened a consultation process which would see the government invest more than $40 billion to build more than 50 vessels over the next 30 years. But are they the right ships for a future characterized by global warming, increasing maritime insecurity, the continued increase of non-state terrorism and global organized crime?

There is no shortage of opportunities for the navy to communicate with other actors in the marine environment and to coordinate its activities with them. For example, an Arctic emergency workshop was held in Montebello, Quebec, 24-26 November 2009. Organized by the Company of Master Mariners and the Marine Institute of Memorial University, it brought together an impressive array of delegates from across a wide spectrum of maritime backgrounds. The delegates had considerable collective experience in incident response and maritime risk management. The fact that this knowledgeable group of people took the time to attend the conference suggests the growing importance of the Arctic region to a country with the world's largest coastline.

Photo: DND

Artist's impression of the Arctic Offshore Patrol Ship.

One thing was clearly illustrated by this conference – the competing demands of government departments and intra-agency coordination. If a ship runs aground in the Arctic, would the site be a crime scene, and thus the responsibility of the police? Would it be an environmental disaster, and thus the responsibility of Environment Canada? Would it be an incident of negligent shipping and thus the responsibility of the Transport Safety Board? How would the navy be involved? The answer depends both on whom you asked and how the question is phrased. As many people with personal experience recounted, conflicting demands of government agencies was a key lesson identified from the 1998 Swiss Air disaster. Eleven years later, has the lesson been learned?

A diverse and vibrant list of events is planned to allow all Canadians to celebrate the Canadian Navy's centenary with their service men and women throughout 2010. These events will include fleet reviews and unveiling of

national memorials to celebrate a proud institution which has survived World Wars, recessions and the post-Cold War peace dividend. This is a program which has been five years in the planning and could bring the navy into the homes of Canadians from Esquimalt to St. John's. For the CMS and his strategic communications staff, this centenary is manna from heaven. It is a gilded opportunity to recount the history of battles in the Atlantic, United Nations operations off Korea or in the Gulf War in the 1990s, and to talk about current enforcement operations from the Caribbean to Somalia.

Canada's withdrawal from combat operations in Afghanistan in 2011 offers the navy a unique opportunity to reassert its primacy for national defence missions and to take over from a battle-weary army. But this opportunity will need to be grasped by the naval leadership. Afghanistan has taught both the army and the air force the versatility of expeditionary operations. Together, they now have the experience of deployed operations far from Canadian soil for extended periods. The acquisition of the C17, CH47 and C130J also gives them a powerful strategic and operational airlift capability. Meanwhile, the navy waits, still desperate for a firm decision on the Joint Support Ship program and its inherent strategic mobility. If it remains silent, the navy's potential moment of glory could yet be snatched from its grasp by more astute and forward-looking colleagues from the other services.

Here the value of strategic communications becomes essential. As Corrie Adolph's article in the Fall 2009 issue of *CNR* (Vol. 5, No. 3) suggested, the navy has to communicate more effectively. Effective strategic communications is a two-way process in which discussion and open debate should be encouraged. For many commentators there has been a disappointing lack of dialogue about tomorrow's force structure. But let's not dwell on the past. Instead, we could look abroad for examples of countries which are united behind the concept of having a strong and versatile naval force. Countries like India, Australia and the United States herald the relevance of naval forces and engage in wide-ranging dialogue about their futures. The Royal Navy in the United Kingdom, on the other hand, hides modestly and accepts ever smaller slices of the national resource cake – this is Nelson's Britannic Isle that once ruled the waves!

Communication with Canadians and the interested marine community is not the only item that should be on the agenda for the navy. The future force structure should be determined by capability management requirements and not platform numbers and outdated doctrine. The navy must not let itself continue to be governed by doctrine

*The US Navy fleet support ship USS **Grapple** conducts deep drone and diving operations at the crash site of Swiss Air Flight 111 off the coast of Peggy's Cove, Nova Scotia, on 14 September 1998.*

that is not suitable for the new threat environment. The army's new counter-insurgency doctrine is at the centre of army operations and procurement, and shows a dynamic response to the new security environment. But where is the navy's equivalent that shows a focus upon enforcement operations such as drug interdiction, counter-piracy and peace support operations? Where is the move away from high-end warships designed for Cold War battles toward a mixed fleet that includes fewer frigates, more deployable minor warships and a strategic sealift capability? Where is the doctrinal shift towards delivering comprehensive maritime strategy? The army has adapted, the navy has not.

To conclude, the Canadian Navy should view its centennial year as a watershed moment, an opportunity for a doctrinal renaissance. The navy should make 2010 a year in which it discards the hubris that could make it irrelevant, follows the army's lead in redefining its role for the next generation, re-equips itself with the tools required, and ensures it is truly three-dimensional. The navy should be a formidable deterrent, a face of diplomacy and a military tool to develop the abilities of states in need. It is unlikely that the Cold War will return but it is certain that there will be threats and instability in the maritime world. Canada needs a navy that is optimized for the job of protecting Canada's trade, environment and coastal communities from whatever threats manifest themselves in the marine environment. If it achieves this – and communicates effectively at every opportunity – the Canadian people will endorse its use as a force for good. The navy must speak in order to resonate with a larger body of people. In short it must communicate, rather than wait in the hope that somebody in Ottawa will take notice.

So, could 2010 see Canada's navy rise like a phoenix? Yes, if the navy seizes the opportunity, and convinces Canadians that oceans matter to their security, prosperity and independence.

Dave Mugridge

2nd Place Essay in Bruce S. Oland Essay Competition

A New Era or the Great White Norm? Comparing Perspectives on Canadian Arctic Sovereignty

Matthew Gillis

It could be the stuff of the next political thriller – Russian submarines, treasures of diamonds and oil, exploration amidst harsh conditions and international vitriol. Yet Canadians need not look to any bestseller list for this tale, they need look simply to the north. The Arctic has become an issue of contention, since claims to sovereignty over the region were brought to the headlines as an issue during the 2006 federal election. For a country taking pride in peacekeeping innovations and multilateral dialogue, are the military procurement plans and vocal assertions over territory indicative of a foreign policy identity crisis? Do claims over Arctic land and water signal a departure from international stereotypes of a toothless Canadian foreign policy oriented around soft power initiatives?

Scholars of Canadian foreign and defence policy have long debated the role to be played in the Arctic. Dr. Rob Huebert of the University of Calgary suggests that Canadians today lie on the "cusp" of a major Arctic transformation in the senses of politics, the environment and industry.[1] Receding Arctic ice and high fuel prices have made exploration and exploitation of Arctic resources viable. Beginning with its election platform and continuing in several Speeches from the Throne, the Canadian government has stated a commitment to sovereignty over the Arctic and its resources.

The conditions of this sovereignty are matters of control and the promotion of Canadian interests and values in the region. To this end, the government has promised a number of military solutions, including construction of northern warfare training centres and Arctic patrol vessels. For a state that, as a so-called 'middle power,' has had success in maintaining good relations with other states through more diplomatic means such as multilateral agreements, the many military initiatives tabled thus far are interesting cases for Canadian foreign policy studies. Although some critics, such as Commodore (retired) Eric Lerhe, have applauded government promises to project power in the Arctic with new icebreakers and aircraft,[2] other scholars like Elizabeth Young have identified a chance to pursue a more 'Canadian' idea and establish an international Arctic regime to manage this region in a fair and cooperative manner.[3] Will Canada pursue the hard power solutions and veer from the path it has beaten, or will it follow the more traditional, soft power methods and play to time-proven strengths?

This article argues that while current rhetoric in this contemporary debate can be seen as presenting a substantial deviation from historical Canadian international posturing, Canada lacks resources and a tangible plan to implement the more aggressive options that have been tabled. Canadian success in the Arctic may lie in perpetuating the Canadian international stereotype and 'middle power' methods of international agreements and negotiation. This article provides an analysis of the historic and current context of the Arctic in government defence planning, a review of the federal government's rhetoric and considerations of how it pertains to Canadian foreign policy, and offers conclusions on future roles for Canada in the north.

Historical Perspectives on the Arctic

With the goal of understanding present government rhetoric about the north, it is necessary to place today's situation in context by considering the Arctic from an historical perspective. In many ways – particularly government initiatives and options available – the situation with which Canada is faced today is not wholly unique. The following case studies can help in understanding the contemporary Arctic debate.

The Arctic was considered to be an unimpressive and unimportant region in the early decades of Canadian history. The Second World War saw some skirmishes close to the Arctic Circle on shipping routes to and from the Soviet Union, but otherwise the Arctic remained out of Canadian consciousness. As the Cold War began and

Photo: Lieutenant John D. Mahoney, Collections Canada

*Anti-aircraft gun crew at action stations on the destroyer HMCS **Algonquin** in Arctic waters, 20 April 1944.*

nuclear weapons gained prominence, and with the Arctic being the most probable route for nuclear missile and bomber exchanges, investments were made as part of the North American Air/Aerospace Defence (NORAD) agreement. The Distant Early Warning and Mid-Canada lines scanned the skies over and near the Canadian Arctic for Soviet incursions. These joint US-Canada establishments signalled a starting point for 'internationalization' of the Arctic Circle.[4]

The Arctic arguably first became a critical Canadian issue in 1969 when the SS *Manhattan*, an oil tanker modified with an icebreaking prow, traversed through what Canadians considered 'territorial waters' in an effort to prove that the Northwest Passage was navigable. The *Manhattan* successfully broke through extremely thick ice and traversed into the Pacific at Prudhoe Bay, Alaska, before making the return trip to New York City.[5]

The Canadian response to the *Manhattan* incident took form in the creation of the *Arctic Waters Pollution Prevention Act* (*AWPPA*). *AWPPA* established a claim on waters extending 100 nautical miles from Canadian territory. Additionally, it empowered the Canadian government to interdict, seize or bar passage of a ship travelling in Arctic waters under certain conditions.[6] As the passage of the *Manhattan* prompted concerns of increased Arctic traffic and of environmental catastrophe in the event of a spill, these conditions were devised around matters of pollution and safety.

The sovereignty question surfaced again in 1985, when the US Coast Guard icebreaker *Polar Sea* traversed the Northwest Passage without seeking permission from the Canadian government.[7] The *Polar Sea*'s trip through the passage prompted a range of military promises from the Conservative government of the day to secure Canadian Arctic sovereignty. Interestingly, government rhetoric of the day bears a surprising resemblance to that of recent years. Then-MP Joe Clark delivered a speech to the House of Commons in September 1985 enunciating the government's view of the Arctic. According to Clark:

> The Arctic is not only a part of Canada, it is part of Canadian greatness. The policy of the Canadian government is to preserve the Canadian greatness undiminished. Canada's sovereignty in the Arctic is indivisible. It embraces land, sea and ice…. The policy of the Government is to maintain the natural unity of the Canadian Arctic archipelago and to preserve Canada's sovereignty over land, sea and ice undiminished and undivided.[8]

Credit: Internet

*USCGC **Polar Sea** in Arctic waters.*

These policies would come to range from military to diplomatic, and while some were successful, others never made it beyond the rhetoric of Cabinet. These historical options provide a useful lens when gauging modern Arctic policy.

The military response was probably best outlined by the 1987 defence White Paper, titled *Challenge and Commitment*. The White Paper, for the first time, advocated a "three

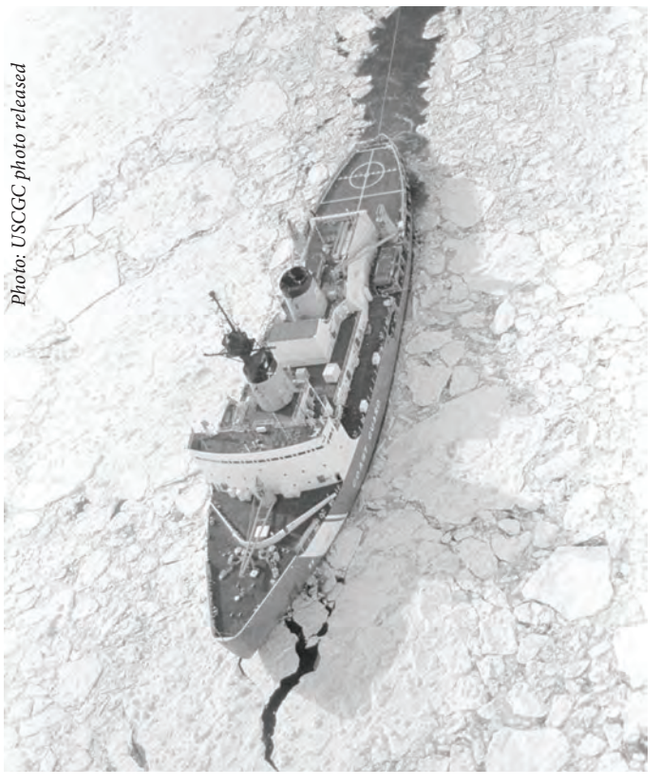

Photo: USCGC photo released

*USCGC **Polar Sea** transiting Arctic waters. **Polar Sea** and her sister ship **Polar Star** are designed to break 6.5 feet of ice at 3 knots.*

ocean" approach, and brought the Arctic Ocean into the sights of the Canadian Forces. The paper aimed to give Canadian defence some fangs in the north through a number of Arctic-oriented schemes. These included improving oceanic surveillance capabilities with satellites, underwater listening posts and towed sonar array vessels, modernizing the DEW line to form the Northern Warning System (NWS), constructing the Polar 8 heavy icebreakers and, perhaps most famously, acquiring 10-12 nuclear-powered submarines for the Canadian fleet. These submarines, the White Paper states, would not be nuclear-armed, but would nonetheless be a critical aspect of Canadian presence in the north, being "the only vessel able to exercise surveillance and control in northern Canadian ice-covered waters"[9] thanks to their high speeds, manoeuvrability and near limitless endurance.

Photo: MCpl Blake Rodgers, Formation Imaging Services Halifax, Nova Scotia

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

With the exception of the NWS upgrade, which was a joint Canada-US project anyway, these options did not come to fruition. This was due to fiscal concerns in Canada, chiefly a ballooning deficit (approximately $30 billion) and growing national debt at the time. The decision to cancel these initiatives coincided with closure of seven military bases, termination of 3,400 jobs and cuts to other government programs – obviously, the economic situation did not support military commitments in the Arctic.

However, several soft power initiatives were successful. The 1988 Canada-US Arctic Cooperation Agreement, while not decisively addressing matters of Arctic ownership, mandated that American icebreakers would seek consent from Canada before transiting through Arctic waters claimed by Canada to be internal waters. In this sense it was an agreement to disagree while providing for better interoperability and understanding between the coast guards of the United States and Canada.[10] In the most successful example of multilateral negotiations, a 1991 meeting in Ottawa of delegates from Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the United States established the Arctic Council, a high-level intergovernmental forum. A significant Canadian innovation, the Arctic Council has a mission of

> [P]rovid[ing] a means for promoting cooperation, coordination and interaction among the Arctic States, with the involvement of the Arctic indigenous communities and other Arctic inhabitants on common Arctic issues, in particular issues of sustainable development and environmental protection in the Arctic.[11]

Today, the Arctic Council convenes twice a year, facilitates dialogue and action among member states and encompasses a number of sub-groups devoted to more specialized Arctic matters, such as emergency preparedness and marine protection.

This council and the aforementioned internal and international agreements are the closest Canada has come to establishing an Arctic regime for itself. The hard power, military-oriented proposals, as enterprising and promising as they are, are beyond Canada's capabilities and resources. Given its limited resources, Canada has had a penchant for what Huebert calls "multilateralism on the cheap" – international councils and symbolic laws like *AWPPA* and the Arctic Cooperation Agreement take good ideas

that require minimal capital spending or procurement to be implemented and produce appreciable results. These initiatives are congruent with the perceived Canadian role of being a middle power which Canada has garnered through participation in multilateral organizations, peacekeeping efforts and other international agreements like the Ottawa Treaty to ban landmines.

These soft power perspectives are echoed in many scholarly works of the late 1980s and early 1990s. Authors like Suzanne Holroyd of the RAND Corporation pointed to strengthened continental defence against the Soviet Union through better coordination between the United States and Canada in the Arctic, exchange of officers and sharing of research and development costs with the stipulation that some sovereignty must be conceded.[12] Others noted a deficit in the availability of institutional mechanisms for managing the Arctic,[13] which the Arctic Council and other agreements have begun to rectify. Others touched upon the importance of arms control in the Arctic and imposing limits on deployments of missile-carrying submarines to preserve stability in the region.[14] However, despite the fact that *hard* power and financial resources were unavailable in 1987 to support the military focus on the Canadian Arctic, *soft* power perspectives were not considered by the government in great depth.

Today the strategic situation has undergone changes, with new players attaching new interest to the Arctic. Further, Canadian politics have also changed – after a long freeze, the Arctic is once again a policy priority with new approaches and ideas. Therefore, these historical perspectives only grant so many answers.

Contemporary Perspectives on the Arctic

The Arctic returned to Canadian minds when the Conservative Party, under Stephen Harper, prioritized sovereignty in the north in its 2006 federal election campaign. The election platform outlined a 'Canada First' strategy. Among other defence initiatives, the strategy included a brief list of objectives to meet in the Arctic, chiefly the introduction of three new armed icebreakers, a deep-water port near Iqaluit, an Arctic sensor system employing underwater listening posts, unmanned aerial vehicles to be tasked with surveillance out of CFBs Comox and Goose Bay, an Arctic warfare training centre, increasing size and capability of the Canadian Rangers, and new Arctic search and rescue aircraft.[15]

Since 2006 when the Conservatives took power in Ottawa, election promises have slowly trickled out into procurement plans. All things, however, have not materialized. In 2007 Harper announced plans to proceed with establishing a CF Arctic training centre in Resolute Bay, an overhaul of the Canadian Rangers, and construction of a deep-water port in Nanisivik. Yet the armed icebreakers evolved into Arctic/Offshore Patrol Vessels (AOPVs) (a concept which remains ambiguous) and no further commitments have been made public. Further, a comprehensive Arctic strategy beyond basic procurement plans failed to materialize in the Canada First Defence Strategy document of 2008.

As any plans for further initiatives are tweaked and delayed, and delayed some more, the government has still apparently remained committed to Arctic sovereignty. The 2007 Speech from the Throne re-affirmed the government's stance, yet made another course change – now,

Photo: Cpl Dany Veillette, Canadian Forces Joint Imagery Centre, Ottawa, Ontario

*Arctic Response Company Group soldiers conduct an amphibious landing from HMCS **Toronto** and CCGS **Pierre Radisson** at Iqaluit during **Operation Nanook** 09.*

Photo: Jeannine Leclair, Defence Construction Canada

*CCGS **Terry Fox** alongside existing berthing facility in Nanisivik. Located more than 1,000 nautical miles by sea north of Iqaluit, the new facility at Nanisivik would serve as a staging area for Canadian vessels on station in the high Arctic, extending their range during the navigable season.*

the government is interested in environmental research and seafloor mapping.[16] Mapping the Arctic seabed is a step away from hard power, unilateral designs on the Arctic and closer to the soft power models of negotiation, institutions and cooperation. This is because mapping the seafloor is a major step towards sovereignty through the avenue provided by the United Nations Convention on the Law of the Sea (UNCLOS). Article 76 of UNCLOS provides a basis for a coastal state to make sovereignty claims by surveying its continental shelf, procedures upon which Russia and Denmark have already embarked.

This appeal to institutional measures likely marks a further transformation in Arctic policy. The military measures proposed, although appealing in the name of Arctic control and presence, remain ambiguous and expensive. As in 1987, the government will run a substantial financial deficit in 2009 and 2010 and matters which were not as much of a concern in 1987 – such as the heavy burden of Afghanistan, the impending DDH-280 rust-out, and replacements for the aging CF-18s – are new challenges to be juggled.

Photo: USCG Released

*Scientists conduct an acoustic survey while on board USCGC **Polar Sea** during a west Arctic deployment, November 2009.*

Thus, it should not be surprising if Huebert's concept of "multilateralism on the cheap" persists over the next few decades. The Canadian government has an option of waiting more than 15 years to design, build, commission and deploy the AOPVs, the missions and mandates of which have yet to solidify, but it also has an option to participate to a greater extent in the UNCLOS agreement and forums like the Arctic Council. The international forums are where our Arctic neighbours such as Russia are waging their battles. These avenues, which Canada helped to establish and in which Canada is a seasoned veteran, provide our country with an undeniable home field advantage.

Today's Arctic: A New Era or the Great White Norm?

This section compares the historical and contemporary perspectives and argues that today's government rhetoric about securing sovereignty in the Arctic does not represent the start of a new chapter or deviation in Canadian foreign policy. What looks like a major Arctic transformation rooted in a seemingly new approach by the Canadian government in reality shares multiple similarities with the situation in the 1980s.

Canada stands at risk of deviating from its role as a middle power – not quite a major state but still wielding influence, the great compromiser. As outlined by John Holmes in the particular context of the Arctic, Canada has an "effective and highly constructive role ... 'helpful fixing' of the highest order, a worthy contribution to international structure."[17] Canada has pursued this role in the Arctic and around the world through careful appeal to global institutions and partnerships. The hard power and unilateral approaches proposed by the Harper government, then, could be seen to represent departures from these historic norms of Canadian foreign policy.

Outside of the Arctic, Canada has never unilaterally claimed contested territory and pledged to enforce its claims with military assets. Military deployments, such as in Afghanistan or Kosovo, have been backed by multilateral mandates, whether by the United Nations, NATO, or other collective organizations. If the Canadian government holds to its promise for a strong Arctic presence, then we may perhaps observe a new precedent in Canadian foreign policy. But whether the government will go beyond rhetoric to produce results remains open to question. There are a number of reasons to believe that the government will probably return to soft power advocacy and diminish its military or hard power commitment to the north.

The first reason is that *no strictly military Arctic regime*

Photo: U.S. Geological Survey

CCGS ***Louis S. St. Laurent*** *(left) and USCGC* ***Healy*** *(right) during a scientific expedition to map the Arctic seafloor, 1 September 2008.*

has been attempted or seriously posited. For all the patrol ships, aircraft and underwater listening posts that have been proposed, no consensus exists about how to handle intrusions into what the government considers internal waters. The 'Canada First' strategy has few answers beyond procurement plans, but the issues that must be grappled with are difficult. After all, what kind of response is warranted when a Russian submarine is detected traversing under the Northwest Passage? Can it be sunk? What about American submarines? The counter-argument is certainly that presence is a necessary component of control and ergo sovereignty, but with no mandate on how to handle intruders, it is likely that a presence would be little more than for show. In the case of the *Polar Sea*, failing to ask for Canadian permission inspired much anxiety in Parliament but the passage of the breaker was ultimately allowed. This is no way to assert a claim over territory.

The second reason is that *nearly identical promises were made in 1987 and very few came to fruition*. The situation today is admittedly different in some ways – access to the Arctic is increasing and new weight is being placed on Arctic resources and transportation. Yet the Arctic is still a vast area with challenging conditions, and Afghanistan will occupy the attention and resources of the Canadian Forces until at least 2011, and the current global economic crisis has led to a bleak outlook for future federal budgets. Funding the military's revitalization, a continuing role in Afghanistan, and expansion into the Arctic is a tall order, and it is questionable whether the government can afford to perform all of these tasks.

The third reason is that *the multilateral avenues for securing Canadian Arctic sovereignty are inexpensive and play to Canadian talents*. As described above, the UNCLOS approach is being employed by states with Arctic claims. Canada has already made significant innovations in legal approaches to the Arctic with *AWPPA* and the Arctic Council. The home field advantage provided by Canada's experience in pursuing multilateral agreements is substantial. The counter-argument to this is that not all states appeal to multilateral avenues. The United States, for instance, is a signatory of the UNCLOS agreement but has never ratified it and as a result is not likely to acknowledge claims to sovereignty made on the grounds of UNCLOS. Yet states that have not signed and ratified the agreement are in a small minority and the players with designs on

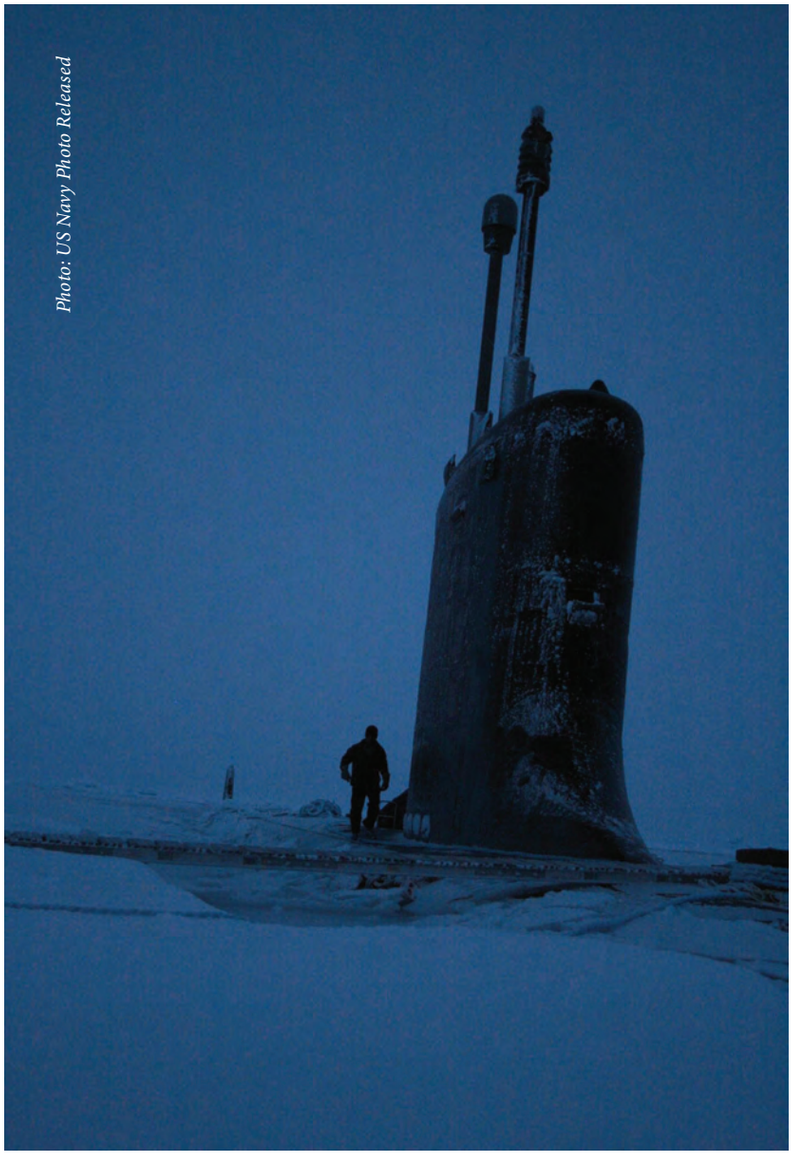

Photo: US Navy Photo Released

*A crew member inspects the deck of the **Virginia**-class fast-attack submarine USS **Texas** after it surfaced in the vicinity of the North Pole 13 October 2009.*

the resources of the Arctic – Denmark and Russia – have signed and ratified UNCLOS.

Conclusions

Canadians find themselves on a ledge looking down towards a new brand of foreign policy, one potentially using military force to stake a unilateral claim over a valuable piece of territory. Yet, as was the case in 1987, it will not be surprising if the government inches back towards the tested and true Canadian methods of multilateralism and soft power. This is not to argue that the hard power initiatives do not have a place in the north. While a strong military force is necessary to pursue unilateral claims over the Arctic, if Canada's claims are acknowledged and commercial and industrial traffic continues to increase, a constabulary force – the navy, the coast guard, or some combination of them – will be necessary to establish control of the Arctic, and to further the protection and promotion of Canadian interests and values. Efforts to build icebreakers and deploy surveillance systems to the north should be applauded as the critical next step following successful multilateral agreements over Arctic ownership.

Although these hard power approaches are the Harper government's primary answer to this contemporary debate, this article has argued that they will not remain so for long. Canada can and should employ its strengths on the world stage to secure control over the northern reaches of its territory – and Canada's strengths are soft power approaches, not hard power. If Canada does not play to its strengths, there is the possibility that it will be shunted aside in the race for the control of this vitally important region.

Notes

1. Rob Huebert, "Canada's Arctic Policy," presentation made at Centre for Foreign Policy Studies Seminar Series, Dalhousie University, Halifax, 7 November 2007.
2. Commodore (Retired) Eric Lerhe, "Arctic Patrol Vessel Announcement," Broadsides Forum, available at http://naval.review.cfps.dal.ca/forum/view.php?topic=2.
3. Elizabeth Young, "An Arctic International Regime," in R.B. Byers (ed.), *Strategy and the Arctic* (Toronto: Canadian Institute of Strategic Studies, 1986), pp. 113-114.
4. Gail Osherenko and Oran R. Young, *The Age of the Arctic: Hot Conflicts and Cold Realities* (New York: Cambridge UP, 2005), pp. 24-25.
5. "The Manhattan's Epic Voyage," *Time Magazine*, 26 September 1969, available at www.time.com/time/magazine/article/0,9171,844952,00.html.
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Future Canadian Security Challenges and Some Responses

Eric Lerhe

Despite the 20-year horizon of the Canada First Defence Strategy (CFDS) and the agreement in Parliament that Canada's current commitment to Kandahar will cease in 2011, there is no clear vision for where Canadian defence will go.[1] One option is land-centric and has the Canadian Army 'resetting' during a brief operational pause post-2011 and then returning to this type of large failed-state or nation-building mission. Another calls for balanced army, navy and air force capabilities with an equal focus on domestic and overseas security operations. The final view is that provided in the CFDS that claims both of these options are viable within the funding it has assigned.[2] This article looks at these proposals and then assesses which best addresses the security challenges Canada will face.

The first view argues that Afghanistan-like deployments in support of the world's many failed states are the future. As General Andrew Leslie noted in 2007, "[l]et's not kid ourselves, it is logical to expect that we will go somewhere fairly similar to Afghanistan and do much the same sort of activity."[3] Canada has showcased this new foreign policy posture in Afghanistan, an operation General Rick Hillier described as "a glimpse of the future."[4]

This focus would call for increasing the size of the armed forces to 69,000 regular and 30,000 reserves, and the CFDS hints that most of these increases will be for the army.[5] This vision would require the $5 billion in new land-combat vehicles announced in July 2009 with the possibility that $2 billion would still be needed. It is not clear whether the $5 billion 'resets' all the vehicles prematurely exhausted due to operations in Afghanistan or whether a further $1-2 billion would be required. Finally, these personnel and equipment increases suggest that after a brief rest for the army, Canada would be able to resume commitments that would look like the current 2,950 person Afghanistan commitment.

While our Afghanistan commitment has given us increased recognition within NATO and, most importantly, in the United States, there are problems with this model. First, it is a costly mission in terms of blood and treasure. I will focus on the financial costs here. The Parliamentary Budget Officer demonstrated that the real incremental cost of Afghanistan operations in 2007 was between $1,689-1,912 million per year. He also estimated the total *military* costs of the Afghanistan mission for 2001-2011 will range from $11 to 14 billion.[6]

Canadian governments are increasingly unwilling to provide the Department of National Defence (DND) with additional funding for rising incremental costs in Afghanistan. The Paul Martin government had concerns with the size of the Kandahar force being proposed by General Hillier in 2005 and would only fund 85% of its cost. To deploy the 'full package option,' General Hillier had to fund the remainder by making cuts elsewhere to the defence department. The Harper government became even more hard-nosed. In 2007 it only provided DND with 29% of the direct costs and signalled that in 2008 it would eliminate even that.[7] As a result, the baseline defence budget bore ever more of the Afghanistan expenses.

This led to reports of sustainability problems across the three services. As a result, one has cause to doubt the CFDS promise that Canada can produce a "balanced, multi-role and combat-capable force that will give the Government the necessary flexibility to respond to a full range of challenges in the future" while simultaneously maintaining a large overseas land commitment like Afghanistan.[8] Quite simply, Afghanistan appears to have consumed too much of DND's attention and funding.

To no great surprise, defence contractors walked away from projects like the Joint Support Ship and the *Halifax*-class modernization project because the government provided too little money for the capabilities being called for.[9] This reinforced the view that dollars assigned for new equipment within the CFDS are, if not inadequate, barely sufficient to maintain a combat-capable army, navy and air force. It also demonstrated that the plan lacked flexibility and any unforecast capital demands by one service would have to come at the cost of another service.

At this point, there is enough evidence to reject any suggestion that we can maintain a "balanced, multi-role and combat-capable force" on the land, sea and air while maintaining an army designed to repeat missions similar in size to the Afghanistan mission. The choice is therefore between a land-centric failed-state focus and broader combat capability. The rest of this article examines which

of these options best addresses the challenges Canada faces.

Challenges and Threats

The task of assessing the challenges a Western state like Canada faces has been assisted by the recent release of a series of government-issued studies by defence and foreign affairs institutes. In Table 1, I have plotted what the Canada First Defence Strategy (CFDS) and the United Kingdom's National Security Strategy (UKNSS) consider the dominant threats and challenges. To these I added the views of the Canadian Defence and Foreign Affairs (CDFAI) report *A Threatened Future: Canada's Future Security Environment and its Security Environment*, and the Noaber Foundation's *Towards A Grand Strategy for an Uncertain World* (known as the Naumann Paper after its lead author General Klaus Naumann, former Chairman of NATO's Military Committee). The table shows surprising agreement on the range and type of threats Western states face.

Table 1. Threats Faced by Western States

Threats	CFDS	CDFAI	UKNSS	Naumann
Fragmentation/ failed states	X	X	X	X
State-based threats		X	x	X
Globalization	X	X	X	X
Terrorism	X	X	X	X
Organized crime	X		X	X
Nuclear proliferation	X	X	X	X
Climate change	X	X	X	X
Energy security	X	X	X	X
Demographics/ poverty	X	X	X	X

Sources: CFDS; United Kingdom, The National Security Strategy of the United Kingdom, "Security in an Interdependent World" (London: Cabinet Office, March 2008); J.L. Granatstein, Gordon Smith, Denis Stairs, *A Threatened Future: Canada's Future Security Environment and its Security Environment* (Calgary: Canadian Defence and Foreign Affairs Institute, Fall 2007); General (ret'd) Klaus Naumann, et al, *A Grand Strategy for an Uncertain World* (Lunteren, Germany: Noaber Foundation, 2007).
Note: The smaller 'x' indicates that the report judges the threat from other states as 'very low' but the re-emergence of such a threat cannot be ruled out.

Fragmentation/Failed States

Table 1 shows agreement on the challenges posed by failed states. There is, however, no agreement on what defines a failed state or how the condition can be altered. The number of failed states is small and few of these directly affect Canadian interests. Afghanistan is one that does,


Photo: Internet

Double-decker bus destroyed during the 7 July 2005 coordinated suicide attacks on London's transportation network. Four of the eight alleged bombers were British-born Muslims.

but there is now doubt over our actual ability to improve its status especially by relying on military means.

Similarly, arguments that suggest the West stop terrorists by engaging them 'over there' are weakened by the rise of homegrown terrorists motivated by the West's very efforts 'over there.' The Canadian Security and Intelligence Service has suggested that the threat has shifted to "locally born youth or those who moved to the West at a young age," and within this group "the conflicts in Afghanistan, Iraq and other areas are often cited as justification for Jihad."[10] We must not succumb to the demands of such groups, but Canada must seriously assess the value of Afghanistan as a model for the future in view of these difficulties.

State-Based Threats

The strategic assessments by the private institutes were clear on the military competition that will come from China and Russia – the government studies were more diplomatic. Most would accept that cooperation with these states is as likely as competition. Nonetheless, when Chinese or Russian national interests collide with those of Western states, they will not hesitate to defend the more critical of those interests with military force. Paul Kennedy and Robert Kagan argue that the force they are most likely to employ will be naval.[11]

China and India present the most interesting cases largely because of their focus on naval investments. Both countries lost their independence to sea-borne Western invaders and they do not want this to recur. In addition, the Chinese government now recognizes that economic dominance and global influence have historically been underwritten by naval power and is building to follow the Mahanian model and instructing its citizens on the theory.[12] The West seems to have lost this understanding as seen in the decline in warship numbers everywhere.

Yet when vital interests of states do collide as they did in Georgia in 2008, the US response was to send a destroyer. Russia responded to this by sending a naval task group to Venezuela and Canada sent HMCS *Ville de Quebec* to the Black Sea as part of a NATO Standing Maritime Group.

Photo: Internet

Russian soldiers during the conflict in Georgia, 2008.

NATO ultimately did not use the force to reinforce the American response, but it was ready to do so.

Globalization

Ville de Quebec also participated in the centuries-old task of ensuring the safety of global maritime commerce. This task recognizes that Canada's economic well-being is tied to sea-borne trade and that trade requires protection. More than 90% of the world's volume of trade moves by sea in some 50,000 merchantmen.[13] The world economy is particularly reliant on the unrestrained flow of oil. Even with an extensive land border with the United States, one-fifth of all Canadian trade with it moves by sea. The remaining 95% of the commodities we export moves through Canadian ports that sustain over 250,000 Canadian jobs.[14]

That system is, however, vulnerable to disruption and the effects of even minor interruptions can be dramatic. In 2002, for example, an 11-day strike in the US Pacific coast ports tied up over 200 ships and 200,000 containers. Within weeks, a Toyota/General Motors plant in California, Honda plant in Ohio and Mitsubishi plant in Illinois had to shut down.[15] This brief but total restriction on their trade with the United States cost Hong Kong, Malaysia and Singapore some 1.1% of their annual Gross Domestic Product.[16]

Photo: Internet

A man gets himself and his cow out of the path of a tank from Georgia's breakaway Abkhazia region, August 2008.

Another challenge related to globalization is the flawed distribution of its benefits. Some regions do not benefit from global trade, and globalized communications only serve to highlight the disparities. Tools like the internet provide a means of organizing violence against the West and the often-corrupt local governments that are perceived as its allies.

Terrorism and Organized Crime

The terrorism, crime and piracy that issue from weak states excluded from the global economy are often considered only from the point of view of the West's prosperity or safety. This is understandable. Yet this focus ignores a far more insidious range of consequences that affect failed, fragile and fragmented states.

The 2001 bombing of USS *Cole* in the Yemeni port of Aden and the attack on the tanker *Limburg* off that same port resulted in a tripling of the cost of maritime insurance for Yemini ports. That effectively shut them down for an extended period. Thus two terrorist attacks hazarded most of the trade of this already deprived state. Off Somalia, pirates do not just attack Western shipping – *Ville de Quebec* escorted World Food Program aid that feeds some two million Somalis. The damage does not end there as this recent surge in piracy has the potential to shut down the ports and trade from Yemen, Somalia and Kenya to Tanzania as a result of rising insurance rates. Terrorism and crime are inflicting more direct and more serious costs on the developing regions than they are on the West.

Increasing attention is being paid to the economic factors that create and sustain the wars and insurgencies that dominate failed states. In these areas normal economic activity is often replaced by a sub-economy where various groups engage in illegal trading, protection rackets and the creation of monopoly conditions for trade that they then dominate. Stephen Metz argues that "[c]ontemporary insurgencies are less like traditional war where the combatants seek strategic victory, they are more like a violent, fluid, and competitive market."[17] The combined terrorist/criminal class profiting from the market has every incentive to ensure that the instability continues indefinitely.

One is safe in assuming that allowing those states to participate in the world economy will be as productive in countering insurgency, terrorism and organized crime as direct military action. Admittedly, there will be times when insurgent control of the victim state must first be dislodged by ground combat. But one would be wise not

Credit: Internet

*The French oil tanker **Limburg** on fire after a small boat loaded with explosives rammed into the ship, 2 October 2002.*

to delay those forces that will permit the creation of a real economy, and here naval forces are already playing a direct role.

Nuclear Proliferation

Prior to taking up anti-piracy duties off Somalia, *Ville de Quebec* was tasked to NATO's *Operation Active Endeavour*. This operation supports a NATO-led effort to monitor shipping in the Mediterranean and *Ville de Quebec* was the third Canadian ship to do so. A significant element of *Active Endeavour* is tacit support to the Proliferation Security Initiative (PSI) that seeks to curb or interdict the spread of nuclear, chemical and biological weapons and their delivery systems.[18] The successes of the PSI are not loudly trumpeted but this program has been credited with over two dozen interdictions of material destined for Iran's suspected nuclear weapon program.[19] In 2003, a precursor effort resulted in the interdiction in the Mediterranean of the vessel *BBC China* loaded with a cargo of centrifuges bound for Libya's covert nuclear weapons facilities. This seizure was credited with pushing Libya into abandoning that project and allowing outside verification of its cessation. This interdiction also provided the public evidence needed to spur Pakistan's arrest of Dr. A.Q. Khan, the head of that state's nuclear weapon project and the suspected supplier of nuclear programs in Libya, North Korea and Iran.

There are alternate methods of dealing with nuclear proliferation that range from diplomacy to invasion. However, defence analysts Phillippe Lagassé and Paul Robinson argue that "[o]f all the roles that the CF can play in counter-proliferation, the navy's is the most cost-efficient and effective."[20]

Climate Change and Natural Disasters

Naval forces also enjoy an ability to reconfigure rapidly from security tasks to other tasks such as disaster relief. In 2005 Canada dispatched a four-ship task group that included a Canadian Coast Guard vessel to assist after Hurricane Katrina. They joined a force of over 17 naval and amphibious vessels whose tasks went well beyond the delivery of relief supplies – including, for example, medical treatments, production of clean water and emergency power generation.

Evidence suggests that these type of deployments will become more common – the scientific community links recent rises in sea surface temperatures to the increasing intensity of hurricanes and cyclones.[21] As a result, over the last five years, navies have been called to the 2004 Asian tsunami, New Orleans after Hurricane Katrina in 2005, Bangladesh after the 2007 cyclone, Burma after Cyclone Nargis in 2008, and Haiti after a 2008 hurricane. They also joined in the post-earthquake relief operations in Pakistan in 2005 and Peru in 2008. The disaster relief task

Photo: MCpl Colin Kelley, DND

Members of the Fleet Diving Unit Atlantic and Pacific prepare to clear a waterway of hazards left by Hurricane Katrina in Mississippi, 18 September 2005.

Photo: Lt (N) Kris Phillips, Navy Public Affairs

Members of the naval construction team deployed to the Gulfport/Biloxi area following Hurricane Katrina build one of 50 shelters to provide temporary accommodation to the homeless, 27 September 2005.

Photo: Pte Jodie Cavicchi, Formation Imaging Services Halifax

*HMCS **Athabaskan** and CCGS **Sir William Alexander** depart Halifax Harbour for the US Gulf Coast to provide humanitarian assistance to the victims of Hurricane Katrina, 6 September 2005.*

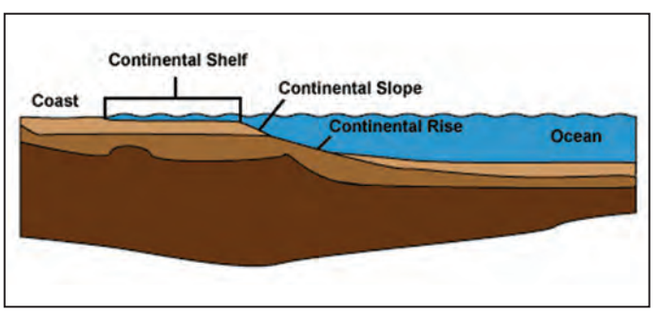
is increasingly being seen as a core mission for Western navies.

In addition to their rapid transit ability and significant lift assets, the ability of naval forces to operate without increasing the load on limited, overloaded or compromised land-based airfields, roads and rail links was critical to the 2004 tsunami relief effort. The American naval task groups that routinely deployed in the area brought shallow-water craft and, most critically, over 100 helicopters that delivered initial relief supplies to the most damaged regions of Indonesia and Sri Lanka. The ability of naval forces to lie well off the coast and not establish a highly visible presence ashore was seen as an additional benefit in states sensitive to any intrusion on their sovereignty.

Energy Security

Climate change is also having an impact closer to home although the security challenge has been quite different. In the Canadian north global warming is reducing the ice cover sufficiently to allow the occasional unassisted transit of the Northwest Passage, and this trend is accelerating. Neither the United States nor Europe accepts the claim that these are internal Canadian waters, and we can expect challenges to our ability to control passage through these waters.

Credit: Internet



Cut-away diagram of continental shelf.

Less concern, however, has been expressed over the greater challenges Canada may face over ownership of the resources that lie under the Arctic waters. It is likely that the Arctic seabed contains 400 billion of barrels of oil and gas – 25% of the world's reserves – and global warming may reduce the ice cover sufficiently to permit their extraction. This has encouraged the five states bordering the Arctic to extend the area under their sole national jurisdiction using the procedures contained within the United Nations Convention of the Law of the Sea (UNCLOS). These provisions permit the extension of a state's offshore Exclusive Economic Zone (EEZ) from 200 nautical miles up to a distance of 350 miles if the geological conditions suggest the state's continental shelf extends that far. Under this process, it likely that the combined claims of these states will encompass over 90% of the Arctic Ocean.

The fact that the five Arctic states are establishing their claims within the appropriate UN legal regime means those who wish to challenge these developments may have to resort to extra-legal tactics. Both the European

Photo: Royal Danish Navy

*The Royal Danish offshore patrol vessel HDMS **Knud Rasmussen** at sea with her rescue launch alongside. In April 2008, the ship deployed to Greenland for trials in Arctic conditions and to test icebreaking capabilities.*

Union and the Chinese government have indicated that they believe that the Arctic's natural resources belong to 'everyone.' Both also tie their need for more oil with the altruistic goal of protecting nature. Given China's ongoing pollution problems and the European Union's appalling record in fisheries management self-serving motives are suspected.[22]

The five Arctic states appear to have recognized that the danger comes from non-Arctic power interest in the region and not their own boundary disputes. They all have proven ready to conduct pooled research efforts at substantiating and resolving their claims. They met in May 2009 in Greenland, and their Ilulissat Declaration makes clear they will continue to rely on UNCLOS

provisions and reject any new legal regime suggested by outside powers.

Diplomacy may be cheaper than employing naval forces but it will probably be inadequate. The demand for energy worldwide will continue and there will be shortages. The small and medium powers are likely the most at risk. In its discussion of today's Arctic, the *London Independent* suggests "[t]he whole business is ... like the late-19th century scramble for Africa when the great powers carved up the continent among themselves."[23] Most small- and medium-sized coastal states are, therefore, not relying on diplomacy alone. Norway is increasing its naval power and calling on NATO to assist it should problems arise. Denmark is protecting Greenland with its own ice-capable naval vessels. Brazil, in the same week that an eight billion barrel oilfield was discovered off its coast, announced that at least one nuclear submarine would be built specifically to protect the find. In Canada and the United States, there are regular suggestions that the NORAD surveillance effort be extended into this region. In such cooperative endeavours, Canada must remember that one's voice is precisely proportional to the strength of one's military contribution.

Photo: Greenpeace International

*Greenpeace observers on board MV **Esperanza** monitor squid catch being landed by the Spanish flagged bottom-trawler **Ivan Nores**, 500 miles north-west of Ireland, October 2004.*

Demographics

The population growth that creates the demand for energy supplies also contributes to an increased demand for food supplies. While there is now recognition that this may lead to conflict on land, it has been a reality at sea for decades. The 'cod wars' between British frigates and Icelandic Coast Guard vessels were followed by the Spanish-Canadian dispute off Newfoundland that led to both states sending full naval task groups, with the Canadian one including a submarine.

The lessons here go well beyond fish. The disputes involved close NATO allies, suggesting that resource disputes can be resistant to the benefits of long friendship, multilateralism and diplomacy. While diplomacy ultimately triumphed, these lessons solidly underline that it helps to have muscle to back the diplomacy. And, while foreign over-fishing off Canada was solved, the problem has not gone away. The global fisheries situation has, in fact, deteriorated. Over 2.6 billion people rely on fish for their protein intake yet population increases and poor harvesting practices are expected to drive that source to depletion with one study predicting that all commercial capture fisheries will have collapsed by the year 2050.[24]

While the developing world relies heavily on this protein source, most of the problem rests with the fishing practices of the developed world. The main contributors to industrial over-fishing are states that have the scientific data needed to recognize their conduct is unsustainable in the extreme. And catches are consistently unreported with estimates that over 20% of world's fish landings are illegal. This, of course, signals another trend – fishing fleets are drawn to areas where enforcement is weak to non-existent.

Regrettably, falling stocks are spurring increased cheating not more effective management. The conclusion is that ocean resources are under immense pressure and fishery industries will only respond to effective surveillance and enforcement. This will be critical for Canada where there are still viable fisheries. These still claim an annual catch of over one million tons, employing 152,000 people and generating $22.7 billion annually in revenue.[25]

Conclusion

My admittedly heavy reliance on naval examples does not suggest that a land contribution is valueless. Indeed, Canada's contribution to Afghanistan also assists in local social and economic development and in training local security forces to the point where they can take over.

This increases regional stability, counters terrorism and demonstrates our commitment to the NATO alliance.

However, such a land commitment need not and should not consume the $1.9 billion – 10% of our defence budget – the current Kandahar force does every year.[26] More critically, this size force cannot become the basis of an even larger peacetime force structure we also cannot afford if we are to recapitalize all three services. In the short term, this suggests capping a post-2011 commitment to Afghanistan to some 1,000 personnel, which will still cost $765 million per year.[27] Such a force would still be contributing to the same failed state, regional stability and counter-terrorist goals as the larger one but at a cost that is sustainable.

Cost and sustainability should also guide the setting of the naval contributions and their resultant force structure. Here, however, the deployment costs are dramatically less while the security challenges addressed are, if anything, broader. A naval contribution can simultaneously protect global trade, support alliance goals, escort famine relief supplies, support counter-proliferation efforts, and counter piracy for an annual incremental cost of $29 million for a frigate or $110 million for the three ship task group.[28] The deployment of Canadian naval task groups in 1990-1 and 2001-3 also allowed Canada to lead significant coalition forces and, thereby, directly influence the campaign planning in two major regional conflicts. They also had no 'reset' costs and could be instantly redeployed closer to home in protecting offshore areas.

Naval forces cannot counter all the domestic and foreign security challenges Canada faces. The broad range of challenges can only be addressed by an equally broad range of balanced capabilities and having the range of responses a balanced army, navy and air force provide. Problems will only occur if one assumes one can predict the future, pick a single challenge to be met and focus on those forces that seem suited to meet it over others.

Notes

1. A much longer version of this paper titled "Canadian Economic Factors and the Canadian Navy" was presented at the Centre for Military and Strategic Studies (CMSS) Conference "Preparing for the Next Century of Canadian Sea Power," 7-10 September 2008, Calgary.
2. Department of National Defence, "Canada First Defence Strategy" (CFDS), Ottawa, 2008, pp. 3, 5.
3. General Andrew Leslie, quoted in Jon Elmer, "Canada: Counterinsurgency Manual Shows Military's New Face," *Global Research*, 25 March 2007, p. 25, available at www.globalresearch.ca/index.php?context=va&aid=5175.
4. General Rick Hillier quoted in Jon Elmer and Anthony Fenton, "Development Aid as Counterinsurgency Toolbox," *Growing Insurgencies, Irregular Warfare*, 28 March 2007, available at http://www.dominionpaper.ca/articles/1092.
5. CFDS, p. 15.
6. Office of the Parliamentary Budget Officer, "Fiscal Impact of the Canadian Mission in Afghanistan," 9 October 2008, Ottawa, Canada, available at www.parl.gc,a/pho-dpb. See p. 16 for 2007 costs per year. The cost given does not include salaries of those deployed or the cost of equipment procurement, only the actual military expenses of the Afghanistan mission. The figures come from p. 18 and by applying 2,950 personnel to the 2,500 and 3,500 personnel tables at p. 19.
7. This is 29% of the declared incremental cost of $1,086 million as claimed by DND. See Dave Perry, "Canada's Seven Billion Dollar War," *International Journal*, Summer 2008, pp. 691-2; and Murray Brewster, "DND Told to Keep War Costs Down in Coming Budget Year," Canoe Network, CNEWS, 2 December 2007.
8. CFDS, p. 5.
9. See David Pugiliese, "Plan for Supply Ships Comes up Short – Tories' $2.9 Billion isn't Enough, DND Officials Say," *Ottawa Citizen*, 19 May 2008.
10. Quoted in Phillippe Lagassé and Paul Robinson, "Reviving Realism in the Canadian Defence Debate," *Martello Papers No. 34*, Kingston: Centre for International Relations, Queen's University, 2008, pp. 77, 95.
11. See, for example, Paul Kennedy, "The Rise and Fall of Navies," *International Herald Tribune*, 5 April 2007; and Robert Kagan and Dan Blumenthal, "'Strategic Reassurance' that Isn't," *The Washington Post*, 10 November 2009.
12. Kennedy, "The Rise and Fall of Navies."
13. Association of Canadian Port Authorities, "Industry Information: Canadian Port Industry," available at http://www.acpa-ports.net/pr/vitallinks.html.
14. *Ibid*.
15. Ivan G. Osorio, "The International Longshore and Warehouse Union, Part II: Will Union Power on the Docks Pay Off?" *Capital Research Center – Labor Watch*, p. 4.
16. Singapore seems to have been especially hard hit, as 2002 third quarter GDP shrank 10.3%. See Geoffrey Arend, "The Naked Truth," *Air Cargo News*, 14 October 2002, available at http://www://aircargonews.com/archives/021014weekly.html.
17. Steven Metz, "New Challenges and Old Concepts: Understanding 21st Century Insurgency," *Parameters* (Winter 2007-8), p. 22.
18. PSI is not a NATO initiative, but *Operation Active Endeavour* is relevant to it and many participants are also PSI participants. See NATO, "Briefing: Combating Terrorism at Sea 5. Proliferation Security Initiative," NATO Online Library, April 2004, available at ww.nato.int/docu/briefing/terrorism_at_sea/html_en/terrorism_sea05.html.
19. Richard Bond, "The Proliferation Security Initiative: Three Years On," British American Security Information Council, *Basic Notes, Occasional Papers on International Security Policy*, 2 August 2006, p. 3, available at www.basicint.org/pubs/Notes/BN060802.htm.
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22. See Randy Boswell, "EU Report Sets up Arctic Turf War: Expert – Document Recommends Greater Role for Europe, Challenges Canada's Claim," Canwest News Service, 22 November 2008.
23. "Audacious, Thrilling – and Deeply Dangerous," *The London Independent*, 3 August 2007.
24. Juliet Eilperin, "World's Fish Supply Running Out, Researchers Warn," *Washington Post*, 3 November 2006, p. A1, available at www.washingtonpost.com/wp-dyn/content/article/2006/11/02/AR2006110200913.html.
25. Canada, "Coastal and Water Statistics," Fisheries and Oceans Canada, available at http://dfo.mpo.gc.ca/coummunic/facts-ifnro/faccts-infor_e.htm.
26. A more likely yearly incremental cost for 2009 or 2010 will be $2,256 million. This is derived by applying the 2,950 personnel figure to the 2,500 and 3,500 personnel tables at p. 19 of Canada, "Fiscal Impact."
27. From Table 11, of Canada, "Fiscal Impact," p. 19.
28. Ross Fetterly, "The Cost of Peacekeeping: Canada," *The Economics of Peace and Security Journal*, Vol. 1, No. 2 (2006), p. 30. His 1994 figure of $10 million per year is updated and increased to $29 million per year to reflect 2008 costs. This data was updated and confirmed with an interview with an NDHQ operational planner via email, 9 August 2008. Email on file with author.

Commodore Eric Lerhe retired from the Canadian Forces in September 2003 and commenced his doctoral studies at Dalhousie University.

The Amphibious Emergency Capability

Major R.D. Bradford

Given that more than half of the world's population lives near the oceans, and that littoral areas – the region where the sea meets the land – will be the scene of a variety of military and humanitarian operations in the future, what consideration is Canada giving to amphibious capabilities in the littoral areas? The Amphibious Warfare Development Program (AWDP) was approved in early 2008 by the Commanding Officer of the Canadian Forces Maritime Warfare Centre in Halifax. In the near term, it is concerned with satisfying the most immediate and pressing operational needs requiring trans-littoral manoeuvre (TLM). Beyond this, the AWDP seeks to identify a number of options to the Chief of Maritime Staff for discussions of the post-2011 period when a re-balancing and re-configuration of the post-Olympics, post-Afghanistan Canadian Forces will inevitably ensue. The near-term effort is centred on the Amphibious Emergency Capability (AEC).

Simply stated, trans-littoral manoeuvre is the tactical-level movement of personnel, equipment or supplies from the sea to land or vice versa. As such, it includes formal amphibious operations but extends beyond them to other forms of movement. All of these utilize the amphibious warfare 'toolbox,' which includes the knowledge, skills, equipment, tactics, techniques and procedures that have been developed since the 1940s. TLM includes many modest and simple activities, and certain other waterborne land-directed activities, that do not fit into formal amphibious doctrine.

The heart of the AWDP is a spectrum of options from which the Canadian Forces can decide what course to pursue. The spectrum begins with a zero point, where the most likely operations involving sea-based TLM are conducted by conventional sea, land and air forces on the basis of total improvisation and without even the slightest modicum of specialist knowledge. The zero point has been rejected as an option in itself because there is ample evidence that improvisation is not adequate to ensure safety and mission success, let alone efficiency. Beyond this, the AWDP envisions options ranging from the most modest (barely beyond ad hoc improvisation) to a full-blown purpose-built amphibious task force. It must be stressed, however, that options are not proposals. The minimum option is not necessarily the most desirable, and the presence of a purpose-built force option is not evidence of an intention to acquire such a capability. Both are required to complete the framework. As such, the spectrum provides a basis for deliberations and a framework in which to situate the desired capability.

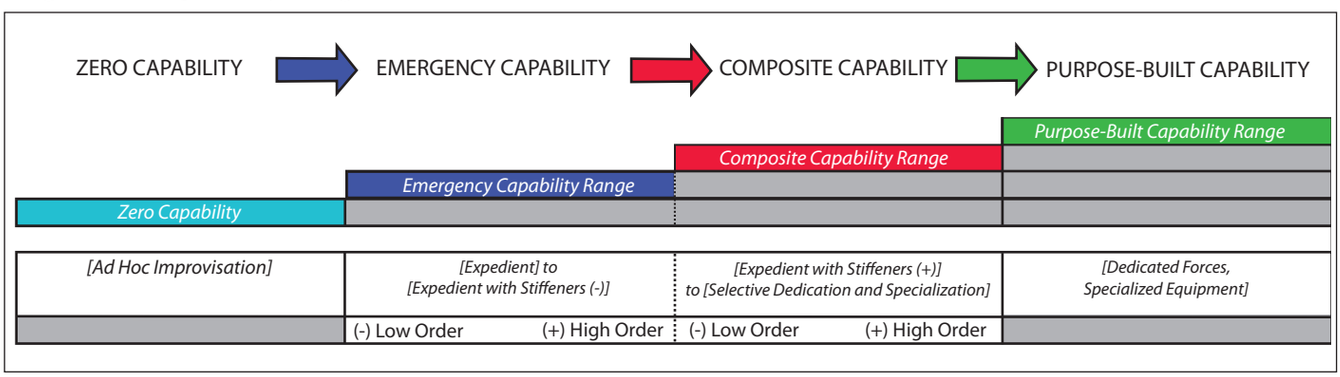
Options are characterized by some combination of adaptation, specialization and dedication. *Adaptation* is fitting out someone/something conventional to carry out trans-littoral manoeuvre activities on an occasional basis. A frigate weapons officer who has completed an appropriate amphibious planning course, or a supply ship deck department that has gone through a ship-to-shore enhancement package, are examples of adaptation of conventional forces to suit them to low-order trans-littoral activities. *Specialization* is someone/something specifically trained or made for amphibious duty. An example of this would be a fully-qualified US Navy amphibious officer loaned to act as the amphibious warfare officer in a Canadian joint task group or unit to do the detailed amphibious work during an exercise. He is a specialized resource, being a full-fledged amphibious warfare officer, but he is not a dedicated resource because he is a temporary measure. *Dedicated* means the person/item is assigned full-time to a duty or task. If a fleet staff has an officer whose primary job is to be the staff officer for amphibious warfare, then he is dedicated. If he is also properly qualified to be a genuine amphibious warfare officer, he is specialized as well as dedicated. Obviously, adaptive measures favour economy, while specialist and dedicated elements enhance capability.

"Red Devils" of A Company, 1st Battalion Princess Patricia's Canadian Light Infantry attend a briefing for amphibious landing operations on board USS ***Bonhomme Richard*** *during Rimpac, July 2008.*

The spectrum is a continuum but for discussion purposes it is divided into four main bands or ranges. The 'zero' capability has been described. The 'emergency' capability range is the near-term focus. It relies greatly on adaptive measures but can be progressively enhanced by specialist augmentation known as 'stiffeners' – which could be people or material. The 'composite' capability range relies on more stiffeners and introduces dedicated small elements (e.g., a tactical boat group). This band eventually features high-order adaptive means (e.g., use of commercial shipping, integrated sealift) and advanced stiffeners. Up to this point, the bulk of the capability is conventional elements. The last band is the 'purpose-built' capability which is centred on specialized equipment (such as an amphibious ship) and a dedicated amphibious-capable force.

The AWDP is focusing almost entirely on the emergency capability range in order to address immediate requirements. Additionally, the knowledge and experience gained in this stage informs the development of the next stage, *if* it is decided to progress further. This is an important point. The spectrum not only has bands or ranges in the horizontal sense, but a vertical shape as well. It is depicted as a series of terraces to indicate that each band can be either an end in itself or a stage in onward progress. In the case of the Standing Contingency Force, a huge rock was rolled up a hill and when the force was disbanded that rock rolled right back down to the start point again. That need not happen with the AWDP.

Figure 1. Capability Progression



The AWDP encompasses institutionalization, establishing a foundation and capability development. Institutionalization seeks continuation, providing the organs and processes that ensure that amphibious warfare takes root and becomes a dynamic activity. It also ensures rational, synchronized development within the navy and Canadian Forces. The heart of this institutionalization would be the Amphibious Warfare Authority (AWA). This would not be a separate organization but a function assigned to an appropriate agency, such as the Commanding Officer of the Canadian Forces Maritime Warfare Centre. Unfortunately, the AWA remains only a proposal at this time.

The foundation takes the form of a number of items, primarily documentary, intended to capture the Canadian approach and facilitate concept and doctrine development, and education and training. Some of the foundation tools include:

- the amphibious index, a consolidation of approved references, all categorized and hyper-linked;
- the amphibious task list;
- amphibious functionary specifications, which describes duties;
- amphibious battle task standards;
- amphibious development scenarios; and
- amphibious force models for concept development, war-gaming and simulation.

Having briefly described the four bands of options, only one seems possible and appropriate for Canada, given current circumstances. The Amphibious Emergency Capability is the capability recommended for early adoption in order to meet immediate requirements. Let us examine it in terms of its objective, operation, possible force packages, principal elements and levels of development.

The objective of the Amphibious Emergency Capability is to assist the adaptation of conventional forces to conduct basic trans-littoral manoeuvre in low-level, small-scale contingency response and security operations in favourable environments. The envisioned contingency response operations are non-combatant evacuation operations and early-response humanitarian assistance/disaster relief operations. This objective is applicable anywhere but for practical purposes the focus is on the Canadian north and the Caribbean. The challenge in the north is deploy-

Photo: Cpl Dany Veillette, Canadian Forces Joint Imagery Centre, Ottawa, Ontario

*Soldiers from the Arctic Response Company Group on board HMCS **Toronto** during **Operation Nanook** 09 prior to being landed ashore during the exercise.*

ability and mobility, combinations of different forces to achieve a wide range of effects, and self-sufficiency with strong linkage to the normal national infrastructure and networks, possibly over extended periods of time. In the Caribbean, the objects are more narrow, joint force combinations – sea, land and air – are normal, and the operations are rapid response in nature and more discrete episodes measured in days or weeks. In both cases, there is the possibility of multinational cooperation but separate operations are the theoretical norm.

The emergency capability organizes and enables amphibious operations or other forms of trans-littoral manoeuvre. These are, in turn, enablers for some other governing mission (e.g., insertion of ground reconnaissance and surveillance patrols in the north, or an evacuation operation in the Caribbean). In some cases, the manoeuvre will be straightforward and simple, such as the movement of troops from ship to shore in a benign environment. This will be the more usual case in the north, where patrols will be inserted and extracted regularly. However, for more complex situations, a special concept has been created for developing doctrine and procedures and as a starting point for planners. This is the establishment of an amphibious lodgment, a derivative of a concept first pioneered by Australia in the mid-1990s. In general terms, this involves a tiny amphibious operation in which a joint task group projects a land element ashore with the immediate purpose of securing specified entry zones (surface or aviation) and a perimeter in order to provide secure space suited to the governing mission at hand. This might be the final extraction area in an evacuation operation, containing an assembly area, processing station and an embarkation point for evacuees.

The tactical lodgment might be the delivery point and reception/staging/assembly area for a larger mission force going ashore. In some cases, the force that establishes the amphibious lodgment might be a separate enabler for a follow-on force (e.g., securing a lodgment for the Disaster Assistance Response Team (DART) being delivered in commercial shipping), while in others it might be part of the overall mission force itself (e.g., an evacuation). In uncertain or highly unstable environments, the lodgment is established tactically. This is not in order to deal with opposition, for the operation is premised on an unopposed landing with a minimal threat ashore where security rather than actual combat is required. It is because of the efficiency and flexibility obtained by the tactical approach in such circumstances that this approach is taken. Needless to say, the establishment of an amphibious lodgment can be administrative, meaning there is no threat and all activities can be carried out on a peaceful basis.

The Amphibious Emergency Capability becomes clearer if we consider a typical force. Being the enabler for a bigger operation, the amphibious operation is not the prime determinant of a joint task group's composition and structure: the overall mission, the task ashore and the conditions inshore and offshore, are key determinants. However, for development purposes, the following three, very general, force models are used. First, the 'large' joint task group would be a supply ship (like an AOR), a destroyer or frigate, an aviation element of two to three helicopters, a land force (comprised of a command element and an infantry rifle company group, or equivalent), possibly a support force (e.g., extra personnel for

Credit: DND

*Affectionately known as "Bonnie," or "Club 22," HMCS **Bonaventure** is shown sailing alongside HMCS **Provider**.*

Photo: Collection of the Shearwater Aviation Museum

Bomaventure's decommissioning sail-past, 3 July 1970.

processing and reception in an evacuation operation) and Amphibious Emergency Capability stiffeners. Second, the 'small' joint task group would be comprised of a single warship (destroyer or frigate) with air detachment, the land element (or equivalent), and the stiffeners. Again, the operation and the availability of elements shape the force for any operation, and many combinations are possible. The duration of embarkation is also a major factor for more people can be carried for a short period than for a long one. *Operation Bandit* in 1988 was a contingency evacuation with a naval task group and an infantry rifle company group, while *Operation Nanook* 2009 included an infantry rifle company group with a warship/icebreaker task group, with one maritime helicopter and one coast guard helicopter, and a coast guard boat detachment.

The third force model is either the large or the small joint task group working with a commercial shipping element. This could be the case should a land-based element larger than naval or coast guard ships can carry need to be moved by civilian ships to be delivered ashore, or if humanitarian resources need to be delivered from the sea. The Amphibious Emergency Capability would be the principal enabler in what would be a joint maritime operation followed closely by a logistics operation. A joint task group would conduct a precursor operation to establish the lodgment or otherwise secure the terminal, and then assist the subsequent logistics operation that would unload the commercial ships. The stiffeners in the form of an amphibious manoeuvre cell, advanced boat cadre and/or commercial ship naval parties (officer and communicator) would prove invaluable.

The tactical lodgment and the typical force models discussed above are tools for developing doctrine and procedures, and assisting training. They are not hard and firm plans for use in a contingency but are useful starting points for planners in such operations. *Operation Unison*, the provision of a maritime inter-agency task group to the Hurricane Katrina relief effort, is a perfect example of this. There was no need for an infantry rifle company group, but a great need for ship-to-shore movement expertise. A low-order amphibious capability that could have provided an amphibious manoeuvre cell and an advanced boat cadre (including a beach party cell) would have paid off nicely. A higher-order option providing a ship-to-shore stiffener, particularly a tactical boat group (including a beach party team) would have been immensely valuable.

It should be evident that the Emergency Amphibious Capability is eminently scalable and an economical means to enable the Canadian Forces in the littoral regions. Whatever the scale, the capability relies on three principal elements. The first element is 'cognitive products,' or documents necessary to inform and guide the joint task group command element and provide a common reference point for all participants. The main document will be the *Operations Guide for the Amphibious Emergency Capability* which is currently being developed. This publication will provide procedures and techniques, along with explanatory notes, to assist in the development of plans and the conduct of activities.

The second element is the Amphibious Augmentation Team (AAT), an umbrella term for stiffeners. In its minimal form, the 'team' could be a single officer assigned to a frigate captain to act as an amphibious warfare officer in the ship's combat staff. The hope is that an amphibious manoeuvre cell will soon be possible, comprised of two or more warfare officers of varying specialization, and capable of advising on all aspects germane to the amphibious part of the operation, beginning with mounting, embarkation, in-transit routines and continuing with entry zone preparation, ship-to-shore movement, and so on. When an amphibious decision and planning support

Photo: US Marine Corps Released

An American marine signals troops in the water during hydrographic survey training in Okinawa, 13 April 2009.

system is acquired, the cell's capability will be greatly enhanced.

A related element is an 'expert cadre' which should include an advanced-level amphibious boat advisor who can assist a deck department in the planning, training and conduct of ship-to-shore movement, and aid in the assessment of surface entry zones. In time, this advisory element could become a cadre of experts, especially in supply ships with landing craft, and this would include the ability to reconnoitre surface entry zones and conduct minimal reception and despatch duties on the beach. The augmentation team consists of a handful of people, perhaps one (hopefully with the decision and planning support system), perhaps five, maybe 10 specialists trained to a meaningful level but drawn from their normal jobs in an emergency. Whatever the strength and the composition of the team, it is always better than the present reliance on ad hoc improvisation by untrained conventional forces.

The third element is 'practise' which means manipulating the doctrine, techniques and procedures, and exploring the elements, functions, processes and relationships articulated in the cognitive products. The *Operations Guide* will have a supplement that addresses exercises and skills-and-drills training to assist in the formulation of effective training. Several of the development aids (particularly the amphibious index, amphibious task list and battle task standards) will contribute greatly to effective practise. Of course, these are internal aids but external dependencies must also be appreciated (e.g., availability and preparation of suitable training sites).

The final point to be made in this very brief introduction to the Amphibious Emergency Capability is that it forms a sub-spectrum within the overall spectrum of options for amphibious warfare development in general. Four levels are identified within this range at this time: elementary, basic, basic with follow-up echelon, and advanced. The 'elementary' capability is simply the cognitive products, the documents and development aids that have thus far been developed in Canada and elsewhere. In this level there is no Amphibious Augmentation Team (however small) and little practise but the documentary capability is intended to preserve concepts, doctrine, approaches, techniques, procedures and advice for the benefit of otherwise ad hoc improvised joint task groups. It is, simply stated, better than nothing and provides a much better starting point for commanders and staff than an otherwise ad hoc improvised joint task group (especially if the Maritime Warfare Centre continues to develop its littoral simulation, war-gaming and training capability).

The 'basic' capability would provide the cognitive products, an augmentation team (whether tiny or large), and the means of practise (if only simulation and practical skills-and-drills training). The 'basic-with-follow-up-echelon' capability envisages a reasonably well-developed basic capability plus the ability to work with follow-up commercial shipping. The 'advanced' capability is the basic level plus a tactical boat element, which *Operation Nanook* experience shows is an inevitable requirement for joint maritime operations in the north.

This treatment of Amphibious Emergency Capability will probably raise more questions than it answers. The gaps in the description here will undoubtedly be filled in the minds of many by visions of large and complicated means that seem exceedingly inappropriate given the current resource constraints in Canada. This mental leap should be resisted – the capability is eminently scalable. It can be an elementary capability alone, comprised only of cognitive products, or a basic capability comprised of these products and one or two specialist additions. Even at the advanced level it is entirely tenable.

Whatever its form or its scale, the Amphibious Emergency Capability is absolutely vital to many future littoral missions, especially in the north and places like the Caribbean. Let us not be fooled by the number of recent operations where Canada was able to pick and choose tasks and activities that suited its default setting. An evacuation operation will not allow that, nor will the frigid north. The purely ad hoc improvised approach is an unnecessary risk. The Amphibious Emergency Capability is an economical, practical, attainable and sustainable approach that will assure safety and enhance the prospects for mission success. If it is determined that only the minimum option – the elementary level – is acceptable at this time, this is much better than nothing. However, something more robust would be entirely affordable, even in today's tough circumstances, while yielding benefits out of all proportion to the cost.

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The Canadian Navy and Its Future Organic Air Capability

Major Sol Martins

In modern naval warfare, the combat capability of one ship or an entire fleet is greatly dependent on its organic air assets. Organic air is the airborne component that is integral to ships and naval task groups. The most powerful navies derive much of their sea power through the use of aircraft carriers with embarked aircraft, primarily fighters and helicopters. Even the US Navy (USN), which has the largest naval air capability in the world, continues to expand its organic air capability. Take for example the new USN 3000-tonne Littoral Combat Ships (LCS). These relatively small warships were designed with an emphasis on coastal operations. Although smaller than a Canadian frigate, they will be designed to operate more than just one helicopter – they will be able to carry one Seahawk helicopter and three Fire Scout rotary wing unmanned aerial vehicles (UAVs) concurrently. The USN is integrating the capabilities of two different but highly capable airborne platforms on a relatively small ship. In future operations, this will significantly expand the options available to this class of warship. The UAV can remain on patrol for significant periods of time, and when it detects something of interest, the manned helicopter can be launched to initiate the appropriate response.

All of the major emerging economic powers – Brazil, Russia, India and China – possess aircraft carriers or are planning to build or buy them within the next decade. Many middle power countries have large ships with significant organic air capabilities. Thus, for example, Australia, a country with a military similar in size to Canada's, is acquiring two large multi-helicopter carrying amphibious vessels (LHDs). Obtaining as large an organic air capability as a country can afford is well understood and cannot be over-stated.

Since the early 1960s when Canada pioneered placing large Sea King helicopters on small warships, maritime helicopters (MHs) have been and continue to be the most effective method of providing an organic air capability to a non-carrier-equipped navy. The MH provides many essential capabilities to a fleet. The most obvious contribution is greatly extended situational awareness of the area around a ship. They provide the ability to see and react beyond the ship's very limited 10-20 nautical miles (nm) visual and surface radar horizon. All ships, from the most powerful warships to the smallest craft, have this same constraint. The ability to affect the battlespace beyond a ship's horizon requires eyes and weapons in the sky. Helicopters easily extend this horizon to well beyond 100-200 nm in any direction.

Increasing a ship's situational awareness of what is beyond its horizon can also lead to extending the range of ship sensors and more importantly permitting a warship to exploit fully its weapon systems. For example, our *Halifax*-class frigates carry Harpoon surface-to-surface missiles with a range of approximately 75 nm. This range cannot be exploited unless the ship knows what is beyond its 20 nm radar horizon. Without the ability to look over that horizon, the ship's effective Harpoon range is only as far as the ship can see.

Photo: US Navy

*USS **Freedom** conducting flight deck certification with an MH-60S Sea Hawk helicopter, 28 September 2009.*

Photo: MCpl Eduardo Mora Pineda, Formation Imaging Services, Halifax

*During the humanitarian mission to Haiti in September 2008, HMCS **St. John's** distributed 65 tons of rice, corn, soya blend and oil to the towns of Tiburon and and Les Anglais, Haiti. Pictured is the Sea King from **St. John's** delivering bags of rice to Tiburon.*

Another unique capability MHs provide is the ability to conduct independent missions from their parent ships. For example, the ship may be focused on conducting an anti-submarine mission while the MH is concurrently maintaining an over-the-horizon plot of surface shipping. Also, helicopters, when equipped with appropriate sensors and air-to-surface/sub-surface weapons, can provide surface and sub-surface surveillance and control over areas many times larger than any ship can provide on its own. Helicopters conduct search and rescue (SAR) and combat SAR missions over land or at sea. They are the primary method of conducting personnel rescues – they can search large areas for a lost sailor at sea quicker and much more thoroughly than any ship and conduct the rescue. Of course, maritime helicopters can also conduct a multitude of other utility missions such as tactical transport, logistic resupply, environmental assessment such as ice reconnaissance or checking oceanographic conditions, and all of these missions can be conducted at distances beyond the ship's horizon.

When the MH and ship are considered together they are able to conduct missions that could not be conducted otherwise. This synergistic effect allows for the accomplishment of some unique tasks. A perfect example was *Operation Horatio* in Haiti in 2008. The frigate HMCS *St John's* was tasked to deliver humanitarian aid after Haiti had been struck by four hurricanes in a row. In 13 days, she delivered 450 tons of rice, bottled water and other relief supplies to an area of southern Haiti that had all its roads washed out and no usable harbours.[1] This was managed by slinging supplies from the warship to remote villages under its Sea King helicopter. A frigate could not have carried out this mission on its own but the combination of a maritime helicopter with its parent frigate permitted this mission to be conducted in a far timelier and less resource intensive manner than using an army unit for the same task.

With Canada's history and knowledge of deploying maritime helicopters on ships and the additional capabilities that organic air confers, one would assume that the navy would be trying to increase its capacity to carry organic air capability as much as possible. So is the navy increasing its flexibility and capacity to employ organic air assets?

The Canadian Navy seems to be going against conventional wisdom in this regard. Some people might disagree with this statement, since we are buying 28 new CH148 Cyclones, modern multi-role maritime helicopters specifically to increase this capability.[2] The Cyclone could provide a large increase in organic air capability but the navy does not seem to want to exploit this fully. Let us take a look at what is being planned in terms of the Canadian Navy's future organic air carrying capabilities. They are as follows:

- 12 *Halifax*-class ships will be converted to carry one Cyclone helicopter, the same as the current Sea King carrying capability;
- three *Iroquois*-class ships can carry two Sea King helicopters. They will not be converted to carry Cyclone helicopters. Thus, the two helicopter-carrying task group command flag ship will no longer have an organic air capability;

Table 1. Maritime Helicopter Carrying Capability

Year	Fleet	MH Capacity Per Ship	MH Capacity Per Class	Max. MH Carrying Capability for a Canadian Task Group	Total MH Carrying Capacity (including ships in refits/maintenance periods, etc.)
2005	2 *Protecteur*-class AORs 4 *Iroquois*-class 12 *Halifax*-class	3 2 1	6 8 12	8	26
2015	2 AORS or Joint Support Ships 3 *Iroquois*-class 12 *Halifax*-class	3 0 1	6 0 12	6	18
2025	3 Joint Support Ships 12-15 Canadian Surface Combatant-class	3 1	9 12-15	7	21-24

- 12-15 future Canadian Single Combatant (CSC) class ships, to replace the current destroyers and eventually the frigates, are planned to carry a single helicopter, thus replacing the equivalent of the *Halifax*-class but not the *Iroquois*-class two helicopter capability; and
- six to eight Arctic Offshore Patrol Vessels (AOPVs) are defined to operate a light observation helicopter, primarily to conduct ice reconnaissance in front of the ship. The AOPV as currently planned, cannot operate a Canadian MH effectively.

Photo: Project Management Office, Maritime Helicopter Project

Artist's rendering of the new Cyclone with a Canadian Patrol Frigate in the background.

The current *Protecteur*-class supply ships (AORs) and the planned Joint Support Ship (JSS) will be able to operate up to three Cyclones but from a single spot flight deck. This is not effective for conducting multi-helicopter operations concurrently. Thus the operational benefit of carrying multiple helicopters is significantly reduced as only one can launch or land at a time.

If we compare the potential to carry organic air of the Canadian Navy from just five years ago to the navy of 2015 and 2025, we see that capacity will be significantly reduced.[3] In addition, the capacity in 2015 is optimistic as all of the frigates will not have completed the modernization and refit program by that time. Thus, in the medium term, there will be difficulty in force generating a maritime helicopter capability due to a shortage of ships to train on, and in the longer term the total capacity will be strained to maintain the 15 Helicopter Air Detachments (Helairdet) equivalents to be provided by the Maritime Helicopter Project.

Is this a trend? Is the Canadian Navy reducing its overall organic air capability, despite its importance in the modern operational environment? Has the navy reduced its ability to project force over the horizon? Is this reversible?

There are certainly ways to ensure that the navy maintains and/or improves its organic air capability. This is especially so when ships are already designed to carry helicopters. In this case, the incremental cost to ensure

Photo: Project Management Office, Maritime Helicopter Project

Artist's rendering of the new Cyclone.

the appropriate number being carried and/or optimized to exploit fully the capabilities that a modern MH such as the CH148 Cyclone will provide is relatively inconsequential. This applies to the JSS, CSC and AOPV classes in particular as these classes of ships have not yet been built and this is especially true if the incremental cost increase is compared to the cost of potentially losing ships in future operations. Suggestions to ensure the Canadian Navy's organic air capability does not wither include the following:

- Convert the *Iroquois*-class to operate the CH148 Cyclone (only beneficial for the short term, due to the short remaining lifespan of these ships);
- Amend the JSS Statement of Requirements to ensure that this new ship class is able to carry and operate four maritime helicopters and the ships are fitted with a dual landing spot flight deck to make best use of the larger helicopter detachment.
- Make one of the future CSC essential requirements the ability to embark and operate two helicopters, as with the current *Iroquois*-class destroyers.
- Amend the AOPV requirements to enable the ships to maintain and operate a helicopter in Sea States 5 or 6, as with other Canadian warships. Even greater flexibility could be built in by enabling AOPVs to operate two maritime helicopters.
- In the future, consider ships such as the Australian LHD mentioned earlier. Such large vessels provide great flexibility in naval missions and tasks, and could also operate much larger helicopters such as the CH147 Chinook helicopters that Canada has recently purchased to support army operations, and/or short take-off and vertical landing (STOVL) fixed-wing capability. A version of the Joint Strike Fighter with which Canada is considering replacing the CF18 then could be a possibility.

One of the few weaknesses of aircraft is their impermanence – they cannot stay in the combat area without regularly leaving to return to a base to refuel, re-arm, etc. Organic air is unique in this context, as its base is a ship and is therefore mobile and can deploy into or near the combat/operations zone. Also, organic air assets are the only air resources always available to a naval ship or task group. Helicopters provide ships greater situational awareness, greater operational flexibility and effectiveness, and enhance safety in maritime situations. However, the capacity to operate aircraft from our ships is being reduced just as we are about to increase the number of capable modern maritime helicopters available to deploy as organic air assets. It is essential to the future relevance and capability of the Canadian Navy that the greatest possible organic air capability and capacity is maintained.

Notes

1. Department of National Defence, "HMCS *St. John's* Heading Home upon Completion of WFP Humanitarian Operation in Haiti," available at http://news.gc.ca/web/article-eng.do?m=/index&nid=420799.
2. The naval requirement is to provide 15 of the CH148 Cyclone helicopters on 11 ships concurrently. In a *Halifax*-class frigate, a Helairdet consists of 1 helicopter, 2 flight crews of 4 personnel each and a maintenance crew of 11 permitting operations of up to 12 hours a day. Having 15 *Halifax*-equivalent Helairdet units that can be transferred from ship to ship provides the most flexibility for the navy, in order to send them to any class of ship that will be operationally deployed.
3. According to previous research conducted by Ops Research, a naval task group of 4-5 ships in a combat situation requires a minimum of 7-8 helicopters to provide 2 helicopters airborne 24/7. In an anti-submarine warfare environment, for example, operating 2 helicopters is the minimum required to conduct effectively anti-submarine defence of the task group. In a littoral environment 2 additional helicopter roles are very important to a task group: (1) the main sea-shore connector for personnel is by helicopter, i.e., the ability to move over the land-sea interface while the task group stays at sea; and (2) the ability to conduct surveillance of additional land threats to the task group.

Major Sol Martins is a member of the CF Maritime Warfare Centre's Education and War-Gaming Staff. His previous posting was as a member of the air requirements staff responsible for the Maritime Helicopter Project.

The Naval Centennial and Canada's Shipbuilders

Janet Thorsteinson

The 100th birthday of Canada's navy is an opportune time for a retrospective look at the shipbuilding industry that has grown to support it. Today, with government shipbuilding consultations behind us, and perhaps months of uncertainty ahead, past events are certainties that may cultivate understanding – and patience.

On 4 May 1910, when royal assent to the *Naval Service Act* created the Naval Service of Canada, soon to become the Royal Canadian Navy, Canada's naval shipbuilding industry was already centuries old. Given the influence of oceans, lakes and rivers on Canadian life, the history of building or adapting vessels for making war undoubtedly begins with our First Nation peoples. With the coming of Europeans, forged tools and abundant timber quickly created a shipbuilding industry. In 1606 two small craft were launched at Port Royal, Acadia, and in 1750, the French Navy received a Canadian-built 70-gun warship. Two centuries ago, the 20-gun sloop HMS *Royal George* was built at the Royal Naval Dockyard in Kingston, Ontario.

In modern times, naval construction in Canada may have only preceded the creation of the navy by six years, as the CGS *Vigilant* sailed out of Polson's shipyard in Toronto in 1904. In coast guard eyes at least, "[*Vigilant*] may be regarded as the first 'modern' warship to be built in Canada."[1]

Photo: Andrew Merrilees Collection, National Archives of Canada

Canadian Government Ship (CGS) ***Vigilant****, circa 1900.*

In the Beginning

Since 1910, naval shipbuilding has been a reflection of Canada's sometimes halting progress towards sovereignty. One price of national maturity can be disillusionment. In 1912, Prime Minister Robert Borden asked the House of Commons for monies to assist the British Admiralty by building some small cruisers and auxiliary vessels and thereby foster the Canadian shipbuilding industry.[2]

Despite this attempt, however, when war erupted in Europe less than two years later, not only were there few Canadian warships to deal with German submarines in the Atlantic, its allies disappointed Canada and "[t]he hard lesson in self-sufficiency was reinforced when the British and Americans had to renege on a promise to provide destroyers to the RCN."[3] The lesson was repeated when the Second World War broke out. As is natural in times of conflict, each state looks after itself before its allies – Britain was far too busy to spend time and money assisting Canadian shipbuilding. Thus, in the two major conflicts of the last century, Canada lacked the warships it needed. In future, as a state that aspires to international stature, we may be disillusioned with our lack of naval capacity, but have only ourselves to blame.

There are other patterns in Canada's naval history. As historian Richard Gimblett points out, when Canada goes to war, the navy goes first.[4] From the First World War, to the Second World War, to the Korean conflict, to the 1991 Gulf War, Canada's warships, no matter how few or ill-prepared, were the weapons that came immediately to hand.

Canada entered the two great wars of the 20th century with tiny fleets but each conflict triggered domestic shipbuilding programs. In the First World War Canada produced large numbers of merchant vessels, if only a few naval vessels. In the second war, Canadian shipyards produced hundreds of military and merchant vessels. This was a great achievement but Canada built standard ships to standard patterns, drawing heavily on the expertise of allies. In fact, there may have been more innovation and decisiveness from diplomats, politicians, bureaucrats and businesspeople than from naval architects and engineers. Our wartime shipbuilding demanded the swift negotiation and careful management of contracts and agreements with allies, and called for creative solutions in the form of commercial arrangements and Crown corporations to build, crew and manage ships.

Sweeping powers make for swift action. Wartime governments created bureaucracies to see that vessels were built, and they were built. After each war, the government of Canada maintained bureaucracies to oversee policies that supported domestic commercial shipbuilding, either directly or through subsidies. In 1918, the government set up the Canadian Government Merchant Marine (CGMM)

Photo: Sgt Paz Quillé, Formation Imaging Services, CFB Halifax

*Families and friends wave to HMC ships **Iroquois**, **Charlottetown** and **Preserver** as they depart Halifax for the Arabian Sea during **Operation Apollo**, 17 October 2001.*

– the Canadian National Railway would operate ships laid down during the war but not completed until after the armistice. The wartime designs, unsuited for commercial use, were eventually sold, and the CGMM was wound up in 1928. After the Second World War, the government set up the Canadian Maritime Commission to support trade with merchant ships, warships and yards that could build them. The Commission oversaw a range of strategies to support shipbuilding and shipping but as with CGMM, it was overtaken by commercial realities and wound up in 1967.

After each war, the navy and the shipbuilding industry looked forward to expanded Canadian-built fleets until those ambitions were overtaken by political realities. Between 1918 and 1934, Canada acquired a fleet of 46 ships, including a cruiser and submarines. Eventually, some destroyers were procured. In 1945, with an aircraft carrier already in the Canadian fleet and Canadian crews manning others, RCN officers looked forward to two carrier groups. That never happened and the carrier age ended for the Canadian Navy in 1970.

If there are lessons to be learned from the First and Second World Wars, they are: do not depend on your allies to provide warships when needed; emergencies do not necessarily bring innovation; and, wartime requirements and programs do not always create peacetime navies – or industries.

Canadian history that could better inform future shipbuilding policy almost certainly begins with the *St. Laurent*-class destroyers. This was an all-Canadian design and construction effort that saw the first ship launched in 1955 and the last taken out of service in the mid-1990s. Ordered to combat the Soviet submarine menace in the North Atlantic and with "a truly revolutionary indigenous ASW design,"[5] eventually 20 destroyers in the *St. Laurent* series were launched.

In the words of a 1995 technical presentation on the *St. Laurent* type,

> Despite the fact that Canada had very little previous warship design experience, the RCN established a new concept of stability, a new hull construction, ... a new shipbuilding engineering and electrical industry, a new propulsion plant manufacturing industry, new RCN standards of furniture, valves and piping, ... commonality of equipment, and a new concept of habitability as an integral part of the development of a new class of ship.[6]

The lesson from the *St. Laurent*-class and succeeding types is that Canada can design and build excellent warships and equip them with innovative systems.

Boom Without a Bang

Naval shipbuilding in Canada is boom and bust. War is the ultimate and literal boom. Clearly, booms are generated by conflict and by periods of tension like the Cold War. However, the two most recent rounds of Canadian shipbuilding – the *Tribal*-class and AOR in the late 1960s and the Canadian Patrol Frigates in the late 1980s – were largely prompted by motives other than the pressures of anticipated battle. Now, Canada seeks to earn a place in the world through peacekeeping, relief operations and by being a stout ally. To do that, Canada needs warships.

The navy's activities since 1945 include tasks like evacuations, disaster relief, aid of the civil power, search and rescue, battlespace dominance and oceans management, carried out in places like Haiti, the Arabian Gulf, East Timor, both coasts, the St. Lawrence and the Great Lakes. These are things that Canada should do and that Canadians support. Our ability to continue doing them is diminishing as ships are retired. Our ability to build ships to replace them is diminishing for lack of action. Canada has demonstrated again and again that it can build naval vessels. It is past time to begin to build more. As they have been for a century and more, Canada's sailors and its shipbuilders are ready for the call.

Notes

1. Usque ad Mare - Naval Service - Canadian Coast Guard, available at www.ccg-gcc.gc.ca/eng/CCG/USQUE_Naval_Service.
2. See "Three Dreadnoughts to Aid England," *The New York Times*, 6 December 1912, p. 1.
3. Department of National Defence, *Leadmark, The Navy's Strategy for 2020*, Chapter 4, "Sternmark to 2010."
4. *Ibid.*
5. Canadian Defence and Foreign Affairs Institute, *Dispatch*, Vol. V, Issue IV (Winter 2007).
6. DDH 205 Class Structural Integrity History 1951-1994, Presented at the Canadian Forces/Chief Research and Development Meeting, "Naval Applications of Materials Technology," Halifax, May 1995.

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

*Arctic Diplomacy: A Chance for Canada to Shine**

Lieutenant-Commander Ray Snook

Referring to the compelling article by Commander James Kraska in the Fall 2009 edition of *Canadian Naval Review* (Vol. 5, No. 3), it would appear that a number of states, Canada among them, have got themselves wrapped round the axle with respect to 'sovereignty' over the Northwest Passage (NWP). This issue has reached the limelight because of mounting evidence that the ice cap that once kept the passage closed year round is rapidly thinning and retreating. This, combined with unilateral and parochial interests in the area, clearly does not resonate well. One just has to ponder the recent bill passed in the House of Commons that promotes the use of the word 'Canadian' preceding Northwest Passage to realize how acute this narrow-mindedness has become. However, a workable solution to the perceived problems of jurisdiction exists, but it will need vision and a modicum of global leadership to enact it.

As Commander Kraska articulated, at the heart of the issue is whether the NWP can be described as an internal waterway or an international strait for navigation as defined under the UN Convention on the Law of the Sea (UNCLOS). On one side of the argument there are concerns about the security, stability and environmental impact of increased use on the Arctic archipelago, and on the other side are those who are energized by the possibility of a quicker trade route between Asia and the Atlantic Ocean. Whatever the point of view, it is possible to create a regime whereby both a secure superhighway can be maintained and the country perceived to be most at risk, in this case Canada, can exercise authority. One just has to refer to the Montreux Convention to see an arrangement that exists and is working well.

The Convention Regarding the Regime of the Straits signed at Montreux 20 July 1936 (the Montreux Convention[1]) pre-dates UNCLOS by many years and thus has stood the test of time. Essentially it regulates the transit and navigation of the Turkish Straits between the Aegean and the Black Sea through which 5-10% of the world's oil supplies pass.

Turkish authorities contend that because of the control that is conferred upon Turkey – which envelopes both sides of the straits, much as Canada does with the Northwest Passage – integrity of that country and indeed maritime security within the whole of the Black Sea has been assured. It is not beyond the wit of man to envisage a similar workable regime applying to the NWP.

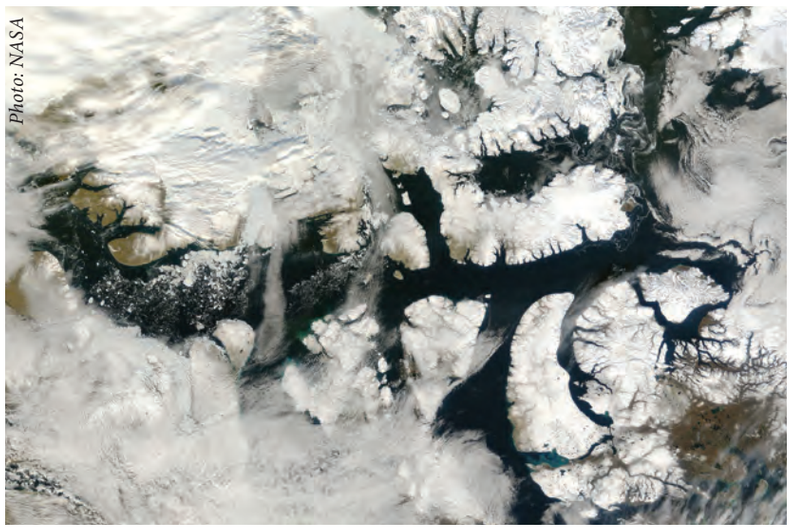

Photo: NASA

NASA Terra satellite image of ice-free Northwest Passage, 15 September 2007. The Northwest Passage connects the North Atlantic and Labrador Sea with the Beaufort Sea shortening the maritime trade route between Europe and Asia by 4,000 miles.

While the Montreux Convention upholds the principle of freedom of transit and navigation, Turkish sensitivities are addressed by:

- exercising environmental and sanitary control prescribed by national law within the framework of international health and sanitary regulations;
- the right to close the straits to certain vessels in time of conflict or when considered imminently threatened;
- restrictions to the numbers, types and status of vessels of war, including submarines, which can transit the straits; and
- regulations pertaining to overflight.

This proposal may appear simplistic and fail to acknowledge that the challenges of the two stretches of water are significantly different. The sheer size and remoteness of the NWP means that the demands of exercising control are far more acute in Canada than in Turkey. Nonetheless, there is no better template than the Montreux Convention for establishing a widely accepted and ratified system to meet the international needs surrounding navigation through the passage. Although not a signatory to the Montreux Convention even the United States abides, if sometimes reluctantly, by the spirit of its articles, a tacit acknowledgement, perhaps, that a fairer system is hard to imagine.

As Commander Kraska has indicated, there already exists an entity to facilitate such a multilateral agreement and that is the International Maritime Organization (IMO). Such collective wisdom would ensure that any new treaty affecting the NWP addresses justifiable Canadian concerns and inserts measures to prohibit transit of anything other than properly maintained and regulated ships. Pre-notification of transit would be mandatory and the option for Canada to undertake engineering quality assurance prior to passage could be written in.

In embracing what is potentially a win-win situation, Canada has much to gain diplomatically rather than dogmatically sticking with its current lines of argument. It should proceed accordingly before it loses both friends and influence with those wishing to use the passage on a regular basis to expedite global maritime trade, of which, paradoxically, Canada itself is a huge beneficiary. A simulation conducted by the University of Alberta in 2006 concluded that a container ship travelling from Yokohama to St. John's would be capable of 9.74 mean round trips per year compared to 7.08 for a comparable vessel going via the Panama Canal.

Exercising control on behalf of the international community over such a large expanse comes with certain obligations and at no small cost. Simply monitoring the NWP and providing the necessary navigational advice and guidance will need considerable planning and financial resources. Nonetheless, the sensors and infrastructure implicit in this activity could contribute to, and integrate into, the already burgeoning network that is being developed under the Northern and Canada First Defence Strategies and help provide full maritime domain awareness.

Furthermore, within any established regime, a system that charges user fees could be incorporated to offset navigational safety services and salvage and oil spill contingencies. Time is money and for the shipping operators this would be small beer compared with the spiralling costs of taking alternate routes. Although initially the usage rates and income would be low, and the Arctic route along the top of Russia likely will open first, there is every reason to believe that there will soon be a marked increase in traffic. Indirectly the service charges could also inject much-needed revenue into what is currently a dire regional economy in northern Canada.

Away, therefore, with the defensiveness and parochial attitudes towards the Northwest Passage and let Canada, by taking the moral upper hand, forge a strong diplomatic and legal framework under which all users can legitimately go about their business. The increasingly ice-free nature of the passage and pure economic imperatives will drive world shipping to demand freedom of navigation there. Canada should pre-empt this before undesirable tensions set root in international and trade relations. Although time is short, it is not too late to act. However, the window of opportunity whereby Canada can leverage its prerogative and set in place measures to alleviate its concerns whilst simultaneously gaining widespread applause for its initiative is fast closing. As ever, the devil will be in the details and there will be difficult negotiations. Compromise will need to be sought and a stepping back from entrenched positions will be required. However, the rewards both in trade efficiency and diplomacy will be there for generations to come.

Notes

* The views expressed in this article do not represent any official policy or position of the Department of National Defence and are those solely of the author.

1. A copy of the full text of the Montreux Convention can be found at http://sam.baskent.edu.tr/belge/Montreux_ENG.pdf.

Canadian Naval History

Colonel (Retired) John Boileau

It appears that Peter Haydon may be one of those he accuses of having a "faltering grasp on Canadian naval history" ("Our Faltering Grasp on Canadian Naval History," *Canadian Naval Review*, Vol. 5, No. 2 (Summer 2009)). In his listing of Canadian museum ships, he neglected to mention the naval equivalent of the Avro Arrow, the innovative hydrofoil HMCS *Bras d'Or*, which is on display high and dry at the Musée Maritime du Québec in L'Islet, Québec, a hole ignominiously cut in her hull for visitor access (as described in my 2004 book, *Fastest in the World: The Saga of Canada's Revolutionary Hydrofoils*).

Additionally, he claims that corvettes were the "first warships entirely designed and built in Canada." In fact, the corvette was designed in England and was based on a small coastal craft developed by Smith's Dock Company in South Bank, Yorkshire, in the mid-1930s. In keeping with the company's whaling heritage, the vessel was seaworthy, manoeuvrable, inexpensive and comparatively easy to construct, although they were said to "roll on a heavy dew." When the Second World War began, hundreds of escort ships were needed and the suggestion was made that Canada construct a fleet of Patrol Vessels, Whaler Type, in keeping with this country's shipbuilding capabilities. But before that happened, Churchill directed a name change to corvette as a more warlike sounding alternative.

The honour for being the first warships entirely designed

and built in Canada belongs to the *St. Laurent*-class destroyers. Between 1955 and 1957, seven of these world-class destroyers entered service: *St. Laurent*, *Assiniboine*, *Fraser* (the catalyst for Haydon's article), *Margaree*, *Ottawa*, *Saguenay* and *Skeena*. Both corvettes and the *St. Laurent*-class destroyers are discussed in my new book, *Halifax & the Royal Canadian Navy*, to be released in the spring of 2010 on the occasion of the navy's centennial. (Please pardon the shameless plug!)

I agree wholeheartedly with Haydon's suggestion that HMCS *Fraser* deserves preservation as a "significant piece of our history."

Arctic Patrol Vessels
Lieutenant (E) (Retired) Robert J. Whitfield

During my 50+ years in ship design and construction in both Canada and the United States, it was the policy of a new ship design team, when given the operational requirements for a new ship, to review the archives for an existing ship which most closely met the desired operating capabilities. This 'parent' design was then carefully reviewed to determine the most cost-effective modifications that could be made to support a design which fully met the new requirements, while minimizing the cost of design and construction changes.

A parent design for the Arctic/Offshore Patrol Vessels that should be carefully considered is the Canadian Coast Guard Type 1100 Icebreaking Buoy Tender. The preliminary design for this class was completed by Saint John Marine Consultants Ltd. in September 1982. In September 1983 contracts were awarded to four Canadian shipyards for the construction of six ships with the *Martha L. Black* being the first delivered. These ships are 83 metres in length, with 16.2 metres breadth and a depth of 7.75 metres. They feature a twin screw AC/AC integrated electric propulsion system (Canadian General Electric - Peterborough), with an installed power rating of 8,484 kW (7,000 SHP) produced by three diesel generator sets and two 3,500 HP synchronous propulsion motors. They are designed to break two feet of ice continuously at full power, or cruise at 17 knots. They can cruise at 13 knots with two generators on line or 12 knots with one. They have a telescoping helicopter hanger and support a complement of 52.

To meet the speed and volume requirements for a naval Arctic patrol vessel, it is visualized that the midbody would be lengthened by 15 metres forward of the superstructure and all buoy handling equipment removed. With modern technology, the installed horsepower could be increased to 10,000 SHP without increasing the volume of the machinery spaces. This could easily be verified by utilizing the original hull test model, modified to the new characteristics, and repeating the original speed/power tests.

Since the government of Canada already owns the detail design, and Canadian shipyards have experience building to this design, significant cost savings could be realized.

The increased hull volume forward could accommodate a vertical-launch missile system module, the smaller of the two carried on a DDG 51, which would provide the ship with an amazing mix of anti-air, anti-ship, anti-submarine and anti-missile capability. The fire control system could be data linked to Aegis-type radar systems installed at high elevations ashore, Pacific, Arctic and Atlantic, which could control several ships of the class.

This is a suggestion for a cost-effective solution to Canadian defence needs.

Save HMCS Fraser!
Doug Thomas

No, not save the Alamo – save HMCS *Fraser*, a floating piece of Canada's historical fabric.

Twenty distinctively Canadian destroyers were built in our shipyards during the 1950s and 1960s, and were the core of our navy well into the early 1990s – a span of about 45 years from the time that the ships were laid-down until the time they were paid-off. Of that 20, most have been towed away to the scrapyards or sunk as destinations for scuba diving. Two of the last three, ex-HMCS *Gatineau* and ex-HMCS *Terra Nova*, were towed from the naval dockyard in Halifax to Pictou, Nova Scota, for scrapping in late November 2009. They had long since been stripped of external and internal fittings, furniture, weapons, radar antennae, boats, etc.

One lonely Cadillac – as these ships were known in their early days – remains, and that is ex-HMCS *Fraser*, rusting at the Naval Armament Depot in Halifax Harbour. Since

Photo: DND

HMCS ***Fraser****, circa 1989.*

Fraser was employed as a museum ship and alongside cadet accommodation vessel in Bridgewater, Nova Scotia, she still has all her fittings and looks like an operational (albeit very unkempt) vessel.

The organization that operated *Fraser* ran out of money to operate and properly maintain the ship, so she was returned to the navy. The Minister of National Defence stated earlier this year that it was hoped that *Fraser* could be preserved as a museum, and there were rumours that parts of the ship could be shipped to some destination as a naval exhibit. Nevertheless, the apparent sudden departure of *Gatineau* and *Terra Nova* may mean that *Fraser*'s days are numbered.

HMCS *Sackville* became a floating museum and Canada's Naval Memorial 25 years ago. She has been lovingly restored by hardworking volunteers and support from the navy to a late World War II configuration. Finding some of the fittings to make her look authentic has been a challenge: for example, a 2-pounder pompom – the principal anti-aircraft gun of WW II corvettes – was finally found in Northern Ireland in a farmer's field. Her Type 291 surface warning radar was found in a warehouse many years ago, and recently restored with the help of the Royal Navy's Radar Museum and a Dartmouth, Nova Scotia, electronic firm.

Fraser presents a treasure trove of authentic historical and period artefacts, as she currently sits in Halifax Harbour. We would not have to search through farmers' fields to find ship fittings. With refurbishment, *Fraser* would present a shining example of the excellence of our country's industrial capacity during a critical period, and be a suitable memorial to the tens of thousands of Canadians who helped to keep the Soviet Navy at bay and contributed to winning the Cold War.

If *Fraser* were berthed in Halifax, she could be operated as part of the Maritime Museum of the Atlantic's historic ship collection and would certainly enhance the attractiveness of Halifax as a tourist destination. One need only visit the Royal Navy Museum in Portsmouth to see the powerful attraction of HM Ships *Mary Rose*, *Victory* and *Warrior* as a reminder of that country's maritime past.

It would be a challenge to operate another museum ship in Halifax, as those involved in *Sackville* know very well. Nevertheless, *Fraser* has the potential to be a true national treasure. Can we really let her go to the scrapyard?

Save the ***Fraser!***

The Problem of Retention of Techs

Raymond Belec

I was 17 years old when I joined the Canadian Navy. I was a Marine Engineering Mechanic. My trade progression was good. I really enjoyed the work and shipboard life. But when it came time to start a family the job didn't fit my idea of hands-on fatherhood.

The training I received in seven years in the navy made me employable in many civilian trades. I worked as a marine fitter at a couple of local Halifax ship repair machine

shops. I worked on every class of vessel that entered Halifax Harbour. These jobs paid twice my navy salary. Then MIL Davie hired me for the next five years as test and trials engineer for the TRUMP and CPF project, a job that paid over four times my navy salary. While I was on this project the ships were tied up at the wharf in Dartmouth. While the ships were alongside I was employed as the chief engineer of the shore plant providing steam and electricity. My hours served on navy steamers allowed me the hours necessary to write my 4th Class Stationary Engineering Licence and my 2nd Class Stationary Engineering Refrigeration Licence, necessary for this job.

At the end of this project I went to work as a machinist for more than twice what I would have made on my navy salary or at least a projection of what I think I would have made assuming that my promotions were on time. My machinist skills I also learned in the navy. Then a local hydraulics shop hired me for the Hibernia Project in Newfoundland. Let us just say the wages were Disneyland – in the six figures range. I was hired because I was certified Hydraulics Level II thanks to the navy. I then moved back to Ontario and worked as a pretty well paid CNC machinist/programmer for the next 15 years.

Do you understand what I am saying? In addition to being able to watch my kids grow up, I made several million dollars more over the life of my career than I would have made if I stayed in the navy – and I did it using my navy training. And this does not take into account the values the navy instilled in me that made me a valuable employee in the civilian world. I am now 45 years old and I just enrolled as a MESO in the naval reserves. I feel I owe them the next 13 years.

If you are wondering why the Canadian Navy can't retain marine engineers and other techs, it is because people with mechanical aptitude are in great demand in the civilian world also and civilian companies know the secret to retaining talent is money.

Talking About Ships: How to Sound Like an Amateur!
Poseidon

One thing that really annoys those of us who have served in the navy is media, academics and even serving members in the armed forces talking or writing about naval ships using 'the' before HMCS. Frequently one will read, for example, "the HMCS *Preserver* sailed from Halifax." If the author of that item decrypted the acronym "HMCS," he should realize this sounds incorrect and unprofessional – "the Her Majesty's Canadian Ship *Preserver* sailed." Why 'the'?

The same would be true of any country with a Royal head of state. Thus, *the* HDMS *Thetis*, or *the* Her Danish Majesty's Ship *Thetis* is wrong and sounds – quite frankly – stupid!

Why has this happened? I suspect part of it is ignorance and laziness – people not checking for correct usage – but the main reason is probably pervasive popular entertainment such as television and Hollywood films, and media coverage of the United States Navy, the world's largest. As a republic, the United States does not have a monarchy, and so the designation of American naval ships is USS which stands for United States Ship. An example in this instance would be the USS *Enterprise*, the United States Ship *Enterprise*. Or, in the case of France, which is also a republic, ships are called, for example, the French Ship (FS) *Charles de Gaulle*. The assumption appears to be that if 'the USS' applies to American naval ships, then 'the + HMCS' is good enough for everyone else.

One should say or write "HMCS *Preserver* sailed…." After the first use of HMCS in an article, best practice would be to use the ship's name without that prefix, e.g. "*Preserver* will return to her home port...." That practice would be true of any country's naval vessels – republic or monarchy.

A small thing, but one would hope we could get it right!

UAV Demonstrates New Capability for the Canadian Navy
Ian Glenn*

On 28 October 2009, the Canadian Navy was catapulted into a new age of unmanned airborne surveillance as a ScanEagle took off from the deck of a Maritime Coastal Defence Vessel, HMCS *Glace Bay*. This flight was historic as it marked the first fixed-wing aircraft flight off a Canadian warship since HMCS *Bonaventure* ceased Tracker operations in 1969.

This story starts with the Canadian Army which since August 2008 has been employing an asset called the ScanEagle. A small unmanned aerial vehicle (UAV), the ScanEagle has now flown over 11,000 hours of airborne surveillance in direct support of operations in Kandahar Province, Afghanistan. Every day, a troop of artillery

soldiers takes control of the small unmanned aircraft from a team of civilian industry field service representatives,[1] and goes in search of bad folk doing bad things. This results in the daily delivery of nearly 40 hours of high-quality airborne intelligence, surveillance and reconnaissance (ISR) to Task Force Afghanistan. Over 1,000 operational sorties have been flown – more hours than all other Canadian UAV programs combined.

Back to Halifax and this historic flight. The Canadian Forces Maritime Warfare Centre (CFMWC) conducted a two-week evaluation of the ScanEagle UAV as an organic maritime airborne ISR system. The army contributed three of its Afghanistan veteran UAV operators and a ScanEagle system used for army training. CFMWC had two of its personnel as ScanEagle operators to bring the maritime perspective and to run the demonstration as part of a full evaluation team. The system included a 20-foot-container ground control station, a 'SuperWedge' launcher, a SkyHook aircraft retrieval system, and aircraft equipped with electro-optical and thermal sensors.

Installation went smoothly, despite the jigsaw puzzle of fitting and fixing the systems into the limited deck space available on *Glace Bay*. Luckily the system doesn't take much space as it was originally designed to be installed on fishing boats. In addition to the displays in the ground control station, a separate networked display was fitted to the bridge so that the Captain and crew could see not only the imagery from the 'bird' but also where it was and where it was looking.

Sea trials off the approaches to Halifax Harbour followed the installation. Once launched, the system was put through its paces to demonstrate not only its capability to find and track vessels/divers in the water, but also its ability to perform surveillance of coastal areas. Also demonstrated was the ability to hand off the aircraft to a shore-based ground control station from the ship.

Success of this capability on board *Glace Bay* was not surprising. The system has accumulated over 240,000 hours globally, and in the maritime environment, the US Navy has accumulated over 20,000 hours and over 2,000 missions employing the ScanEagle in operations. One of the most visible successes was in the rescue of MV *Maersk Alabama's* skipper in April 2009 from Somali pirates – a feat made possible by observation of the pirates via the UAV.

With this initial success in Halifax, the Canadian Navy now has some clear options to augment its airborne ISR capabilities with a low cost, low risk, interoperable UAV system. Immediate employment opportunities that come to mind are support to anti-piracy operations, fisheries patrols, Arctic sovereignty missions, search and rescue missions, and force protection while deployed. Advances in the miniaturization of technology allow the ScanEagle, which is four feet long, seven inches in diameter, with a 10-foot wing span, to stay aloft upwards of 28 hours carrying payloads as varied as a daylight video camera, an infra-red camera, a two-pound synthetic aperture radar, voice and data radio relay and electronic surveillance, individually or in pairs.

Manning this capability could be a challenge for the navy. However, in Afghanistan, the army has proven that with a team of service representatives supporting the soldiers, they are able to fly their own aircraft in one of the most complex airspaces in the world today (Kandahar Air Field currently handles more aircraft daily than Heathrow).

Like the army, the navy will need to consider the total cost of ownership of the ship-borne UAV capability – including initial training costs, currency training, career progression, retention, technological obsolescence in a rapidly evolving field, etc. Another issue for the Canadian Navy to consider is where to put the people. A typical US Navy ScanEagle deployment includes four service representatives on board operating and maintaining the system. A combined industry/military team is a new concept to most military forces, so we will have to see what approach the navy will take.

Introducing this new technology into operations opens up a range of possibilities. Boarding party members can view live video that allows them to look down on the ship that they are about to board. An inbound search and rescue aircraft could share the ship's view of a vessel in distress, allowing more time to prepare the rescue plan. Coupled with autonomous underwater vehicles (AUVs), a ship would be able to use its UAV to communicate with its AUVs as they conducted bottom surveys of a remote harbour. The employment of these new capabilities is limited only by imagination.

Since the first sailor cried "land, ho!" from the crow's nest, ships' crews have looked for ways to extend the view beyond the limitation of the horizon. With the ScanEagle, the Canadian Navy now has a way to extend that view over 100 kilometres away, and without putting sailors or aircrew in harm's way.

Notes

* Ian Glenn is Chairman and CEO of ING Engineering Inc.

1. The civilian industry team, which shares the risks of working in a combat theatre alongside their uniformed team mates, comes from ING Engineering and Boeing/Insitu.

The View from the West: Where is Russia?

Christian Bedford

Despite all the talk about Russia's resurgence, the country remains underpopulated, economically stagnant save for its energy exports, and poorly defended along its Pacific coast by a fleet that has been ignored for years. Is Russia serious about the Asia-Pacific region? If measured by the attention given to the Pacific Fleet, the answer appears to be no.

In 2007 then-Defence Minister Sergei Ivanov enthusiastically announced a major re-armament program for Russia's armed forces, with one-quarter of the budget to be dedicated to the navy. Ivanov spoke proudly of plans that would see the Russian Navy build six new aircraft carriers, eight new ballistic missile submarines, and dozens of new frigates equipped with the latest technology. Two years later those plans have been dashed by a broken Russian shipbuilding sector and uncooperative oil prices. Since 2007, the one-two punch of falling oil prices and a global economic crash have scuttled Moscow's naval ambitions, and forced the government to focus on geographic regions where it will get the best returns for its investments and naval systems that will deliver the best bang for the buck. In this, the Pacific Fleet appears to be the odd man out among Russia's far-flung naval formations.


Credit: Internet

*The nuclear-powered battle cruiser **Pyotr Veliky**, flag ship of the Northern Fleet.*

The state of the Pacific Fleet mirrors very closely the current situation in the Russian Far East, the area east of Lake Baikal where a Russian population of about 6.5 million people lives in an area nearly twice the size of India. Despite its long coastline adjacent to Asia's dynamic economies, this area is an underdeveloped region, considered among the most sparsely populated on earth. It is perhaps fitting that this region, with a population that is projected to drop to 4.5 million by 2015, is defended at sea by a force that is a shell of its former self.


Credit: Internet

*The Russian aircraft carrier **Admiral Kuznetsov**, the only aircraft carrier in the Russian Navy.*

At its height near the end of the Cold War, the Pacific Fleet, headquartered at Vladivostok, was comprised of over 65 large surface combatants, including two *Kiev*-class aircraft carriers (*Minsk* and *Novorossiisk*) and more than 75 submarines, both nuclear and conventional. Ballistic missile submarines were a major component of the fleet, and would conduct regular deterrence patrols in the Pacific. Commanders would also send out both conventional and nuclear-powered attack submarines to monitor the activities of US carrier battle groups operating in the western Pacific, and would deploy ships into the South China Sea and the Indian Ocean. With the demise of the Soviet Union, however, the Russian Pacific Fleet was left to stagnate during the 1990s, a period now known in Russia as *Smutnoe Vremya*, or 'Time of Troubles.' Lacking the state funds that propped up the fleet, ships were left to languish, rusting away at anchor. Dozens of ships were decommissioned or sold abroad for scrap, and new builds were put on hold indefinitely. By 2000, average annual at-sea time per ship had fallen to only 6.4 days, due largely to lack of funds and training.

When Vladimir Putin became President in 2000, he did so at a time when Russia's foreign policy focus was drawn towards Europe. NATO's campaign in Kosovo and the Balkans, and the recent acceptance of Poland, the Czech Republic and Hungary into NATO were viewed with suspicion by Moscow and forced Putin to direct his energies at maintaining Russian relevance in former Soviet states in Europe. The focus on Europe was also pragmatic, as European markets were by far the largest consumers of Russian energy, and Asia represented a small fraction of Moscow's oil and gas exports. Against this backdrop, the Russian Pacific Fleet was deemed a less urgent priority than the Baltic Fleet, based in Kaliningrad, and the Black Sea Fleet, based in Sevastopol, where NATO encroachment into Russia's 'near abroad' was most apparent.

Photo: US Navy Released

*Sailors on board the guided-missile destroyer USS **Stethem** man the rails as the ship enters Vladivostok for a scheduled port visit, 7 May 2008. **Stethem** is one of seven **Arleigh Burke**-class destroyers assigned to the USN's Destroyer Squadron 15, operating out of Yokosuka, Japan.*

As a result, the Pacific Fleet was equipped with older, less effective vessels. For example, while the Northern and Baltic Fleets were armed with more modern *Delta IV*-class and *Typhoon*-class ballistic missile submarines (SSBNs), the Pacific Fleet only had six or seven *Delta III*-class SSBNs, boats which were built between 1974 and 1980. In fact, today the Russian Pacific Fleet still technically operates five of these older submarines, although it is believed that they rarely sail, as they are likely unfit for service. Given the Russian Navy's recent history of submarine accidents, most notably the *Kursk* and *Nerpa* disasters, it is probable that the navy would not put them to sea for even short deployments. The picture is slightly better for the Pacific Fleet's attack submarines, which are a mix of *Kilo*- and *Akula*-class vessels, however the newest vessel is about 17 years old. Above water, the Pacific Fleet's main combatants are *Udaloy*- and *Sovremenny*-class destroyers which are of the same vintage as much of the submarine fleet and can be deployed for limited blue-water operations, but require ocean-going tugs and support ships for longer deployments.

As the Russian Pacific Fleet wanes, other navies in the region have enhanced their blue-water capabilities, adding new submarines, frigates, destroyers and amphibious ships. While China is perhaps the most obvious example of an Asian state that has forged ahead with its naval shipbuilding plans, South Korea and Japan have also brought impressive new technology to their fleets, such as amphibious helicopter carriers and Aegis-equipped destroyers. This development becomes important when we look at the current maritime disputes in the Asia-Pacific region. Russia has an ongoing dispute with Japan over the Kurile Islands, and other disputes, such as those in the South China Sea, have potential to disrupt peace and stability in the region. If the Russian Pacific Fleet is unable to dispatch warships on short notice to respond to regional crises or natural disasters, it will lose credibility as an Asian power.

The lack of a credible Pacific naval presence is also curious when looked at against recent investments Moscow has made in the region. The Sakhalin-II project, for example, is a major new oil and gas project that is seen to be key to Russia expanding its share of the Asian energy market. The project taps into 1.2 billion barrels of oil and 18 trillion cubic feet of gas offshore in the Sea of Okhotsk and aims to export most of it to Asian markets where energy demand is expected to be greatest in the coming decades. Despite this investment into energy exports – the core of the Russian economy – little has been done to defend this region from the sea. In contrast, Brazil discovered vast new energy deposits off its coast and acted quickly to improve its naval capabilities, even looking at building South America's first nuclear-powered submarine to defend these new assets.

The decade ahead will be critical for Russia if it hopes to improve the state of its Pacific Fleet. In a recent op-ed in *RIA Novosti*, the state-owned news agency, retired Admiral Vyacheslav Popov, the former chief of the Northern Fleet, said the Russian Navy as a whole will face an existential threat in the near future. According to Popov, "[i]f things [poor funding and maintenance] remain as they are, we will have to mothball most ocean warships by 2015." Popov's comments are sure to worry naval planners who realize that the lost decade of the 1990s is now showing its full effect. Russia's hollowed-out shipbuilding and naval research and development sectors have launched only one new vessel in the past decade, the *Stereguschiy*-class corvette, and there is debate as to whether it will meet its goal of producing 20 of the ships for its four fleets. This was likely the motivation behind Moscow's announcement that it intends to buy six *Mistral*-class amphibious ships from France, the largest-ever proposed arms sale from a NATO country to its former foe. Moscow has also not been able to meet its commitments for the refit of the *Admiral Gorschkov* carrier that was purchased by India. The repeated delays and increases in the price tag for the carrier has hurt relations with one of Moscow's key arms buyers, and will cause other states to question Moscow's ability to complete orders for future vessels.

In Vladivostok, there will likely be further reductions to an already depleted fleet. Priority will be given to the Northern and Black Sea Fleets, and they will receive any new kit that is built or purchased in the next decade. As the Asia-Pacific region continues to grow in importance in world affairs, Russia is lagging behind, both on land with a dwindling population, and at sea with a weak and shrinking blue-water force. This lag will come at a great cost to the state, and will affect any notion of a Russian resurgence.

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Plain Talk: Hard Questions for the Shipbuilding Industry

Sharon Hobson

Perhaps it's time to ditch the competitive approach to shipbuilding and designate the industry as a strategic asset that the government protects through directed procurement. This, alone, however, won't be enough to solve the industry's problems – money and political will are also key.

This is an opportune time to decide how to use ship procurement to resuscitate the industry and plan for its continued survival. Over the next 30 years, the government intends to buy for the navy, the coast guard and Transport Canada, more than 50 ships with a displacement over 1,000 tonnes, with an estimated value of $43 billion, which will result in steady employment for 1,200 to 1,500 shipyard workers during that period. The government has also identified approximately 70 smaller vessels of less than 1,000 tonnes which will need replacing.

Evidence that the government is serious about establishing a sustainable shipbuilding industry was seen this past July at a two-day industry consultation attended by four key Cabinet Ministers: Defence Minister Peter MacKay; Fisheries and Oceans Minister Gail Shea; Industry Minister Tony Clement; and Public Works and Government Services Minister Christian Paradis. Industry was being asked to help put together a strategy that essentially would provide for a small number of shipyards to specialize in the construction of complex vessels over 1,000 tonnes, and for the remaining Canadian yards to participate in the construction of vessels less than 1,000 tonnes. With so many ships on the drawing boards, it should be possible to allocate the building contracts in such a way as to eliminate the boom-and-bust cycles that the industry has experienced since the Second World War.

Photo: Library and Archives of Canada

A ceremony in Toronto marking the launch of the 1,000th vessel constructed since the start of the Second World War, 21 October 1944.

It *should* be possible, that is, as long as the government follows up with the money to accommodate a practical and timely refit schedule. It's not enough to schedule and allocate shipbuilding contracts – the regular refit of ships in service must also be slotted into the shipyards' work schedules. A slippage in a major refit can cause problems all down the line as the yards struggle to meet converging production demands and the federal fleets struggle to meet operational demands.

The government, of course, wants answers to many questions before adopting any new strategy. The questions it put to industry included how could fleet renewal projects be divided into work packages to provide sustained long-term work for the shipyards? How would shipyards ensure leveraging of research and development, and benefits to skillset development in post-secondary institutions, in terms of collaboration or partnerships? What terms and conditions would the shipyards require? What should be the approach to infrastructure investment?

The thoughts and suggestions of the industry were collected by the organizers – Director General Major Project Delivery Land and Sea, Department of National Defence – and are now being analysed. But there are some more basic questions that also need to be asked, as were raised at a conference sponsored by the Defence Management Studies Program at Queen's University and the Security and Defence Management and Policy Program at the Royal Military College of Canada. How do you define shipbuilding? Is it the complete ship with all its systems or is it just the platform? Why do you want to build ships? These are the basic questions that have to be asked. One conference participant made the point that the reason a country such as Australia has opted to build its own ships is because the domestic industry's interest is in the through-life support. He pointed out that building the platform is only 12-13%

of the total cost of the program, and there is more value for industry in putting its efforts 'further upstream' in the systems and the in-service support. Building the ships is a means to an end.

So does Canada want to build hulls? Does it want to build entire ships with all their integrated systems? Does it want just to maintain a minimum capability? What is the ultimate aim of building ships? Is market share a key consideration (the experience with the Canadian Patrol Frigates showed that while the ships may be respected and admired for their technical competence, states still prefer to buy from their own domestic industry, although discrete systems may be highly marketable) or is the support of Canada's federal fleets the sole driver? When the government is sorting out its new strategy, it is important that it be clear on what it expects to achieve.

At the industry consultation, the Shipbuilding Association of Canada (SAC) put forward its proposal that the government pre-qualify 'centres of excellence' for the construction of major Crown projects. By doing so, the government would clearly identify the most appropriate facilities for undertaking any particular project, and in the process would simplify and speed up the bidding process while reducing the costs.

When Andrew McArthur, Chairman of the SAC, appeared before the Standing Committee on International Trade in March 2009, he suggested that as a result of the shipyard rationalization of the 1980s and 1990s, Canada already has three centres of excellence: Washington Marine Group in BC which "wants to do the smaller types of ships, the midshore patrol vessels for example"; Halifax Shipyard in Nova Scotia "that will do mid-size, which are the Arctic offshore patrol vessels"; and Davie Shipyard in Quebec, which can handle "the bigger vessels, the joint support ships." (Of course, whether Davie, which concentrates on commercial projects would want to re-enter the naval field with the massive amounts of paperwork and bureaucracy that would go with the building of major warships, is another question.)

Credit: Canadian Coast Guard

Artist's rendering of a Canadian Coast Guard Mid-Shore Patrol Vessel.

Credit: Royal Netherlands Navy

*Artist impression of the Dutch JSS **Karel Doorman**, a multi-role vessel capable of strategic sealift, underway replenishment and humanitarian disaster relief with an in-service date of 2015.*

It's interesting to note that despite McArthur's suggestions of which company was best suited for the various contracts, in September the government awarded the midshore patrol vessels not to Washington Marine Group, but to Irving Shipbuilding's Halifax shipyard. Prior to award, that contract was bid three times, and it ended up for nine vessels instead of 12, at a cost of $194 million, which, according to one knowledgeable insider, was a "considerably higher price" than originally anticipated. If a new shipbuilding strategy can help avoid this type of protracted and costly process – admittedly not a high bar – then it will be worth the wait.

In the meantime, nothing is moving. The navy is ready with design proposals for the $3.1 billion project for six Arctic Offshore Patrol Vessels and the $2.1 billion project for three Joint Support Ships, but it can't get government approvals until the new shipbuilding strategy is decided. Only once those two projects are solidly underway can the navy then turn its attention to the $26 billion project to build 15 new surface combatants to replace the 12 *Halifax*-class frigates and three *Iroquois*-class destroyers.

The various interest groups are cautiously optimistic about the government's process. The Conference of Defence Associations issued a press release in which it said that the discussion at the shipbuilding forum was "heartening" because there was a need for dialogue between the government and Canada's industrial base. Such a dialogue has been missing in the past and has meant that the industry has a difficult time making research and development decisions. However, it cautioned that "[t]he issues involved are numerous and complex and require sustained and focused leadership at the highest levels, including the personal involvement of the Prime Minister, in order to deliver specific shipbuilding programmes in a timely fashion. Until this initiative delivers, major shipbuilding programmes will not likely proceed."

The navy is anxious to move forward. All it needs is a procurement strategy – and money and political will. The strategy is only one part of the solution to this country's shipbuilding woes. It will be worth nothing without accompanying political and financial support.

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Warship Developments: The Japanese Navy

Doug Thomas

Japan is an island state, very dependent on shipping to import food, energy and raw materials, and to export manufactured goods. In modern times a large merchant marine was developed, as well as a strong navy to protect the Japanese homeland, shipping and national interests. By the beginning of the Second World War, the Imperial Japanese Navy was the world's third largest, after those of the United States and Great Britain.

Following the defeat of Japan in the Second World War, the Japanese Navy was dissolved. Its ships were disarmed and those few that retained military capabilities were turned over to the Allies in reparation. The remaining ships were used to repatriate Japanese soldiers from abroad and also for minesweeping in the area around Japan. The minesweeping fleet was eventually transferred to the Maritime Safety Agency, which helped maintain the resources and expertise of the navy. In 1954 the Japanese Maritime Self-Defence Force (JMSDF) was formally created as the naval branch of the Japanese Self-Defence Force, following the passage of the Self-Defence Forces Law.

Credit: Internet

JMSDF Major Fleets Naval Districts.

Credit: Internet

The SS-501 ***Soryu*** *(**Blue Dragon**-class), during commissioning ceremony, 30 March 2009.*

The first units in the JMSDF were former US Navy destroyers, transferred to Japanese control in 1954. In 1956 the JMSDF received its first domestically-produced destroyer since the Second World War, built to a modified US design and equipped with American weapons and sensors. Due to the Cold War threat posed by the Soviet Navy's large submarine fleet, the Japanese force was primarily tasked with an anti-submarine role.

Over the past 55 years, the JMSDF has evolved into an impressive navy in all but name, and for some time has developed its own highly effective designs and weapons. In addition, Japan also operates a large armed coast guard for constabulary roles.

Major components of this important navy include:

- 16 modern diesel-electric submarines (SSK);
- one new helicopter carrier with a second one under construction;
- 45 destroyers (including six Aegis DDGs);
- 8 frigates;
- 109 P-3C Orion maritime patrol aircraft;
- 98 shipborne anti-submarine warfare helicopters;
- 3 Landing Platform Dock (LPD) ships;
- significant mine countermeasure and patrol forces;
- 6 large purpose-built training ships which retain many combat capabilities, should that be

needed; and
- 5 combat support ships (AORs).

In contrast to the Royal Navy or the French Navy, the JMSDF does not have nuclear-powered submarines or aircraft carriers operating fixed-wing aircraft, but in every other way it is comparable. Let us look at some of its more capable ships.

The new submarine class – the *Soryu*-class SSK – the largest diesel-electric SSK in the world, has an air-independent propulsion system permitting extended covert operations, is equipped with sub-Harpoon and a modern wire-guided heavyweight torpedo in common with all other Japanese submarines, and has a submerged speed of 20 knots. The MSDF submarine force is maintained at 16. Individual units are generally replaced when they are 20 years old rather than a service life of 30 years or more in many other navies.

Photo: US Navy Released

*The Japan Maritime Self-Defence Force helicopter destroyer JS **Hyuga** underway in the Pacific Ocean during ANNUALEX 21G, 17 November 2009, an annual exercise with the US Navy.*

The two *Hyuga*-class helicopter carriers, with the name-ship of the class commissioned in March 2009, were originally known as destroyers as they are replacements for the much smaller *Haruna*-class helicopter carriers. With a full-load displacement of 18,000 tons, length of 646 feet, a large unobstructed flight deck and an island superstructure, *Hyuga* certainly looks like a small aircraft carrier. Although there is no ski jump for short take-off and vertical landing (STOVL) aircraft, *Hyuga* could easily be modified to operate a few joint strike fighters or unmanned combat aerial vehicles. Indeed, these ships may be the precursors of larger, more capable aircraft carriers in the future – perhaps to counter the Chinese Navy's carrier program.

Credit: Internet

***Kongō**-class **JDS Kirishima**. **Kongō**-class destroyers take their names from Japanese mountains.*

The surface fleet includes six Aegis-equipped destroyers, larger and improved versions of the American *Arleigh Burke* design and as big as many Second World War cruisers. Four of these destroyers have an Aegis ballistic missile defence (BMD) capability which has been successfully proven in trials employing the Standard Missile-3 (SM-3) against land-based ballistic missile targets. They contribute to area-air defence at sea, and also have been deployed in defence of Japan against such threats as North Korean ballistic missiles which have been test-fired into the Pacific.

The three *Oosumi*-class Landing Platform Dock (LPDs) ships add considerably to the transport and amphibious capability of the JMSDF. The hull dimensions are just a little larger than those of a Canadian *Protecteur*-class supply ship, with a stern dock capable of operating two Landing Craft Air Cushion (LCAC) similar to those employed in the US Navy. The configuration is similar to a Landing Platform Helicopter (LPH) and the large flight deck and internal volume of these ships offers considerable flexibility for future expansion of roles.

Although the role of the JMSDF is mandated by law to be purely defensive, destroyers and underway replenishment ships have been deployed to the Indian Ocean to assist in *Operation Enduring Freedom* maritime interdiction operations. Recently the JMSDF has provided fuel to foreign navies conducting interdiction operations, including Canadian frigates. As well, Japanese ships participate in the annual RIMPAC Pacific exercises, and their training vessels deploy worldwide in order to gain experience in seas less busy than the coastal waters of Japan. It is reasonable to assume that such deployments of Japanese naval forces will continue.

Credit: Internet

Book Reviews

Understanding Modern Warfare, by David Jordan, James Kiras, David Lonsdale, Ian Speller, Christopher Tuck and C. Dale Walton, New York: Cambridge University Press, 2008, ISBN 978-0-521-70038-2, 371 pages, $39.99 USD

Reviewed by Dave Mugridge

Seldom does an academic textbook articulate as clearly and logically the complexities of modern warfare as this authoritative tome. *Understanding Modern Warfare* is a must for all students of defence or strategic studies, whether professional, military, academic or layman. Well written and sophisticated, it delivers a comprehensive digest of the amalgamated works from this impressive array of authors. Their success lays in the accessible manner in which they portray both the theory and the manner of modern war-fighting. Good, clear, concise language with well-made argument is the cornerstone of this valuable contribution to current research.

The authors' close links with both British and American military academies is evident from the outset. Speaking personally as a 'dark blue' graduate of the UK Defence Academy, I wish this book had been on my pre-course reading list as it brings together knowledgeable subject matter experts and a detailed bibliography to illustrate the components of joint warfare. I believe the quality of this book recommends itself to past, present and future graduates of any military staff college irrespective of their background.

The six chapters are individually well laid out and presented with informative tables and illustrations. Each of the authors conducts a thorough review of his subject area and their conclusions are applied to the future conduct of war-fighting in their environment. Wisely the publishers have avoided the temptation to follow the modern military mantra of 'effects-based operations,' instead allowing the reader to appreciate the value that each military arm brings to the party.

The 'revolution in military affairs' (RMA) is intelligently handled by all, with a pleasing absence of the normal zeal which accompanies its very mention in stove-piped military circles. The nexus between the successful adaptations of irregular warfare as a response to RMA is pertinent and will undoubtedly gain the approval of the warrior cadre and technophobes alike. After all, the revolution in military affairs is not the unqualified success that its advocates would suggest and at best Iraq and Afghanistan have shown there is a need to commit troops into combat; particularly in counter-insurgency campaigns. There will always be a need for boots on the ground, despite the success of the geek squad.

My one critical observation of this book is the absence of a chapter on how modern warfare is inextricably linked with the delivery of national security and how it is but one part of the triangle (defence, diplomacy and development). The authors do mention this link but given its importance, more could have been done to educate the reader, particularly given recent coalition failures in both Iraq and Afghanistan. We are all converts to the ideas of three-block warfare, the strategic corporal and the essential flexibility demanded of today's deployed military personnel. The complexity of modern warfare demands more from its commanders and their political masters than ever before if a truly comprehensive approach to security is to be delivered.

To summarize, this well-researched and well-documented book will add to the reader's understanding of defence, strategy, political, military interplay and the realities of modern combat. It achieves this through an intelligent appreciation of history, contemporary trends and future scenarios. The authors' works could easily stand alone but complement each other so the value of the book is greater than the combined value of the individual chapters.

To conclude, this book is a worthy if not essential addition to your bookshelf. I doubt any purchaser would not find it fascinating and informative. To christen it a condensed and portable staff course review would be parochial but still accurate. Unlike so many books published on warfare, I believe that it has the potential for further editions and the current contributors should be commended for their work to date. This book is ideal for those who value the joint-force approach to war-fighting but not slavish devotion to it. For me its real value is that it allows readers to draw their own conclusions from the well-researched articles.

Global Politics After 9/11: The Democratiya Interviews, edited by Alan Johnson, London: Foreign Policy Centre, 2007, 320 pages, ISBN 978-1-905883-11-5

Reviewed by Ann Griffiths

Why review a book about *politics* after 9/11 in the *Canadian Naval Review*? Well, if military forces are instruments of a state's foreign policy, then it would seem important that they know something of the foundations of that policy. *Global Politics after 9/11* is an examination of the

underlying elements of Western – particularly American – foreign policy. It is a series of interviews conducted by Alan Johnson, the editor of *Democratiya* and a professor of political science. The interviewees are nine prominent leftist, and one prominent neo-conservative, writers, academics and activists from different institutions, intellectual traditions, states and nationalities, including British, American, Egyptian and Iranian.

The response to the events of 9/11 caused tremendous division among representatives in the liberal-left camp. Leftists were bitterly divided about the invasions of Afghanistan and Iraq, and about the 'war on terrorism' in general. The reaction was confused and leftists argued amongst themselves about what path to take. Many found themselves in a position of knee-jerk anti-Americanism/anti-George W. Bush, others were very supportive of the idea of intervening to promote human rights and democracy (but not of American unilateralism), and others uncomfortably and implicitly supported unsavoury regimes simply because the Bush administration opposed them. The division and confusion is referred to at one point as "the vacuum at the moral centre of the left today" and at another point the "unilateral intellectual disarmament on the part of many on the liberal-left."

Johnson asked each person the same series of questions in order to probe the perspectives of the left/progressives (and one neo-conservative) in the post-9/11 world. They were asked questions such as the following: How serious a threat is Islamism? How can Islamism be defeated? Is Islam compatible with democracy? Why are many leftists unable to see Islamism as a threat or to oppose it vigorously? Is there a naiveté built into liberal civilization? What is the meaning of the concepts 'just war' and 'humanitarian intervention'? What are the agencies that should trigger such interventions? How should they be conducted? What drives US foreign policy? What lessons are to be learned from the intervention in Iraq?

The answers to these questions are very interesting. The reader ends up with 10 different perspectives on these matters, none of which are definitive but all of which are fascinating. There are interesting discussions in the book about, among other things, the sources and threat of terrorism, the responsibilities of American power, the crisis in post-9/11 methods of waging war, civilizational challenges within the Muslim world, the conduct of war in Iraq, Islamic totalitarianism, the relationship between rights and security, and the role and elements of neo-conservatism.

The book does not include a concluding chapter to sum up or analyse what has been said in the interviews. This is appropriate, I think, because to synthesize the various perspectives would be to deny the most important point that this book illustrates – that in a democracy, these fundamental issues must always be debated. Political figures have to make foreign policy decisions, but the debate about first principles should never cease. The elements of a state's foreign policy must be debated and updated as global threats and opportunities evolve. *Global Politics after 9/11* is an interesting and illuminating examination of the tenets of Western foreign policy in the wake of a significant change in the geostrategic environment.

Sir Samuel Hood and the Battle of the Chesapeake, by Colin Pengelly, Gainesville: University Press of Florida, 2009, ISBN 9780813033136, 251 pages

Reviewed by Jay White

Who rivals Nelson in the panoply of British naval gods? Possibly Viscount Samuel Hood (1724-1816), who Nelson himself called "the greatest sea-officer I ever knew." Admiral Hood's active service spanned three 18th century wars: the Seven Year War; the American Revolutionary War; and the Napoleonic War. He was the first of many Hoods who rose to prominence in the Royal Navy; so many that it is tricky to tell them apart. Samuel is the one whose namesake, HMS *Hood*, was the pride of Britain's pre-Second World War fleet.

Colin Pengelly's *Sir Samuel Hood and the Battle of the Chesapeake* focuses on naval action during the closing weeks of the American Revolution. Hood figured prominently in the second Battle of the Capes in September 1781 when a French fleet off the Virginia coast prevented the Royal Navy from relieving British forces at Yorktown. This failure is widely regarded as a turning point in the war. Although the battle itself was a draw, recriminations flew between Hood and his superior officer, Thomas Graves. Surprisingly, this book sides with Graves in the "Hood-Graves controversy," although it offers insufficient evidence to close the debate.

This was an age when empires were far-flung and the task of protecting them formidable. The stakes were so high that an admiral could – and in one case, famously did – face a firing squad for failing to press home the attack. While British tactics favoured engaging the enemy at all costs, for the French, an engagement avoided was a strategic victory. Until Nelson, the scales of battle never tipped decisively toward one side or the other.

Like most of his contemporaries, Hood's career included battles both won and lost. To be a successful admiral in

the 18th century required political acumen as much as seamanship skills. Those who achieved flag rank almost always fought a rear guard action at home to protect their interests and reputations against jealous rivals and scheming foes. Wielding pen and cannon with equal vigour, Hood's correspondence reveals a "carping and querulous character" (p. 6), "who could serve happily only in first place" (p. 55). Although "kind and generous to his family and friends, and understanding to his juniors" (p. 93), Hood "stressed duty and was severe on those who failed in it" (p. 5). The portrait of Hood that emerges, while less laudatory than one expects of a naval hero, probably captures more of the private man than he would have wished us to see.

With four decades of research under his belt, Pengelly knows his subject. But the book will disappoint scholars expecting a broader analysis based on a wide range of sources. The bibliography promises more than the citations deliver; too many endnotes (more than 70 of 285) contain bio-data with no sources specified. Secondary works by leading authorities are lightly referenced. The obligatory 'other side of the hill' chapter on French naval developments is virtually devoid of citations.

Over-reliance on too few sources is the bane of every historian. In one early chapter, Commodore Hood arrives in Halifax as the newly appointed commissioner of the dockyard and finds that stores of oak for ship repairs are shockingly low. Pengelly blithely accepts Hood's judgement that corrupt local contractors were to blame. The author then reinforces the point with his own "damning commentary" toward the laxity of dockyard administrators "in a continent where large tracts were covered in forests" (p. 24). What Pengelly (and presumably Hood) failed to realize was that native Nova Scotia oak was entirely unsuitable for shipbuilding purposes. As Julian Gwyn has pointed out elsewhere, the Navy Board considered North American hardwoods to be of inferior quality.[1] It was likely that the logistics of gathering timber under wilderness conditions contributed to supply problems on the Halifax station rather than corruption or poor administration. Gwyn's book, not to mention R.G. Albion's classic *Forests and Sea Power* (1926), would no doubt have been useful to Pengelly.

Maps and diagrams are invaluable even to those intimately familiar with the tactics of 18th century naval warfare. How an academic publisher could allow a monograph of this kind to be so deficient in illustrations beggars belief. The only map, of the Chesapeake region, is dated 1916 and shows railway lines! Numerous typos scattered throughout suggest other corners were cut in the editorial workflow.

As "both an analysis of the engagement and a biography of Admiral … Hood," this book serves the former purpose better than the latter. One could wish for a fuller treatment of Hood's other notable engagements, such as the blockade at Toulon, by Pengelly's own admission "the most difficult" of Hood's long career (p. 220). One could wish as well for a more in-depth analysis of French naval commanders, particularly Hood's great nemesis, the Comte de Grasse, during operations in the West Indies. But this is perhaps asking too much of a book aimed at an American readership. That said, *Sir Samuel Hood and the Battle of the Chesapeake* should warm the cockles of armchair admirals who know the ins and outs of fighting sail.

Notes

1. Julian Gwyn, *Ashore and Afloat: The British Navy and the Halifax Naval Yard before 1820* (Ottawa: University of Ottawa Press, 2004), p. 169.

The Trust Wants You!

Jacqui Good

Photo: Pte Dan Bard Formation Imaging Services Halifax

*Navy saluting cannons fire from HMCS **Sackville** during committal ceremony of Rear Admiral William Moss Landymore, 1 May 2009.*

HMCS *Sackville* is called Canada's Naval Memorial. This is an official sounding title for the last of the *Flower*-class corvettes which shepherded convoys across the Atlantic Ocean during the Battle of the Atlantic in World War Two. Many visitors to *Sackville* assume that the title means that the ship is a national historic site (like the nearby Citadel in Halifax) under the care of Parks Canada. Others think that the ship is an outdoor exhibit attached to the Maritime Museum of the Atlantic, or that, at the very least, the museum ship is a part of the Canadian Navy.

In fact, HMCS *Sackville* is literally kept afloat by a board of trustees – private citizens known collectively as the Canadian Naval Memorial Trust. Originally known as the Canadian Naval Corvette Trust, this group acquired *Sackville* in 1983. She had seen service immediately after the war, laying anti-submarine indicators across harbour entrances. From the 1950s onward she was converted to an oceanographic research vessel. All of the other *Flower*-class corvettes built for the war had been scrapped or sunk. There was, therefore, a sense of urgency to get this last corvette restored to her old self.

Most of the early trustees were ex-servicemen with vivid memories of the war. They brought their personal commitment to refurbishing the ship and memorializing their comrades. As the years pass, there are fewer and fewer veterans left standing. Trustees have come increasingly from civilian ranks and from the families of men who fought.

Once again, there is an urgency surrounding HMCS *Sackville*. There is a plan to move the ship indoors as part of a new museum complex on Halifax Harbour. This will require a large capital campaign and many more volunteers. *Sackville* will also be front and centre during the summer 2010 celebration of the 100th anniversary of the Canadian Navy.

As a result of all this, John Jay, the new chair of the Canadian Naval Memorial Trust, along with Captain (N) Phil Webster, the chair of the membership committee, have launched a campaign to increase substantially the number of trustees. As Jay says, looking just a little like Uncle Sam, "The Trust Needs You!" Jay is looking first for recruits among the Canadian Forces, returning to the tradition of earlier days. He has received support from the Commanders of Joint Task Forces Atlantic, Maritime Forces Pacific, the Naval Reserves and the Chief of the Maritime Staff. He has also challenged existing trustees to recruit at least one new member. Some trustees are signing up their children and grandchildren. Others are talking to friends and neighbours. Members of the trust are asked for a minimum contribution of $75 per year. Lifetime memberships of $1,000 are also available and come with a number of perks. And, for the first time, there are corporate trusteeships.

If you want to help keep *Sackville* afloat, you can write a cheque payable to the Canadian Naval Memorial Trust. The address is PO Box 99000, Station Forces, Halifax, NS, B3K 5X5.

Jacqui Good is a life member of the Canadian Naval Memorial Trust.

CANADIAN NAVAL REVIEW

Announcing the 4th Bruce S. Oland Essay Competition

The *Canadian Naval Review* will be holding its annual essay competition, the Bruce S. Oland Essay Competition, again in 2010. There will be two prizes for the best essays – a first prize of $1,000.00 and a second prize of $500.00. The winning essays will be published in *CNR*. The first prize will be provided by Mr. Richard Oland in memory of his father Commodore Bruce S. Oland, and the second prize will be provided by the Centre for Foreign Policy Studies at Dalhousie University.

Essays should relate to the following topics:

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

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

Announcing the 2nd Canadian Naval Memorial Trust Essay Competition

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

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

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

Operation Podium and the 2010 Olympics

By **Lt(N) Peggy Kulmala, Maritime Component Public Affairs**

In January 2010, one of the largest Canadian Forces domestic operations in history – *Operation Podium* – will unfold in and around Vancouver and Whistler, in support of the RCMP-led 2010 Olympic security efforts.

At any one point in time, the maritime component will have an *Iroquois*-class destroyer or *Halifax*-class frigate as well as multiple *Kingston*-class coastal defence vessels, *Orca* patrol vessels and a variety of small boats in the approaches to Vancouver Harbour and the city's bustling inner waterways. Using sophisticated equipment, advanced software and expert sailor know-how, the vessels will conduct coordinated surveillance patrols, sharing vessel tracking information with the RCMP and other partners in the Olympic Marine Operations Centre.

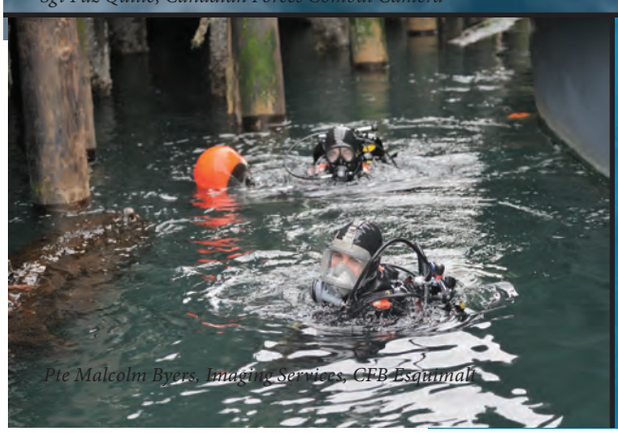
Sgt Frank Hudec, Canadian Forces Combat Camera

Sgt Paz Quillé, Canadian Forces Combat Camera

Sgt Paz Quillé, Canadian Forces Combat Camera

Cpl Roderick Hoppe, Imaging Services, CFB Esquimalt

Cpl Roderick Hoppe, Imaging Services, CFB Esquimalt



Pte Malcolm Byers, Imaging Services, CFB Esquimalt

Sgt Frank Hudec, Canadian Forces Combat Camera

MCpl Chris Ward, MCC Imaging Services