



CANADIAN NAVAL REVIEW

VOLUME 7, NUMBER 1 (SPRING 2011)

**Concepts of
Operations: A Year in
the Life of a Ship**

**The Emergence of
China as a Polar-
Capable State**

**The British Defence
Review: What It Means
for Britain and Its Navy**

**Sir Julian Corbett's
New Royal Navy:
An Opportunity for
Canada?**

Canada as a Sea Power

**Interview with Rear-
Admiral David Gardam**



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Photo: Cpl Chris Ringius, Formation Imaging Services Halifax



Leading Seaman Russell Brown, a Port Inspection Diver, dives on a piece of an aircraft found at the bottom of Lake Resolute near Resolute Bay during *Operation Nanook 10*, 16 August 2010.

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The Danger of Tactical Thinking in Times of Strategic Change

“Change is inevitable: change is constant.”
British Prime Minister Benjamin Disraeli

Historians and political scientists look back to the 19th century for parallels to the current age because it predates the era of global conflict and the bipolar stability of the Cold War. Prime Minister Disraeli’s experiences in the 1860s and 1870s are relevant to Canada’s current situation because he was a political leader in an era of unipolar military and economic power. It was also a time of major social, economic and technological change. Moreover, Britain was engaged in a losing war in Afghanistan. Disraeli was famous for his ability to think strategically and his largely successful efforts to advance the power of the British Empire. But what would he have made of the new strategic factor of our age: climate change?

Climate change is marching steadily upward in the list of security concerns. It is likely that coastal areas will flood and the Earth’s landmass will shrink as sea levels rise over the next millennium. These changes will occur even if we take action now to change our behaviour. Although Canada and Russia will fare better than countries in the southern hemisphere, the global outlook is dire. Is this sufficient impetus for institutional change?

The Canadian Chief of Force Development issued a future security study that came up with 45 deductions about trends in five analysis areas.¹ Four key words are used in connection with the terminology of probability: will, probably, possibly and unlikely. ‘Will’ means

circumstances are already moving in a stated direction, and moving off this trajectory is not foreseeable. In other words, the trend is a change of strategic importance.

Six of the study’s deductions (Numbers 11 to 16) relate to environment and resource trends and three have direct bearing on Canadian maritime capabilities. Number 11 says “[c]limate change *will* call for military support to assist victims of disasters around the world, ranging from humanitarian relief to full scale stability operations.” Number 12 says “[i]ncreased access to the Arctic, brought about by climate change, *will* have sovereignty, security, and environmental implications for Canada that *will* result in increased CF engagement in the Arctic region.” Number 13 says “[t]here *will* be greater demand for the maritime surveillance capabilities of the CF and for standing patrols of marine space under Canadian jurisdiction.” The italicized words illustrate how emphatic the report is about the strategic importance of the trends. It is also categorical about the need for maritime capabilities. The extensiveness of Canada’s coastline, the global scope of foreign missions plus the coastal urbanization of the world all lead to the conclusion that the projection of maritime force will be needed and that strategic lift and transport capabilities are essential.² Are these requirements sufficiently important to spur maritime institutional change?

Despite the emphatic statement of need in the study, Vice-Admiral Dean McFadden made a statement in November 2010 that downplayed the new capability requirements. According to Admiral McFadden, “[w]e won’t structure and specifically train for Humanitarian Assistance and Disaster Relief (HA/DR) but they will be core military



Permafrost thaws are threatening the Arctic community of Tuktoyaktuk, shown here in a 1996 aerial photograph.



Tuktoyaktuk today.



USS *Bataan* landing craft #1663 delivers 174 members of the Royal 22^e Regiment embarked in HMCS *Athabaskan* to Leogane, Haiti, during *Operation Hestia*, 28 January 2010.

missions of the 21st century because we are the ones with the capacity to respond.”³ The problem is that the relief effort to Haiti (*Operation Hestia*) showed the navy’s volumetric capacity is, in the words of Patrick Stewart, “positively puny.”⁴ Destroyers and frigates can carry supplies, but not nearly as many as are needed.

The demand for logistical capabilities *will* increase as climate change progresses. As more people move to cities located near coastal areas, the number of people affected by climate change-related maritime events will escalate. By some estimates, globally we have the capacity to assist 150 million people who have been affected by a humanitarian/natural disaster(s). But by 2025, the potential number of people affected by such events will be 450 million people.⁵ There will be a monumental shortfall, but the Canadian Navy seems unimpressed and remains resistant to change.

Resistance to change by traditional conservative bureaucracies is an important aspect in the study of change management. It often relates to a phenomenon known as ‘goal displacement’ which happens when an organization reverses its goals and means. A ‘means-ends inversion’ results in the means (fleet force structure in this case) being elevated to become a goal and the goal (achieving maritime security for Canada) being subordinated in the interests of pursuing the means.⁶ Protecting the status quo is viewed as loyalty to service organization and values. This attitude ignores that change is inevitable.

The force structure of the existing Canadian Navy was developed during the Cold War. Canada was a junior partner in a grand strategic alliance and was a specialist capability provider within that construct. The tactical thinking of that age caused the means-ends inversion because it was a practical necessity. Outside of that stable historical context, such resistance to change is out of step with the strategic trends.

What should a new institutional balance look like? Elinor Sloan recommends that land force structures for the new security environment be changed to a 50-50 balance between combat capabilities and combat support/ combat service support.⁷ Currently, the naval balance is 19-2, based on current fleet assets. If the conclusions of the future trends analysis are any indication, amphibious, engineering, cold weather, logistical, medical and civil-military cooperation capabilities should be considered. But being able to conceive such alternate plans requires lateral thinking developed through advanced programs of education. These are decidedly lacking in the navy and their absence limit its ability to conceive options and to plan for institutional change.

There have been studies of the departmental changes that occurred in the 1990s in Canada. The departments most able to take advantage of change had put effort and resources into advanced thinking. Research into alternatives to the status quo, testing alternatives against the judgements of external experts and best practices elsewhere, and seeking out the views of stakeholders and interested parties were essential to successful change. “The crucial importance of strategic research” was a key lesson of the entire review process and “good intentions, hard work or even a willingness to contemplate major change [were] not adequate to overcome the absence of advanced planning.”⁸ The navy needs to put far more resources into advanced thinking.

Currently, the navy has no service-oriented programs for strategic education or analysis, no open process for consultation and no evident desire to acquire the logistical capabilities that *will* make them relevant and effective in a wide range of roles and missions, not just humanitarian assistance/disaster relief. The need for change has been identified but there is not much evidence that the message has been received and understood. Maritime forces can deliver strategic effects, but only if they are supported, sustained and supplied by logistical capabilities of adequate volumetric capacity. It’s time to change. 🚢

Ken Hansen

Notes

1. Chief of Force Development, Department of National Defence, “The Future Security Environment 2008-2030, Part 1: Current and Emerging Trends,” 2010, available at <http://publications.gc.ca/site/eng/365586/publication.html>.
2. *Ibid.*, p. 7.
3. “Halifax International Security Forum, Day Three, Panel Eight,” “Crises Without Borders: Humanitarian Emergencies,” German Marshall Fund meeting in Halifax, 2010, available at www.gmfus.org/halifax/2010/video.html.
4. Patrick Stewart, “Just How Shipshape Are We?” CBC News, 10 February 2010, available at www.cbc.ca/canada/story/2010/02/10/f-vp-stewart.html.
5. See Gerald Martone, “The Right to Survive: The Humanitarian Challenge in the Twenty-first Century,” New York, Oxfam International, 20 April 2009, available at www.oxfam.org/en/policy/right-to-survive-report.
6. Hari Das, *Organization Theory with Canadian Applications* (Toronto: Gage Publishing, 1990), pp. 108-109.
7. Elinor Sloan, *Security and Defence in the Terrorist Era* (Montreal: McGill-Queen’s University Press, 2005), pp. 129-130.
8. Peter Aucoin and Donald Savoie (eds), *Managing Strategic Change: Learning from Program Review* (Ottawa: Canadian Centre for Management Development, 1998), pp. 282-283.

Concepts of Operations: A Year in the Life of a Ship

Mark Tunnicliffe

Concepts drive all phases of naval planning, whether or not the participants at the time recognize it. They drive the development and composition of a navy, the design of its ships, the character of its doctrine and the conduct of its missions. The concepts that drive fleet vision and strategy, force development and, ultimately, force employment on specific missions clearly need to be coordinated and linked by a logical set of assumptions about the tasks that the navy will be called upon to perform. If the assumptions made by the force developer and ship designer are found to be applicable for a particular operation, the force employers will obviously find their mission much easier to execute. They will have been provided with a task force appropriately composed of properly designed ships manned by personnel with the right training to confront the challenge they have been assigned.

This would be the case in an ideal world anyway. When the assumptions made in the planning phase for fleet development (at whatever level that might be) are not found to apply to the execution of a particular operation, complications often arise. They may or may not be serious ones and their mitigation typically depends on how flexible the navy is. This flexibility is built into the navy at all levels – its fleet composition, ship design, its doctrine and (most often) in the training and culture of its personnel.

One early year in the life of the Auxiliary Oiler Replenishment (AOR) HMCS *Preserver* provides a good illustration of this.

A Year in the Life of a Ship

Commissioned in 1970, *Preserver* was designed with an eye to the lessons learned from the earlier HMCS *Provider* design as a ‘one stop replenishment shop’ for a small but globally deployable navy. Constructed largely to commercial standards, *Preserver* still included a number of design innovations intended to facilitate a simultaneous stores, ammunition and fuel transfer capability – functions which in larger navies traditionally had been provided by separate ships. *Preserver* was also equipped with a significant maintenance capability enabling her to conduct second-line repair operations in support of task group ships and their embarked helicopters. She was also fitted out with compact but very capable medical and dental facilities. The helicopters (she could carry up to three) and four landing craft (LCVP) provided a modest shore connection capability in addition to the anti-submarine warfare (ASW) role her *Sea King* brought to a task group.

Conceived nonetheless as a warship, she was equipped with a 3"/50 bow gun and a curious rotating C4 hull outfit for a hull-mounted sonar. An SQS 505 sonar and a single quad Sea Sparrow missile system and fire-control radar were supposed to be back-fit during her first major dock period.¹ Clearly the operating concept underlying her design was to act as the logistical core of a largely ASW task group operating in a Cold War context and in this role, *Preserver* and her sister ship *Protecteur* fit the bill.

But events often call for operations to be conducted outside



Photo courtesy of the author

Preserver anchored offshore Saint-Louis-du-Sud, Haiti. The hills in the background are typical of the environmental impact of the deforestation carried out in the 19th century. Little topsoil was left to support agriculture.



Photo courtesy of the author

Preserver's Sea King transports construction supplies and school furniture for Saint-Louis-du-Sud.

the bounds of a ship's design concept – particularly in peacetime. The additional features of the *Protecteur*-class design coupled with the ingenuity of her crew as situations arose ensured the success of her missions. One year of fairly intense operations, 1974, illustrates this.

In the spring of that year *Preserver* was supposed to join a multinational exercise off Norfolk, Virginia, supporting and conducting gunnery and electronic warfare trials with the US Navy (USN) and Royal Navy (RN). Following this, *Preserver* was to proceed independently to Haiti to conduct a humanitarian sealift of supplies in support of a development project in the parish of Saint-Louis-du-Sud in the southwest area of that country. When the exercise was cancelled, the sealift operation became the prime purpose of her deployment. The aid project, originally sponsored by the Canadian Forces (CF) Roman Catholic Vicarate, with support from the Canadian International Development Agency (CIDA), had been ongoing for three years and was now concluding with the construction of a school and a medical centre. Consequently *Preserver* was loaded up with some 80 tons of supplies ranging from school desks, to steel telephone poles, an X-ray machine, apple sauce, medical supplies, rice pudding and canned food, electrical wire, clothing and plastic pipe.

But why sealift and why military? While some supplies like medicine could be (and were) airlifted in via Hercules, moving them from Port-au-Prince over Haitian roads to this outlying coastal region was a challenge, and this route was often impractical. Sealift directly to the site made more sense for most stores. Indeed, in many relief situations, support must be inserted into an area where infrastructure taken for granted by most civilian logistics services either has been destroyed or, as in this case, never

existed in the first place. Providing support under such circumstances often results in a more risky, innovative or manpower-intensive operation than can be easily obtained by contracting ships 'off the shelf.' Hence *Preserver*.

Even the approach to the area required some caution. There were no pilots and the navigation chart that *Preserver* used was a USN chart from the 1930s annotated as being copied from a French one made in the 1880s and adorned with warnings about shifting sandbars. With a draft exceeding 30 feet, *Preserver* had to feel her way in (with the proposed route overflown first by a Sea King), anchoring at a comfortable distance offshore. Ship-to-shore connection was effected by the ship's fleet of four landing craft and two helicopters to move about 159,000 pounds (lbs) of stores in two days. The LCVPs made some 22 runs (again over a carefully reconnoitred route to ensure they did not run aground) to deposit their 5,000-lb loads to the Haitian shore party on the beach while the helicopters moved similar loads to an improvised drop zone of packed earth. Transport ashore, beyond a few donkeys, consisted of some brightly painted trucks made available by the local authorities to move the stores to their destination. While this was underway, the ship's medical staff set up an improvised clinic in the town dance hall performing basic medical care that included the extraction of 500 teeth using pliers and a flashlight. Military humanitarian support operations often cannot assume much in the way of local infrastructure.

Of course *Preserver's* primary design mission was at-sea replenishment in a NATO Cold War scenario and the next month saw her on the other side of the Atlantic demonstrating her capability in this role. However, even



*Construction materials are offloaded from *Preserver's* LCVP under the supervision of the Haitian police.*

Photo courtesy of the author



Photo courtesy of the author

Preserver's hoses are jury-rigged in an attempt to supply water to the F222 FGS Augsberg.

the execution of this function was not without some quirks unforeseen by the requirements staff. After a quick exit from the Tagus River (during the 'Carnation Revolution' of 1974 in Portugal), *Preserver* first provided logistic support for NATO forces in Exercise Dawn Patrol at the entrance to the Mediterranean before escorting the Standing Naval Force Atlantic back to Canada. Multi-national fuelling evolutions were obviously pretty standard operations. What was not, however, was a requirement to transfer a large quantity of fresh water over to a German ship, FGS *Augsburg*, whose evaporators had broken down. A bit of imagination in how to jury-rig a jack-stay and a fire hose got the rig over to the stricken ship but the couplings would not fit – NATO standardization still had a way to go! Again, assumptions about the nature of replenishments made during requirements specifications are sometimes trumped by the realities of operations.

After her return to Halifax, *Preserver* was employed in her design role, providing logistics support to Canadian frigates conducting exercises in local waters – for a while. During the return transit from one of these, the task group

was notified of a large Soviet fishing fleet working George's Bank off Nova Scotia and was diverted to investigate and report on the activity. That fleet, composed of factory trawlers and processing ships plus their logistics support, proved to be a very large one. At times it was difficult to see the horizon for fishing ships. The Canadian warships were deployed in a loose line abreast, 10 miles apart, and were instructed to identify and report all ships encountered. *Preserver* was not a particularly manoeuvrable patrol asset but she did possess a complete helicopter air (HELAIR) detachment. Consequently, between the ship and her helicopters, she located, investigated, identified and reported over 90 contacts in a single day of operations. Three years later, Canada would start enforcing a 200-mile fisheries Exclusive Economic Zone.

In the summer *Preserver* was still executing her role as a supply ship as she supported two helicopter-carrying destroyers (DDHs) on a trip into Hudson Bay in Norploy '74 visiting northern communities and undertaking the traditional naval roles of demonstrating sovereignty in Canada's third ocean and showing the flag to Canadians. The operation had other objectives as well, and the more sturdily constructed AOR left the destroyers behind for the ice-infested waters further north. Continuing into Jones Sound she adopted yet another role – that of a research ship. For this trip, *Preserver's* complement had been augmented not only by professors and students conducting Arctic wildlife observations, but also by scientists from Defence Research Establishment Pacific who were conducting acoustic characterizations of Jones Sound. This research role got the ship's crew involved in hydrographic surveys, Arctic diving operations to lay cable for underwater instrument packages and numerous excursions by the ship's zodiac and LCVPs in support of acoustic trials. The ship also conducted trials on an



Photo courtesy of the author

Soviet trawlers and support ships on George's Bank.



A hydrographic survey party from *Preserver* sets up camp on Ellesmere Island.

experimental communications system investigating novel techniques for maintaining communications links in the high Arctic.

Certainly navigating a ship the size of *Preserver* in the ice-filled waters of Lancaster and Jones Sounds was not a trivial task, particularly in light of the still-incomplete charts and complete lack of radio aids to navigation at that time. It raises the question of why such a vessel would be used for the mission. Certainly the research ships of the Department of National Defence (*Endeavour* and *Quest*) were both ice-capable and designed for the purpose of conducting research at sea. However the range of tasks assigned to the deployment, beyond just research, suggested that the flexibility of a large ship with ample stores, fuel, aviation and a robust small-boat capacity was called for. Indeed, *Protecteur* conducted similar deployments in the years immediately before and after this one, suggesting that in the years before more stringent Arctic pollution regulations came into effect, the navy looked to its AORs as potential Arctic patrol vessels.

In the fall of 1974, the ship was once again called upon to execute a task not specifically envisaged by her designers. The previous year, 1973, had been marked not only by the Yom Kippur War but also by the Turkish invasion of northern Cyprus and Canadian troops were quickly drawn in. In May 1974 in the aftermath of the Yom Kippur War, the United Nations Disengagement Observer Force

(UNDOF) was set up with Canadian troops dispatched to provide communications and logistics support. Most of the vehicles they required were dispatched via airlift but follow-up transport was requested from the navy. Again, one assumes that civilian sealift was not considered, no doubt partly because some of the cargo was ammunition and because the Suez Canal was still not assured to be mine-free and consequently was not open to commercial traffic. Similarly, the CF peacekeepers in Cyprus had found that the small arms with which they had been provided were not convincing to any force challenging a UN partition line with tanks and armoured vehicles and a request was made for more robust equipment.

Consequently, *Preserver* was pressed into service as a transport ship to provide stores for army units in Egypt and Cyprus. She was certainly well designed to load and store the ammunition required, and had some space available on the flight deck for carrying logistics trailers. The ship even had room for additional food supplies and other comforts (including Christmas trees) for the deployed troops, but fitting additional vehicles onboard proved to be a challenge. There simply was not sufficient free deck space on a ship designed for underway replenishment to carry the jeeps and water tenders the army needed in the Middle East. As a military unit, she was able to sail into troubled waters, but as an AOR, there proved to be a limit to the kinds of things she could carry.



Preserver heads into ice-infested waters of Lancaster and Jones Sounds. It could be done if the ship was navigated with care and with help from helicopter reconnaissance.

A Question of Concepts

An 'operating concept' is a statement, in broad terms, of how a military intends to employ military art and science within defined boundaries. It can be applied at all levels of war from the strategic to the tactical and essentially informs the planning process. That process usually defines the presumed operating environment, doctrinal approach, general capabilities needed for projected mission execution and indicates the forces required. It is essentially a force developer's tool.

A 'concept of operations' on the other hand, is a force employer's instrument. It is the mission planner's approach to dealing with the specific situation which he has been tasked to confront using the tools and constraints which he has been provided. In an ideal world, the assumptions and instruments made by the force developer (including, in a naval world, the ship designer) will closely match the reality faced by the force employer and the task will be that much easier. Where the assumptions diverge significantly, the mission commander will have to adapt, modify and compromise as necessary with an attendant cost in money, efficiency, lives and/or success.

No one can expect the developers of an operating concept to be able to guess, years in advance, the circumstances of

the missions that their forces will be required to conduct. A key element, therefore, in adjusting to these unpredictable circumstances is flexibility – flexibility in doctrine, training, people, fleet composition and, of course, ship design. *Preserver's* 1974 schedule illustrated this principle quite convincingly. A ship designed for deployed maritime logistic support did that function very well, along with humanitarian sealift, Arctic research, military transport and fisheries patrol.

Photo: US Navy



HMCS Preserver arrives in Port Everglades, Florida, for Fleet Week 2009. While in port, *Preserver* crew members engaged in Habitat for Humanity projects in the local community.

A small navy will be called upon to execute almost as many different types of missions as a large one – only the scale will be different. However, with fewer ships and ship types at its disposal, it will have to depend on the flexibility of the assets it does have to tackle the missions it is assigned by the government. This flexibility can be built into the ships, fleet and personnel at the outset or perhaps later on (if there is time) in response to the specific operational circumstances as they arise. Flexibility, however, is expensive in either case. The only question that remains is when to pay for it – now or later. 🇨🇦

Notes

1. The missile system, which was intended to be added during the ship's docking period in 1975 was never fitted – an ironic decision given the hurried anti-air warfare backfit that would be provided to her sister ship *Protecteur* some 15 years later. Sometimes the concept designers do predict accurately!

Mark Tunnicliffe served 35 years in the Canadian Navy before retiring in 2007 and joining Defence Research and Development Canada as a Defence Scientist in Ottawa.

The Emergence of China as a Polar-Capable State

Aldo Chircop



Photo: Yong Wang, the Chinese Arctic and Antarctic Administration, Beijing, China

Xue Long in Arctic waters, August 2010.

Introduction

In 1999 Canadian authorities were taken by surprise when the Chinese ice-capable research vessel, *Xue Long* (*Snow Dragon*) made port in Tuktoyaktuk, Northwest Territories, without being detected. That port call should not have been a surprise because Canadian authorities were in fact notified of the vessel's presence in the region. This call and subsequent activities affirmed China's presence and capabilities in the region, further consolidating polar credentials which were already well-established in the Antarctic.

China's emerging polar capabilities and interests in the Arctic are attracting attention in Canada and elsewhere. In February 2010, the China Institute for Marine Affairs of the State Oceanic Administration of China hosted what was probably the first Sino-Canadian Workshop on the Arctic. The meeting was convened with the cooperation of the Polar Research Institute of China, the Marine and Environmental Law Institute at the Schulich School of Law at Dalhousie University and the Ocean Management Research Network. The workshop was mainly an exchange of views among Canadian and Chinese scholars.

Shortly after that event, a significant study focusing on China's Arctic interests by Linda Jakobson was published under the auspices of the prestigious Stockholm International Peace Research Institute.¹ Jakobson's report highlighted China's stated and unstated interests in the region and was quickly picked up by the global media and Canadian scholars. Another Canadian study on the subject was published by the Canadian International

Council, and other Canadian and US scholars joined this discourse. This interest is not unreciprocated. Several Chinese policy scholars are observing Arctic governance, including Canadian initiatives in the region. Thus, following Prime Minister Stephen Harper's five-day tour in the Arctic in August 2010, one Chinese commentator posed the question "why is Canada obsessed with the Arctic?"²

First Steps

China has not yet issued a foreign policy statement on the Arctic, similar to those issued by Canada, Russia and the United States, or even a preliminary release such as the European Union (EU) Arctic Communication. Jakobson has described China's approach to the Arctic as a "wait-and-see approach."³ Arguably China has already done more than that. It has built a credible polar research capability and has also expressed views on some Arctic issues, perhaps not at the highest levels, and cautiously, but certainly at a sufficiently senior level to suggest that a policy is evolving.

Xue Long is not China's first step in the Arctic. China has been a party to the 1920 Treaty Concerning the Archipelago of Spitzbergen (also known as the Svalbard Treaty) since 1925. It was not an original High Contracting Party, but became a party in 1925 on an invitation through France as the depositary state. China did not, however, undertake any significant activity in relation to the region before the 1980s. It was with the establishment of the Polar Research Institute of China under the auspices of the State Oceanic Administration in 1989 that its modern interests were given impetus.



Prime Minister Stephen Harper during **Operation Nanook**, one of three major sovereignty operations conducted annually by the Canadian Forces in Canada's Arctic, 25 August 2010.

The Maritime Trade Imperative

The potential for new Arctic trade routes stands out against the backdrop of China's tremendous economic stature and position in maritime trade. In August 2010 the size of China's economy surpassed that of Japan, elevating China to the status of the world's second largest economy. By some estimates, it will surpass that of the United States some time after 2020. Close to half of China's Gross Domestic Product is dependent on maritime trade.⁴

The EU is China's biggest trading partner – its trade in goods with the EU, which is largely seaborne, was valued at €326 billion in 2008.⁵ China is the EU's second largest trading partner, but the EU's largest source of imports. China's two-way trade (i.e., imports *and* exports), mostly seaborne, with the United States was valued in 2009 at over US \$360 billion. China became the second largest trading partner (after Canada) of the United States in 2006. In 2007 Canada's two-way trade with China was just shy of CAD \$40 billion. China is Canada's second largest trading partner. In 2010 China surpassed Germany as the world's largest exporter and also overtook the United States as the world's largest auto market.

This economic and trade profile triggers a strong interest in safe, secure and commercially-feasible maritime trade

Graphic: Internet



The Northern Sea Route to EU markets is not only shorter it is pirate-free and thus less dangerous than the route via the Strait of Malacca and the Suez Canal.

routes. Studies carried out by a Japanese-Norwegian funded project in the 1990s, The Northern Sea Route Project (INSROP), underlined the significance of the Northern Sea Route through Russian waters for east-west trade. This route is 4,800 miles (7,700 kilometres) shorter than the Suez Canal route for a Hamburg-Yokohama voyage.⁶ Other northern passages are also much shorter than current routes. In linking Europe and Asia, the Northwest Passage is 5,600 miles

(9,000 kms) shorter than the Panama Canal route and 10,500 miles (17,000 kms) shorter than the Cape Horn route. The transpolar route (cutting across the Arctic Ocean and bypassing the other two routes), the least feasible in the foreseeable future, is almost 5,000 miles (8,000 kms) shorter than the Hamburg-Yokohama route through the Suez Canal and over 6,000 miles (9,600 kms) shorter than the Panama Canal course for the same route.

Photo: Internet



The China Shipping Line container ship the CSCL **Long Beach** bound for European markets transiting the Suez Canal via the Al Ballah By-pass sea lane.

The Arctic is not shorter for all maritime trade between Europe and Asia.⁷ For instance Mediterranean ports are closer to Shanghai and Hong Kong using the Suez route. Nonetheless, other potentially significant routes, such as Shanghai-Rotterdam and Shanghai-Bordeaux, are substantially shorter through the Arctic.

No one is expecting that new maritime trade routes through the Arctic will displace the current Suez and Panama Canal routes, especially with the latter's enlargement to be completed in 2014. However, there is an expectation that the Arctic will be increasingly attractive for certain kinds of trade, in particular related to hydrocarbons and other minerals produced in the region and exported to China and other Asian countries, and for some seasonal transcontinental trade.



Photo: Internet

The MV Nordic Barents carrying 40,000 tons of iron ore takes an Arctic Ocean shortcut from Norway to Shanghai, September 2010.

Thus China's interest in new Arctic trade routes is to be expected. This interest is further justified by recent commercial transits. In 2009 two German commercial vessels transited the Northern Sea Route from Ishan, South Korea, to Rotterdam, demonstrating feasibility. In September 2010 the Hong Kong-flagged MV *Nordic Barents* (ice-class 1A) transported a cargo of iron ore from Kirkenes in Norway to Shanghai using the same route. This voyage was one-third shorter than the traditional Suez route, saving time, fuel and carbon dioxide emissions. Indeed, about \$180,000 worth of fuel was saved. A month earlier, the first-ever high tonnage tanker, the 100,000 ton *Baltica*, transited the Russian route from

Murmansk to China with a cargo of gas condensate. If current ice formation trends continue, the Northern Sea Route could be available for a period of two to four months every year.

If there is an increase in transits, at reasonable cost for the services supplied to each transit (icebreakers, pilotage, etc.) and at competitive insurance rates (at the moment insurance is mostly at a costly per voyage rate), China's large shipping companies (at this time on the sidelines) can be expected to avail themselves of Arctic routes, even though Arctic trade routes will be open only on a summer seasonal basis. There is likely to be most interest in the Russian route because the infrastructure and support services for shipping, although needing upgrades, are better developed than they are in the Northwest Passage. In fact, most of the pioneer transits to date have been through this route. Chinese shipping companies will compare the costs of financing, building, chartering and operating polar-class vessels with other major routes. There are draught restrictions in Arctic straits and channels that will likely rule out large container vessels.



Photo: University of Georgia

Scientists embarked in Xue Long collect water samples to determine salinity, temperature, nutrient concentration, chlorophyll activity and levels of carbon dioxide during University of Georgia-led international expedition to the Arctic, August 2008.

In addition to the prospect of savings on new trade routes, China may well have an additional incentive to promote trans-Arctic trade. Piracy has affected the cost of trade using the Indian Ocean and South China Sea routes. As well, Arctic shipping could contribute to economic development in east and northeast China. Known as the rust belt, China is actively promoting the economic and industrial revitalization of this region, which lags behind other major industrial and manufacturing centres. China is also seeking cooperation with Russia, among other states in the region, particularly because of energy sources.

Marine Resources and Research

Recently the US Geological Survey published the most authoritative statement on Arctic oil and gas resources to date. With the knowledge available at this time for all areas above the Arctic Circle, it concluded that “about 30% of the world’s undiscovered gas and 13% of the world’s undiscovered oil may be found there, mostly offshore under less than 500 meters of water.”⁸ The region also contains many other strategic minerals. Given that China is the world’s largest importer of iron ore and copper, and second largest importer of hydrocarbons, it would be surprising if China did not have an interest in the Arctic’s mineral and hydrocarbon resources, especially with the ground-breaking transit of the iron ore shipment from Norway to China in 2010.

China is seeking greater cooperation with Norway, in particular because of Norway’s advanced technology capabilities for deep water and cold environment extractive activities. China may have the capital, but it does not have the technical capability to engage in extractive activities in such an environment at this time.

Since the establishment of the Polar Research Institute in Shanghai, China has invested heavily in building its marine research capacity and has now become one of the major polar research countries in the world. In 1996 it joined the International Arctic Science Committee and participated actively in the International Polar Year. Recently the institute received new premises that include research laboratories with a capacity to accommodate 180 scientists and staff (currently at over 140), as well as administrative space, a large wharf, warehouses and workshops. Its areas of research at this time are polar glaciology, polar oceanographic science, polar upper atmospheric physics, polar biological science and polar information platforms. The Polar Research Institute has several dedicated labs for each of its research programs. It operates on the basis of five-year plans and is responsible for organizing Chinese National Arctic/Antarctic Research Expeditions (CHINARE), of which there have been several.



Xue Long navigates through Antarctic ice during China’s 24th scientific expedition to the region in March 2008.

Equally impressive is China’s presence on both poles through the establishment of research stations. It has three research stations in the Antarctic. The first is the Antarctic Great Wall Station, established on King George Island in 1985. This substantial station accommodates 80 summer and 40 winter personnel. The second is Zhongshan, located in east Antarctica in 1989. It accommodates 60 summer and 25 winter personnel. In January 2009 work commenced on the building of a third research station, Kunlun, located inland at Dome Argus, with a capacity to accommodate 20-24 research personnel. To date, China has mounted 26 CHINARE research expeditions to Antarctica.

In the Arctic China established the Yellow River Station in Ny-Ålesund, Svalbard (Norway) in 2003, accommodating up to 18 research personnel. It has four resident scientists. China was able to do this by virtue of the Svalbard Treaty mentioned earlier which provides certain rights to nationals of other countries. There are 11 such stations in the region of Svalbard and China is a party to an association of these research stations. To date, China has sent four CHINARE research expeditions to the high Arctic (1999, 2003, 2008, 2010). The fourth Arctic expedition was in the Arctic for 85 days between July-September 2010. It studied changes in the ice surface and their effects on the

environment in the Bering Sea, Bering Strait, Chukchi Sea, Beaufort Sea, Canada Basin and Alpha-Mendelev Sea Ridge. This was no small expedition. It was the largest to date, with over 120 scientists, logistical staff and media persons from China (including one scientist from Taiwan) and seven scientists from Estonia, Finland, France, South Korea and the United States.

Xue Long was used as a platform. It is an ice-strengthened vessel (class 2A, 167 metres, 21,000 tonnes with a capacity to break 1.2 metre ice, 32,000 km range). It has 128 berths, seven labs, a helicopter and an underwater robot. It has been described as the largest non-nuclear icebreaker, but a more precise characterization is that it is an ice-strengthened vessel which was originally built in Ukraine in 1993 for a different purpose. China has determined that a single research platform is not sufficient to meet the demands of expeditions to both poles and has accordingly commissioned the building of a smaller vessel, an icebreaker of 10,000 tonnes at a cost of US \$300 million.

Participation in Arctic Governance

In the view of a growing number of Chinese scholars, the Arctic is a region in which the international community has interests. In other words, the Arctic is not for the exclusive benefit of the Arctic Ocean coastal states. China views the Arctic Council as an important mechanism for the cooperative governance of the region, and to date has attended three sessions as an ad hoc observer. In 2009 it requested permanent observer status, but was turned down together with requests from Italy, the EU and South Korea. It expects reconsideration at a future ministerial meeting, after all there are already six permanent observers on the council – France, Germany, the Netherlands, Poland, Spain and the United Kingdom. The significance of permanent observer status is the concomitant ability to participate in most meetings without the need to seek permission to participate on a meeting-by-meeting basis. Permanent observer status is not just symbolic. It better positions non-Arctic states to participate in the governance of the region. The Arctic Council does not normally reject requests for ad hoc observer status, but this status limits participation in the council's activities.

In a speech in Beijing in August 2010, Norway's Foreign Minister Jonas Gahr Støre supported China's application and hoped that consensus could be found in the council.⁹ At the outset of its current presidency of the Arctic Council, Denmark stated that "[o]bservers and ad hoc observers are assets, and the Arctic Council should look for ways to further involve those that are ready to cooperate under the premise that the primary role of the Arctic Council is to promote sustainable development for the Peoples of the



Chinese scientists onboard Xue Long enjoy an outdoor feast during an expedition to the Arctic Ocean, 21 August 2010. The scientists carried out a series of research activities, including collecting sea ice and seawater samples.

Arctic and the Arctic States.”¹⁰ Among non-Arctic states, China stands out in terms of its resource commitments, activities and presence in both polar regions. The next opportunity for a council decision on this matter will be the Ministerial Meeting in Nuuk, Greenland, in May 2011.

The UN Convention on the Law of the Sea (UNCLOS) and its application to the Arctic also features in Chinese Arctic interests. In 2008 the ‘Arctic five’ (Canada, Denmark for Greenland, Norway, Russian Federation, United States) adopted a declaration in which they expressed commitment to UNCLOS as the legal framework containing rights and obligations for the Arctic Ocean.¹¹ This was assurance to the international community that the balance between the rights of coastal states and the international community enshrined in that instrument will be respected. China sees UNCLOS as providing the framework for governance in the region, but believes that this is not the only instrument to do so. For example, the Svalbard Treaty also plays a role in the region and international law as it applies to the region may need to be further developed.

Coastal state entitlements in the Arctic Ocean are accompanied by a responsibility not to encroach on international seabed areas, which are designated by the UN convention and international customary law as the common heritage of mankind and therefore cannot be appropriated. Assistant Minister of Foreign Affairs Hu Zhengyue was reported as stating in 2009 that “[w]hen determining the delimitation of outer continental shelves, the Arctic states need to not only properly handle relationships among themselves, but also consider the relationship between the outer continental shelf and the international submarine area that is the common human heritage, to ensure a balance of coastal countries’ interests and the common interests of the international community.”¹² Thus, although China did not issue a *note verbale* to the UN Secretary-General (as it did in the case of the Japanese submission), it is likely that it is concerned about



The crew of the Greenpeace ship MY *Esperanza* works with German marine scientists near the Arctic research station of Ny-Alesund in Svalbard, May 2010.

the Russian submission concerning its continental shelf in the Arctic to the Commission on the Limits of the Continental Shelf. China's view is that while coastal states have a right to establish "outer limits of their continental shelf beyond 200 nautical miles, States Parties shall also have the obligation to ensure respect for the extent of the International Seabed Area ... which is the common heritage of mankind, and not to affect the overall interests of the international community as a whole."¹³

Despite differences in the region, China prefers not to pronounce views on the region's disputes, including on the status of Canadian and Russian Arctic waters, possibly because in turn it does not welcome pronouncements by non-regional states on its sovereignty and maritime boundary disputes in the South and East China Seas.

Accordingly, conscious of its potential clout as well as its own disputes with neighbours, China has been careful in advancing its interests in Arctic governance and has consistently placed emphasis on cooperation, especially on marine scientific research, clearly an international community right in the UN convention of which it is availing itself. This explains the significant investments it has made in marine scientific research to establish itself as a credible and desirable research partner.

A Unique Role?

Some scholars view China's foray in the Arctic with suspicion while others see China's current activities in the region as exercising its rights under international law. As a nascent global power, China should be expected to assert interest in both poles and to expect to be included in the governance of the Arctic. Its political interests will be driven by its economic interests, primarily maritime trade and long-term access to new energy sources and minerals. China has ocean and climate change research interests and it is arguable that a global power with such scientific and economic clout should be contributing to building understanding of climate change impacts at a global scale.

Beyond building knowledge and displaying increasing skill, China appears to be using marine scientific and climate change research as a way of engaging the Arctic

region. Indeed China may be building confidence among regional states that it has something important to contribute and the capacity necessary to cooperate effectively in the region. It has invited foreign researchers on its vessels. In 2010 Norway signed an agreement on polar research cooperation with China. In the same year, Canada and China signed an agreement on scientific cooperation which could be a framework for cooperation in polar science.

It is also interesting to note that China has spoken for the global commons in ways that no other major state has done in recent times. Clearly there is self-interest in reminding Arctic states that extended continental shelf claims, while permitted to coastal states under UNCLOS, should not trench on the international seabed area. In doing so, however, it is also playing the role of advocate for the common heritage of mankind and interests of developing countries, which no other Arctic state is doing. It has given itself a voice for developing countries. Considering its substantial official development assistance in all developing regions, this is a role which many developing countries are likely to endorse. 🍵

Notes

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The British Defence Review: What it Means for Britain and its Navy

Geoffrey Till

Introduction

As part of a range of huge spending cuts introduced by the coalition government to tackle its budget deficit, an estimated cut of between 7.5 and 8% in Britain's future defence spending over the next five years has been announced. This is on top of a 10% 'black hole' in the defence budget that already existed – so the actual total cuts are more like 17.5% than the figure officially announced. The government has tried to answer the criticism that it has rushed through these cuts with insufficient strategic thought beforehand by producing a strategy review document called "A Strong Britain in an Age of Uncertainty." This document was generally welcomed but was criticized for dodging some fundamental issues. The most obvious of these is the basic question of how much money Britain *should* be allocating to defence as a proportion both of government spending and of the country's Gross Domestic Product (GDP). It assumes, rather than justifies, a target of just over 2% of Gross National Product (GNP), the NATO minimum. The review also assumes that the increasingly unpopular Afghanistan campaign must be the 'main effort' for the next five years and should take priority over preparations for a longer term future, but did not try to justify this assumption.

The failure to tackle this last point seems bizarre given the increasing degree of scepticism about the policy and worries about its long-term consequences on both sides of the Atlantic. In the United States, President Barack Obama is pressing his generals for as early an end to the combat phase of the Afghan campaign as possible, a campaign now attracting increasing criticism from the defence-academic community. Thus we have Robert Kaplan arguing in his new blockbuster book *Monsoon* that "the sum total effect of U.S. preoccupation with Iraq and Afghanistan has been to fast-forward the arrival of the Asian Century, not only in the economic terms that we all know about, but in military terms as well."¹ Likewise Seth Cropsey in an article in *Foreign Affairs* calls Afghanistan "a detour" for the United States from the prime and increasingly demanding task of maintaining a balance of power in the all-important Asia-Pacific region of the future.²

These views may not be right, either for the United States or the UK, but the point is that they were not even discussed in the course of what purported to be a review of Britain's long-term strategic interests. Instead, in the words of General Sir Nicholas Houghton, Vice Chief of the Defence Staff,

We have had to Afghanistan-truth the outcome. And an operation like Afghanistan gives a sensible benchmark against what one of the enduring capabilities of our force structure should be, though not in identical terms.³



British soldiers conduct a casualty extraction simulation.

The report and the Strategic Defence and Security Review (SDSR) were comprehensively savaged by both the House of Commons Select Committee on Defence and in an extraordinary debate in the House of Lords on 12 November 2010 in which Air Marshals, Generals and former Defence Secretaries took turns to rubbish the conclusions that had emerged. The Royal United Services Institute (RUSI) in London conducted an opinion survey of defence-academics and others about their views of the SDSR process. This survey illustrated that most respondents were disappointed at both its lack of strategic depth and deeply worried about its consequences. Because of the fixation on Afghanistan, Britain in 2015 would end up with a force ratio of army to the other services of 65%, analogous to the continental mind-set of Germany – and significantly worse from a maritime point of view than the US equivalent figure of 55%. Extraordinary consequences like this only emerged *after* the review process,

Photo: British Army



Artist's concept of HM Ships *Prince of Wales* and *Queen Elizabeth*, the new Royal Navy aircraft carriers.

not during it. They are what dropped out of the bottom of an over-hasty process of review that was not actually about strategy at all. The process was instead dominated by the urge to save as much money as possible as soon as possible, with the vague hope that things could be put right, or at least recalibrated, at the next SDSR in 2015. In the margins of the Libyan events in February/March 2011, there was still further pressure to re-open the debate.⁴

The Impact on the Royal Navy

The result has been particularly severe for the Royal Navy (RN) since it was unlucky enough to have the most expensive capital projects going through at the time of the review after a long period of relative neglect. These projects, moreover, seemed to have little to do with the immediate needs of the Afghanistan campaign. The projects included:

- two large 65,000 ton strike carriers,
- a replacement program for the RN's *Trident* strategic deterrent submarine force;
- the completion of its *Astute* nuclear hunter-killer submarine and Type 45 air warfare destroyer programs; and
- in the longer term, an ambitious Type 26 frigate replacement program.

All of these projects involve cutting-edge technologies of the sort appropriate for a navy that the American journal *DefenseNews* called "the gold standard for the world's navies" in a recent editorial, but they are all fiendishly expensive.⁵

Not surprisingly, this ambitious fleet renewal program has been scaled back and there have been cuts in the current fleet to help pay for the 'recapitalization' of the future fleet. The RN will:

- decommission its current, if somewhat venerable, flagship carrier HMS *Ark Royal*;
- decommission its Harrier aircraft;
- lose one helicopter carrier;
- lose one amphibious warfare ship;

- lose four old Type 22 frigates;
- lose two replenishment vessels; and
- lose 5,000 people.

While both carriers will be built, only the second, HMS *Prince of Wales* will be initially completed as a fleet carrier and will only 'routinely' carry 12 Joint Strike Fighters although equipped for 36. The first carrier to be completed – HMS *Queen Elizabeth* – will be commissioned for three years as a helicopter carrier, without fixed-wing aircraft, and may even be sold off.

This sounds bad enough, but many expected it to be worse. The amphibious force has survived, albeit at a somewhat smaller scale, and the Royal Marines have fought off the threat of being taken over by the army. As well, the Type 45 destroyers will be completed, there will even be a seventh *Astute*-class submarine, and the *Trident* replacement program, now underway, faces no more than a slight delay. These last two 'concessions' have satisfied the navy's submarine community and in fact much relieved their amphibious colleagues too, who had feared their extinction, despite having done so well in both Iraq and Afghanistan.

From 2015, new frigates in the shape of the Type 26 Global Combat Ship, new tankers, landing ships and maritime helicopters will, hopefully, all be joining the fleet. Both carriers will at least be built, and *Prince of Wales* will be upgraded for the operation of the much more capable conventional take off variant of the F 35C Joint Strike Fighters. There may be hope that the first carrier will be retro-fitted as a fleet carrier later on. Both of them, after all, could well be serving until the 2070s! The fact that the British carrier will carry fewer fighter aircraft than it could



The Arleigh Burke-class destroyer USS *Winston S. Churchill* (right) and the Royal Navy frigate HMS *Cumberland* (left) transit the English Channel toward Portsmouth, England, June 2010.



HMS Ark Royal entering US Naval Station Mayport, Florida, in May 2010 while conducting an operation with US Navy ships and aircraft.

is in itself hardly surprising. After all, even the Americans cannot afford full deckloads for their super-carriers.

All the same, the problem area is in maritime aviation. One serious part of this has hardly been noticed – the cancellation of the Nimrod MRA4 replacement program leaves the Royal Air Force (RAF) without a credible maritime patrol aircraft. This program was admittedly lamentably late – some 144 months behind schedule – and with some £3.6 billion already spent on it, a third more than planned, it had become very expensive. Its loss at this late stage when allegedly the fourth aircraft was actually being painted, will have devastating consequences for the hard-pressed maritime community in the RAF. It will affect the UK's ability to protect its own sea-based deterrent and to monitor everything from the cyber-chatter of international terrorists to the passage of submarines through the Atlantic Ocean. At a time when terrorism and cyber-attack are amongst the things the policy-makers tell us we should most worry about, this decision seems nothing short of extraordinary.

The RAF's preference for the retention of its Tornado force and the consequent early disposal of the Harrier force, together with the rapid decommissioning of the *Ark Royal* represented another major blow for the RN. The suggestion is that this last minute change was forced on the navy, *after* the inter-service bargain on fair-cuts-for-all had been agreed. It leaves the navy in the unenviable position of having, in a few years time, completely to reconstitute its fixed-wing aviation almost from scratch, and to have to do so against the most demanding of operational specifications – that of flying an advanced aircraft (the Joint Strike Fighter F 35C) off an equally advanced and ambitious carrier. When tomorrow's sceptics (no doubt in

light blue or khaki uniforms!) point to the very small air-wing of the *Prince of Wales*, further doubts about whether the game is worth the candle will undoubtedly arise. Countries like China or India (or maybe Brazil) now with a greater sense of the importance of sea power than coalition Britain would probably be happy to participate in the subsequent yard sale!

The nightmare prospect, to be serious once again, is that the RN has made sacrifices over the better part of 20 years in people, minor warships, auxiliaries, submarines and the escort fleet in order to get the carriers. Having made these sacrifices it will end up without a credible carrier capacity and a small unbalanced fleet simply incapable of attending to the all-important maritime interests of what is still a maritime country. The situation will not be as bad, certainly, as that of Vietnam, the Philippines or Indonesia, but it is going that way. Ironically, all of them are showing signs of seeing the errors of their previous ways, and taking their naval requirements and responsibilities much more seriously.

Implications and Consequences?

Prime Minister David Cameron has stated that the cuts will not reduce Britain's strategic weight but it is hard to see how this can be the case once the Afghanistan campaign has ended, as it seems increasingly likely to do within the next two or three years. The immediate and medium-term consequences of the disproportionate investment in combat operations in Afghanistan assumed in the SDSR will inevitably be a marked reduction in the Royal Navy's ability to meet its increasingly important commitments all around the world. These cuts can be seen as part of the slow drift of maritime power from West to East, accelerating as Robert Kaplan has remarked, the



*A giant floating crane lifts the stern of the South Korean **Pohang**-class corvette ROKS **Cheonan** from the Yellow Sea after an explosion ripped the ship in half, March 2010.*

maritime decline of the West. Given the increasing preoccupation of the United States in the Asia-Pacific region, the cuts will certainly not be welcomed by the US Navy which has looked on the RN as its principal ally for over 50 years. Given the constant refrain in the review and decision-making process that the American connection continues to be a significant driver of UK policy, this mismatch seems strange. One possible explanation may be that the UK is quietly abandoning its attempt to influence US opinion through the deployment of rounded high-quality general-purpose forces.⁶

In truth it is also hard to see how the RN can possibly hope to meet its existing commitments, let alone the ones that will certainly arise as the maritime nature of the 21st century becomes clear. In the same timeframe as the SDSR was conducted a number of important maritime events occurred, including:

- Russian submarines appeared once more in UK waters;
- a North Korean submarine sank a South Korean corvette;
- the United States had a series of increasingly acrimonious maritime exchanges with China and switched a growing proportion of its forces to the Pacific;
- the situation in the South China Sea deteriorated markedly;

- Vietnam ordered six Kilo submarines and Malaysia deployed its first two;
- pirates captured more ships than ever despite the presence in the Gulf of Aden of one of the biggest naval armadas seen for years; and
- the round of multilateral naval exercises and disaster relief operations around the world escalated enormously.

Clearer evidence of an emerging maritime future, and the need for maritime countries to prepare for it adequately, could hardly be found. It is certainly the way things are being seen outside the UK and Europe.

The emerging gap between Britain's maritime commitments and its capacity to service them is illustrated in a small but significant way by its likely impact on the country's contribution to the Five Power Defence Arrangement (FPDA) involving Singapore, Malaysia, Australia, New Zealand and the UK which is in its 40th year.

Although this commitment still has a high priority at ministerial level, the Afghanistan commitment has already meant that Britain has found it difficult to provide the warships and personnel for FPDA exercises and meetings that it would have liked to have done. The loss of half a dozen warships can only exacerbate that, although it is true that more work can be expected from capable new vessels than from old ones that need constant maintenance. This is much less true of people, however, and the UK will find it more difficult than in the past to staff FPDA exercises on land and sea.

But surely there must be another side to all this? To be fair, the review process has thrown up two possible compensatory responses to this doom and gloom. The first is the idea of closer cooperation with Britain's European allies, who are all facing the same sort of challenges because of the impact of the recession on their defence budgets and a general political disinclination to invest in defence. In November 2010, the British and French struck a historic deal to pool some aspects of their carrier and nuclear programs. One of the strategic reasons for this, typically to be found on the French rather than the British side since the French now 'do' grand strategy so much better than their colleagues over the Channel, is the fear as expressed by Hervé Morin a former Defence Minister that "[a]t the pace we're going, Europe is progressively becoming a protectorate and in 50 years we will become a game in the balancing act between new powers, in which we will be under a Sino-American dominion."⁷ Aware of

that, the French have agreed to reconcile their national interests with Britain's in a manner which is truly historic and may indeed produce some benefits.

But whether any such strategic bargain will deliver goods of strategic significance rather than of transient political expediency can be doubted. The continuing if paradoxical European obsession with state sovereignty (to which the British and the French are as pre-disposed as any other Europeans) is likely to limit the extent to which the continent can escape from its strategic bind by this means. It will certainly place significant constraints on the *operational* aspects of the Franco-British deal. The diversity in the European response to the challenge of Afghanistan for example is far from encouraging.



Photo: Belgian Navy

The nuclear-powered French aircraft carrier **Charles de Gaulle** anchored off Portsmouth, UK, in 2005.

The other less jaundiced response to the current situation is the hope that in the next strategic review now set for 2015, the skewing of British defence away from its maritime roots will be corrected after a decade of strategic distraction which future historians are likely both to be puzzled by and to condemn. But here too, there are worrying issues. The first has to be increased doubts as to the benefits to be derived from 'jointery' in *practice* rather than jointery in *theory* which was supposed to produce a total military force that would through seamless coordination be so much more than the sum of its parts. The major military players in the SDSR process have repeatedly claimed that they all played 'with a straight bat,' did not engage in the destructive inter-service battles so characteristic of the 1960s, and that media representations to the contrary were ill-informed mischief-making. Perhaps, but it certainly did not appear like that to outsiders. Britain's beleaguered

maritime community seems to find it hard to believe that a result so skewed in a continental direction could really have resulted from an open and rational consideration of strategic alternatives.⁸ If there is any truth at all in such suspicions the prospect for a fair-minded review in the run up to the next SDSR in 2015 must seem remote indeed.

The second reason for pessimism about the prospects for bread and butter, if not jam, tomorrow is that the cutting process is not over yet. Paradoxically some of the academic experts consulted by RUSI were disappointed with the result because they did not think the financial savings had gone far enough to meet the government's budgetary targets. In Year 1, defence spending is *still* nearly £2 billion over budget, so many expect continuing argument about deferrals, and demoralizing training, activity and exercise cuts, and there is talk of slicing another Type 23 off the destroyer/frigate fleet to bring the total down to 18.⁹

The strategic arguments, such as they were, are now regarded by the government as over. Instead of reviewing them constructively as Afghanistan peters out, the immediate institutional focus is on trying, yet again, to improve the procurement system so that the devastating cost and time over-runs that have plagued major defence acquisitions, naval ones included, in the past can be better controlled. This is praiseworthy indeed, but it is hardly likely in the short term to do much to overcome the worst consequences of SDSR 2010, or to prepare the way for a corrective SDSR 2015. 🇬🇧

Notes

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Sir Julian Corbett's New Royal Navy: An Opportunity for Canada?

Brian K. Wentzell

The British government recently made significant reductions in its spending to reduce a record budget deficit to more manageable levels. The Royal Navy (RN) bore the brunt of the cuts, both in a direct and indirect way. The Royal Air Force (RAF) vacated the long-range maritime patrol business, leaving the navy to protect its Trident ballistic missile submarine fleet with Merlin anti-submarine helicopters, attack submarines and surface vessels. Furthermore, it removed the Harrier attack aircraft from service thereby abolishing the rationale for RN strike aircraft carrier forces. HMS *Illustrious*, now an interim helicopter carrier, will be paid off in 2014 while HMS *Ocean* will be retained until the new *Queen Elizabeth* is commissioned as a helicopter carrier.

There is a government commitment to complete building of the *Queen Elizabeth*-class aircraft carriers and to equip one of the two with an unproven electric catapult system and a dozen F35C Joint Strike Fighters in 2020. The second ship will be commissioned as a helicopter carrier and after three years be paid off into reserve pending disposal. While this plan may change, it cannot change before the new aircraft carriers are commissioned and the F35C aircraft achieve operational status, some time after 2020. The RN is therefore out of the strike business for at least a decade. The RAF has convinced the British government

that it can cover the world with expeditionary air wings of Typhoon and Tornado fighter-bombers. There is little doubt who won this inter-service competition!

Aside from the retention of the Trident nuclear deterrent mission, the RN is reduced to a medium-size sea-control navy with an amphibious capability. The amphibious capability has been reduced by the placing of one of the two *Albion*-class landing ships in reserve. The capability will be further reduced by the withdrawal of a modern Landing Ship Dock (LSD) from service. Despite these reductions, the United Kingdom retains a substantial capacity to undertake humanitarian and military missions where air superiority is not in issue or projection of force ashore does not require locally based fighter-bomber support.

While these changes appear to have been financially inspired, one can hypothesize that we are witnessing a return to the naval theory of Sir Julian Corbett.¹ Simply restated, Corbett recognized that navies could not, on their own, resolve conflicts ashore. Land operations are the tasks of armies while navies, and air forces, are enablers and supporters of such operations. Air forces have similar supporting roles in land operations. In this light, the British government's defence decisions can be seen as having strategic coherence and relevance.

Canadians take pride in their military, particularly when it is engaged in humanitarian operations (Haiti 2010), the evacuation of Canadian citizens caught in turmoil abroad (Lebanon 2006), or supporting classic United Nations (UN) operations (Cyprus 1964, Egypt 1956). The Canadian Navy was involved in each of these operations through the deployment of forces, provision of logistic support, delivery of aid, or citizen extraction operations in the theatre. In Cyprus and Egypt the aircraft carriers of the day carried army vehicles and equipment to the theatre of operations. In each operation the Canadian Navy supported the Canadian Army or other agencies in a land operation. These naval operations conform to Corbett's theory.

In Lebanon naval officers (not ships) carrying sidearms and money engaged civilian



Plymouth-based HMS *Bulwark* is currently conducting sea trials having recently come out of a major refit. Improvements were made to her landing craft and aircraft tactical night vision capability and her ability to operate two heavy-lift Chinook helicopters simultaneously from her flight deck.



Photo: DND

Canadian sea power has been represented by many types of ships over the years, for example, HMCS *Algonquin*.

ships to assist the Department of Foreign Affairs and International Trade in the extraction of Canadian citizens from the conflict zone. In Haiti HMCS *Athabaskan* and HMCS *Halifax* transported troops and material to initiate and conduct operations over the shore to provide aid and assistance to earthquake survivors under the auspices of the UN and the Haitian government. However, in both cases the ability of the navy to execute its mission was limited by the physical resources available.

The operation in Haiti involved naval, army and air force units in a joint operation. The navy provided the initial forces in the form of two ships, embarked personnel and one Sea King helicopter to render immediate assistance ashore and to provide command functions until the army, with the assistance of the air force, could deploy troops ashore. The use of a destroyer and frigate, supported by a single helicopter and the ships' rigid-hull inflatable boats (RHIBs), exposed the inadequacies of the fleet for such duty. Medium landing craft were 'borrowed' from the US Navy and air force Griffin helicopters were used to supplement the sole Sea King in the movement of people and material. The classic Canadian 'can do' worked again.

The weakness in the response was due to the fact that the operational support ship, HMCS *Preserver*, was out of service pending a long refit, and her sistership in the Pacific fleet was otherwise tasked. Either ship, if available, could have provided better cargo capacity and 'over the shore' means. This class carries two small vehicle/personnel landing craft and can carry up to three Sea King helicopters, should they be available. But without the ships, the navy had to make do with what it had, and it did so very well. The command capabilities of *Athabaskan* were important and even if the support ship had been available, there would have been a need for these capabilities until the joint task force established its headquarters ashore.

These operations are becoming more frequent with a confluence of factors and events. Urbanization is a phenomenon across the world, and the larger urban centres are frequently found along coastlines. Climate change, strong storms, earthquakes and tsunamis affect these

locations as does the turmoil of failing or failed states. As humanitarian operations become more frequent, in either permissive or combative environments, the range of responses will span the full spectrum of military operations. Most operations will be at the lower end of the military spectrum but, as the current chaos in Haiti shows, the situation can quickly escalate into civilian conflict demanding the presence of highly qualified and equipped security forces. These complexities demand a well-equipped military that can deal with a broad range of in-theatre conditions that can change with little or no warning.

The choices made by the British government in restructuring the Royal Navy take these complexities into consideration. The maintenance of air and sea transportable army and marine formations provide the means for armed intervention, delivery of humanitarian aid and evacuation of non-combatants in permissive or semi-permissive environments. The retention of helicopter carriers, destroyers, frigates, amphibious and logistic shipping provides the means to command, conduct and sustain such operations. The elimination of the Harrier fighter-attack aircraft and the aircraft carriers is considered an acceptable risk. The decision recognizes that higher end combat such as state-on-state conflict – thought to be unlikely except in the Korean Peninsula or the Persian Gulf areas – will be major land campaigns dealt with using coalition capabilities.

The challenge for Canada, and the Canadian Navy, is to recognize the significance of the British decision. The Canadian Navy cherishes being a blue-water fleet with



Photo: DND

Royal Canadian Dragoon Ferret delivered from HMCS *Bonaventure* arriving at Famagusta, Cyprus, March 1964.



Ambassador Sandra McCardell, Canada's Ambassador to Libya, tends to Libyan evacuees as they disembark from CC-130J Hercules at the Malta International Airport, 3 March 2011.

international reach. The ability to command an international squadron or to sail in support of an American carrier or amphibious group is its objective. Is this the best value for the Canadian taxpayer and is it the best way to serve Canada's national interests?

Our national interests involve the maintenance of Canadian sovereignty, the defence of Canada, the defence of North America, the sustainment of democratic ideas and institutions worldwide, and the maintenance of the free market system through participation in international political, trade and security organizations. From security and defence perspectives, this indicates that national participation will involve a whole-of-government approach in collaboration with the UN, the North Atlantic Treaty Organization (NATO) and coalitions of the willing.

This suggests that Canadian military requirements have changed. The high end of army and air force involvement is currently represented by the Afghanistan operation and, for the Canadian Navy, supporting US Navy expeditionary forces. The mid-range is represented by the naval anti-piracy operations in the Indian Ocean. The low end is found in domestic sovereignty operations in Canada's

three ocean and coastal areas. With the exception of the *Kingston*-class, all Canadian warships operate at all levels of naval operations.

The recent world economic crisis, the deficits and debt incurred by stimulus spending and financial bailouts, and the enormous costs of the Iraq and Afghanistan wars have created financial problems for most Western states. Canada is not immune from these woes and is about to embark on another period of austere national budgets. The deficit must be reduced quickly to avoid the type of financial crisis the Chretien government dealt with more than a decade ago. The Canadian Navy and Canadian Air Force have not yet realized the forthcoming fiscal storm. Multi-billion dollar air warfare destroyers and fifth generation strike fighters may be little more than a dream in a couple of years. The proposed national shipbuilding program may not match the expectations of today.

How can the Canadian Navy renew its fleet to meet, first, its low- and middle-level conflict tasks and, second, participate in high-level coalition operations? The lessons from the British predicament and the resulting naval reductions are plain. Fiscal responsibility cannot be ignored by any competent government. National security strategy and implementation programs must be realistic with risks analysed and assessed. The defence strategy and plan is a component of the larger national security strategy and the foreign policy of the state.

The British government did not conduct a foreign policy review as the financial situation was dire and decisions could not be delayed. The defence strategy review, however, evaluated certain foreign policy and security risks. For example, it concluded that the likelihood of state-on-state military conflict was low. It concluded from this that there was little likelihood of direct military threat to the national homeland. Therefore reductions could be made.



Photo: Cpl Pier-Adam Turcotte, CFB Esquimalt Imaging Services

HMCS *Calgary* (top right) sails with ships from the USS *Abraham Lincoln* Carrier Strike Group during a refuelling operation off the coast of California, November 2007. *Calgary* was integrated with the multi-ship carrier strike group, providing both the group and *Halifax*-class frigate opportunities to enhance their interoperability, as well as provide important training opportunities.



RFA *Largs Bay* seen departing Portsmouth 15 January 2007.

What should Canada take from the British decision? First, there is need of a coherent foreign policy that reflects the identification and pursuit of Canada's national interests. The policy needs to set achievable prioritized goals and timeframes. Second, there is need of a risk-assessed national security strategy that includes consideration of the financial ability of the country to implement the resulting security policy over a reasonable period. Third, there is a requirement for a defence strategy that assesses the military risks that flow from the foreign policy and national security strategies and offers credible, achievable and sustainable capabilities.

Canadians find themselves in a similar but less severe situation as the British. With little time to undertake even proper risk assessments, we nonetheless still need to know the answers to several questions. For example, what is the future of the Canadian Navy and how may that future have an impact on the national shipbuilding procurement strategy with respect to renewal of the naval fleet?

Canada can adopt expedient solutions on naval procurement and defer some new construction but this comes with a risk of impairing capabilities. It seems likely that the national shipbuilding strategy will proceed at reduced levels. The promised Arctic/Offshore Patrol Vessels will be built first, probably in reduced numbers. Two naval replenishment ships will follow and be built to either a modified German or Spanish design. The *Halifax*-class modernization will be completed. The air warfare destroyers will not be built and there will be no landing ship to support the increasing number of military intervention or humanitarian assistance operations.

There are fleeting 'off-the-shelf' alternative solutions for the humanitarian assistance operations. The Royal Navy had a modern Landing Ship Dock (LSD) for sale, RFA *Largs Bay*. She will be available in mid-2011, requires a relatively small crew and could have replaced the roll-on roll-off Polish-owned MV *Wloclawek* currently chartered by the Canadian Forces to support the Afghanistan and Haitian operations. Unfortunately, Australia has announced the purchase of this versatile ship. Canada

had the same opportunity to buy the ship but chose not to pursue it. This is an opportunity lost.

Britain also has a replenishment ship for immediate sale, RFA *Fort George* (see Table 1). She is less than half the age of the existing well-worn *Protecteur*-class and could be a stopgap pending delayed construction of Canada's two new replacement ships. She has a large helicopter capacity and has been used for humanitarian relief work as well as in drug enforcement operations. Brazil has expressed interest in the ship. Will Canada let this opportunity slip away as well?

Table 1: The RFA Fort George

Full Load Displacement	36,580 long tons
Overall Length	204 m
Beam	30.4 m
Draught	9.75 m
Speed	18 kts normal, 21 kts max
Range	Not stated
Landing Craft	1x LCVP, 1x RHIB
Helicopters	2x landing spots for medium helicopters, hangar for 5 Sea Kings
Weapons	2 Phalanx, decoy launchers, 2x20mm guns
Deck Cranes & RAS	1-25 tonne, 2-10 tonne, 2-5 tonne, 4 RAS stations, stern rig
Cargo	6,000 tonnes-munitions, dry and refrigerated cargo
Crew	134 plus 154 air complement
RFA <i>Fort George</i> (A388)	Delivered 1994

By purchasing this ship Canada could quickly have a better equipped naval fleet for conducting all levels of maritime operations, including mid-level interventions and humanitarian assistance. This would be a means for the Canadian Navy to improve its support of Canada's national interests. 🇨🇦

Notes

1. Julian S. Corbett, *Some Principles of Maritime Strategy* (1911), reprint introduced by Eric J. Grove (Annapolis: Naval Institute Press, 1988), p.16.

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Canada as a Sea Power^{*}

Marc Imbeault and Janine Kriebler

I have always believed, and will continue to believe, that the firm basis of the British Empire is, next to the British Crown, the local autonomy of the different dependencies; that is to say, their working out of their own destinies to the central end of the Empire. Sir Wilfrid Laurier¹

Canada is a sea power. However, 'from coast to coast to coast' describes clearly its geography but not its security policy. By developing a vision of this country, rooted in geopolitical reality, we propose to lay the groundwork for a new approach to naval power in Canada. This vision is looking forward while respecting our best traditions of political and human rights.

Sir Wilfrid Laurier was the first statesman to institutionalize the maritime dimension of Canadian geopolitics in creating, a century ago, the Royal Canadian Navy. Laurier's vision is still sustainable. His idea of the future of Canada as a great country could be useful to inspire us today to find a new path for Canada in terms of maritime strategy. At the heart of the process through which Canada could become a global leader in the 21st century is maritime strategy. With this in mind, we shall try to answer the following question: what are the geopolitical conditions of future Canadian sea power?

Philosophy and geopolitics provide the framework of analysis to assess the ranking of Canada as a sea power. In his essay on state sovereignty and maritime freedom, Carl Schmitt contrasts two traditions in geopolitics: the world seen from the land; and the world seen from the sea.² It is possible for mankind to see the planet from a maritime perspective. The result is naturally a totally different historical and political picture of the self and the world. The maritime environment is totally different from the land. It is an open space where there are no boundaries and no battlegrounds and there is uncertainty about how to insure ocean freedom. How do we impose order on this vast unlimited space? We could do it by strengthening international law but that leaves us with the problem of how the laws can be enforced. By leaving the question of enforcement open, we are led to the question who is dominating the sea and how?

In this article, we examine the Canadian maritime dimension. Effective presence in the marine environment depends on how the capacity to act is *perceived* more than an actual occupation of space. That is why force and power are the basic elements of a maritime capacity. We will see how these notions of force and power apply to Canada and how they could be improved in the future.



Prime Minister Wilfrid Laurier.

Photo: Library and Archives Canada

Force and Power

Raymond Aron, at the beginning of his masterwork *Peace and War*, spends a chapter discussing the notions of power and force. According to Aron:

French, English and German all distinguish between two notions, *power and force (strength), puissance et force, Macht und Kraft*. It does not seem to me contrary to the spirit of these languages to reserve the first term for the human relationship, the action itself, and the second for the means, the individual's muscles or the state's weapon.³

Aron posits that there is a distinction between power and force, but he acknowledges the complexity of defining these notions. There are different ways to measure power in a context of foreign policy and international relations:

The forces being susceptible to an approximate evaluation, power can be estimated, within an extended margin for error, by reference to the forces available. But there is such a broad distinction possible between defensive and offensive power, between wartime and peacetime power, between power within a certain geographical zone and power beyond this zone, that the measurement of



By the early 1980s, the potential power of the Soviet Union had already started to decline and in the early 1990s, the Soviet Union collapsed. Russian fighter jets fly in formation over Red Square during a military parade dress rehearsal in Moscow, 6 May, 2010.

a power taken as absolute and intrinsic seems to me to do more harm than good.⁴

What Aron means here is that one has to be very careful in mapping the international hierarchy of powers. He suggests making a distinction between what actual force is – the muscles and the weapons that can be observed and counted – and a potential capacity to act in various environments and settings.

According to the philosopher Julien Freund, the notion of *potential power* has to be carefully distinguished from three other political concepts – *actual power*, *force* and *violence*. The potential power of a state, organization or individual is a matter of perception, of the image they project and their reputation, rather than reality. In other words, the potential power of a state is often linked with *actual power* and *force* but never limited by them. Freund proposes two examples that illustrate the differences among potential power, actual power and force. They are exceptional cases but sometimes such exceptions reveal the true nature of a phenomenon.

The first case is that of Joan of Arc. She was simply a shepherd, but her arrival changed the army – “with the same weapons and the same men she restored power into a band unfit for combat.”⁵ This example is particularly interesting in light of contemporary theories of leadership because it shows what could be accomplished by *transformational leadership*. Joan of Arc transformed the whole French army and thereby achieved its full potential power. She did not bring any new technology or tactical innovation but she was an extraordinary source of inspiration

for the troops when morale was at its lowest. Therefore, with only her charisma, her determination and her vision of France’s spiritual mission, she succeeded in building, from an undifferentiated mass of armed individuals, a disciplined army able to apply a large-scale strategic plan.

The second example is Napoleon Bonaparte’s arrival on the island of Elba. François-René vicomte de Chateaubriand, a writer and poet, characterized this arrival as a miraculously successful invasion carried out by a single man, what he referred to as “le prodige de l’invasion d’un seul homme.”⁶ The new regime and the French police were waiting to arrest Napoleon but he reversed the situation all alone, by his mere presence, without a shot being fired. Again, here, charisma was at play. Napoleon personally knew every officer and several soldiers in charge of his capture. He therefore addressed them directly. Alone and disarmed, he seized command of the troops and instead of being arrested and jailed, he later marched on the capital to regain power. At the Mure in March 1815, he faced the 5th battalion d’infanterie de ligne, one of the oldest and most famous of the French army. He bared his chest and challenged the soldiers to shoot at him. As he said, “[s]’il en est un parmi vous qui veuille tuer son empereur, me voilà.” Nobody obeyed the order to fire, and the 5th battalion rallied to his march.

Contrary to these examples, some countries with weak potential power are able to deploy a high level of force. In the early 1980s, the USSR presented a force comparable to that of the USA, perhaps even superior, but its potential power had already started to decline. This was problematic, not because the physical forces were deteriorating

but because the political power was failing. According to Freund:

Once a community is losing political power, no economic or material success can compensate politically for this deficiency.... [T]he power depends less on the quantity or abundance of wealth and property than on tenacity, determination, commitment and passion that constantly open new prospects and increase the opportunities and potential extensions.⁷

This quotation is of paramount importance to our purpose. It means that a point of no return exists in the destiny of communities. It is the moment when the loss of potential power cannot be stopped, a sort of fatal descent that inevitably leads to a decline. Thus, some apparently unassailable and indestructible superpowers could be gradually sidelined, and nothing could be done to stop their dissolution.

The Roman Empire seemed indestructible before it was defeated by hordes of barbarians determined to fight. Machiavelli said that the best weapons make the best prince and that it is an illusion to think that government is controlled by the Holy Spirit – as stated by the Florentine Girolamo Savonarola. For Machiavelli, *fortuna* (luck) can be overcome by *virtù* (political decisiveness), that is, a talented political power is able to use bad or good circumstances to its advantage. Material force impresses but potential power can also accomplish much. How potential power works is often a mystery, it is not just the result of gross calculation of economic wealth or military strength. Potential power reveals itself in its effectiveness on the battleground, and it is an asset that is very difficult to overcome even in a case of asymmetric combat forces. It is like a chessboard, where one of the two players has a material advantage but has lost the initiative and is overcome by a more determined opponent. It is what happened when Bobby Fischer took a psychological advantage over his opponent Boris Spassky by conceding the first two games during his famous conquest during the 1972 World Chess Championship.

Power is not synonymous with violence, even if it sometimes involves the use of violence. Violence is inherent in a polity. The state is basically defined by its monopoly of violence which assures authority and legitimacy through security institutions such as police and armies. The use of force might be more or less violent – in certain cases, the *raison d'état* has justified torture and assassination. Freund reminds us that violence *could* be a demonstration of potential power but it is never an essential condition. Excessive violence might even be a sign of powerlessness.

Thus, Freund notes that “[v]iolence is often a way of compensating for impotence. In all cases, violence is an illusory and ephemeral replacement of power; violence has neither solid foundations nor capabilities. Revolutions degenerate easily into violence, but they find elsewhere the basis of their power.”⁸

Therefore, potential power cannot be reduced to the ability to use force or violence that is actual power. It is built on capabilities that are the potential to apply force. In this sense, Canada can become a great power because of its immense potential. What is still lacking is *time*, *will* and *population*.

Canada's Power

Canada has a unique combination of wealth that makes it a candidate for superpower status. It has one of the largest freshwater reserves in the world⁹ and one of the largest oil reserves, not to mention many other natural resources found in abundance in the country. If we add to this its three ocean fronts and stable political system firmly embedded in traditions that date back to the British Empire, one might say that Canada possesses the geopolitical assets to become one of the great powers of the 21st century and beyond.



Photo: Jiri Rezac, Greenpeace

Aerial view of Athabasca oil sands and Suncor Millennium mine near Fort McMurray, Alberta. The Athabasca deposit is the largest reservoir of crude bitumen in the world.

In fact, over the last 50 years, Canada has experienced an increase in power that does not appear to be slowing down. Other global powers that could possibly compete are declining (the United States and Western Europe) or over-populated and dependent on external sources of raw materials (China and India). The example of the United States is the most typical. Even if its actual power is unparalleled, its potential power is declining. As for Russia, a former superpower, it certainly has a vast territory and large oil reserves, but it has no ocean fronts comparable to Canada's Atlantic, Arctic and Pacific – 37,653 kilometres for Russia compared to 202,080 kilometres for Canada.

The new situation in the Arctic due to global warming opens up new avenues for Canada. Under these conditions in the Arctic, the rise of Canada could become virtually irresistible. As well, the experts on global warming predict a wave of 'ecological migration.' With an appropriate immigration policy, Canada could benefit greatly from these huge shifts in population. Increasing Canada's population is the first condition for increasing its potential power.

Unlike most places, global warming will lead to the habitability of the entire Canadian territory, or at least a large part of it. It will also lead to greater access to the north which is rich in natural resources. The disadvantages of global warming may be mitigated by advantages. If temperate areas of the globe are threatened by desertification, Canada could become an environmental heaven, replete with an abundance of natural resources and water. In other words, the disadvantages of global warming may prove to be a relative advantage to Canada by increasing its comparative strength and developing its maximum potential.

It is in this context that we must consider the uncertainties surrounding the opening of the Northwest Passage. It is a challenge for now, and unlikely to be the first maritime route to open up across the Arctic, but in the long term, the passage gives Canada a strategic advantage. The advantage is in the unification of its two other oceanic fronts on the Atlantic and Pacific Oceans. Russia possesses more than one ocean front but Canada can deploy its fleet on three sets of open waters.

The fact remains that under these circumstances Canada will increasingly need a navy capable of ensuring its security. This is a military priority as well as a commercial one. Therefore, it is important to begin to introduce this requirement into the strategic planning of national defence. This brings us to the philosophy that should guide this strategy.

Canada's Future and the Canadian Navy

At a seminar on maritime terrorism which was held in San Diego in 2009, a speaker concluded his presentation with a cartoon showing a pedal boat topped with a machine gun and carrying the Canadian flag.¹⁰ This was to illustrate the reputation of the Canadian Navy – both weak and poorly equipped. In reality, the navy is not so helpless. It is actually just behind Great Britain and France and is served by its high interoperability with allies, notably the United States.

The area in which the navy might have to work is its ability to operate with other elements of the Canadian Forces,



HMCS Goose Bay alongside in Nanisivik, Baffin Island. With its deep-water berthing facility, sheltered harbour, nearby airstrip and proximity to the Northwest Passage, Nanisivik is the site of the proposed naval facility in Nunavut.

particularly in terms of communication systems. Other elements of the Canadian Forces also will have to adapt to the navy simply because Canada is essentially a geopolitical maritime power. It is no coincidence that during the Second World War, Canada distinguished itself on the seas. It is also from the oceans that we derive our high standards of living. The Canadian population and government, and the Canadian Forces, may not always focus on the oceans but they must take into account this essential feature of Canadian geography.

In the long term, it is likely that the navy will become the spearhead of the Canadian Forces and the pivot of its security architecture. The control of vast coastlines and unequivocal affirmation of sovereignty over territorial waters of three oceans will determine the development of the Canadian international capacity. It is probable that in the future, the Canadian Navy will intervene with more and more force beyond the limits of its territorial waters to carry the Canadian voice around the world. This is why the Canadian Navy should become a major global force.

Playing a major role in ocean security will ensure Canadian influence in human destiny and a place in the great humanist political tradition. The Canadian Pearsonian foreign policy tradition emphasizes the high road instead of simple power politics. But it is not enough to take the high road by oneself. As stated by Laurier, "[t]he only way to defend one's ideas and principles is to make them known,"¹¹ and that can be done via the navy in international roles.

The Canadian tradition is sustainable and compatible with the rise of Canadian maritime power. When operations were mostly limited to peacekeeping missions, Canadian



Photo: Cpl Rick Ayer, Formation Imaging Services, Halifax

Chief of the Maritime Staff, Vice-Admiral Dean McFadden (right) along with other members of the navy salute HMCS *Charlottetown* as the ship departs Halifax for *Operation Mobile*, Canada's response to the crisis in Libya, 2 March 2011.

diplomacy was amongst the most influential. This was a consequence of the country's potential power. The international community will leave no choice; at some point in the future Canada will be asked to exercise this potential power.

The Canadian naval vision suggested here does not exclude the development of other elements of the Canadian Forces. It suggests the exact opposite. But military philosophy must be built on reality, as this ensures the stability of policy, economic prosperity and development of integrated forces. Integration is obviously the key word. It is impossible to achieve integration if one does not realize the importance of the navy in Canada's future security system due to the crucial changes that are currently affecting Canadian territory.

Conclusion

Machiavelli, in one of his famous lessons to the prince, states that moral force and determination are the key elements of any political equation. Material wealth, strength of armies and magnitude of political institutions are nothing without will. Once again let Laurier formulate our final recommendation. As he noted many years ago, "[t]he British empire is composed of a galaxy of free nations all owing the same allegiance to the same sovereign, but all owing paramount allegiance ... to their respective peoples."¹² Today, as it has been for a long time, Canada is standing up for itself. As any state, it may ally with others who share common values and interests, but it must also defend jealously its independence. These two objectives are complementary not contradictory.

It is perfectly possible for the Canadian Navy to play a role in allied forces or coalitions, while remaining independent. It is true that in the current state of things, the navy and Canada only play a relatively minor role in

international high politics. But if one – when considering military and political decision making – takes into account that Canada is a true maritime power, it will not take a lot to make Canada a major player in imposing order in this vast international space. If, as we think, Canada is to become a true world sea power, it must now seize the means, develop a comprehensive defence policy and establish a military organization that is sufficiently equipped and educated to face the challenges ahead. 🇨🇦

Notes

- * This article is a modified version of "Le Canada comme puissance maritime," in Ann Griffiths and Eric Lerhe (eds), *Naval Gazing: The Canadian Navy Contemplates its Future* (Halifax: Centre for Foreign Policy Studies, Dalhousie University, 2010), pp. 109-118.
1. Sir Wilfrid Laurier, "Canada and the Navy," speech in the House of Commons, 12 December 1912.
2. Carl Schmitt, *Du politique. "Légalité et légitimité" et autres essais* (Paris: PUF, 1990), p. 161 (our translation).
3. Raymond Aron, *Peace and War. A Theory of International Relations* (Garden City, NJ: Doubleday, 1966, 2003), p. 48.
4. *Ibid.*
5. Julien Freund, *L'essence du politique* (Paris: Sirey, 1986), p. 136 (our translation).
6. Vicomte de Chateaubriand, *Mémoires d'outre-tombe*, 1849-50, quoted in Jacques Bainville, *Napoléon* (Paris: Arthème Fayard, 1931), pp. 448-449.
7. Freund, *L'essence du politique*, p. 137.
8. *Ibid.*
9. Peter H. Gleick et al., *The World's Water. The Biennale Report on Freshwater Resources 2008-2009*, p. 198. Canada ranked second with 3,300 km³/yr of renewable water resources.
10. Kevin Creswell, "Maritime Security and Port-Border Awareness," paper presented to the Bicoastal Counter-Terrorism Summit, hosted by Halo Corporation, San Diego State University, April 2009.
11. The idea comes from Bob Davidson and Guillaume Lafrance, "La nécessité de la sécurité maritime," *Sécurité mondiale*, janvier-février 2009, especially "L'impact économique," pp. 1-4.
12. Sir Wilfrid Laurier quoted in Réal Bélanger, *Dictionary of Canadian Biography Online*, available at www.biographi.ca.

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Interview with Rear-Admiral David Gardam, Commander Joint Task Force Atlantic

10 December 2010

Dan Middlemiss: Admiral, welcome to Dalhousie University. We are most grateful to you for taking time to talk to the *Canadian Naval Review*. We did this once before with one of your predecessors, Admiral Dan McNeil, and we all found the interview enormously helpful in understanding how the modern navy functions and how you go about your job. Peter Haydon and I will be asking the questions, and Peter will start.

Peter Haydon: I'm interested in force generation and force employment and how that process is not really understood. Although there are changes planned, what is involved in taking a ship from the end of its overhaul period and turning it into a ship that's ready to go on any operation almost anywhere in the world?

Rear-Admiral David Gardam: The process is called the Technical Readiness Program (TRP), and it takes a ship from the overhaul shipyard and through a series of trials that ensures the equipment has been groomed and actually meets specifications. Then the ship progresses into a working-up period, called 'work-ups' and that's when the sea training staff come on board and actually make sure that the ship is capable of doing the war fighting, the damage control and all ship evolutions that a warship is expected to be able to do.

When a ship comes out of a TRP, the ship's company is not really a ship's company, it is a collection of individuals. The strength of a ship isn't the hull, it is the people. The challenge is to make the people act as a team, and act as one. So, the work-up process allows the ship to go from a collection of individuals to a fighting team. That's the key thing. Following the work-up process, there may also be some higher-level grooming to be done. For instance, let's say that I have a ship deploying to the Persian Gulf – after it has gone through the work-up period, I will bring it up to an even higher state of readiness and preparation, including preparing for it to fire missiles so that I know that should it have to go into harm's way it is able to defend itself or be offensive if required.

That's the basic process. It takes about a year to bring a ship from TRP to its high state of readiness. We don't take every ship to a high state of readiness anymore, because, quite frankly, it's very costly, so normally we will take a ship to a 'standard' state of readiness which allows it to do the basic domestic roles, essentially a 'constabulary plus'



Rear-Admiral David Gardam Commander Maritime Forces Atlantic and Joint Task Force Atlantic.

Photo: Cpl Johanie Maheu, Formation Imaging Services, Halifax

level of capability. Then, if we know we need that ship at the high level of readiness, we will give it additional training which takes it to the high level of readiness.

Haydon: Thank you, you've actually answered my next two questions, so we will move ahead. What is the navy's operational capacity today, bearing in mind the next few years you've got the Frigate Life Extension Program (FELEX) coming and you've got personnel shortages on top of that. What's the future limit of your operational capability – the operational threshold?

Gardam: Next year, 2011, is probably the last year when we can generate the composite task group. That task group is made up of a flag ship on one coast with perhaps a frigate or two frigates, or with another frigate from the other coast, all blending together so we have the full task group capability complete with an indigenous oiler – the AOR. As we go into the *Halifax*-class modernization (FELEX) process, ships start to move into the refurbishment phase, and that means our major platforms quickly begin to reduce in number.

As that happens, we're bringing submarines online. So, our strategic assets come 2012 start to shift from surface ships to submarines as we achieve a fully operational capability in submarines. We'll have one boat fully operational on each coast, and we'll also have some frigates still around, but in lesser numbers.

We've made it very clear to the government that our operational capacity in the next six to eight years will be reduced as we go through the modernization of the frigates. Then, when the frigates come back online in that period, we'll also have the Arctic Offshore Patrol Ship and the new Joint Support Ship (JSS). So it's a very interesting challenge, because although we are shrinking the force generation capacity starting now, we are going to come out at the other end with a much larger fleet.

Haydon: Can you keep the AORs going long enough?

Gardam: We are looking at keeping an AOR going as long as we possibly can. We are just finishing *Preserver's* refit and she will continue on into about 2016, essentially the middle of this decade. We're looking at getting the new JSS somewhere in the 2016 to 2017 timeframe. So there may be a period when the fleet support capability has a gap, but it may be a small period of time. Now, don't forget we already experience gaps in capability because every year when we have an AOR in refit, there is a period of time when the capability isn't available on each coast. Fortunately, we have a very good working relationship with the United States, and we are able to leverage that relationship so that we can use their oilers on many of the operations and exercises.

Haydon: As we did with *Operation Unison*.

Gardam: Absolutely.

Haydon: What are the implications of the limitations on the AORs being single-hulled and carrying fuel?

Gardam: The limitation really relates to who will allow you into their waters. On the high seas, it's not a limitation. In general for maritime operations outside of 12 nautical miles, this is not an issue, and we don't fuel inside someone's territorial waters anyway. The problem arises when some states say "we're not quite comfortable with your AOR coming into our port." Quite frankly, I've talked to my commanding officer and said, "do not put yourself in a position where you're carrying more risk than you should unless it's operationally essential, because she's an old ship."

Middlemiss: I think you partly answered one of my questions related to the declining numbers of frigate hulls and using submarines instead. Will this involve some sort of 'non-traditional' tasks for the submarines? In other words, will they be doing different missions or traditional submarine missions to make up for the lack of surface hulls?

Gardam: The submarines will be doing traditional submarine missions, but what we're indicating to government is that this capability is an available asset. So if you needed to put something into harm's way, you have the submarine. That's not to say that we will not have frigates; yes, we will still have frigates. Some frigates will be in the yard being modernized, some will be returning to the fleet, and some will not have started their modernization yet. So each year the total surface ship capacity will vary from about 12 to 15; the capacity goes down very rapidly, because of the number of hulls undergoing modernization. We also know with experience that ships will come out more rapidly after the first one.

Middlemiss: Do you think that this submarine capacity that you're offering, from your own operational standpoint, can actually be a plus when it comes to multinational exercises?

Photo: United States Navy



HMCS *Victoria* arrives at the Pacific Northwest Region Bangor Complex to conduct ranging operations with the Naval Undersea Warfare Center, Keyport, 1 October 2004. In July 2003 *Victoria*, the former HMS *Unseen*, joined the Pacific fleet in Esquimalt, BC. A Canadian submarine has not been based on the West Coast since 1974.



Photo: MCpl John C. Webb, Formation Imaging Services, Halifax, NS

Then Captain (N) Gardam, Commanding Officer HMCS Athabaskan, and work parties from Athabaskan and Toronto disembark a US landing craft in Biloxi, Mississippi, during Operation Unison, after Hurricane Katrina in September 2005.

Gardam: Absolutely. Everyone wants to work with a diesel submarine. In fact, in the United States, we just had *Corner Brook* working off the East Coast with a *Los Angeles*-class submarine. We get a huge dividend from that type of interaction.

Middlemiss: I'd like to switch gears from the very operational stuff and the strategic stuff that you were talking about earlier to something that perhaps people don't understand as well even though it's associated with the navy. Can we talk a bit about the 'everyday life' of Joint Task Force Atlantic (JTFA) commanders in dealing with other governmental, federal, provincial, other sorts of agencies all the time? Could you give us some insight into those sort of lesser known responsibilities that you have wearing that other hat?

Gardam: Absolutely. I would think many people in, for example, the Atlantic region don't actually realize that I wear two hats. They always see me as 'the Admiral' and I am 'the Admiral' but in fact, with my JTFA hat, I have a much broader responsibility for the four provinces when it comes to emergency and response. For instance, it was a security issue that we responded to when we helped the folks from Trouty and on the Burin Peninsula of Newfoundland following Hurricane Igor this past fall. That was a classic example of me wearing my JTFA hat where I was a joint task force commander with forces from the army, navy and air force working under my command to provide support in that region.

Every spring, we also monitor where the floods are going to be, and in the Maritimes we work very closely with Coast Guard, RCMP, Public Safety and Transport Canada, on how we manage these operations. Plus there are the provincial emergency response organizations embedded within each province. So it's a fairly demanding task because a lot of my job is relationship building.

Haydon: Taking that one more step, the response operations would be the fleet commander's responsibility, but

getting the ships ready so that they can do domestic humanitarian response is that your responsibility as the joint task force commander?

Gardam: It's quite interesting because I'm somewhat schizophrenic. As Joint Task Force Atlantic commander I go to myself as the Commander, Maritime Atlantic, and I say "I want a particular capability." I then task my fleet commander to generate that capability. He generates it and then he 'chops' that capacity to me, not as the Admiral, but as the joint task force commander. So it's a schizophrenic relationship I deal with every day – but I have not had too many conversations where I have been answering myself!

Haydon: Do we still keep one ship available on short notice?

Gardam: Yes. I have a 'ready-duty ship.' In fact, there is one on the East Coast and one on the West Coast available 24/7, 365 days a year.

Haydon: Is that at full readiness? Or just at standard readiness?

Gardam: The ships are at varying degrees. I could have one that is not quite at standard readiness yet, or one that is at standard readiness, or one that's at high readiness. But because the ready-duty ship is primarily going to be doing a domestic mission, in support of another government



Photo: Cpl Johanie Maheu, Formation Imaging Services, Halifax, Nova Scotia

HMCS Athabaskan fuels from USNS Kanawha during a task group exercise in the Atlantic Ocean, 14 November 2010. HMCS Charlottetown was refuelling at the same time on Kanawha's starboard.



Photo: Cpl Johanie Maheu, Formation Imaging Services, Halifax, Nova Scotia

Rear-Admiral Gardam (2nd from left) chats with junior sailors over lunch onboard HMCS *Athabaskan* during an exercise in the Atlantic November 2010.

department, or in traditional search and rescue, the lower level of readiness is more than enough.

Middlemiss: Some of the questions that we've been touching upon relate to the issue of doing more with less, which is a common complaint. Could you give us some idea about what the everyday challenges of that are, including the people, and so forth?

Gardam: The first thing I'd say is it's about managing expectations. In the past, the navy has always generated the gold-plated solution – it has to be able to do the following 20 things or we can't send the ships. We don't do that any longer; for every mission we look and say "is this good enough to do that mission?" and if the answer is yes, away you go. So that's one of the huge changes in culture we've had to make over the last two to three years in order to ensure that we are able to meet some of those needs. So, for example, when we did the Haiti mission, those were 'come as you are' ships. We filled them up, but you know what, to do that humanitarian disaster relief kind of mission, they were the perfect ships.

On the personnel side, the real challenge here is that years ago we had lots of people, and we never worried about people getting their training because we had lots of ships, too. Now, obviously we have fewer ships, and we have lots of new recruits coming in. In fact, we're actually being inundated with new recruits. The challenge now is to make sure they get the training at sea. So, in the past, we never had to worry about individuals, we worried about ships. We now are tracking every individual sailor, the amount of sea time they have, where they are in their training pipeline, and what is the minimum need in order to be operational. To use a phrase you probably have not heard in the navy before, we are becoming a 'pipeliner' navy.

Haydon: To close our discussion off, what do you think is really the navy's single greatest achievement in the past 12 months?

Gardam: Probably the greatest achievement we have had is our ability to remain strategically engaged in many different areas around the world, notwithstanding many

of the personnel pressures we've had and many of the fiscal pressures we've had. We have kept our eye on some of the larger issues. Whether it was engaging with Mexico, being down south, working in the Arctic, working with disaster relief in Haiti, or dealing with counter-terrorism and counter-piracy, in the last 12 months, we've done it all. The fact that we have been able to do all of those things I've just mentioned, that has been our greatest success.

Haydon: Will you be able to keep doing that next year, and the year after?

Gardam: You know, there's the rub. When we talk about the Canada First Defence Strategy it means that you will see much of our focus being more toward home, which I actually think is appropriate at this time. We have a lot of issues happening in our own waters, whether it's up north or down south dealing with drugs flowing from Mexico into the United States. So I think you're going to see more of that type of operation, but we're still going to look at the 'one-offs' where we say it's really important to be engaged internationally in this issue, we're going to send that ship. But instead of sending three, we'll send one.

Here's the other thing I think you're going to see; we're going to change our way of generating command capability when it comes to task groups, because there's no reason you can't send a staff, with all the enablers that they bring, into someone else's ship.



Photo: Cpl Francis Gauthier, Formation Imaging Services

Rear-Admiral David Gardam, Commander Joint Task Force Atlantic (left), Commander John Zorz, Commanding Officer HMCS *Fredericton* (centre), and Brigadier General Anthony Stack, Commander Land Force Atlantic Area (right) in discussion during **Operation Lama** the Canadian Forces' joint response to Hurricane Igor in Newfoundland on 21 September 2010.

Haydon: Something we really learned through NATO.

Gardam: Absolutely. The NATO model could fit in Task Force 151 doing counter-piracy, and it could fit in a mission down in South America through UNITAS. There's no reason we can't do that.

Middlemiss: Admiral, thank you very much. In a short period of time you've covered a lot of things, and we're most grateful. 🍷

Building a Defence Industrial Strategy

Janet Thorsteinson

Cyclone Yasi came ashore in Australia early on 3 February 2011. High winds and surging waves hammered the northern coast of Queensland and left thousands homeless and public services out of action. Under *Operation Yasi Assist*, the Australian Defence Force (ADF) began relief activities that involved every branch of the military services. Army helicopters and engineers were deployed into the area while Royal Australian Air Force C-17 Globemasters and C-130 Hercules aircraft moved personnel, equipment and casualties. Unfortunately, the crisis caught the Royal Australian Navy (RAN) with some of its major disaster relief assets out of action.

Press reports said that HMAS *Tobruk*, a heavy support ship, had to go into drydock for repairs to its propeller shaft before it could sail, despite the fact that Defence Minister Stephen Smith had said the ship was available for emergency duty at 48 hours' notice.¹ Politicians were forced into the extremely uncomfortable position of attempting to explain away a situation that explained itself – the relief ship simply was not ready.

Two other support vessels, HMAS *Kanimbla* and HMAS *Manoora*, were also unavailable for service. A series of problems had put the two ships on an 'operational pause' the previous September. Just two days before Cyclone Yasi touched shore, the Australian Defence Department had announced that *Manoora* would never return to service.² The announcement stated that *Kanimbla* would be repaired, back in service in 2012, and decommissioned in 2014. But it would still be missing from action in Queensland. The opposition's defence critic described the situation as a national scandal, a charge that *The Australian* newspaper was happy to print. As far as perceptions were concerned, the situation may not have been improved by the arrival of the New Zealand Navy's supply ship HMNZS *Canterbury* in the place of Australian vessels.

In a statement after Cyclone Yasi, the Australia Defence Association (ADA) asked, "[w]hy is the ADF's amphibious fleet worn out?" Their answer was judicious and even-handed. According to the ADA, "[b]oth sides of politics are being less than correct historically when trying to attribute blame for sudden and burgeoning deficiencies in defence force amphibious vessel capabilities."³ However, the ADA noted:

Finally, and most importantly in terms of the scale, longevity and persistence of the root causes, once again governments are primarily at fault because of their short-term thinking. The

investment needed in defence capabilities is often diverted to vote-buying elsewhere. It is therefore governments, not the scape-goated Navy, who are chiefly responsible for the Navy having to operate very old and/or inadequate ships.⁴

In the Canadian context, the ADA's analysis may be relevant, if not prophetic.

The Canadian context, of course, includes the National Shipbuilding Procurement Strategy (NSPS) to replace our geriatric fleets. The strategy to buy more than 50 naval and coast guard ships over the next 30 years is an ambitious attempt to bridge the gap between the need for long-term, planned and managed defence procurement and the realities of election cycles. As the Cyclone Yasi situation shows, even if failures come to rest on the party in power, failure is collective and cumulative, in the inability of successive governments to coordinate the planning, building and management of government fleets. That failure brings all political parties into disrepute. Even worse, it can erode public faith in the military personnel who need the capabilities and in the ability of government to supply them.



HMAS *Manoora* at anchor in Jervis Bay, Australia, during Fleet Concentration Period, 2009.

A successful shipbuilding strategy does more than equip mariners with the vessels they need and sustain public faith in the institutions of government. Billions of dollars in spending over decades can and should provide sustained, high-value economic benefits to communities across Canada. In 2009, the federal government undertook extensive consultations on the creation of a long-term and sustainable shipbuilding strategy for Canada. The shipbuilding consultation documents put out some impressive numbers: 70 million person hours of employment over 30 years; direct employment of 1,200-1,500

Photo: Royal Australian Navy



Raven (left) and Orca (right) are two of eight Orca-class patrol vessels constructed by Victoria Shipyards between 2004 and 2008, at a total cost of C\$90.7 million. All eight are based at CFB Esquimalt.

yard workers over that time⁵; and the potential for as many as 10,000 jobs when suppliers of equipment and material, designers, systems integrators and in-service support (ISS) workers are added.⁶

In-service support is important but, like the marine industries that provide equipment and services away from the shipyards, ISS is not as visible to the public – and politicians – as the finished ships that will eventually be launched. When the government announced the NSPS, it made the claim that it would “invest heavily in new Navy ships by commissioning work over the long term. This will enable the shipbuilding industry to effectively manage work flows and make investments in infrastructure and skilled personnel.”⁷

Much of the infrastructure and many of those people will be devoted to ISS. In a procurement cycle, there is an initial purchase from an ‘Original Equipment Manufacturer’ (OEM), a period of time when the equipment is under OEM warranty, and then a program of in-service support to maintain that equipment until it is retired. In recent years, particularly in the aerospace business, the government has moved away from a policy that prescribed competition for the ISS business to a model in which the manufacturer provides that service. This trend is unfortunate. When Canadian companies can compete for Canadian ISS defence business, they build strong, internationally competitive, exporting businesses.

Canadian government policy is to build Canadian ships in Canada. Therefore, it is not a huge reach of logic, nor a violation of any trade agreements, to insist that ISS contracts associated with the NSPS remain within the reach of Canadian businesses. No champagne bottles are broken on the bows of a newly-commissioned ISS contract but the employment opportunities and stability associated with them are as real and lasting as the ships they support. In a major study about procurement, CADSI has called on the government to “shift to indigenous in-service support ... after the warranty period on significant military equipment procured from off-shore sources.”⁸ The companies that manage ISS have become the stewards of Canada’s military equipment. Enhancements, modifications and

maintenance are all strategic activities. Canada works its equipment longer and harder than other countries, making ISS even more important. We should try to make sure that service of major equipment is done in an effective and cost-worthy manner. Other countries have competitions for ISS contracts – Britain and Australia both run competitions for ISS contracts during the initial warranty period when the OEM is maintaining the ships.

ISS is one of the ‘moving parts’ of the defence procurement machinery that can yield much greater and more lasting benefits from a framework that brings them all together in an organized manner – i.e., in a defence industrial strategy. Matching defence strategy to industrial capability makes sense. Businesses know where to invest, communities and provinces know which businesses to support, colleges and universities know which programs to teach.

Every other comparable country in the world operates a version of a defence industrial strategy to capture as many of the benefits of large military procurements as possible. Canada will be spending many billions of dollars to re-equip, train, maintain and support its military over the coming decades. A defence industrial strategy is the way to get all the economic moving parts working together in one efficient machine. The product of extensive consultations, the National Shipbuilding Procurement Strategy is not only one component of a complete defence industrial strategy, it could serve as a model for the creation of that essential national strategy. 🍷

Notes

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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).



View from the West: Submarine Procurement in the Indo-Pacific Region

Christian Bedford

During the 20th century, the north Atlantic Ocean was ground zero for submarine activity. Whether it was U-boat wolfpacks or Soviet and NATO submarines, most submarine activity occurred along the maritime routes between Europe/the Soviet Union and North America. Today however, the Indo-Pacific region is where the greatest amount of submarine activity occurs. This shift has had a significant impact on the security calculus of the region.



A Chinese Type-39 Song-class submarine dressed over-all at the Ngong Shuen Chau Naval Base in Hong Kong, April 2004.

Unlike the waters around Canada, the Indo-Pacific is a tough neighbourhood, characterized by unresolved conflicts, overlapping maritime claims and disputed offshore resources. Submarine activity in the Indo-Pacific region has been increasing for years owing to shifting regional security dynamics, the need to secure sea lines of communication and national security considerations. China, for one, has been keen to expand its submarine fleet for these reasons, plus its desire to deter Taiwanese independence and to push its fleet into the western Pacific and South China Sea. Over the past two decades Beijing has been re-orienting its defence spending from the army to its naval forces, and particularly its sub-surface forces. The Chinese Navy has moved up-market with its submarine force: whereas in the 1980s it fielded noisy and low-tech diesel-electric boats, today those submarines are being replaced at a rate of 2-3 new submarines per year by designs that incorporate the latest technology. The core of the conventional attack (SSK) force is now comprised of a mix of Russian Project 636 Kilo-class submarines, Type-039G Song-class boats equipped with air-independent propulsion (AIP), Type-041 Yuan-class and the latest SSK (launched in late 2010), the Type-039B Improved Yuan-class.

The Chinese Navy has also been building nuclear-powered boats, including both nuclear attack (SSNs) and nuclear ballistic missile (SSBNs) submarines. While progress has been less impressive than with the conventional fleet, Beijing has still managed to field an array of nuclear-powered submarines, including the Type-093 Shang-class SSNs and Type-094 Jin-class SSBNs. Some designs are dated, but designers are reportedly pushing forward with work that will produce new nuclear submarines within the next decade, including a Type-095 SSN that is due to be launched before 2015. In terms of sheer numbers, China now has roughly 66 submarines of all classes, a number that could rise to between 85 and 100 by 2030.

Submarine fleets have also been increasing across the region. In December 2010, Japan increased its self-imposed limit of 16 submarines to 22, a significant move that was driven by considerations arising from Beijing's expanding navy. Tokyo already deploys some of the world's most advanced diesel-electric submarines, including the Soryu-class which are distinguishable by their distinctive X-shaped rudders and length. They are longer than previous Japanese submarines owing to the inclusion of an AIP system that allows them to remain submerged for weeks instead of days.

South Korea too has increased its submarine force, although this is primarily to counter the threat posed by North Korean naval forces. Seoul acquired nine German-designed Type-209 submarines in the 1990s, and in the early 2000s signed a deal for the production of nine larger Type-214 submarines, which are equipped with an AIP system that employs fuel cell technology. These new submarines have a much greater range, indicating that Seoul may expand its submarine operations beyond its coastal regions to support an increasingly capable blue-water fleet. These submarines could be used to provide defence for the navy's future expeditionary battle groups. There have also been rumours that Seoul intends to build nuclear-powered submarines.

Several other Asian countries are looking to increase their submarine forces, with varying degrees of success. Taiwan has long sought to increase the size of its submarine fleet, which boasts two operational SSKs that Taipei acquired from the Netherlands in the 1980s, as well as two older training submarines. Chinese anger at the Dutch deal has



USS *Nimitz* and the South Korean Type-214 submarine *Son Won-il* berthed at the Busan Naval Base pier, February 2008.

meant that no country since has offered the Taiwanese Navy submarine technology. A 2001 arms package with the United States included eight diesel-electric submarines, however this was contingent on a third country providing the designs, which has yet to occur.

Indonesia has also looked at acquiring submarines, and was thought to have concluded an arms package with Russia in 2007 that included two *Kilo*-class SSKs. Since then, however, Jakarta has backtracked and is now looking elsewhere including to South Korea and Turkey.

Singapore, despite being no larger in territory or in population than Toronto, has perhaps the most capable submarine fleet in southeast Asia. It is currently in the process of replacing its *Challenger*-class boats with *Archer*-class submarines equipped with AIP. Singapore has signed a deal for two of these boats, and it will use the expertise gained from these submarines and apply it to a third-generation submarine. Singapore will possibly team with Sweden for its upcoming submarine replacement program, which will feature new technologies such as a customized bow for deploying unmanned underwater vehicles or special forces, as well as modular construction that allows for rapid reconfiguration for various missions.

Malaysia has also entered the fray, purchasing two new *Scorpena*-class SSKs from France. And even Vietnam, which had a modest navy consisting of old Soviet vessels, announced in late 2009 that it would purchase six new Improved *Kilo*-class submarines from Moscow. This submarine deal was unexpected as few naval watchers would have guessed that Vietnam would jump into submarine operations so ambitiously.

The story is the same in the other corners of Asia. In 2009, Australia released its Defence White Paper called "Defending Australia in the Asia Pacific Century: Force 2030." The report had a strong maritime element to it, and called for the Royal Australian Navy's (RAN) submarine fleet to be doubled, from six boats to 12. This is ambitious not only from a procurement point of view, but also given

the manning and maintenance issues that the RAN has had with its current fleet of *Collins*-class submarines.

India too is increasing the scope of its submarine operations, and has been upgrading its fleet to reflect its ambitions in the Indian Ocean. New Delhi has perhaps the most diverse submarine fleet in Asia, with Russian, German and French submarines all either in service or soon to be inducted. It has also leased a Russian *Akula*-class SSN for 10 years to acquaint sailors with a nuclear-powered submarine, and in 2009 launched its first indigenously-produced SSBN, *INS Arihant*, which completes India's nuclear triad. It is likely aimed more at China than at traditional foe Pakistan, which has not been able to compete with India's naval modernization.

What about the United States? Washington has a major sub-surface presence in the Indo-Pacific region. A full overview of US submarine operations in the region is beyond the scope of this article but it can be said that the United States possesses the pre-eminent submarine force in Asia. In 2006, the US Navy began a realignment of its naval forces in which 60% of its submarines were to be deployed to Indo-Pacific waters. By 2010, this re-deployment was largely complete, and included *Los Angeles*-class nuclear attack submarines, the *Virginia*-class SSNs, the high-tech *Seawolf*-class and the newly-converted *Ohio*-class guided missile submarines. Three of these submarines surfaced in Asia in summer 2010 – in South Korea, Diego Garcia and the Philippines – in a show of force intended to remind rivals that despite recent talk of its decline, the United States remains present in Indo-Pacific waters.

The increase in submarine activity in the region has been as much proactive as it has been reactive. States like Australia, Japan and India are keen to control the seas in their respective sub-regions, yet are also aware of the shifting power balance in Asia. Smaller powers were unnerved in summer 2010 when Beijing declared the South China Sea to be one of its core national interests, placing the vast maritime region on par with Taiwan and Tibet. This declaration, together with the construction of a Chinese submarine base on Hainan Island, was likely a key driver for Singapore, Indonesia, Malaysia and Vietnam in their submarine acquisition plans.

Like the north Atlantic in earlier years, the water of the Indo-Pacific is now considered a 'submarine-rich' environment, and the geopolitical realities of this region will ensure that it stays this way well into the 21st century. 🇺🇸

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Warship Developments: Multinational Programs

Doug Thomas

This column was inspired by the recent uproar by politicians and labour leaders over the idea that Canada might build a new class of warships to a British design, as though that was a terrible thing. As pointed out by Peter Haydon in a recent posting to BroadSides, CNR's online discussion forum,¹ this practice is nothing new. It has been made necessary by the paucity of government support for the Canadian shipbuilding industry and the 'boom or bust' practice of building new ships in this country. The state-of-the-art shipyard set up in Saint John, New Brunswick, to build the Canadian Patrol Frigates during the late 1980s and early 1990s was turned into a lumber yard several years ago due to a complete lack of follow-on contracts for additional ships. Originally the plan had been to build a third batch of frigates, for a total of 18. This did not happen, nor did the federal government support Saint John Shipbuilding's attempt to exploit the goodwill in the Middle East derived from Canada's largely naval effort during the first Persian Gulf War. It was France which supplied new frigates to the Saudi Navy not Canada!



German frigate FGS *Sachsen*, one of three frigates built under a trilateral frigate agreement among the Netherlands, Germany and Spain, approaches her berth at Naval Station Mayport in Florida, February 2007.

on completion in the early 1980s, and the remainder of the class was sold to Greece in the 1990s and early 2000s after the ships were paid off from Dutch service. A further two air defence variants were completed for the Netherlands and sold to Chile with the downsizing of the Dutch surface fleet several years ago. Eight modified *Kortenaers* were constructed in Germany and remain in service as the *Bremen*-class. All of these vessels are considered very successful general-purpose frigates.

But perhaps one of the most interesting multinational frigate programs was established by a January 1988 memorandum of understanding for the project definition phase of a NATO frigate replacement for the 1990s (NFR-90). The ultimate configuration of the projected ship and its full capabilities were the subject of extensive study and debate. It was intended to be 'stealthy' with a superstructure shaped to deflect radar return, radar-absorbent materials, advanced degaussing, and sound-isolation mounting for engines and auxiliaries to reduce electromagnetic, radar cross-section and acoustic signatures. The ship was also intended to include modular sensors and weapons so that the ships could be readily reconfigured for specific missions or threats.

The eight countries participating in this project were Canada, France, Germany, Italy, the Netherlands, Spain, the United Kingdom and the United States. A first-of-class ship was to be constructed to prove the design, but individual states would build their own vessels. While there would be the flexibility to fit differing combat equipment, the key to success was to realize sufficient commonality of equipment across the program to achieve economies of scale in procuring propulsion, electrical generation and combat systems.



The Netherlands Royal Navy *De Zeven Provinciën*-class frigate HNLMS *Tromp* (F-803) on exercise with the *Harry S. Truman* Carrier Battle Group, 19 September 2009.

For many years the construction of major warships – i.e., frigates or larger – has had an international flavour. Only the very largest navies go it alone, and even then innovations from other countries are adopted and equipment purchased in order to build the most effective vessel possible to meet operational requirements and funding constraints. Some well-conceived national designs have been adopted by other states.

An example of this was the Dutch Standard frigate. The Dutch developed the *Kortenaer*-class, known as the Standard frigate because it met agreed NATO standards. Two of these very successful ships were sold to Greece



The French Navy destroyer FS *Forbin* while attached to the *Eisenhower* Carrier Strike Group in support of *Operation Enduring Freedom* in the Arabian Sea, May 2009.

A project management office was set up in Hamburg, Germany, and eight Canadian naval officers were posted there to help with project development. The construction of the Canadian Patrol Frigates (CPFs) was well underway at the time, but it appeared that NFR-90 would be a good candidate to replace the four *Tribal*-class anti-air warfare/command and control destroyers.

Although much good work was done to develop a design that would please all of the participants, the devil was in the details. The French wanted Exocet as the surface-to-surface missile of choice, but the British preferred the American Harpoon. The UK was concerned that the design would not be an acceptable replacement for its Type 42 DDGs, and it did not incorporate a close-in weapon system, which was considered essential after the hard-won experience of the Falklands War. The Americans did not like the concentration on anti-air warfare alone, and preferred the larger, multi-mission DDG-51 *Arleigh Burke* design, which is still being built today. When the UK and United States decided to withdraw from this project in the late 1980s/early 1990s, it sounded the death knell of the program.

Although NFR-90 ultimately failed, a sea-change in international collaboration did result. The French, British and Italians collaborated on the Horizon Program in order to meet their objectives of substantial savings. The UK vessels evolved into the Type 45 *Daring*-class destroyers but the French and Italian Navies built two *Horizon*-class destroyers each, and all three countries shared in the development of the Euro Principal Anti-Air Missile System (EUROPAAMS), Sampson radar, and Astor 15 and 30 surface-to-air missiles. Similarly the Netherlands, Spain and Germany combined their frigate programs in the Trilateral Frigate Program to achieve cost reductions through the development of common components and subsystems. All the ships in the program were fitted with the same main armament – the very effective US Standard 2 area-air defence missile system. A variant of this design is being built in Spain for Norway – the very capable *Nansen*-class frigates.

The final multinational program I'd like to discuss is the Global Combat Ship program. The British government has discussed with Canadian officials the possibility of collaborating on a new frigate program in which Australia, Brazil, Malaysia, New Zealand and Turkey have also shown interest. Building a new frigate is a very long-lead project, with the first ships likely not being operational before the early 2020s. This Global Combat Ship is destined to replace Type 23 frigates in Royal Navy service by the start of

the next decade. BAE Systems has been working since last year on a £127 million (\$202 million) assessment phase to provide a warship capable of supporting land operations and conducting other roles, such as anti-submarine warfare. Initial studies for this ship include features such as an aft 'mission bay' for swappable payloads, a key feature of the American Littoral Combat Ship. Key design criteria include multi-role versatility, flexibility in adapting to future needs and affordability in both construction and through-life support costs: all goals which would be important to our naval planners.



Artist's design of a Type 26/Global Combat Ship.

There is no question that such a ship would be built in Canada – as have all of our frigates and destroyers since World War II. We would have to hire skilled people from outside Canada if we wished to design our 'own' ship, so surely it makes sense to call upon design expertise wherever we can find it. It would also make good use of the collaborative lessons learned from past decades to ensure that the core of our next navy – the replacement vessel for the Canadian Patrol Frigate – is cost-effective and successful, right out of the box. 🇨🇦

Notes

1. See Peter Haydon, BroadSides Discussion Forum, Topic # 39, Canadian Shipbuilding, available at <http://naval.review.cfps.dal.ca/forum.php>.

Making Waves

Canadian Naval History and a Modest Arctic Proposal

Brian K. Wentzell

My personal Canadian naval centennial project was reviewing the contents of *Crowsnest* magazine that was published from 1948 through 1965. The purpose of this was to seek out interesting articles that recorded unusual activities of the Canadian Navy.

My attention was drawn to persistent operations in the north of Canada. The first such operation was the two-and-one-half year commitment of HMCS *St. Stephen* to ocean weather station Baker in Davis Strait midway between Labrador and Greenland. Patrols were of one-month duration and the crew was augmented by meteorologists from the Canadian Weather Office. Information was collected for the benefit of trans-Atlantic air travel through this area.

In order to undertake this duty, the *River*-class frigate was specially modified with weather radar and a stay sail for this duty. This was perhaps the first sailing frigate commissioned into the Canadian Navy! The operation began in 1947 and ended in August 1950 when Canada's weather station commitment was reduced to station Papa in the Pacific. The task was assumed by the Department of Transport and HMCS *St. Stephen* became CGS *St. Stephen*.

The second persistent operation consisted of the various cruises of HMCS *Labrador* from 1954 to 1958. The *Crowsnest* reveled in the ship's activities as it explored the Arctic Ocean and circumnavigated North America. In 1958 the ship was transferred to the Department of Transport after which it was involved with survey work, oceanographic studies and resupply missions.

Persistent presence by Canadian ships was and remains an exercise of sovereignty. It is also an opportunity through the conduct of scientific research to increase our knowledge and understanding of this region. To its credit, the Canadian Navy has a history of Arctic experience that today is further developed by the annual Nanook exercises conducted in the eastern Arctic.

Significant changes are happening in the Arctic. In summer 2010 the Arctic ice cap continued to retreat and there was more ship traffic in the north. The tanker MV *Nanny* ran aground as did a cruise ship. In both cases the grounding was due, at least partially, to the absence of current navigational charts. Clearly there is need of further survey work throughout the northern waters. This is an opportunity for the Canadian Navy.



Report of operations 1956, HMCS Labrador. Cover drawing by Lieutenant-Commander C. Anthony Law.

The *Kingston*-class coastal defence vessels were designed and equipped for the conduct of route surveys in harbours. I suggest that they should be tasked as part of a whole-of-government operation to conduct route surveys in key harbours and narrow passages of the Arctic archipelago. Six of these ships could be crewed by regular and reserve members to conduct annual route surveys during the summer navigation season. This would represent a significant increase of national presence and survey effort.

Until the port of Nainasivik is re-opened as a naval logistics facility, the Canadian Navy could acquire a vessel to provide the necessary logistics and maintenance services to the *Kingston*-class. One opportunity would have been to acquire the *Bay*-class auxiliary landing ship *Largs Bay* that was declared redundant by the UK strategic defence review and is in the process of being sold to Australia. A second ship of this class may be declared redundant as the British have announced that further reductions are required for financial reasons. It could be crewed by Canadian Forces civilian personnel, fitted with modular repair shops and alongside replenishment equipment. This class of ship has performed similar duties in the Persian Gulf.

This modest proposal would increase Canadian presence and knowledge and provide mariners with reliable navigation information that should reduce environmental

risk in the Arctic. It also provides the navy with a national program that will be seen by the public as a valuable contribution to the future of the country. 🇨🇦

Comment on Dave Mugridge's "Cheap and Nasty"

Eric Lerhe

I seem to be caught in a rut of responding to other's articles instead of writing my own. The last time I replied to the charge that key elements of my paper were "fallacies," while my critic failed to provide any evidence. This time I am replying to a commentary by Dave Mugridge in the winter 2011 issue of *CNR* (Vol. 6, No. 4). In his comments Mugridge refers to Captain (N) Art McDonald's article (Vol. 6, No. 2 (Summer 2010)) as a "thinly disguised piece of propaganda." Has Mugridge backed up a serious, even insulting, charge with evidence?

Mugridge's commentary is included in *Making Waves*, and thus it is an *opinion* piece. But even opinion pieces require evidence, and Mugridge provides no evidence to back up his allegation. Rather he simply claims that McDonald's ships only provided an "intermittent drip" of relief to Haiti, rather than a tsunami as McDonald had claimed. In his article, McDonald pointed out that 170 tons of equipment and 200,000 liters of water were delivered, along with numerous other humanitarian assistance elements. Mugridge ignores this. Instead he argues that Canada needs an "amphibious capability" if it is to be effective in operations such as the one in Haiti. I, for one, would love an amphibious capability, but the Canadian taxpayer has the right to ask why a traditional supply ship (AOR) with a large flight deck and big helicopters is not adequate for humanitarian missions. This is not addressed.

Mugridge offers other suggestions for the future fleet, but this is preceded by analysis that is often weak. Thus, he argues that interventions within failed states, etc., are "the uncertain future *Leadmark* should address as its goal, not conventional fleet-on-fleet battle, fought in deep blue water." I challenge Mugridge to show where *Leadmark* has the latter as its goal. *Leadmark* actually goes into some detail on the change of naval interests from blue water to littoral regions. See page 109 where it states "[t]he two themes coming to typify 21st century naval operations are that they will be multinational, and they will occur in the littoral [regions]." The successor to *Leadmark*, *Securing Canada's Ocean Frontiers* (2006), repeats this theme.

Mugridge also says "[s]adly, Canadian Navy and Coast Guard planners refuse to acknowledge that current shortfalls in capability warrant an examination of future requirements." Where and when did the navy and coast guard so refuse? In fact, *Leadmark* devotes an entire chapter (Chapter 7) to the navy's shortcomings and its future requirements, and *Securing Canada's Ocean Frontiers* similarly includes a chapter on the subject ("Evolving Capabilities").

A final example of Mugridge's failure to provide adequate evidence is his argument that "[t]he majority of the navy's future tasks will be lower order and less militarily demanding, and therefore do not sit well with today's force generation and platform employment model." Both statements cry out for some evidence or analysis. Failing that, mention should have been made of the potential dangers of designing a future fleet on the expectation of the lowest possible threat. I would even accept a passing mention of the *Cheonan* torpedoing or *Charlottetown* off Libya to show there is another side to this complex question.

So just where is Mugridge taking us? He argues for a fleet mix of high-end and middle-capability ships. That is not an unreasonable goal but the journey Mugridge takes us on to get there is problematic. First off, in his view whatever the Canadian Navy is planning for its future is "following the wrong path," will result in it being "ill-prepared" for that future and will put us on "the expressway to irrelevance." Yet if I look at the planned future fleet of 8 *Orca* training ships, 12 coastal defence ships (maybe), 4 Arctic and offshore patrol ships, 3 tankers and 15 frigates/destroyers, I see a blend of high-end and middle-capability ships. Given the hard ceiling of the Canada First Defence Strategy capital defence budget and the rising cost of warships, a more likely result would be that the frigate/destroyer total may fall to 8 while the number of middle-capability ships stays constant. Overall, it is difficult to argue that the planned future fleet does not already mix high- and middle-capability ships.

It is clear in the Mugridge piece that whatever mix the navy has planned is not what is needed. Mugridge claims that Canada needs "a much smaller number of high-end warships." So frigates and destroyers would be cut in this plan. In his view, the frigates cut should be replaced with lesser capability ships that would be "deployed long term and globally to discharge those missions that occupy the lower categories of today's spectrum of operations." These lower-order "new generation combat ships" would:

- be “multi-role warships,”
- “be capable of delivering an effective asymmetric response [not explained] rather than wasted high-end capability” (areas of wastage not identified),
- use “an evolving hull form” (unspecified),
- be “modular,”
- employ commercial-off-the-shelf technology/design,
- have “low-level maintenance” demands,
- use “commercially derived logistic support,”
- have full intelligence, surveillance, target acquisition and response (ISTAR) capability,
- have “long range,”
- have “long-term endurance,”
- “make a contribution to joint operations,”
- be “dynamic, capable, enduring and adaptable,”
- cost “a fraction of the price” of traditional models.

Regrettably, Mugridge does not identify this vessel or one like it. In my view, much of the capability list would lead one to choose today’s frigate. The only difficulty is that you cannot have all these capabilities while also enjoying low-level maintenance and costs at a fraction of the price. Likely the only way of getting them at low cost is to leave off the weapons and sensors for the unspecified ‘wasted high-end capability’ warfare areas.

According to this line of thinking there is no need to anguish over whether cuts will be made to anti-submarine, anti-surface or anti-air warfare. Pick and delete one at random as there is little evidence that we have *ever* been able to identify today the threat we will meet tomorrow. Alternatively, we must accept the extra cost and have a general purpose frigate that can be sent anywhere, any time and within 48 hours – the sailing time of our ships to Haiti. And, we won’t have to bring it home if things change for the worse in theatre.

I will, however, admit that the Mugridge piece pushes us towards a thorough examination of Canada’s future fleet design. 🍷

A Response to David Mugridge

Peter Haydon

In his controversial commentary “Cheap and Nasty” in *Making Waves* (Vol. 6, No. 4 (Winter 2011)), David Mugridge challenges the existing structure of the Canadian Navy. His rationale is that the responses to the MV *Sun Sea* incident, the Haitian earthquake and piracy off the Horn of Africa were not good enough, and so he wants to re-invent the Canadian fleet. While it makes absolute

sense to challenge the suitability of the present force structure for the demands of the future, this should be done on the basis of a credible vision of the future. The next generation of warships will be around until about 2050 and so there isn’t room for errors in capability. Unfortunately, Mugridge doesn’t provide the necessary vision of the future, and this weakens his argument. His apparent lack of understanding of the various factors that drive any future naval restructuring weakens the argument even further.

In fairness to Mugridge, no sensible person would try to predict the future in any detail, but some things about what lies ahead can be said safely. It is a pretty safe bet that the world will remain unpredictable and prone to instability and that requirements for humanitarian aid and disaster relief will still exist, but there is no evidence that they will dominate the strategic environment. As well, it is fair to say that security of trade routes, energy in particular, and the need to conduct coercive and deterrent diplomacy are likely to be high-priority naval tasks, and that states will continue to have domestic security requirements, which for Canada will include sovereignty patrols in northern waters. This says that the future is not a single scenario. Rather, it is more likely to be complex and multi-faceted. This will call for flexible naval forces. Rather than opt for ‘niche’ naval forces with limited flexibility, as Mugridge advocates, a wiser approach to force planning suggests ships and capabilities that maximize flexibility.

The trend in international security operations seems to be towards collective rapid response from the sea with a clear exit strategy. So, it makes sense to keep a navy able to integrate effectively into a multinational task force – *effective* being the key requirement. The task group concept is, in fact, ideally linked to a Canadian foreign policy of active internationalism. But that doesn’t mean Canada will not need to deploy warships independently to support policy.

As an organizational model the naval task group, which has proved its value over the last 20 years, provides the greatest flexibility for small navies expected to meet security requirements in many parts of the world. The task group model also provides the necessary training environment that prepares individual ships to join multinational formations as useful members rather than as token participants. There is as yet no evidence that the task group model is redundant.

All that said, it is perfectly fair to ask what type of ships and aircraft provide the greatest flexibility. Mugridge introduces the ‘cheap and nasty’ warship and the ‘hi-lo’

fleet mix, both of which have been looked at over the years but not found completely satisfactory. There are concerns that the hi-lo mix lacks operational flexibility and that there is a risk that the cheap and nasty ships will eventually replace all the higher-capability warships. This option is just too attractive to cost-cutting politicians and bureaucrats. Today long-term force flexibility is more important than most other force planning considerations.

The rising sticker price of warships, and just about every other item of military hardware, is a genuine concern these days and a compelling motivation for seeking cheaper military solutions to national security. It is estimated that the cost of a frigate-size warship (excluding the life-cycle costs) grows at about 7% a year. (Over the last 20 years, inflation in Canada has averaged 2-3%.) In Canada, new ships are being evaluated against a model that is 20 years old and this paints an inaccurate picture. Anyway, one could argue that there is no such thing as a useful cheap and nasty warship because cheap and nasty equipment of the type needed to permit flexible use of the ship does not exist. Cheap and nasty or 'economy' warships have been thoroughly evaluated and discarded twice in recent history because those designs are not compatible with the Canadian operating environment. Essentially, when you buy cheap and nasty, you only get as much value out of the item as you pay for.

Although Mugridge rightly questions the future relevance of the existing fleet structure, advocating a radical shift in Canadian fleet structure that would sacrifice operational flexibility is not realistic. The consensus today seems to be that the overseas interests of medium powers are best served by involvement in multinational naval and joint forces. Yes, this is very much the *traditionalist* view, but until someone proves that there is a better way of delivering national security at and from the sea, many prefer to retain what has been tested and found more than adequate under a wide range of scenarios. 🍷

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Book Reviews

First to Die: The First Canadian Navy Casualties in the First World War, by Bryan Elson, Halifax: Formac Publishing Company Ltd., 2010, 96 pages, ISBN 978-0887809132

Reviewed by David Morse

As the 100th anniversary of the Canadian Navy fades from memory, Bryan Elson's well-crafted volume reminds us of the enduring impact of the individual in times of upheaval. Through the story of the first class and particularly four individual graduates of the Royal Canadian Naval College (RCNC), Elson tells the story of the dedication of these young men even as the leadership of Canada's new navy struggled against national indifference to naval power.

Every premise of the establishment of the Royal Canadian Navy (RCN) was subject to debate and revision. In the shadow of the Anglo-German naval arms race, Canada debated about whether to focus on its own navy or contribute to an Imperial force. This argument would play out over two wars becoming an essential element of the transition from Canada as a dependent colony to independence. The 1910 *Naval Service Act* seemed to resolve the dilemma, setting into place a shipbuilding program and the training and maintenance establishments required to support the fleet and, perhaps more importantly, a path to recognition of Canadian control over coastal waters. A further step was the opening of the RCNC with a first class of 21 cadets all aged 14-15. They all shared the ambition of serving Canada in Canadian ships but of the 19 graduates, five would perish in English hulls before the First World War was a year old.

Foreshadowing policies to come, the shipbuilding program was cancelled immediately following the 1911 Laurier-Borden change of government, leaving the RCN effectively unequipped. *Niobe* was an out-of-date castoff which had been badly damaged after running aground and *Rainbow* was of even less utility given rapid advances in naval technology. Political shenanigans aside, "it is tempting to believe that [the cadets] were unconsciously absorbing what became the RCN's characteristic defence mechanism: fatalistic acceptance, coupled with a stubborn determination to make the best of whatever resources a grudging and uninterested country saw fit to provide" (p. 20).

The RCNC midshipmen were assigned to Royal Navy ships for training. Elson describes the social whirls of

Caribbean port visits, behind which loomed the realities of war. Canada's lack of a naval policy meant the professional aspirations of the 19 young Canadians were in doubt – "if Canada was not ready to support [a navy], they had to consider the possibility of resigning." As a stop-gap, the midshipmen undertook additional training in communications and on the declaration of war, reported for duty. Frustrated and ill-employed in the jetty-bound *Niobe*, all 19 midshipmen volunteered to join HMS *Suffolk* as she refuelled in Halifax – joining on Friday and sailing on Saturday. The flagship HMS *Good Hope* was short four midshipmen and four Canadians moved aboard – two at the personal invitation of Rear-Admiral Sir Christopher Craddock. These four would be the 'first to die' that Elson refers to in his book's title. They would perish in the confrontation with the German Pacific squadron at Coronel in November 1914 barely six weeks later.

The British squadron lagging in numbers, technology, speed, fuel and intelligence was rapidly defeated. Elson paints a picture of the challenges facing Rear-Admiral Craddock – ships of limited capability and lacking training, over-stretched logistics especially coaling stations, contrary and over-controlling direction from an Admiralty unfamiliar with the limitations of radio communications, a staff lacking even the rudiments of an operational control capability, and the influence of aristocratic family connections. Elson's narrative of the chase and the action is economically laid out but a compelling read.

The parallels with today are striking – outdated equipment, lack of trained officers and sailors, dependence on the RN (now the US Navy), and a political desire to make the least contribution for the greatest credit. Even in recent years, the "stubborn determination to make the best of whatever resources a grudging and uninterested country saw fit to provide" seems to persist. The continuation of maritime helicopter capability has rested on the determination of aircrew and maintenance crews all the while waiting out the challenges of contracting and re-contracting. Will the 2010 shipbuilding policy and the replacement of replenishment ships and the *Iroquois*-class be any different?

Does Elson merely chronicle history or has he fingered an essential Canadian trait – uncertainty about our role in international military cooperation and the procrastination over force procurement which ensues? *First to Die* is an evocative read. This is no dry analytical tome; it is a well-told story which prompts an appreciation of the contribution of the individual to the course of naval history. 🍷

Why Has the Cost of Navy Ships Risen? by Mark V. Arena, Irv Blickstein, Obaid Younossi and Clifford A. Grammich, RAND, National Defense Research Institute, 2006, 124 pages, ISBN 0-8330-3921-0

Reviewed by Commander David Peer

This RAND report for the US Navy is an important contribution to our understanding of cost drivers in naval ship acquisition. The study was driven by a concern in the USN that unless a way was found to get more out of a fixed shipbuilding budget the size of the USN would inevitably shrink. Size does matter. The report is easily read and the results well presented. Readers will quickly draw parallels between the US experience and that of any Western navy.

The importance of the book lies in the analysis and reduction of 50 years of detailed USN ship cost data into simple graphs and tables. The US Department of Defense has an enviable ability to estimate the cost of ships, primarily as a result of years of production information from US shipbuilding projects. Canada and its shipyards have never enjoyed the same sharing of detailed cost data, so this report should be particularly welcome as we embark on the renewal of the Canadian Navy and Coast Guard over the next two decades.

The authors were only concerned with cost escalation which measures over time the increase in 'sail away' cost of a ship and thus naval capability. The issue of cost growth or the increase in cost over the design and construction of a ship is a separate concern for navies. RAND isolated cost escalation factors into two groups, depending on the government's ability to exert influence – economy-driven and customer-driven. The word *customer* here means those elements of the government that influence cost, including the navy, Congress and the office of the Secretary of Defense.

For surface combatants, economy-driven factors are roughly comparable to that of inflation and account for about half of cost escalation. They are largely outside the control of the government and include elements such as wage rates and the cost of material and equipment. Customer-driven factors provide the other half of cost escalation, and include direct factors such as standards and requirements that increase complexity or improve performance and indirect factors such as labour regulations, procurement practices for shipbuilding and environmental regulations.

This approach provides some structure to the factors that contribute to the complex issue of cost escalation. In general, the approach should be valid for any country

and the conclusions should be particularly interesting for Canada given the close alignment of our economies, similar laws and regulations, and comparable ship design standards and requirements. The report's conclusions offer considerable insight on ideas for controlling the cost of future naval ships for Canada.

The report concludes by considering positive and negative aspects of preliminary ideas on how to reduce ship costs. Readers familiar with discussions on building ships for the Canadian Navy will recognize recommendations to increase ship procurement stability, consolidate the industrial base, encourage international competition and participation, change the design life of ships, buy a mix of mission-focused and multi-role ships, and build commercial-like ships. The report also highlighted the problems, expense and difficulty that an unstable business base causes shipbuilders by discouraging investment, creating fluctuations in the demand for skilled labour and reducing the supplier base.

The report makes one interesting extrapolation on cost escalation and the size of the USN that Canada should consider for its navy. A continued demand for more complex (and by inference more capable) future combatants will invariably lead to smaller fleets if governments do not increase shipbuilding budgets. The RAND analysis suggests that cost escalation could halve the steady-state size of the USN by 2025 if customer-driven factors are not restrained. Similar logic applied to the Canadian Navy suggests there will be a point in the future when a choice will have to be made between fleet size and ship capability. 🍷

Piracy and Maritime Crime: Historical and Modern Case Studies, edited by Bruce A. Elleman, Andrew Forbes and David Rosenberg, Newport Papers #35, Newport, RI: Naval War College Press, 2010, 273 pages, ISBN 978-1-884733-65-9

Reviewed by Dave Mugridge

As we know, history has a habit of repeating itself, sometimes on numerous occasions. It would appear that piracy is one of those subjects which does exactly that. This fine volume examines the history of piracy across Asia and Africa, brings scholarly insight to this issue and helps naval practitioners to grasp the complexity of the issue. Perhaps if enough of us read, understand and apply the lessons that are identified in this book, then future generations won't get bitten again.

Like prostitution, piracy is a longstanding criminal way of life. These vocations have adapted over time in response to changes in economics, law and society. Are they a granite boomerang – no matter how far you throw them, they always return as stubbornly as the rock from which they were hued? Is this because we don't learn from the past and ignore their causal roots?

This book commences with a legal review by Penny Campbell of piracy and why we seem so hung up over whether the territorial limit should determine whether the offence is piracy or robbery at sea. These pages provide a great first stop for any new student of piracy as the author sets out credible legal definitions for these offences.

With four chapters on piracy in east Asia and the South China Sea, history and contemporary events are both well served in what is a comprehensive review of local issues and events. Robert Antony and David Rosenberg both contribute chapters which provide an appraisal of piracy in its modern-day guise.

South and southeast Asian piracy is similarly dealt with in four chapters. The article by Sam Bateman, "Confronting Maritime Crime in Southeast Asian Waters," is a country mile ahead of a strong field and should be reprinted by all maritime security courses which aim at the strategic level. Here is an author who is on top of his game and fully deserving his burgeoning reputation as an expert.

Two of the four chapters in the section on Africa adequately deal the history of piracy off the coasts. But the more interesting chapters discuss the issues which separate the pirates of the Gulf of Guinea from those off Somalia. In their chapters Arild Nodland (about the Gulf of Guinea) and Gary Weir (about the Horn of Africa) identify the root causes and suggest methods to correct the current situation. My only complaint is that neither attempt to discuss the links between piracy and terrorism.

Piracy and Maritime Crime is a reference book which should remain at hand when discussing piracy. The editors have pulled together interesting authors who give the reader something worthy of consideration and a knowledge base beyond elevator talk. If enough policy-makers read this, then perhaps we could avoid collective surprise when piracy or robbery at sea emerges from the waters of a failed/failing state and threatens the freedom of the global ocean commons. 🍷



Announcing the 5th Bruce S. Oland Essay Competition

The *Canadian Naval Review* will be holding its annual essay competition, the Bruce S. Oland Essay Competition, again in 2011. There will be two prizes for the best essays – a first prize of \$1,000 and a second prize of \$500. The winning essays will be published in *CNR*. (Other non-winning essays will also be considered for publication, subject to editorial review.)

The first prize will be provided by Commander 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:

- Canadian maritime security;
- Canadian naval policy;
- Canadian naval issues;
- Canadian naval operations;
- Canadian oceans policy and issues.

If you have any questions about a particular topic, contact naval.review@dal.ca. And see the guidelines for submissions and judging given below.

Announcing the 3rd 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.

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

Contest Guidelines and Judging

Submissions for the 2011 *CNR* Oland Essay Competition and/or the CNMT Essay Competition must be received at naval.review@dal.ca by **24 June 2011**. Essays are not to exceed 3,000 words. Longer submissions will be penalized in the adjudication process. Essays cannot have been published elsewhere. 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 essays will be assessed on the basis of a number of criteria including readability, breadth, importance, accessibility and relevance. The decision of the judges is final. All authors will be notified of the judges' decision within two months of the submission deadline.



Task group exercise with Her Majesty's Canadian Ships *Athabaskan*, *Charlottetown* and *Montréal* off the Atlantic coast, November 2010.

All photographs by Corporal Johanie Maheu, Formation Imaging Services, Halifax