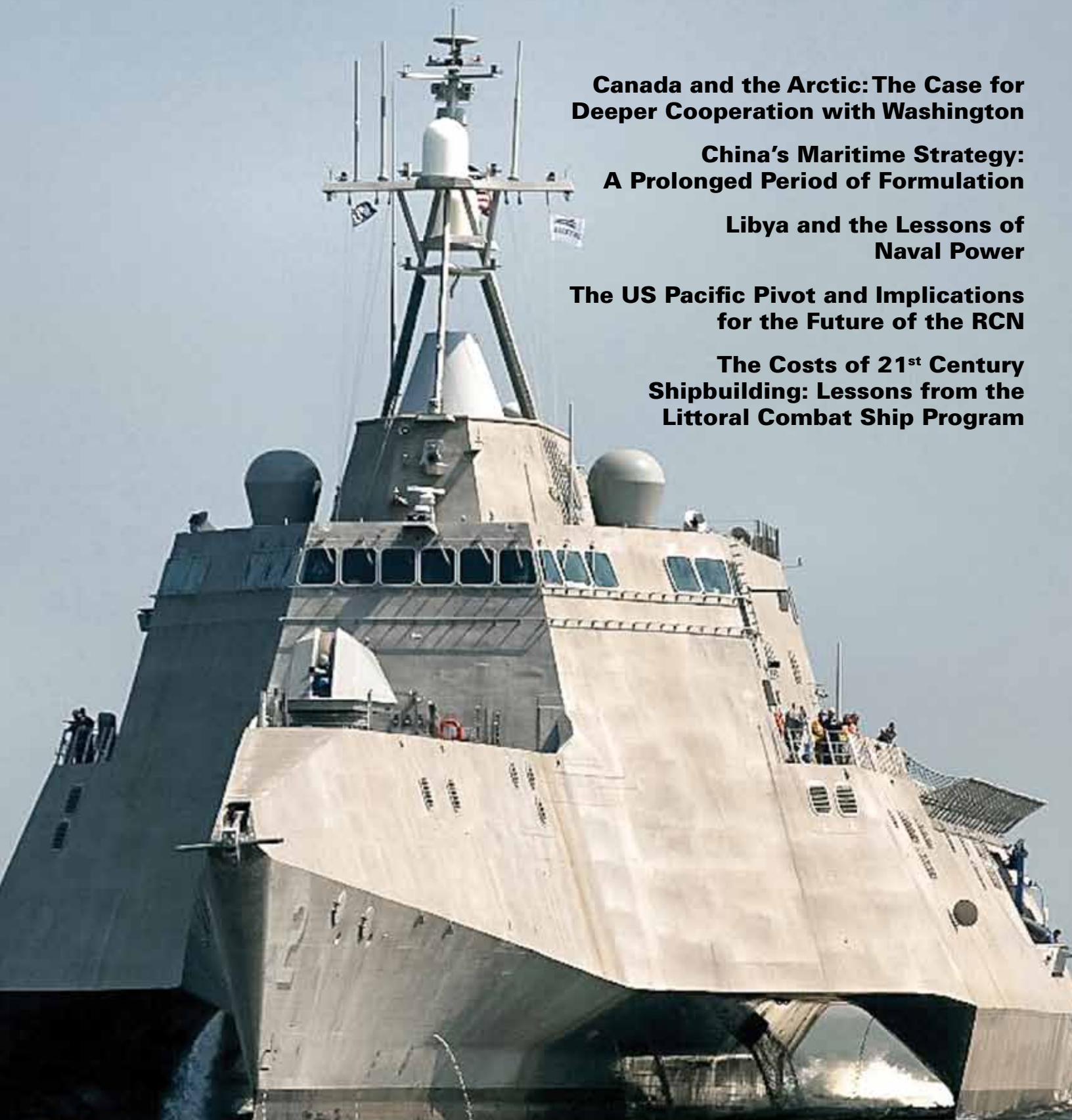
# CANADIAN NAVAL REVIEW

VOLUME 8, NUMBER 4 (WINTER 2013)



**Canada and the Arctic: The Case for Deeper Cooperation with Washington**

**China's Maritime Strategy: A Prolonged Period of Formulation**

**Libya and the Lessons of Naval Power**

**The US Pacific Pivot and Implications for the Future of the RCN**

**The Costs of 21st Century Shipbuilding: Lessons from the Littoral Combat Ship Program**

# Our Sponsors and Supporters

*Canadian Naval Review* (*CNR*) is a 'not-for-profit' publication depending for funding upon its subscription base, the generosity of a small number of corporate sponsors, and support from the Department of National Defence and the Centre for Foreign Policy Studies at Dalhousie University. In addition, *CNR* is helped in meeting its objectives through the support of several professional and charitable organizations. Without that corporate support *CNR* would not be able to maintain its content diversity and its high quality. Corporate and institutional support also makes it possible to put copies of *CNR* in the hands of Canadian political decision-makers. The help of all our supporters allows *CNR* to continue the extensive outreach program established to further public awareness of naval and maritime security and oceans issues in Canada.

CANADA'S NAVAL MEMORIAL H.M.C.S. SACKVILLE MÉMORIAL NAVAL CANADIEN

(www.canadasnavalmemorial.ca)

**Naval Association of Canada**

(www.navalassoc.ca)

NAVY LEAGUE LIGUE NAVALE

(www.navyleague.ca)

CADSI · AICDS

Canadian Association of Defence and Security Industries

Association des industries canadiennes de défense et de sécurité

CNRS · SCRN

The Canadian Nautical Research Society
(www.cnrs-scrn.org)

seaspan

THALES

(www.thalesgroup.com)

To receive more information about the corporate sponsorship plan or to find out more about supporting *CNR* in other ways, such as through subscription donations and bulk institutional subscriptions, please contact us at naval.review@dal.ca.

# CANADIAN NAVAL REVIEW

VOLUME 8, NUMBER 4 (WINTER 2013)



The editorial offices of *CNR* are located at the Centre for Foreign Policy Studies, Hicks Building, Dalhousie University. The mailing address is 1699 South Street, PO Box 15000, Halifax, NS, B3H 4R2.

Phone: (902) 494-3769
Fax: (902) 494-3825
Email: naval.review@dal.ca
Website: www.naval.review.cfps.dal.ca

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

*Canadian Naval Review* has three primary objectives:

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

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

Articles, opinion pieces, book reviews and letters may be submitted via email or mailed (with an electronic copy) to the address given above. Send to the attention of the Editor, Dr. Ann Griffiths. Articles are to be in Word or WordPerfect format and no longer than 3,000 words. Articles must not have been published elsewhere. Citations should be kept to a minimum and articles must be accompanied by a 100-120 word abstract. Opinion pieces are to be 1,000-1,500 words. Authors of articles and opinion pieces which are published will be paid a small honorarium. Book reviews are to be 500-750 words. Photos may be submitted with articles or commentaries but they must be at least 300 dpi, at an equivalent size to 5 by 7 inches, and internet images cannot be used. Intellectual copyright will remain the property of the author, however, the right to re-publish articles initially published in the *Canadian Naval Review* remains with the Editorial Board. Articles and commentaries written in French are welcome and, if accepted, will be published in French.



*Credit: Dennis Griggs, General Dynamics*

*The US Navy's first trimaran Littoral Combat Ship,* ***Independence*** *(LCS-2), underway during builder's trials in the Gulf of Mexico, 2 July 2009.*

# Contents

EDITORIAL: HOW DO YOU MEASURE SUCCESS? — 2
ANN GRIFFITHS

2ND PLACE ESSAY IN THE 2012 OLAND ESSAY COMPETITION — 4
CANADA AND THE ARCTIC: THE CASE FOR DEEPER COOPERATION WITH WASHINGTON
JEAN-FRANÇOIS BÉLANGER

CHINA'S MARITIME STRATEGY: A PROLONGED PERIOD OF FORMULATION — 9
ADAM P. MacDONALD

LIBYA AND THE LESSONS OF NAVAL POWER — 14
SCOTT BISHOP

THE US PACIFIC PIVOT AND IMPLICATIONS FOR THE FUTURE OF THE RCN — 19
DAVID S. McDONOUGH

THE COSTS OF 21ST CENTURY SHIPBUILDING: LESSONS FOR CANADA FROM THE LITTORAL COMBAT SHIP PROGRAM — 24
TIMOTHY CHOI

MODULAR WARSHIPS — 29
JANET THORSTEINSON

MAKING WAVES
A NECESSARY CAPABILITY — 31
BRIAN WENTZELL
CRITICISM FOR THE SAKE OF CRITICISM — 34
PETER HAYDON
THE REFLECTION PROJECT AT HMCS *PREVOST* — 35
SUB-LIEUTENANT DAVID LEWIS

A VIEW FROM THE WEST: THE ROLE OF FISHING FLEETS IN MARITIME BOUNDARY DISPUTES — 36
DANIEL BAART

PLAIN TALK: UP SHIP CREEK WITHOUT AN EXPLANATION — 38
SHARON HOBSON

WARSHIP DEVELOPMENTS: UPDATE SNIPPETS — 40
DOUG THOMAS

BOOK REVIEWS — 42

THE LAST FLOWER: HMCS *SACKVILLE* — 45

*Editorial*

# How Do You Measure Success?

As 2012 ends and we move into 2013, it's a time to reflect on the year that has passed. Was 2012 a successful year for the Canadian Forces? Was it a successful year for the Royal Canadian Navy? Does it depend on how you measure success? The federal government's retreat from its previously adamant push for the F-35s puts the replacement for the F-18s on an uncertain trajectory. And the continuing absence of the replacement for the Sea King helicopters is a lack of success. As well, the National Shipbuilding Procurement Strategy has stalled amidst significant headwinds, so much so that the first ships seem like a distant and improbable dream, despite the headlines that appeared when the decision on the shipyards was made. By these measures 2012 was not a resounding success.

In terms of the navy, 2012 meant some successes, some failures and some unknowns. Among the unknowns are the Maritime Coastal Defence Vessels (MCDVs). What is happening with them? Will they be kept and used? What will they do? And what about the destroyers? While *Iroquois* recently participated in a task group exercise, the future of *Athabaskan*, which until recently was undergoing a major refit in Ontario, is unknown. *Athabaskan* will spend the winter in Halifax after an eventful tow back to Nova Scotia from Ontario.


*HMCS **Victoria** returns to Esquimalt Harbour 14 September 2012 after participating in the world's largest multinational maritime exercise, Rim of the Pacific (RIMPAC).*

There were, however, some successes that occurred in 2012. Thus, for example, Canada now has two submarines in the water. While many Canadians question why we have submarines in the first place, their blood pressure may go down to learn that the submarines are now becoming fully operational. There is a joke in Halifax that HMCS *Windsor* has had more air time than some of the Sea Kings. The submarine spent years out of the water up on lifts for refit/repair – indeed, it has spent more time in the air than at sea. But *Windsor* is now back in the water, and recently was seen undertaking trials in the Bedford Basin of Halifax Harbour. And on the West Coast, *Victoria* has had a busy year, and participated in its first Rim of the Pacific (RIMPAC) exercise off the coast of Hawaii. A highlight of the exercise was that *Victoria* participated in a live fire exercise, firing a Mk48 torpedo and scoring a direct hit on a target ship. So, two submarines are in the water, one that can float and move, and one that satisfies all three requirements of naval ships – float, move, fight.

Another success to which the navy can point is the Frigate Life Extension Program (FELEX). This is a program to maintain and upgrade Canada's 12 frigates in order to update them and make them more capable until their replacements can be built. The program involves work on the West Coast by Seaspan and on the East Coast by Irving Shipbuilding. In Halifax, HMCS *Halifax* has gone through the FELEX process and is now undertaking sea trials. The mid-life refit appears to have gone well, and *Halifax* has already tested some of the new systems with success. *Fredericton* is almost through the process, and *Montreal* is right behind it. *Charlottetown* is now entering the process – i.e., in the pre-mid-life refit stage. On the West Coast, *Calgary* is at roughly the same stage as *Halifax*, conducting tests and sea trials. And *Winnipeg* is in the early stages of the process. There will also be updates to the supply ship *Protecteur* and the command and control ship *Algonquin*.

As time passes, the FELEX process is getting significantly faster. On the East Coast it took *Halifax* over two years to make it to sea trials. *Fredericton* will take half that time, and *Montreal* even less. There were definitely problems with the process with *Halifax*, indeed a litany of problems occurred, but they have generally been sorted out. With each ship we can hope that the problems will decrease. The program illustrates that Canada is capable of modernizing its own fleet without outsourcing. It also illustrates that, despite talk of the lack of project managers in the Department of National Defence, there are people who are capable of managing big projects and that the workforce learns quickly.

So we are back to asking if 2012 was a year of success for the navy. Six of the 12 frigates are just coming out of, or are in the midst of their mid-life refits. Is this a success? It


Credit: Ships Start Here

*HMCS **Halifax** at Irving Shipbuilding's Halifax Shipyard for FELEX refit, September 2010.*

means that the six ships will be much more capable in the near future but they are not operational at this time. And the other six ships are still to go into the program. As well, with six ships out of rotation, crews are sitting ashore. In his speeches during the navy's centennial year in 2010, Commander Maritime Command, Vice Admiral Dean McFadden said that his biggest concern was a shortage of personnel. Now with six ships undergoing mid-life refits there aren't enough ships for the crews. While FELEX is making good progress, it still means that at-sea training is difficult for new sailors, and sailors sitting ashore will lose their skills. This means a reduction of capability, not just of ships but of people.

The FELEX program is supposed to modify the frigates to accommodate the new Cyclone helicopters. Thus far, in the absence of these long-awaited helicopters, all that can be done is to ensure that the hangars onboard are big enough to fit them, and make some adjustments to the system for hauling them down and securing them to the deck. Most of the other modifications for the Cyclone can't be made until they are actually delivered. Where are the Cyclones? I don't see any landing or taking off at the naval base in Halifax. I see Sea Kings – and indeed, many people in Halifax saw a Sea King in November 2012 as one made an unscheduled landing in a parking lot next to a grocery store – but I don't see Cyclones.

So, what is the bottom line? If we define success for the navy as movement and a process, then 2012 was a successful year. Ships have participated in exercises and operations with Canadian allies. Two submarines have moved from the air into the water. Six frigates have moved into and/or progressed through the FELEX modernization program. This work may have started slowly and tentatively, but the sweet spot in the learning curve has been reached, and we can see that managers have the skills to keep the work moving.

If we define success as the acquisition of new assets, then 2012 was not a success. The Sea Kings celebrated their 50th birthday with still no Cyclones to replace them. As the government cuts back on expenditures, the National Shipbuilding Procurement Strategy shows signs of real stress, and that means the first ships – if any – of the production line will be a long time in the future, and probably fewer in number than the navy would like.

It's our choice whether to be optimists or pessimists, glass half full or glass half empty. A week into January and 2013 is already not looking good – *Athabaskan* has some new dents in it, and both the Auditor-General of Canada and the Parliamentary Budget Officer are due to release reports on shipbuilding costs. But, whatever your definition of success, I hope that at this time in 2014 we can point to 2013 as a successful year for the navy.

Dr. Ann Griffiths

*2nd Place Essay in the 2012 Bruce S. Oland Essay Competition*

# Canada and the Arctic: The Case for Deeper Cooperation with Washington*

**Jean-François Bélanger**

Credit: Doug Sanderson

*A sign(ing) of the times? US Army General Charles Jacoby Jr., commander of NORAD and US Northern Command, and Canadian Army Lieutenant General Stuart Beare, Canadian Joint Operations Command commander, sign the Tri-Command Framework for Arctic Cooperation and the Tri-Command Training and Exercise Statement of Intent in Colorado Springs, 11 December 2012.*

Until recently, the question of Arctic sovereignty and security was moot – the ice made any efforts in the north almost impossible. However, with global warming and the ice melt, drilling for oil and other natural resources has become a real possibility. A 2008 US geological survey speculated that the Arctic could contain close to 25% of the undiscovered oil reserves of the world.[1]

As the ice melts, the activities of the eight Arctic states will increase, and it will become necessary for Canada to develop a robust policy to ensure its own claims in the Arctic are respected and its borders secure. The importance of the Arctic was acknowledged by Prime Minister Stephen Harper in 2007 when he stated "Canada's new government understands that the first principle of Arctic sovereignty is: use it or lose it," and noted that "Canada has a real, growing, long-term presence in the Arctic."[2] The government's Arctic policy was mostly unilateral and has been criticized widely. Most analysts agree that Canada cannot go it alone in the Arctic.[3] In response, the government adopted "Canada's Northern Strategy" in 2009 which takes a more multilateral approach. But it is not enough; Canada cannot hope to have a robust Arctic policy, both ensuring its sovereignty and its security, without the help of Washington. Canada should pursue multilateral ventures in the Arctic, but a truly effective policy is impossible without the support of the United States. I will make the case for a bilateral agreement, involving NORAD and/or NAFTA, to provide Canada with the necessary tools to protect its sovereignty, at the price of some compromise.

## *Canada in the Arctic: A Multilateral Approach?*

In 2009 the Canadian government issued a statement – "Exercising Sovereignty and Promoting Canada's Northern Strategy Abroad" – which updated its Arctic policy. The policy indicated a change from the 'use it or lose it' stance to a greater emphasis on international cooperation.[4] Although the Northern Strategy continues to focus on using all of the available governmental resources to exercise sovereignty in the Arctic, it also creates space for cooperation. This new policy may reflect that Canadian decision-makers have developed a broader view of what sovereignty means, and this provides them with a larger set of tools to deal with arising problems.

The first priority listed in the sovereignty section is to "seek to resolve boundary issues in the Arctic region, in accordance with international law." It also states that Canada will "continue to manage these discrete boundary issues and will also, as a priority, seek to work with our neighbours to explore the possibility of resolving them in

accordance with international law."[5] The Arctic policy stresses increased involvement with the Arctic Council, deference to the United Nations Convention on the Law of the Sea (UNCLOS), and joint military exercises in the Arctic. In fact, in May 2011 Canada signed an important multilateral treaty on Arctic governance, the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic. This agreement creates a framework for search and rescue missions in the Arctic, and was signed by all the Arctic states.


Credit: Corporal Malcolm Byers, MARPAC Imaging Services

*A CH-124 Sea King helicopter takes off from the flight deck of HMCS **St. John's** to conduct weather and ice reconnaissance in the Davis Strait, east of Baffin Island on 16 August 2012 during **Operation Nanook** 2012.*

Despite improvement from the 'use it or lose it' stance, there are, however, still significant issues inherent in Canada's Arctic policies. First, despite what the Northern Strategy says, the Canadian involvement with the Arctic Council may be more words than deeds. Since the creation of the council, successive Canadian governments have reduced support to it. In 2006, the Harper government went as far as to eliminate the position of Circumpolar Ambassador of Canada to the Arctic Council. The Canadian government has allocated $10 million over four years for its enhanced presence at the council, but has stipulated that the funds would also need to cover support for the University of the Arctic, and a program to improve relations with Russia.[6] Moreover, with the severe cuts to most ministries in the 2012 federal budget, it is unclear how much money will be left for the Arctic.

Second, Canada has very limited military capabilities that it can deploy in the Arctic in order to promote sovereignty and defence/security, and it is unlikely it will be able to fulfill its commitments to international agreements without help. The actual and/or projected forces of Canada in the Arctic consist of the $720 million icebreaker *John Diefenbaker*, which has been announced but will not be available until 2017, at the earliest. The contracts for six Arctic Offshore Patrol Ships were announced in October 2011 but the ships are not expected to be ready until at least 2017. Canada does not have nuclear-powered submarines which are extremely useful in the Arctic. Compared to the military capabilities deployed by Russia in the Arctic, Canada will have a hard time controlling the region if the need arises. The Department of National Defence (DND) has acknowledged that Canadian capabilities in the Arctic have decreased in recent years and that its ability to monitor activity in the north and to respond to situations is limited. This shortcoming is likely to become more significant as activity in the Arctic increases. While the 2007 Speech from the Throne and the Canada First Defence Strategy called for an increased presence in the Arctic, the cuts to DND in the 2012 budget make it unlikely Ottawa will add additional resources for its Arctic policy. In fact, it will probably decrease or cut funding to certain programs.

Third, it is unwise for Canada to subject its Arctic policies to international law through UNCLOS due to the status of the Northwest Passage. Canada has always claimed that the passage is part of its internal waters and subject to Canadian rules and regulations. However, most analysts agree that the Canadian claim would not hold in international court. The United States has historically maintained that the passage is an international strait, available for all states to use. Washington fears to create a precedent by saying otherwise, due to similarities with the Strait of Hormuz, a strait that Iran is contesting. This was traditionally a non-issue because the Northwest Passage was frozen and hard to navigate. This is no longer the case – starting in July 2005 the ice in the passage melted enough to permit transit.

Canada has to find a way to make the United States happy on the subject while ensuring that Canadian regulations are used in the passage. And this has to be through a bilateral agreement with the United States. But there is a profound fear in Canada that more integrated policies with the United States on security issues would mean a loss of sovereignty. Most important security decisions in recent years – in particular, the refusal of Canada to participate in the US missile defence plan, the refusal to go to Iraq, and Canadian emphasis on border security since 9/11 – have all been driven by the fear of eroding national sovereignty. The dispute surrounding the Northwest Passage has become part of this fear, and underlies

the lack of a bilateral agreement with Washington on the passage.

However, this fear is based on a false dichotomy between security threats and sovereignty threats. It is based on the assumption that Canadian security in the Arctic has to come at the cost of its sovereignty, or its sovereignty at the cost of its security. Security and sovereignty are not mutually exclusive concepts, and they both have the same requirement: control. Control is necessary to enforce the laws and regulations established by Canada for the well-being and security of its citizens. Canada wants the right to make and enforce its rules in the Arctic, but doing so would come with a cost that Canada does not seem prepared to pay. Without the United States, Canada cannot hope to exercise control in the Arctic. And, historically, the price Canada has had to pay the United States on security issues has been much lower than the benefits it received.

### *The Case for a Canada-US Agreement in the Arctic through NORAD and NAFTA*

Canada and the United States have a long history of cooperation in the Arctic. During World War II both countries cooperated on Arctic projects such as the Northwest Staging Route, the Crimson Route and the Alaskan-Canadian Highway. Historically, the United States, along with Canadian observers, has taken care of icebreaking capabilities, or any situation in which Canada had a lack of capability. The construction of the Distant Early Warning (DEW) line in the 1950s and the establishment of the North American Aerospace Defence (NORAD) organization are also examples of the high level of cooperation between the two countries on the Arctic and security matters. Moreover, in most initiatives, and especially NORAD, Washington has assumed the majority of the cost. A robust policy in the Arctic would cost Canada more money than it is willing to spend at the moment. A bilateral agreement through NAFTA or NORAD would ensure low cost for Canada at the price of a compromise on the Northwest Passage. A bilateral agreement would make the defence of Canadian sovereignty in the Arctic more possible.

The first element of a joint US-Canada Arctic policy is to include Arctic sovereignty and the cooperation for energy resources in the Arctic as part of NORAD. Washington has treated Ottawa as a political equal within NORAD, while providing the financial and technological requirements for the construction and maintenance of the critical infrastructure. According to Rob Huebert, a prominent Arctic scholar, Canada and the United States have had their share of minor disputes throughout their NORAD


*Credit: Wofratz, Wikipedia*

*Russia's nuclear icebreaker, **Yamal**, on its way to the North Pole in 2001.*


Credit: Petty Officer 3rd Class Patrick Kelley, USCG Atlantic Area

*The CCG ship **Louis S. St. Laurent** makes an approach to the USCG Cutter **Healy** in the Arctic Ocean, 5 September 2009. The two ships were taking part in a multi-year, multi-agency Arctic survey that will help define the North American continental shelf.*

experience, but the difficulties had no significant impact on Canadian-American security requirements.[7] NORAD has provided a useful framework for security collaboration between Washington and Ottawa, and it should be used in the Arctic. If an extended version of NORAD was used, it could make control of North American Arctic waters and skies a shared responsibility between Canada and the United States. NORAD is already in place and Canada and the United States have learned to work together. It would make sense, therefore, to reinvest in NORAD for new satellites to enhance surveillance in the Arctic.

In January 2009 President George W. Bush issued US Presidential Directive 66/25 in which the United States identified its "fundamental homeland security interests in preventing terrorist attacks and mitigating those criminal or hostile acts that could increase ... vulnerability to terrorism in the Arctic region."[8] Although it is highly unlikely, terrorist groups *might* use the Arctic as an entry point to North America and there is the possibility of criminals using the region. If terrorists used Canada's Arctic territory to commit an attack in the United States, it would be disastrous for the Canada-US relationship. In 2005 former US Secretary of State Colin Powell warned Canada without naming it that it would have to pull its weight in the effort to enhance border security if Canada wanted the privileged relationship with the United States to continue.[9] Showing a strong commitment to North American security via all borders would strengthen Canadian leverage with the Americans when discussing possible compromises on the Northwest Passage. Moreover, an agreement within NORAD would give Canada the necessary capabilities to maintain both sovereignty and security in the Arctic.

There is evidence that North Korean vessels have tried to sail through the Northwest Passage and a Chinese vessel making the voyage was only discovered when it arrived in Tuk at the end of the trip.[10] With the current bad relationship between Washington and North Korea, and the possible security competition with China, it would be in Washington's interests to withdraw its current policy regarding the Northwest Passage in order for NORAD or NAFTA to have the necessary laws and control to secure the Arctic. Canada has already missed one opportunity to secure its claim on the Northwest Passage, it should not lose another. Washington's focus on continental security in the aftermath of 9/11 could have made it possible for Canada to convince the United States to abandon its claim that the Northwest Passage is an international strait in favour of Canadian control through the *Arctic Water Pollution Prevention Act* in order to complete a security perimeter around North America.[11] But this opportunity was missed. Canada has to use the current international context to engage in bilateral talks with the United States on the Arctic.


Credit: Petty Officer 3rd Class George Degener, USCG

*USCG Cutter **Alder** passes an iceberg field along Greenland's western coast, 22 August 2010, during **Operation Nanook** 2010 which was designed to demonstrate international cooperation and expand the ability to respond to emergencies in the Arctic.*

There is an alternative to using NORAD to enhance Canadian-American cooperation in the Arctic. Michael Byers, an expert on the Arctic, has outlined an avenue for Canada if it wishes to engage in bilateral talks with Washington on the Arctic issue.[12] Canada should develop its policy to international standards and use the support of Washington to ensure other countries would recognize Canadian sovereignty on the issue. Such a proposal would work within NAFTA. A dispute over the passage could then be settled via NAFTA and not foreign judges at the International Court of Justice. It is better, instead, to negotiate a compromise that benefits both countries.

Both NORAD and NAFTA provide useful channels for enhanced cooperation in the Arctic. I would agree with Michael Byers when he said in an interview "my preference is for Canada to invest heavily in improving the charts, navigation aids, ports of refuge, search-and-rescue and oil spill cleanup capacity along the Northwest Passage to world-class standards. Then, Canada could invite foreign ships to use this infrastructure and thus recognize Canadian sovereignty. This would also assure the United States of Canada's willingness to police the waterway and thus protect mutual interests there."

An important door was opened in 2010 regarding bilateral relations in the Arctic between the United States and Canada. American and Canadian defence officials increased their collaboration on military exercises, investment plans and technology development related to the Arctic. As well, Canadian and American intelligence officials have created a classified joint 'utilization' assessment for the Arctic which will be updated on a continuing basis.[13] The military agencies are talking to each other on the issue, but more is needed. Ironically, if Canada wants to retain its sovereignty in the Arctic, it needs the United States strongly on its side. Multilateral proposals and involvement are good, but none of them provide enforcing mechanisms, nor help enhance Canada's capability. Canada has to take the first step towards negotiating a robust bilateral agreement with Washington in the Arctic if it wants to retain both sovereignty and security.


Credit: Corporal Rick Ayer, Formation Imaging Services, Halifax, Nova Scotia

*HMCS **Summerside** sails past an iceberg in the Davis Strait during **Operation Nanook** 2011, 16 August 2011.*


Credit: Corporal Rick Ayer, Formation Imaging Services, Halifax, Nova Scotia

*HMCS **Summerside** off the coast of Saglek, Labrador, during **Operation Nanook** 2011.*

**Notes**

* Note: This essay was written before the signing of the Tri-Command Framework for Arctic Cooperation and the Tri-Command Training and Exercise Statement of Intent during the 230th meeting of the Canada-US Permanent Joint Board on Defence at the US Air Force Academy in Colorado Springs, 11 December 2012.

1. US Geological Survey, "Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle," 2008, available at http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf.
2. Interview with Stephen Harper, quoted in Ewen MacAskill, "Canada uses Military Might in Arctic Scramble," *The Guardian*, 11 August 2007, available at www.guardian.co.uk/world/2007/aug/11/oil.arctic/print.
3. See, for example, Janice Gross Stein and Thomas S. Axworthy, "The Arctic Council is the Best Way for Canada to Resolve its Territorial Disputes," *The Globe and Mail*, 25 January 2010, available at http://www.theglobeandmail.com/news/opinions/the-arctic-council-is-the-best-way-for-canada-to-resolve-its-territorial-disputes/article1881720; Franklyn Griffiths, "The Shipping News: Canada's Arctic Sovereignty Not on Thinning Ice," *International Journal*, Vol. 58 (2003), pp. 257-282, 263; Michael Byers. *Who Owns the Arctic? Understanding Sovereignty Disputes in the North* (Vancouver: Douglas & McIntyre, 2009), pp. 1-3.
4. Government of Canada, "Statement on Canada's Arctic Foreign Policy: Exercising Sovereignty and Promoting Canada's Northern Strategy Abroad," 2009, pp. 1-29.
5. *Ibid*., p. 7.
6. Rob Huebert, "Canada and the Changing International Arctic: At the Crossroads of Cooperation and Conflict," in Frances Abele, Thomas J. Courchene, F. Leslie Seidle, and France St-Hilaire (eds), *The Art of the State IV Northern Exposure: Peoples, Powers and Prospects in Canada's North* (Ottawa: The Institute for Research on Public Policy, 2009), pp. 13-14.
7. Rob Huebert, "Renaissance in Canadian Arctic Security?" *Canadian Military Journal* (2005-2006), p. 19.
8. President George W. Bush, "National Security Presidential Directive and Homeland Security Presidential Directive NSPD-66/HSPD-25," 9 January 2009, available at www.fas.org/irp/offdocs/nspd/nspd-66.htm.
9. Colin Powell cited in Peter Andreas, "A Tale of Two Borders: The US-Canada and US-Mexico Lines after 9-11," in Peter Andreas and Thomas J. Biersteker (eds), *The Rebordering of North America: Integration and Exclusion in a New Security Context* (New York: Routledge, 2005), p. 14.
10. Jess Worth, "Who Owns the Arctic?" *New Internationalist*, Vol. 424 (2009), p. 16.
11. *Ibid*.
12. Michael Byers as cited in "Arctic Security: Fighting for the True North," *The Globe and Mail*, 25 January 2011, available at http://byers.typepad.com/politics/2011/01/arctic-security-fighting-for-the-true-north.html.
13. Ronald O'Rourke, "Changes in the Arctic: Background and Issues for Congress," CRS Report for Congress 7-5700, 8 August 2011, p. 42.

*Jean-François Bélanger is currently working on a PhD at McGill University. He is a fellow with the Centre for International Peace and Security Studies and a recipient of the Joseph Armand Bombardier SSHRC award.*

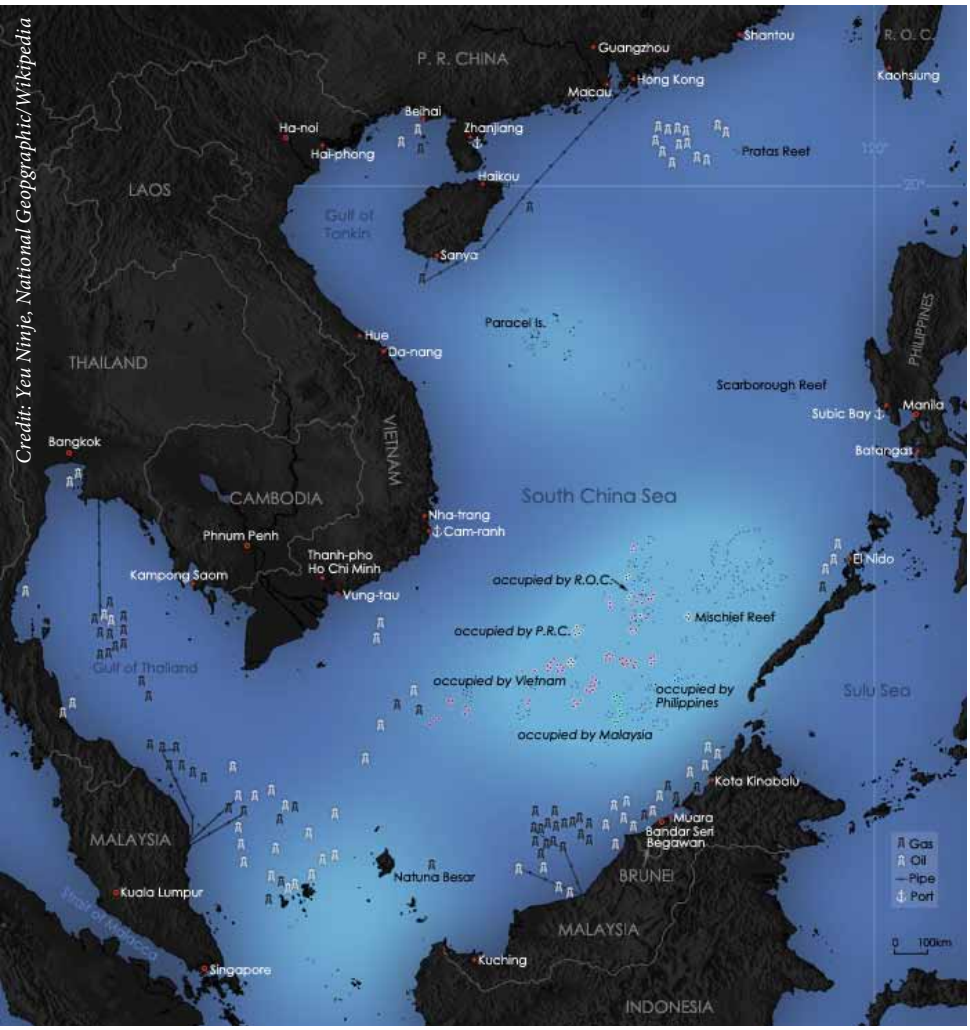
# China's Maritime Strategy: A Prolonged Period of Formulation

**Adam P. MacDonald**

China's arrival as a maritime power is an undeniable feature of today's international system. This is gaining the attention of Westerners who are trying to understand the underlying forces at work, and predict the future trajectory and the degree to which China's new maritime focus conflicts with the current maritime regime. One of the main concerns is to discover why Beijing is not being transparent about the intentions underpinning the development of its maritime capabilities. Most Westerners assume that China has a well-developed and coherent maritime strategy.

I would like to argue that this is not the case. Instead of having a clear maritime policy, China is in a prolonged period of policy formulation. Unlike what most Westerners seem to assume – i.e., that China is one actor with one voice – this process is characterized by a multi-layered and complex process populated by various domestic actors interacting and sometimes competing over the interests, strategies and overall direction Beijing should pursue.

There are some Chinese interests and activities which are ongoing sources of contestation with the West and regional actors, particularly Taiwan and the South China Sea (SCS). These issues distract investigation of China's maritime strategy as a whole, and lead to the assumption that it is a finalized product being implemented rather than under construction. A more comprehensive understanding of the contemporary debate within China about its maritime future including key actors, interests and areas of deliberation is needed. In this way the West can engage China not by countering or resisting its rise as a maritime power but by building a relationship of mutually defined interests within the maritime domain.




Credit: Yeu Ninje, National Geopgraphic/Wikipedia

*The South China Sea is an increasingly contested area, particularly over offshore petroleum and fishing claims.*

### *Shifting Focus: Beijing's Turn to the Maritime Domain*

Over the last three decades the maritime domain has changed from an area of peripheral interest to one of vital importance for Chinese leaders. The most influential facilitators of this shift have been the end of the Cold War and the transformation of the international system to an interconnected globalized world dependent on seaborne trade. For years China had been fixated internally and towards the continent. This was because of tense relations with its land neighbours, the Soviet Union and India, and economics related to China's command-style system. The disappearance of the Soviet Union, the explosion of export-driven economic growth initiated by the Open Door reforms of the 1980s, and the growth of population centres along the coastline motivated China's leaders to look to the seas.

With improving relations with land neighbours and a reconfiguration of economic development, Beijing has increasingly tied its success to the world economic system of seaborne trade. Approximately 85% of all Chinese trade moves via the sea. As well, in

2010 China briefly became the world's largest shipbuilder (but has now slipped behind South Korea), creating an industry of massive companies with revenues in the billions, employing hundreds of thousands of people.[1] The problem for China is that economic development is reliant on foreign markets and energy imports. This causes concern in Beijing over the potential vulnerability of China's extensive sea lines of communications (SLOCs) worldwide.

In addition to securing China's economic lifelines, the new focus on the maritime domain also incorporates territorial and maritime claims in adjacent waters including Taiwan, and the Paracel and Spratly Islands. Tied to the importance of these disputes is a growing sense of nationalism which promotes the enhancement of Chinese military power at sea not simply in support of economic interests but as a fundamental step towards becoming a great power. For Beijing these dynamics – the products of government reforms, emerging domestic forces and changing international circumstances – have come to be the motivating factors of China's expanded involvement in the maritime domain.

Credit: Jeff Head, the Rising Sea Dragon site

*Vessels of the People's Liberation Army Navy (PLAN) take on fuel during a maritime exercise.*

## *Does China have a Maritime Strategy?*

There is no doubt that China is continuing to build itself into a maritime power. In the 2010 Ocean Development Report, published by the State Oceanic Administration, enhancing maritime power is stated as China's historic task for the 21st century.[2] The report specifically mentions 'protecting' authority over 'relevant waters,' developing the maritime economy, and strengthening ocean and island management. The 2010 report is the first comprehensive document on China's maritime activities, combining economic, political and security matters in both domestic and international contexts.

Beijing states that its future is interconnected with that of the international system and that it does not seek to

Credit: Chinese Internet

*Chinese Type 22* ***Houbei****-class fast attack missile boat.*

challenge American sea power. In terms of military development, Beijing's official naval policy is offshore defence which, though vague in terms of geography, refers to deterring and repelling naval attacks in its surrounding waters. The Ocean Development Reports and Defence White Papers highlight developing capabilities to support international maritime operations such as anti-piracy and humanitarian relief as key priorities.

Despite these pronouncements there is a disconnect between Chinese policy and behaviour, specifically its growing naval power. Many Western commentators highlight discrepancies but they do not analyse the context within which these issues have been constructed or the assumptions underpinning them. In particular, Westerners make several assumptions. First, they assume a Chinese maritime strategy exists but there is a noticeable void as to what this term means. A strategy is a central logic which may or may not be explicit, but which informs and links policies and actions, and through which leaders determine what interests are and how to achieve them with the capabilities available. Analyses of China's maritime strategy are usually *descriptions* of China's maritime activities from an international perspective focused on great power politics. This neglects the roles of various domestic actors in China's maritime domain who are competing over how to define interests and marry capabilities with objectives. Thus Western analysis focuses on outputs not the inputs that lead to a policy that may depend on the dominance of domestic actors at the time.

Second, there is too much focus on China's growing naval power to the degree that many assume that *naval* strategy and *maritime* strategy are one and the same. Such analyses assume that naval power has become the favoured method to achieve political and economic interests due to the Chinese naval modernization program. Naval developments are interpreted as stemming from a centralized plan without contemplating the possibility that decisions are idiosyncratic and the result of effective framing of the agenda by both military actors and security industries promoting more limited interests. Thus, the perception

of China as a potential competitor to the United States tends to affect the analysis of Chinese naval power, more so than other developing naval powers. Our biases shape our threat assessments by beginning not with what we think an adversary *can* do but what we imagine it *will* do with its power.[3]

The third assumption is that China is monolithic, that there is no debate within it. Many Westerners overlook growing debate within China itself over its maritime future. Contrary to the days of hegemonic leaders, Chinese decision-making has become more diffused, opening arenas for increasing debate among actors with varying bureaucratic interests which may not align with the interests of leaders. The regime still has a strong authoritarian structure which imposes constraints on policy debates, but in the past few decades there has been an explosion of institutions in China composed of academics, policymakers, business leaders and military officers debating future objectives and strategies.[4] As well, as we have just recently seen during the turnover of power in China, there are serious strains within the top leadership about the future direction the country should take. Outsiders cannot know exact details of the debate, but it is obvious that there are a number of areas of contestation ranging from specific projects to China's guiding maritime logic. Just like in other countries these various actors advocate for interests which can overlap and/or conflict. These domestic differences should not be glossed over or seen as mere discussions over tactics, but as real deliberation pertaining to the highest levels of government strategy and planning.

The discussions about the direction of Chinese military developments include political, economic and military elements. Various actors debate, for example, whether to develop littoral or blue-water forces (or both), how to assert maritime claims, how to designate bureaucratic responsibilities for maritime matters, the future of China's commercial industry, how to ensure continuity of seaborne trade, forging relations with resource partners, the relation of sea power to great power status, and the relationship with the United States. This is not to suggest that everything is up for debate but that there is gradation to the degree to which China has defined certain interests and the measures it favours to achieve them.

### *Areas of Contestation*

Currently there are a number of aspects within Chinese policy and action which are or will be areas of contestation with other maritime actors, specifically the United States, but also Japan, Vietnam, Taiwan and the Philippines. A better understanding of the motivation in these matters will allow a greater appreciation of the intricacies of the disputes.

*Type 056 Corvettes under construction for the People's Liberation Army Navy.*

The first area of contestation is related to China's increasing assertion that maritime areas are its territory. The 2010 Ocean Development Report refers to China's "blue soil," an extension of its land borders and territories. The 1992 Law of the Territorial Sea and Contiguous Zones proclaims the entire South China Sea as Chinese territory. It also illustrates that Beijing's justification is rooted not in scientific claims of geological features but in historic claims which are not recognized under the UN Convention on the Law of the Sea (UNCLOS), and reveal a major area of disagreement with maritime neighbours.[5]

This thinking promotes strict control over adjacent waters around politically sensitive areas such as Taiwan and the SCS. The growing nationalism – in China and in neighbouring states – is a powerful force which shapes leaders' perceptions, and is sometimes fed by Asian leaders for their own political purposes. Specifically this is becoming more apparent in the SCS where Chinese maritime claims have caused hostility with a number of southeast Asian states. It should be noted that on this specific issue there is a desire to paint a simple binary picture of China as the aggressor facing off against the other claimants. This completely distorts and overly simplifies the disputes between the other states such as Taiwan and Japan which became evident in the summer of 2012.

Despite signing the 2003 Association of South East Asian Nations (ASEAN) Treaty of Amity and Cooperation in Southeast Asia, China has sent police and enforcement units to exercise jurisdiction in disputed areas. This reflects a policy of attempting to portray the issue as not one of competing legal claims but a constabulary matter to maintain authority of its 'historic' waters. The South China Sea provides a clear example of the current jockeying for position and power underway among interested domestic agencies. These agencies include the Chinese Maritime Safety Administration, the Maritime Surveillance Force and the Chinese Coast Guard, not to mention the military/navy and resource-extractive agencies which have an eye on potentially resource-rich areas, and they are all competing to frame this environment for their

own bureaucratic interests. This internal competition has real effects on policy for Beijing's leaders.[6] Because of the opaque nature of Chinese politics, we don't see the internal jockeying, we just see the results.

The second area of contestation relates to the issue of securing resources. To keep its economy running, China has to import a number of key natural resources from steel to cement to oil. The maintenance of these flows is a huge concern for Beijing and is a frequent element of Chinese discourse. Although it may be framed in terms of historic control, the resource potential of the South China Sea, for example, is a motivating factor for Beijing in proclaiming its authority over the area. Because of the global nature of its imports and exports, China's maritime concerns extend far beyond its neighbourhood. Security not only implies protection and enforcement of trade routes via military means but also employing diplomatic and economic strategies to build warm relations with natural resource producers. We can see this in Beijing's creation of extensive relations with states in Africa, the Middle East and Central Asia. There is concern in the West, and India, about the nature and extent of these relations, the increasingly dominant position in maritime industries of Chinese actors and the possible use of the Chinese navy in some form in protecting these SLOCs abroad.


Credit: Jeff Head, the Rising Sea Dragon site

*China is increasing production of the **Yuan**-class air-Independent propulsion diesel/electric submarines.*

The third area of contestation relates to the development of the People's Liberation Army Navy (PLAN). It is obvious that modernization of PLAN points towards new offshore capabilities and operations, but within Chinese military and policy circles there are disputes as to what should be their ultimate direction and scope. China has acknowledged that it is developing an anti-access/area-denial strategy in its adjacent waters to disrupt the freedom of action of other naval powers, specifically the United States, in these areas. There are, however, a number of prominent Chinese thinkers arguing against developing naval power to counter that of the United States because of concerns about overstretch and triggering a counter-balancing coalition. How to integrate PLAN capabilities into operations which facilitate and contribute to international efforts such as anti-piracy and humanitarian assistance are increasingly important military priorities. While acknowledging China's growing involvement in counter-piracy operations, the overriding concern for many in the West is that PLAN is being designed to be a peer competitor to the US Navy to limit American influence in the Asia-Pacific region. In the immediate future PLAN development appears focused on Taiwan, particularly anti-access and area-denial strategies.

Changes in Chinese naval strategy and capabilities cannot, however, be reduced to one variable but include a host of factors such as the role of naval leadership, relations with members of the civilian leadership, changing perceptions of the external security environment, availability of funding and technologies, and the institutionalization of naval research.[7] The most important debate in these matters is the framing of the security environment and the ways in which military power can assist state objectives. To this end, it is interesting that the writing of American Alfred Thayer Mahan is an important area of study for Chinese naval strategists.[8]

## *The Next Steps*

While these areas of contestations are real, there are avenues for the West to engage with China regarding maritime matters, and there are already a number of common linkages. The maintenance of economic growth is Beijing's primordial interest and in pursuance of this the continued free movement of trade by seaborne transport is vital. There are legitimate concerns about China's increasing naval power and political manoeuvring, but it is the protection of sea trade which represents the greatest arena to foster cooperative and mutually beneficial relations particularly to counteract a number of maritime security threats. Anti-piracy operations are the clearest example of such cooperation but as China becomes a maritime actor, there will likely be a desire to have influence over constructing the politics of the maritime domain. The West, therefore, must acknowledge that in the future Chinese warships will operate more frequently across the maritime domain. China will be increasingly assertive in issues ranging from UNCLOS to environment protection to the opening of the Arctic Ocean, and these arenas will need new frameworks in order to interact with the world's fastest growing maritime player.


Credit: Mass Communication Specialist 2nd Class Aaron Chase

*PLAN frigate **Yi Yang** (FF 548) transits the Gulf of Aden prior to conducting a bilateral counter-piracy exercise with the guided-missile destroyer USS **Winston S. Churchill** (DDG 81), 17 September 2012.*

It is China's naval power which is the greatest cause of concern for its neighbours right now. While there are actors who call for caution, there are many others who are pushing for a more assertive, confrontational posture. To meet the changes in Chinese focus toward the sea, the West must continue to develop a more thorough appreciation of the contemporary Chinese discourse on sea power and in particular Chinese concerns about the preponderance of American naval power. Washington's foreign policy 'pivot' towards the Asia-Pacific region will heighten such concerns in China. Leaders in Beijing, however, are well aware that the continued benefit from seaborne trade – which lies at the root of China's increased prosperity – has occurred because the US Navy has ensured the security of the global commons. This is an issue the West can emphasize when discussing the maritime arena with China. If it is serious about becoming a major maritime power, China must acknowledge the importance of the free movement of goods through the global commons.

Given rapid change, uncertainty about motivations and competing jurisdictional claims, consultative mechanisms need to be established regarding naval issues to avoid misunderstandings and build trust in the Asia-Pacific region. While it is unlikely that naval relations between the United States and China, and in the region in general, will become close in the immediate future, new partnerships and joint efforts will have to be developed to tackle mutual areas of concern across a spectrum of issues from terrorism to maritime ecological concerns to responding to natural disasters.

## *Conclusions*

China's maritime strategy is still in a period of formulation – it has not been written in stone as many Western analysts seem to believe. Furthermore, in order to understand this process, China must not be portrayed as a monolithic entity solely reacting to the power realities of the international system. Like any state, it consists of domestic actors competing over the future trajectory of this process, usually attempting to advance bureaucratic interests and influence. This is evident in the continued discussion among Chinese academics, although we don't know if the debates are genuine or if they are relevant in the making of China's maritime strategy. However, if the debates are real, and they are increasingly translated and reproduced in English journals, the range and complexity of issues at hand is evident for a regime trying to balance domestic priorities with international ones.

Although the maritime strategy is still being formulated, Beijing has decided on a number of broad priorities including continued use of seaborne trade, the augmentation of its naval power and a desire for growing political influence in maritime issues. We must not assume that China is a benign actor because there are areas of contestation with many other maritime actors, but it is in a period of formulation allowing for portals of influence and engagement from outside actors. Whether the West capitalizes upon them will be dependent on the context through which we interpret China's maritime rise.

**Notes**

1. Dean Cheng, "Sea Power and the Chinese State: China's Maritime Ambitions," Heritage Foundation, 2011.
2. State Oceanic Administration, Ocean Development Strategy Research Group, *China's Ocean Development Report 2010*. These reports are now published annually.
3. Marshall J. Beier, "Bear Facts and Dragon Boats: Rethinking the Modernization of Chinese Naval Power," *Contemporary Security Policy*, Vol. 26, No. 2 (2005), pp. 287-316.
4. See Mark Leonard, *What Does China Think?* (Public Affairs: New York, 2008); and Randall L. Schweller and Xiaoyu Pu, "After Unipolarity: China's Visions of International Order in an Era of US Decline," *International Security*, Vol. 36, No. 1 (2011), pp. 41-72.
5. Leszek Buszynski, "The South China Sea: Oil, Maritime Claims and US-China Strategic Rivalry," *Washington Quarterly*, Vol. 35, No. 2 (2012), pp. 139-156.
6. See International Crisis Group, "Stirring up the South China Sea," 23 April 2012.
7. Li Nan, "The Evolution of China's Naval Strategy and Capabilities: From 'Near Coast' and 'Near Seas' to Far Seas," *Asian Security*, Vol. 5, No. 2 (2009), pp. 144-169.
8. See James Holmes and Toshi Yoshihara, "A Chinese Turn to Mahan?" *China Brief*, Vol. 9, Issue 13 (2009).

*Adam P. MacDonald is an independent scholar whose research interests include international relations theory, political regime typologies and Asia-Pacific affairs. He lives and works in Halifax.*

# Libya and the Lessons of Naval Power

**Scott Bishop**

On 20 October 2011, Muammar Gaddafi was killed by anti-regime forces near Sirte in Libya. It was an event that marked the end of NATO's *Operation Unified Protector* (OUP), with the North Atlantic Council ordering its military commanders to cease operations at midnight on 31 October.

Only eight months before, Libya had been firmly in the hands of an authoritarian regime that had ruled Libyans for more than 42 years, and there was little evidence to suggest that the Gaddafi regime was in any immediate danger. When regime forces fired upon protesters in Benghazi on 17 February 2011, a widespread rebellion erupted across the country. During the ensuing weeks, the regime's use of military force against its own populace drew international condemnation, culminating in UN Security Council Resolutions (UNSCR) to establish a no-fly zone and arms embargo and authorizing states to take all necessary measures to protect civilians from attack.

The UN resolutions were first put into effect by a US-led coalition in *Operation Odyssey Dawn*, with NATO taking over responsibility for the enforcement of these UNSCRs on 24 March 2011. Notwithstanding the many challenges that confront Libya today, there can be little doubt that NATO's air-sea campaign was a success when seen through a purely military lens.

In only 214 days of operations, NATO-led forces established a suffocating embargo on military goods and cargoes, implemented a complete no-fly zone, and undertook actions to protect civilians from attack by pro-regime forces. These actions helped pave the way for Gadaffi's eventual ouster. In short, it was the sort of military operation that is immensely appealing to political leaders: successful, short, relatively inexpensive compared to a protracted ground campaign, and popular with voters. No doubt, Prime Minister Stephen Harper's assessment of the campaign as "NATO's most successful operation ever"[1] is a sentiment shared amongst political leaders across NATO. In the future, we can be confident that politicians and their security advisors will rightly or wrongly view the NATO action in Libya as a model for how military force can be used to achieve effect and strategic aims.

Navies would be wise, therefore, to study the lessons of this campaign. Yet surprisingly little seems to have been written on its maritime dimensions. In speeches, Canadian Forces (CF) leaders talk about the impact of the Royal Canadian Navy (RCN) in the Libya campaign by highlighting the critical role that HMC Ships *Charlottetown* and *Vancouver* played in intelligence collection and in the use of this intelligence to support targeting of pro-regime forces by NATO air strikes. And they emphasize the risk borne by these ships in the RCN's first combat mission since the Korean conflict in the 1950s.


*Credit: NATO*

*Official logo of NATO's* ***Operation Unified Protector****.*

However, these communications and commentaries leave the deeper questions unanswered. What are the key lessons of OUP at the strategic, operational and tactical levels? Sound bytes for public consumption aside, is there more to learn about what sort of contributions maritime forces made in the campaign? At the strategic and operational levels of war, naval power proved to be absolutely critical to the stunning success of OUP, but at the tactical level, a somewhat different picture emerges. As we pass the first anniversary of the Libya campaign, it would be wise to take stock of the answers to these questions, to communicate the critical role that naval power played and to learn the lessons about naval operations in the littoral region.

## *The Strategic Impact of Naval Power*

The public perception of OUP is that of a precision, almost surgical application of force against pro-regime units by NATO air forces. Very little media attention was devoted to the maritime dimensions of the campaign and, in particular, its role in NATO's strategy to isolate


Credit: Map available on the "IISS Voices" web page, International Institute for Strategic Studies

*Allied assets deployed to Libya to the* ***Operation Unified Protector*** *theatre of operations.*

the Libyan regime, limit its ability to threaten civilians and, ultimately, facilitate a regime change. The role of naval power was absolutely critical to the success of this strategy.

At the strategic level, the maritime embargo significantly constrained and undermined the ability of pro-regime forces to carry on the fight. Under the UNSCR mandate to establish a no-fly zone and to use all necessary means to protect civilians from attack, dual-use cargoes were denied entry to, or departure from regime-controlled ports. Dual-use cargoes included goods that could be used, directly or indirectly, to threaten civilian populated areas. For example, vessels carrying flat-bed trucks were interdicted under the embargo as these vehicles were often reconfigured as fighting vehicles by the regime.

Additionally, NATO's maritime forces restricted the availability of petroleum, oils and lubricants (POL) in pro-regime areas in Libya. Vessels with POL cargoes were denied entry to ports because these cargoes would likely be used by pro-regime forces. Moreover, despite Libya's standing as an oil-exporting state and its capacity to refine crude oil into POL products, the Gaddafi regime depended upon sea lines of communication both for the raw materials that were essential to the refinement process, and to export refinery by-products that Libya lacked the capacity to process. As a result, regime ground forces were chronically short of fuel and supplies, which severely constrained their operations.

NATO maritime forces also halted regime crude oil exports. The revenue from these exports was critical to the regime's ability to finance its ongoing war efforts, especially since Libya's international assets had been frozen worldwide. In short, the embargo proved to be a critical means of isolating the regime, denying it access to both war materials and its sources of economic power.

Although not directly connected to the strategic aims of the operation, there can be little doubt that the humanitarian situation in Misratah was of strategic importance to NATO. The plight of its citizens during the city's long siege by pro-regime forces was a focal point of international media coverage and it was essential for NATO's maritime forces to keep the port of Misratah open for humanitarian relief efforts in order to maintain alliance solidarity and strong public support for NATO's strategy. These were seen as issues of strategic importance within the alliance's civilian and military leadership.

## *The Operational Impact of Naval Power*

At the operational level of the campaign in Libya, the importance of naval forces cannot be understated. And yet it remains one of the most poorly understood and least communicated lessons of the conflict. NATO quickly established command of the sea, giving the alliance the ability to use the sea for its own purposes, and to deny

Credit: Corporal Charles A. Stephen, MARPAC Imaging Services

*Chief of Maritime Staff, Vice Admiral Dean McFadden (right) and Commander Canadian Fleet Pacific, Commodore Peter Ellis, bid farewell to HMCS* ***Vancouver*** *as she departs 10 July 2011 for the Mediterranean to take part in* ***Operation Mobile****, the CF element of* ***Operation Unified Protector****.*


Credit: Corporal Brandon O'Connell, MARPAC Imaging Services, Esquimalt

*HMCS **Vancouver** patrolling the **Operation Mobile** area of responsibility in the Mediterranean Sea, 29 August 2011.*

its use to the regime. Despite regime attempts to disrupt NATO's sea control with fast inshore attack craft, it was unable to disrupt or deny NATO's command of the sea. Only when the regime successfully deployed sea mines on the approaches to Misratah was it temporarily able to deny NATO maritime forces the use of a small area of sea. It is easy to overlook the importance of sea control to the campaign and the commander's operational design, but it was extremely important.

NATO naval forces denied the regime the use of the seas to manoeuvre, to reposition, to reinforce and to resupply its forces that were deployed across the narrow, littoral band of the Libyan coast from Tripoli to Sirte to Ajdabiyah – a distance of over 800 kilometres. Military leaders understand the importance of sea lines of communications to meet the vast logistics requirements of land forces in combat, and access to the sea would have greatly enhanced the regime's ability to defeat anti-regime forces.

Similarly, NATO's command of the seas also prevented the regime from consolidating and concentrating its land forces by ensuring that the city of Misratah remained an anti-regime stronghold. Keeping the sea lines of communication open to the city of Misratah was essential to ensuring that the city did not fall to regime forces. This prevented the regime from employing the tactics that it had used so successfully against the city of Al Zawiyah early in the Libyan uprising when the citizens there rebelled against the Gaddafi regime. The tactics used to quell the uprising were very effective, beginning with the isolation of the sectors of the city held by anti-regime forces and cutting these fighters off from external support. Once contained, regime forces conducted a campaign of harassment, with the aim of wearing down insurgent forces before pushing in to recapture these sectors.

These tactics were very successful in Al Zawiyah, and it is reasonable to assume that they would have been equally effective in Misratah had the regime been able to isolate the city. However, the inability of regime forces to control the seas adjacent to Misratah proved to be a key factor in their inability to capture the city. The inability to put down the rebellion prevented the regime from using these forces to reinforce other forces fighting to the west in the Berber highlands or the east in Ajdabiyah. As a result, Gaddafi forces had to continue their fight on three fronts. The inability of the regime to manoeuvre, reposition, reinforce and resupply its forces resulted in serious challenges for the regime forces. As a consequence, in the early days of the operation, as the anti-regime transitional government focused on the generation of a rudimentary combat force, the pro-regime forces were unable to redeploy further forces to threaten Benghazi, the seat of the transitional government and a key centre of gravity. The regime's efforts to attempt sea-denial operations in the approaches to Misratah to disrupt the flow of humanitarian assistance and logistics are evidence that it was acutely aware of the city's importance at a strategic and operational level.

Naval forces also played other key roles in the campaign at the operational level that have been overlooked. For example, the French aircraft carrier *Charles de Gaulle* provided a significant component of NATO air power. And for NATO combat aircraft, the factor limiting how far they could penetrate inland to strike targets was not their fuel range or endurance, but rather the operating range of ship-based combat search and rescue assets. For targets inland, precision strike weapons such as Tomahawk cruise missiles launched from submarines were often the only viable means to hit distant targets. Finally, NATO's use of rotary-wing attack aviation in the campaign was particularly successful – its psychological impact on regime forces alone was considerable. Of course, it was naval forces and their capacity to sea-base this capability that enabled their incorporation in the campaign.

Finally, the NATO air-sea campaign demonstrated the potential of the US doctrine of 'Air Sea Battle' (ASB), not

just as a strategic concept relevant to a superpower, but as a concept that is just as relevant to middle powers. ASB is described in the 2010 Quadrennial Defense Review as a joint air-sea battle concept for defeating adversaries across the range of military operations. It describes how air and naval forces integrate capabilities across all operational domains – air, sea, land, space and cyberspace.[2] Fundamentally, ASB is all about enabling commanders to access, combine, coordinate and employ naval and air capabilities to defeat the enemy's area-denial capability. The promise of such a concept could be seen on a number of occasions during OUP. For example, NATO warships patrolling off Misratah often came under attack by fast inshore attack craft (FIAC). On one occasion, as the FIAC approached, it was detected by a patrolling NATO submarine. The ships, now alerted to the threat, requested air support from the air component commander. Attack helicopters preparing to take off in a nearby amphibious group for a land strike were re-tasked to intercept and destroy the FIACs. All of this occurred in minutes.

### *The Tactical Impact of Maritime Power*

While the vital strategic and operational contribution of maritime forces in OUP is beyond dispute, a somewhat different picture emerges at the tactical level. Naval operations at sea off Libya were highly effective, but NATO warships struggled to make a contribution in the land domain of the littoral region and its airspace. The US Navy did not commit any of its warships to combat operations in OUP, and NATO's remaining maritime forces had limited means to project power ashore. Consequently, the


Credit: Corporal (Cpl) Chris Ringius, Formation Imaging Services, Halifax

*Ordinary Seaman Peter Dennis uses the Big Eyes on HMCS **Charlottetown** to search for possible Libyan regime boats near the port of Misratah, as part of NATO's **Operation Unified Protector**, 27 May 2011.*

Credit: Corporal Mathieu St-Amour, Canadian Forces Joint Imagery Centre

*A CP-140 Aurora aircraft starts its engines in Sigonella, Italy, on 29 September 2011, to depart on a surveillance flight as part of **Operation Mobile**.*

Maritime Component Commander had to work hard to find meaningful ways to make a contribution to the joint campaign at the tactical level.

NATO strikes in Libya demanded great accuracy in order to minimize both civilian casualties and damage to infrastructure. Therefore, these engagements required a precision strike capability. Unfortunately, NATO surface combatants in OUP were not equipped with such a capability. Surface warships were therefore relegated to very limited roles in strikes against targets ashore, which was at the core of the tactical level fight. As the mission wore on and the concept of operations for naval gunfire support matured, their contributions at the tactical level increased measurably. That said, even when procedures for naval-air force cooperative targeting and forward target observers for naval gunfire support had been established, NATO's maritime forces were still relegated to the role of a minor partner in the joint effort to strike pro-regime forces ashore. Surface combatants with the ability to conduct precision strikes would have been a tremendously valuable asset to the operation, particularly since many targets were along the coast and demanded weapon systems that could be used with very low collateral damage.

OUP was an operation that revolved around excellent intelligence, surveillance and reconnaissance (ISR). In fact, this was a defining characteristic of the operation, and this is likely to be the case for all operations of this type in the future. The need to identify targets, determine a pattern of life in an area of interest, and monitor target areas in order to minimize collateral damage all combined to generate a massive requirement for ISR capabilities, which were chronically in short supply in the campaign.

Unfortunately, this was an area of particular weakness for NATO's maritime forces. Without embarked unmanned aerial vehicles (UAVs), the ability of surface ships to conduct ISR was severely limited. In the case of real-time

ISR, a naval capability was completely absent. NATO's naval forces were focused largely on exploiting communications networks and human intelligence sources ashore, and it was not until the temporary assignment of a US Navy destroyer with an embarked UAV that the tremendous potential of warships as ISR platforms was realized.

## *Conclusions*

As we mark the first anniversary of the Libya campaign and reflect on the role of naval power in its success, it is worthwhile to take stock of what we've learned and determine how navies can do better in the future. There can be little doubt that OUP was a great military success; equally, there can be little doubt that political leaders will see great potential in the OUP model as they consider military options in a future conflict.

Clearly, if this type of operation is to be used as a template in the future, navies must devote effort to determine how warships can be more relevant at the tactical level. Littoral operations demand different approaches to the application of current capabilities, and they will also drive navies to invest in new capabilities. These may include precision, longer range strike weapons, onboard and off-board sensors for ISR, special operations forces, and new electronic warfare capabilities.

Yet at the same time OUP also demonstrated clearly that modern, capable naval forces remain absolutely vital to the strategic aims and operational design of such campaigns. At the strategic level, naval power can be used to deny the enemy access to resources and/or to deprive it of its sources of economic power. At the operational level, naval power can severely hamper the enemy's campaign by denying it the use of the sea for manoeuvre, repositioning, resupply and reinforcement.

In order to illustrate why naval power remains so relevant in military operations today and in the future, the RCN needs to find ways to highlight and explain these vital contributions. Unfortunately, these strategic and operational concepts don't film well and they don't translate easily into sound bytes. Nevertheless, they represent – as they have done for centuries – the foundation of the navy's strategic relevance to Canada and they are concepts that remain critical to the CF's ability to prevail in conflict.

OUP demonstrates another critical lesson, namely that the grand theories of naval power proposed by Sir Julian Corbett and Alfred Thayer Mahan and the concepts of command of the seas and sea control are not the sole purview of great powers. OUP demonstrated unequivocally that these strategic concepts have equal applicability in military operations mounted by a collection of like-minded middle powers. For those who question why Canada needs a modern, capable navy and what relevance the weighty concepts of command of the sea or sea control have for Canada, OUP provides the narrative to answer the question decisively.

In its efforts to communicate and connect with Canadians, and in its ongoing dialogue with colleagues in the other services of the CF, the RCN needs to ensure that its vitally important contributions at the strategic and operational levels of war are not subsumed or lost in the effort to demonstrate relevance at the tactical level in the littoral regions. This is a shortcoming that all navies will have to address as they digest and incorporate the lessons of Libya and conceive, design and build their future fleets.

Credit: Corporal Chris Ringius

*Leading Seaman Peter Fitzgerald, a Boatswain on HMCS **Charlottetown** conducts Ship without Air Department training off the coast of Libya during **Operation Mobile** on 27 June 2011.*

**Notes**

1. Prime Minister Stephen Harper, "Address at the Chief of Defence Staff Change of Command Ceremony," 29 October 2012.
2. US Department of Defense, "Quadrennial Defense Review Report," February 2010, available at www.comw.org/qdr/fulltext/1002QDR2010.pdf.

*Scott Bishop is the Commander of Canada's Pacific Fleet and served in Operation Unified Protector in NATO's Combined Joint Task Force Headquarters as Chief of Current Operations.*

# The US Pacific Pivot and Implications for the Future of the RCN

**David S. McDonough***

In 2011, in what Secretary of State Hillary Clinton called a "pivot to new global realities,"[1] the United States focused its attention back to the Asia-Pacific region. Canada might have little choice but to follow suit with its own pivot towards the Pacific. The foreign policy review announced by the government in early 2012 could offer just such a strategic shift. But the government would be remiss if planning did not include attention on the military capabilities required for a role in Asia, most notably naval assets as the military instrument of choice in this heavily maritime theatre.

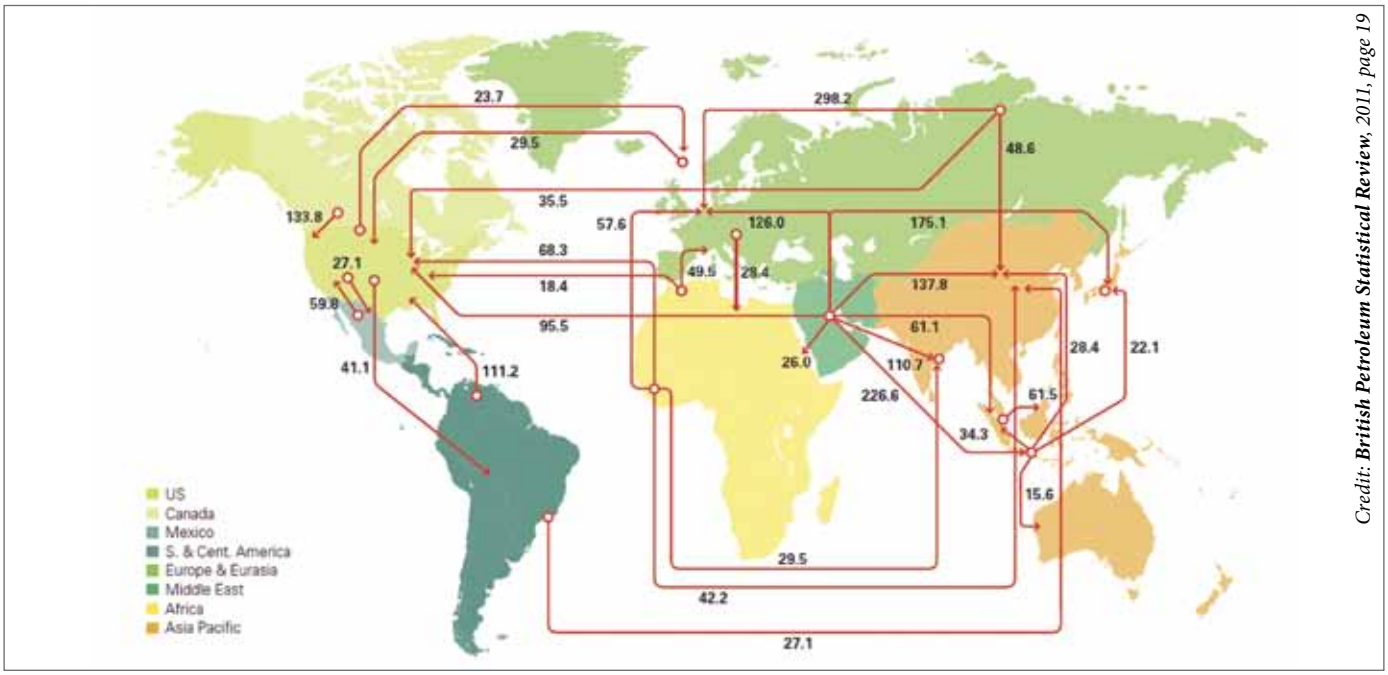
This article assesses the strategic rethinking currently underway in Washington and evaluates its possible impact on the future direction of Canada's naval policy. The United States is repositioning its military assets to the Asia-Pacific region, but President Barack Obama's pivot should be seen as the latest element of a larger, long-term strategic and operational trend meant to prepare for and counter Chinese anti-access and area-denial (A2/AD) capabilities. To be a relevant security partner, Canada needs to ensure that the Royal Canadian Navy (RCN) does not eschew high-end capabilities in its future force structure – likely a difficult proposition for a government eager to reel in discretionary spending. There will be some hard decisions ahead if Canada wants to play a role in the emergent Pacific century.

### *Shifting to the Asia-Pacific Region*

The US strategic turn towards Asia was laid out over several months. In what has been referred to as a "fundamental reorientation of American priorities,"[2] President Obama said in November 2011 that the United States intends to "play a larger and long-term role in shaping this region and its future." US Secretary of Defense Leon Panetta announced a 60/40 split in American naval assets between the Pacific and Atlantic by 2020, which clearly fit with the emphasis on rebalancing evident in the Pentagon's 2012 Strategic Defense Guidance.

The centrepiece of the pivot has been the decision to expand the American military presence in Australia, including up to 2,500 US Marines. Negotiations continue on obtaining greater access for US warships and aircraft in Australian air and naval facilities, and a possible base on the Cocos Island. As well, the US presence in southeast Asia will be reinforced. For example, the US Navy (USN) plans to deploy some of its new Littoral Combat Ships at a base in Singapore and has been expanding military-to-military cooperation with Indonesia, Thailand and the Philippines. Plans are also underway to upgrade base facilities on Guam to create a strategic military hub in the region.

Washington has also been keen to emphasize the softer




*Credit: **British Petroleum Statistical Review**, 2011, page 19*

*This figure illustrates major trade movements in 2011.*


*Two PLAN guided-missile destroyers and a guided-missile frigate – the expanding role and size of the Chinese navy worries the US Navy.*

forms of diplomatic and economic engagement. This would include participation in the East Asian Summit, a push to negotiate a free trade agreement under the rubric of the Trans-Pacific Partnership (TPP), and creation of the China-US Strategic and Economic Dialogue. These efforts help to engage Beijing in institutional forums while countering the notion that the American pivot to Asia-Pacific is all about military rebalancing and containment. But such measures also have the strategic benefit of restricting China's influence over the region's diplomatic and economic matters and providing some insight into China's often opaque intentions.

Obama's pivot to the Pacific heralds increasing selectivity in US global engagements. There will be a rebalancing of commitments away from regions that are not considered strategically salient (Latin America, Africa and Europe), not least due to the worrisome economic and fiscal situation in Washington. To retain its traditional dominance in the Pacific, US forces may need to retrench elsewhere. Yet primacy would not necessarily be discarded, even if its scope becomes increasingly narrowed to one region.

The United States must rely largely on naval and air assets to maintain its strategic preponderance in the western Pacific. In keeping with this, the US Army and Marine Corp have borne the brunt of recent defence cuts, with total manpower reductions of over 90,000 and the Marines returning to their amphibious roots. Of course, the USN and US Air Force (USAF) are not immune to cuts. At most, the USN only hopes to avoid the decline of its fleet, and perhaps experience some modest growth by the end of the decade. The prospects that the USAF will be so lucky are bleaker, especially given the cost overruns plaguing the F-35 fighter program.

Nevertheless, both services will likely benefit from the envisioned force structure. Washington could also minimize any capability shortfalls by repositioning key naval and air assets to the western Pacific from elsewhere. With the plan to position 60% of the USN fleet in the Pacific Ocean, Obama seems intent on realizing this goal.

Under the rubric of the Joint Operational Access Concept, the USN and USAF have been developing operational concepts meant to increase synergy, reduce redundancy and achieve closer operational integration. The Air-Sea Battle Concept, for example, is meant to overcome the challenge of asymmetrical capabilities capable of preventing US operational access and thereby reducing its freedom of action within a regional theatre. US officials have not been shy in pointing to Iran and China as the principal threats to American command over the maritime and airspace domains in their respective regions. There is little doubt the most advanced A2/AD challenge can be found in the western Pacific.[3]

China's anti-access forces largely consist of conventionally-armed ballistic and cruise missiles. It has a growing arsenal of short-range ballistic missiles, and with up to 100 new medium-range ballistic missiles and 500 second-generation land-attack cruise missiles, China can also reach targets as far as Japan and the Philippines. As well, its intermediate-range ballistic missiles can target Guam, and there are reports that its new long-range bomber can be armed with air-launched cruise missiles for conventional strikes against the island.


*The guided-missile destroyer USS **John S. McCain** (DDG 56) approaches USS **Kitty Hawk** (CV 63) to conduct a replenishment at sea, 26 January 2003.*

It is assumed that the People's Liberation Army Navy (PLAN) aims to deny the freedom of action of the US military within the broader western Pacific theatre. Such area-denial operations rely heavily on its burgeoning submarine fleet armed with anti-ship cruise missiles (ASCMs) of increasing range and effectiveness. This includes a dozen formidable *Kilo* submarines from Russia armed with Sizzler ASCMs, and upwards of 20 *Song* and *Yuan* indigenously-produced diesel submarines. The *Yuan* submarine likely utilizes air-independent propulsion (AIP) technology that eliminates the need to recharge the batteries by snorkeling near the surface. China has also launched two *Shang* nuclear-powered submarines, with five more on the way.

This undersea fleet has some protection against American anti-submarine warfare (ASW) capabilities when operating in its littoral zone due to the poor acoustics of the water and the protection afforded by shore-based aircraft capable of contesting American air supremacy over the East, Yellow and South China Seas. But such advantages are significantly lessened when these vessels operate beyond China's 'near seas.' The United States could form acoustic barriers to permit the detection of submarines entering into the 'second island chain,' while its air and ASW assets would pose a significant threat if PLAN submarines were to go close enough to use their ASCMs, especially without proper air cover from the shore.[4]

However, the USN must also contend with China's new conventionally-armed anti-ship ballistic missiles, which could threaten American aircraft carriers and Aegis destroyers well into the Philippine Sea. These missiles could destroy or disable American vessels and provide an additional complication for Aegis active defences. The PLAN also has a growing fleet of surface combatants, including four Russian-built *Sovremenny* destroyers armed with the particularly effective Sunburn ASCM, and almost 20 new indigenously-produced and ASCM-armed destroyers and frigates, with several hulls still being laid. Newer classes include phased-array radars, vertical-launch missile systems and other technological improvements to provide an area-air defence capability. As a result, PLAN naval task groups will have an improved surface presence and increasingly be able to operate beyond the range of shore-based air cover. Even China's new aircraft carrier will likely play a similar role once fully operational which, given its recent successes with landing exercises, could be sooner than expected.[5]

China's A2/AD capabilities represent a complex mélange of underwater and surface naval platforms and shore-based aerospace assets. The former are geared towards anti-ship operations and increasingly under the protection of area-air defence ships, and the latter are useful for air cover and to undertake strikes against land sites and even ships. To overcome this challenge, the Air-Sea Battle Concept envisions renewed integration between the USAF and USN for offensive and defensive operations in which air power is used directly in support of naval operations and vice versa. For example, submarines are capable of operating in a contested littoral region and can undertake missile strikes against China's ground-based launchers, radars and other soft targets, while Aegis ballistic missile defence ships could help protect the USAF assets on vulnerable land bases.[6] This could mean deep strikes into an adversary's territory to destroy or neutralize weapon systems as necessary.


Credit: MCpl Marc-Andre Gaudreault, Canadian Forces Combat Camera

*Aircraft technicians prepare to discharge static electricity from an approaching US Navy MH-60S Sea Hawk helicopter on board HMCS **Algonquin** (DDG 283) in the Pacific Ocean on 26 July 2012, as part of RIMPAC 2012.*

## *Implications for Canada*

Prior to the 1990s, the RCN focused its forces in the Atlantic, where 70% of the fleet was located, rather than the Pacific. The RCN's distribution is still weighted in favour of the Atlantic, although less so, with 55% of the fleet now based in Halifax.[7] Critics might point to Asia's economic dynamism and burgeoning trans-Pacific trade, and conclude that the navy should be stationed on the West Coast. With the Cold War over for more than two decades, a Pacific-centric navy can perhaps be better justified by evolving strategic and military concerns.

It might finally be time for the RCN to assess the merits, requirements and costs of such a force posture. According to its draft strategic concept, the navy anticipates the "re-emergence of inter-state maritime armed conflict" and the possible employment of "sophisticated area denial capabilities," which to some refers implicitly to China.[8]

Of course, this does not mean Canada should base its entire naval policy on the uncertain prospects (and indeed worst-case assumption) of a Sino-American war. Nor would Canada play a defining role in any such conflict, any more than it did in the Cold War. But Ottawa should at least prepare for the renewal of American engagement in the Asia-Pacific region and the possibility of greater strategic competition with China. Specifically, Canada needs to ensure that it has the military means to support

the United States in the region, lest one day Washington turns to its key allies for support and Canada is found wanting.

If the RCN fleet is to be focused primarily on the Pacific, there needs to be further repositioning of Canadian naval assets from Halifax to Esquimalt. The United States envisions a 60/40 split between the Pacific and the Atlantic, and it might be wise to adopt a similar distribution. Canada's coastal defence vessels are already evenly split between both coasts and should remain so, due to their domestic patrol duties. The RCN would need to station the majority of its blue-water fleet of frigates, destroyers and submarines on the West Coast, at least if it hopes to have the capacity to maintain a fleet-in-being in the Pacific theatre. As Halifax is closer to the Arctic than Esquimalt, however, the ice-capable, constabulary Arctic/Offshore Patrol Ships (once these are built and operational) should probably rely primarily on an East Coast base.

Much depends on the outcome of the navy's ongoing fleet-replacement plans. Of particular importance are the 15 Canadian Surface Combatants (CSCs) which are to replace the existing fleet of destroyers and frigates. At present, it is envisioned that the first batch of three ships to replace the *Iroquois* destroyers will have similar command and control and anti-aircraft capabilities, while the remaining two batches adopt the general purpose role of the *Halifax* frigates. True, these new ships might be too large for littoral missions and ill-suited to provide fire support and project power ashore, but small ships may be too vulnerable to operate in the littoral zones of the western Pacific. Large vessels also offer greater flexibility with the choice of weapon systems and have greater operational range and endurance than ships of small displacement.


*A CP-140 Aurora aircraft from 14 Wing Greenwood, Nova Scotia, readies for takeoff at Marine Corps Base Hawaii on 23 July 2012 in preparation for RIMPAC 2012.*

To maximize the effectiveness and endurance of these new vessels, the RCN also needs to replace its aging Auxiliary Oiler Replenishment (AOR) ships. Numerous delays already plague the Joint Support Ship replacement project, and capabilities have been scaled back. Yet, by acquiring what amounts to an AOR+, the RCN will at least retain its crucial at-sea replenishment capability while avoiding the possible trade-offs of a hybrid ship. It is worrisome that only two ships are expected to be procured, which raises the risk that a ship will be available for operations only 65-70% of the time.[9] A third replenishment ship would help ensure coverage for Canada's naval task group deployments, especially for the type of sustained, long-distance operations required in the Pacific.

That being said, the RCN could be better tailored for sea control operations in this contested maritime environment. On one hand, Canada should consider following the Australian, Spanish and Norwegian examples by incorporating the Aegis combat system in the CSC-destroyer replacements. These countries have or plan to acquire Aegis ships in the 6,000-ton displacement range, which is similar to some of the current projections for the CSC. Indeed, with Norway's 5,000-ton Aegis frigate and South Korea's plan for mini-Aegis destroyers, one can no longer say that Aegis systems are too large for modestly-sized surface combatants. If armed with vertical-launch standard missiles, the Aegis system would offer the RCN a formidable area-air defence capability – one that could eventually be converted to sea-based ballistic missiles to help counter anti-ship cruise and ballistic missile attacks. Given the number of Aegis ships in the USN fleet, Canada's acquisition of this system might very well be *sine qua non* for continued RCN-USN interoperability.

On the other hand, Canada should return to its historical naval roots by ensuring several CSC frigate replacements are specifically geared for ASW. The Chinese submarine fleet poses a significant challenge to American carrier battle groups. By specializing again in ASW and countermine operations, the RCN will offer a capability that is in relatively short supply but is crucial to ensure American operational access in a hostile environment. With an ASW-focused fleet structure, the RCN would still be capable of providing a naval presence needed for surveillance and sovereignty protection missions, even if potential anti-surface or fire support capabilities are reduced.

Other supporting platforms are also necessary. Canada plans to obtain Cyclone maritime helicopters and several of these should be designated for ASW. The CSCs should also be capable of holding a second maritime helicopter, or at least unmanned aerial vehicles designed for such


Credit: MCpl Marc-Andre Gaudreault, Canadian Forces Combat Camera

*HMCS **Victoria** (SSK 876) arrives at Joint Base Pearl Harbor-Hickam, in Honolulu, Hawaii, on 3 July 2012 to participate in RIMPAC 2012.*

missions. Equally important are the surveillance capabilities of the Aurora long-range maritime patrol aircraft. However, since the current fleet is aging and no longer geared towards undersea detection, a replacement aircraft like the P-8A Poseidon will need to be procured shortly. The RCN's four *Victoria*-class diesel submarines have the stealth and surveillance capabilities to be a complementary undersea ASW asset. Submarines are perhaps the safest means for the RCN to operate in a high-threat maritime environment and could benefit from an anti-surface warfare and land-attack capability.

To maximize effectiveness, it would be helpful for Canada to have the capacity to forward base submarines and other vessels in the Pacific at times of rising tension. Current efforts to secure access to a logistical support hub in Singapore for disaster relief support could prove useful. The RCN could also benefit from expanded naval ties with Australia, Japan and other regional partners, to supplement its close working relations with the USN. Canada's continued participation in the annual Rim of the Pacific (RIMPAC) exercise is crucial in that regard, as is a Canadian role in regional security discussions like the Shangri-La Dialogue.

Admittedly, an RCN specializing in area-air defence and ASW, geared to ensure sea control in the increasingly contested Pacific maritime environment, might prove uncomfortable for proponents of a balanced fleet structure. It will also not be cheap. The CSC is estimated to cost around $26 billion, more than the funds earmarked in the National Shipbuilding Procurement Strategy for both the CSC *and* A/OPS. The Aegis system would increase the price tag and ASW specialization entails replacing not only existing air assets but eventually submarines as well.

It might therefore be tempting to dismiss such a proposition. Even with such expensive upgrades, the RCN would still remain a medium-sized navy only capable of playing a supportive role at best. A better course of action might be to backstop the American military presence elsewhere as Washington narrows its strategic attention to the Pacific. But even this alternative would not be a panacea. If the Americans are unsatisfied with indirect support, Canada could find what influence it might have in Washington all but gone. More importantly, the RCN would still have to deal with the A2/AD challenge in other hotspots, such as the Persian Gulf, where area-air defence and ASW capabilities designed for the Pacific would prove equally useful. Any cost savings for this option could prove more illusionary than real.

A formidable obstacle would be the cost of a naval force structure capable of operating in a hostile threat environment, whether in the Pacific or elsewhere. Yet even this problem is not insurmountable. If personnel costs are reduced, the personnel-capital ratio could be rebalanced in favour of the latter and ensure that sufficient funding is allocated for equipment renewal and fleet replacement.[10] A smaller Canadian Forces would be contrary to recent efforts at expanding manpower levels and would carry some definite risks, especially if it results in a force structure less able to take on a ground-intensive campaign like Afghanistan. But hard choices may be required if Canada hopes to ensure recapitalization of all its military services, let alone play a salient maritime role in the 21st century.

**Notes**

* The author would like to thank Eric Lerhe, James Boutilier and the *CNR* reviewers for their helpful comments and suggestions.

1. Secretary of State Hillary Clinton, "America's Pacific Century," *Foreign Policy* (November 2011).
2. Kurt Campbell, "Speech by Assistant Secretary Campbell at Korea Society in Seoul," 31 January 2012; The White House, "Remarks by President Obama to the Australian Parliament," 17 November 2011.
3. Much of the following information on China's A2/AD capabilities and current platforms is from US Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China, 2012* (Office of the Secretary of Defense, May 2012).
4. Owen Coté, "Assessing the Undersea Balance between the US and China," *SSP Working Paper* (February 2011).
5. Andrew Erickson, "Can China Become a Maritime Power?" in Toshi Yoshihara and James Holmes (eds), *Asia Looks Seaward: Power and Maritime Strategy* (Westport, CT: Praeger Security International, 2008), p. 79; and Daniel Kostecka, "China's Aerospace Power Trajectory in the Near Seas," *Naval War College Review*, Vol. 65, No. 3 (Summer 2012), p. 116.
6. See Andrew Krepinevich, Barry Watts and Robert Work, *Meeting the Anti-Access and Area-Denial Challenge* (Washington, DC: Centre for Strategic and Budgetary Assessments, 2003).
7. James Boutilier, "Grey on Grey: The Critical Partnership between the Canadian and U.S. Navies," in Paul Taylor (ed.), *Perspectives on Maritime Strategy: Essays from the Americas*, Newport Paper (Newport: Naval War College Press, 2008), p. 114.
8. Quoted in Elinor Sloan, "US-China Military and Security Developments," *International Journal*, Vol. 66, No. 2 (Spring 2011), p. 277.
9. Sharon Hobson, "Plain Talk: JSS Adrift in a Strategic Black Hole," *Canadian Naval Review*, Vol. 6, No. 3 (Fall 2010), p. 36.
10. See Eric Lerhe, "Getting the Capital and Personnel Mix Right: Implications for the Future of the Canadian Navy," in Ann Griffiths and Eric Lerhe (eds), *Naval Gazing: The Canadian Navy Contemplates Its Future* (Halifax: Centre for Foreign Policy Studies, 2010), pp. 54-95.

*David S. McDonough is a SSHRC post-doctoral fellow in the Department of Political Science at the University of British Columbia.*

# The Costs of 21st Century Shipbuilding: Lessons for Canada from the Littoral Combat Ship Program

**Timothy Choi**


Credit: Mlarsen, Wikimedia Commons

*Danish frigate **Iver Huitfeldt** during a port visit in Århus, Denmark, 20 January 2012.*

As Canada embarks upon its first major naval revitalization since the end of the Cold War, its navy finds itself in a difficult position. Although the National Shipbuilding Procurement Strategy (NSPS) promised some $33 billion for the purchase of the Royal Canadian Navy's (RCN) next-generation combatants and support ships, that funding is now on shaky ground.[1] It is highly unlikely that the sum will be augmented to accommodate any cost increases that occur in the course of the NSPS.

What factors contribute to ship cost growth and which of these can be controlled by decision-makers, thereby maximizing the effectiveness of NSPS funding? This article identifies and examines these factors. It will do this by utilizing the RAND Corporation's 2006 study "Why Has the Cost of Navy Ships Risen?"[2] and applying its findings to the US Littoral Combat Ship (LCS) program. There are several reasons behind choosing the LCS for the case study. First, at almost $500 million per ship,[3] the LCS has failed to meet the original conception of a low-cost small combatant. This is especially glaring because many foreign warships are available at that price (or less) and are much more capable in terms of combat power. One example is the Danish *Iver Huitfeldt* class, which costs as little as $333 million per ship (including sensors and weapons!) despite displacing nearly twice as much as an LCS.[4] Second, the LCS program is set in the 21st century and reflects the advances in the realm of computer-aided design and automated shipbuilding techniques that will be used in any future RCN naval construction. Finally, the LCSs are equipped similarly to that of the RCN's Arctic Offshore Patrol Ships, the first ships of the new RCN fleet. Both share a basic weapons suite, low crew levels and relatively conservative sensor systems. These three elements make the LCS program a relevant and contemporary case study for the RCN modernization effort.

### *Applicability of the RAND Analysis to the LCS Program*

The primary finding of the RAND study is that the main reason for increased ship costs is the increased complexity of ships, and in particular the insertion of more numerous combat and non-combat systems. This has resulted in the recommendation that perhaps ships should be built separate from their systems. The authors cite the LCS program and its approach of developing the mission packages separate from the hull, and suggest that this may be one way of reducing the cost of ships. The logic behind this proposal is that the US Navy would only have to buy enough mission packages for the ships that are operating in the package's role. For example, instead of buying 55 massive ships capable of holding the mine counter-measures (MCM), anti-submarine warfare (ASW) and anti-surface warfare mission packages all at the same time, and thus requiring 55 units of each of those packages, the navy could settle for 55 small LCSs and a reduced quantity of those packages. This would be done based on the operational vision that there would

never be 55 LCSs needing the same mission package type at any given time.

The logic is certainly sound. And although the LCSs and their mission packages are extremely expensive relative to traditional combat capability, this does not take away from the expected cost savings for the LCS program as a whole versus building the same number of multi-mission combatants. The one caveat here is that buying fewer mission packages may mean higher prices per unit.

In any case, the RAND report's suggestion for ship-systems separation rests upon the finding that systems do in fact contribute significantly to ship costs. Because there are no recent Canadian shipbuilding programs to examine, let's look at the validity of this by examining other shipbuilding industries around the world. In the United Kingdom, systems represent the biggest percentage of the price of a warship – 70% compared to 30% for the hull.[5] This is in stark contrast to commercial vessels, where the reverse is true – 20% systems, 80% hull. Although the figures measure somewhat different elements, the same trend holds true in Australia where the costs are 33% for "platform design, hull, machinery, and equipment" versus 41% for combat systems.[6] Logistical support and training and project management make up the remaining costs. The similarity between these two countries is strengthened if we shift the Australian machinery and equipment cost percentages into that for combat systems, more accurately reflecting the broad system-hull dichotomy of the British example. In sum, the RAND conclusion that systems are the most significant element of ship costs is valid, seemingly regardless of country.

Another factor in increased ship costs noted in the RAND study was the use of multiple shipyards for the same class of vessels. Thus, contrary to the theory that *increased* competition leads to reduced costs, the study argued that further consolidation of shipbuilding industries and eliminating competition between shipyards would result in cheaper ships. Certainly, historical practice appears to bear out the validity of this suggestion. Throughout the Cold War and since its end, the British shipbuilding industry has continually merged shipyards in 'rationalization' schemes.[7] However, this suggestion is not helpful in the Canadian case as the shipbuilding industry is already as 'rationalized' as it can be. With only the Vancouver and Halifax shipyards as the major players in the NSPS, it would be more useful to examine how ship costs can be reduced in a situation where only two shipyards exist, but the absence of such a situation elsewhere makes comparison difficult.

Based on economic theories, competition amongst shipyards

*Credit: U.S. Navy/Mass Communication Specialist 2nd Class Jon Dasbach*

*The Littoral Combat Ship USS* ***Freedom*** *(LCS 1) arrives at Joint Base Pearl Harbor-Hickam to participate in the 2010 Rim of the Pacific exercise, June 2010.*

*should* result in cost savings, but there is little evidence that this holds true in practice.[8] Furthermore, competition amongst shipyards may well result in economic ruin, or at least hardship, for one or more of the yards. During Imperial Germany's Dreadnought construction program, for example, the extremely competitive climate resulted in major shipbuilders like Blohm & Voss losing significant sums of money for every ship they built.[9] The LCS program provides us with a very interesting case study of the impact that competing shipyards may have on modern ship costs.

At least one US Navy official has publically stated that the decision to purchase both versions of the LCS, and thus buy from two separate shipyards and companies, has resulted in a $600 million net savings over purchasing one design. The US Navy had originally wanted to make a decision about which of the two LCS builders would win the contract to build the first 10 ships. The LCS design of the winning bidder would from then on be the only design built, regardless of which shipyard won the contract to build after the first 10 ships.[10]

As it turned out, the navy decided in late 2010 to buy both the Lockheed Martin monohull and the General Dynamics trimaran designs, awarding each company 10 ships. The justification for this was the expectation it would save $600 million in total procurement costs versus going with the strategy of picking one design.[11] This figure already accounts for the $300 million in extra costs associated with maintaining two designs' worth of spare parts, simulators and differing components.[12] Information is scarce regarding how exactly buying and supporting two drastically different ship designs, each with their own different radars, engines and other hull-specific components,[13] can end up being cheaper than going with just one design.


*Here we see the Lockheed Martin monohull variant of the Littoral Combat Ship (top) and the General Dynamics trimaran variant (bottom).*

One possible explanation for why there are cost savings involved in this particular scenario may rest, ironically, in the very distinct differences between the two LCS designs. The RAND report concluded that "multiple producers may not make it as far down the learning curve as a single one will during a constant production run."[14] That is, a single design spread over multiple yards means fewer hulls built by each, and consequently each yard may not have the opportunity to gain sufficient familiarity with the design to find areas where savings can be attained (i.e., 'learning'). In contrast, a yard that is responsible for building all of the hulls can gain the experience necessary to benefit from that learning and still have new hulls on which to apply those cost-cutting lessons, resulting in lower total procurement costs. This is essentially an economies-of-scale argument, in which each shipyard is treated as a self-contained producer.

So why not go with the original strategy of building a single design of the LCS at one yard? Simply put, the $600 million figure may well be a *potential* or *expected* rather than *actual*, cost savings – a relative savings dependent on a comparison with the possibility of awarding the second (and/or subsequent) batch of LCS builds to a company that did not have the experience of working on the initial 10 ships. In such an event, that second company would have had to be paid for retooling all of its construction equipment and facilities to conform to the winning design. As well, this second company would have to 'relearn' areas in which cost savings had already been achieved by the first company. Finally, the second company may experience delays in restarting construction since it will have to rehire some of the workers that would leave while there was little or no work to be had during the construction of the first batch by the first company. This outcome runs the risk of costing the navy more money than the current option of both designs and both shipyards. In purchasing both designs for the first 20 ships, there is work stability in the likelihood of the navy continuing to award both shipyards a roughly equal distribution of the remainder of the 55 total hulls. This stability means that there is less potential risks of cost increases due to any switching back and forth between two shipyards to build a single design, as may have been the case under the initial procurement plan.

Of course, much of this could have been mitigated had the navy insisted on there only being one design to reach the physical stage. A more rigorous analysis of the two radically different designs could have avoided the problems involved in paying for the establishment and disestablishment of physical equipment and manpower to build both designs. In short, the $600 million in relative savings, and probably more, would have already been covered had the


*The Littoral Combat Ship pre-commissioning unit **Independence** (LCS 2) is the second ship in a new design of next-generation combat vessel for close-to-shore operations. It has a crew of less than 40 sailors, can reach a sustained speed of up to 40 knots and can accommodate two SH-60 Sea Hawk helicopters.*

navy decided to build all 55 ships in one shipyard with the same design.

One final point made by the RAND report was that it would reduce ship costs to build 'commercial-like' ships.[15] This would mean that naval vessels would be built to civilian survival standards. Navies other than the USN have already been doing so – RAND cites examples like HMS *Ocean* of the Royal Navy and the ships of the Royal Netherlands Navy. In theory, building ships towards a lower, civilian, standard should result in significant cost savings. However, the LCS does not follow this pattern.

Despite the word 'combat' in its name, the LCS was never conceived to be a combatant in the traditional sense. To the extent that a combat-capable warship is usually able to absorb some battle damage while continuing to fight, the LCS fails this criterion.[16] The USN decided that the LCS should be built with only the minimal amount of durability – what it terms Level 1+. The lowest level of survivability is 1 and the highest is 3, therefore 1+ implies a Level 1 with additional sources of protection that fall short of a full Level 2 survivability. This puts the LCSs at a rank that is lower than the FFG 7 class frigates they are replacing. The additional bit of protection that the LCS has is meant to allow the ship to retreat from the area if it is damaged by hostile forces. Part of the reason behind this choice of lesser protection was that it would be cheaper, since Level 1 survivability is little more than what commercial ships have. Yet neither version of the LCS is cheaper. Indeed, the LCS was originally to cost $220 million but the cost is now nearly half that of a Level 3 *Arleigh Burke* destroyer. This illustrates that this cost-saving measure suggested by RAND isn't always effective.

Credit: Wikimedia Commons

*HMS **Ocean** at the 2005 International Fleet Review, showing landing craft on davits and stern ramp deployed.*

## *Conclusions and Lessons for the Royal Canadian Navy*

What should the Royal Canadian Navy learn from this? First, the cost savings resulting from a mission package approach should be evident. In particular, the Arctic Offshore Patrol Ships (AOPSs) will be able to benefit from this. For example, it is unlikely that Pacific fleet AOPSs need to be equipped with Arctic gear, as it is a much further distance to Canada's northern waters from Esquimalt than it is from Halifax – especially given the location of the prospective Nanisivik refueling station at the eastern end of the Northwest Passage. This may reduce the numbers needed for Arctic-specific items such as climate-controlled 25 mm gun copulas and fully-enclosed lifeboats.[17] Obviously, these items are significantly less expensive than the remote vehicle, organic helicopter and heavy weapon technologies involved in the LCSs' various mission packages, but the general principle still applies. The only caution here would be the increased per unit cost of each individual component due to the decrease in total number of orders.

Credit: U.S. Navy/Chief Journalist Alan J. Baribeau

*USS **Arleigh Burke**, lead ship of this class of guided-missile destroyer, conducts underway operations in support of **Operation Iraqi Freedom**, March 2003.*


*The US Navy's newest Littoral Combat Ship USS* ***Independence*** *(LCS 2) arrives at Mole Pier at Naval Air Station Key West.*

Second, the RCN might find it worthwhile to look into possible cost savings that may result if it were to build the entire future Canadian Surface Combatant (CSC) class using a single design. Currently, the RCN is expected to build two types of CSCs – a few to replace the *Iroquois* air-defence destroyers and the majority to replace the *Halifax* general-purpose frigates. Even if the two were to utilize the same hull, the vastly different roles of the two ship types demand CSC replacements that are also drastically different in terms of equipment and capability. However, doing so may prevent the builder from capitalizing upon the benefits of economies-of-scale. Thus, while conventional wisdom would expect that building most of the CSCs to a less advanced standard would be cheaper, this should be weighed against potential savings from building the entire fleet to the same design. It may even be the case, though unlikely, that economies-of-scale would make building the entire fleet to a single advanced multi-mission design cheaper than a mix of air-defence and general-purpose designs.

The economy-of-scale argument could also be used to examine the government's indecision regarding whether to build six, seven, or eight AOPSs. Building eight may result in a lower average cost per ship, but would likely cost more overall. The LCS experience would also suggest that even if Esquimalt-based AOPSs will not require Arctic capabilities, it would be economically risky to build an expensive ice-capable version for Halifax and a cheaper ice-incapable version for Esquimalt, as this would eliminate any possibility of savings resulting from experiential learning in the building process.

Finally, as we can see from the LCS experience, there is little to lose by building the future Canadian fleet to a high standard of survivability. The attempt to decrease construction costs of the LCS through the use of near-civilian level survivability failed. The RCN should not make the same mistake. Not only is it economically false, it would also expose Canadian sailors to unnecessary risks. Canadian waters can be cold and unforgiving, and Canada must ensure that the men and women who go off in ships to defend Canada receive the best protection available.

NSPS implementation and funding distribution have begun, but ship designs are yet to be finalized, and no hulls have yet been laid. It is not too late to examine the possibilities outlined in these conclusions.

**Notes**

1. Lee Berthiaume, "Canada's Massive Shipbuilding Plan Headed for Stormy Seas," *Postmedia News*, 10 June 2012, available at www.canada.com/story_print.html?id=6759846&sponsor.
2. Mark V. Arena, Irv Blickstein, Obaid Younossi and Clifford A. Grammich, "Why has the Cost of Navy Ships Risen? A Macroscopic Examination of the Trends in US Naval Ship Costs Over the Past Several Decades," Santa Monica, RAND, 2006.
3. Ronald O'Rourke, "Navy Littoral Combat Ship (LCS) Program: Background, Issues, and Options for Congress," CRS Report for Congress, Congressional Research Service, 2012, p. 6.
4. "An Overview of Current, On-Going Danish Naval Projects 2005-2009," *Canadian American Strategic Review*, 11 October 2010, available at www.casr.ca/id-danish-naval-projects-frigate.htm.
5. Stuart Young and Jonathan Davies, "United Kingdom Warship Procurement Strategies," in Douglas L. Bland (ed.), *National Approaches to Shipbuilding and Ship Procurement* (Kingston: Defence Management Studies Program, School of Public Policy Studies, Queen's University, 2010), p. 7.
6. Stefan Markowski and Robert Wylie, "Australian Naval Shipbuilding Strategy 2009," in Bland (ed.), *National Approaches to Shipbuilding and Ship Procurement*, p. 87.
7. Young and Davies, "United Kingdom Warship Procurement Strategies," pp. 2-3.
8. Arena et al., "Why Has the Cost of Navy Ships Risen?" p. 65.
9. Holger H. Herwig, "Imperial Germany: Continental Titan, Global Aspirant," in Andrew S. Erickson, Lyle J. Goldstein and Carnes Lord (eds), *China Goes to Sea: Maritime Transformation in Comparative Historical Perspective* (Annapolis: Naval Institute Press, 2009), p. 186.
10. O'Rourke, "Navy Littoral Combat Ship (LCS) Program," p. 8.
11. *Ibid*., pp. 8-9.
12. Grace Jean, "Buying Two Littoral Combat Ship Designs Saves the Navy $600 Million, Official Says," *NationalDefenseMagazine.org*, 12 January 2011, available at www.nationaldefensemagazine.org/blog/Lists/Posts/Post.aspx?List=7c996cd7-cbb4-4018-baf8-8825eada7aa2&ID=283.
13. Director, Operational Test and Evaluation, "FY 2011 Annual Report," Office of Director, Operational Test and Evaluation, 2011, p. 139.
14. Arena et al., "Why Has the Cost of Navy Ships Risen?" p. 47.
15. *Ibid*., p. 68.
16. O'Rourke, "Navy Littoral Combat Ship (LCS) Program," p. 17.
17. Department of National Defence, "AOPS - SRD Draft," Department of National Defence, 15 September 2010, pp. 9 and 108.

*Timothy Choi is completing his Master of Strategic Studies degree at the University of Calgary's Centre for Military and Strategic Studies, with a focus on naval and maritime affairs.*

# Modular Warships

**Janet Thorsteinson**

Standard shipping containers, the humble 'sea cans,' revolutionized global trade. They made the cost of shipping much cheaper and more efficient, and this changed the pattern of the world economy. According to one writer, "The value of this utilitarian object lies not in what it is, but in how it is used."[1] Like the container did for world trade, can standardized modules be used to revolutionize Canada's next navy?

Canadian planners have long understood the key benefits of modularity. A 2006 paper for Defence Research and Development Canada identified the benefits as: operational flexibility, or the ability to reconfigure a ship for various missions; increased availability of the ship or reduced operational downtime; and a reduced total number of mission modules for the fleet. All these would result in cost savings.[2] Cost savings are key to government interest in warship modularity, and many navies have examined modularity in some form or other. In some cases, ships have been designed to be fitted 'for' but not 'with' certain systems. This means that ships can go to sea without some elements that are not necessary for their mission. As well, modularity means that there is space and/or the ability to add systems in the future. As Norman Friedman phrases it, "[q]uite aside from its direct financial advantages, modularity allows for surprises during the life of a ship."[3]

The Royal Danish Navy is widely credited with pioneering work in warship modularity, with its Standard Flex (StanFlex) concept. During the Cold War different ships had to perform a number of different tasks (surveillance, minelaying, anti-invasion, mine counter-measures operations, anti-submarine warfare) at different stages of the conflict. As the Cold War ended, a number of older ships in the Danish Navy had to be replaced, but a one-to-one replacement was not possible due to budgets constraints. So the Danish Navy came up with the modular concept to outfit the fewer ships with mission equipment matching the different elements or stages of a conflict.

Today, the US Navy is building two variants of the Littoral Combat Ship around the concept of modularity. The USN looked to aviation and the concept of reconfigurable airframes and it has designated the *Freedom* and *Independence* ship types as 'seaframes.' These seaframes have the ability to be outfitted with reconfigurable payloads – called 'mission packages' – which can be changed quickly as missions or situations change. The mission packages are supported by special detachments that also have the ability to deploy manned and unmanned vehicles and sensors in support of missions.

The USN has had ships of each type in service, and it is learning the strengths and weaknesses of the system. One of the important challenges is how to integrate the people who accompany a module on board with a core 'permanent' crew. The USN notes that it can change modules in 96 hours, but that this is only part of the equation. The bigger challenge is getting the mission package personnel to work together with the crew, and that takes time.

Another question pertaining to modularity is what happens when a ship is out at sea configured for a certain


Credit: Internet

*Drawing on the experience from the **Absalon**-class command and support ships, the Danish frigate, HDMS **Iver Huitfeldt** is compatible with the Danish Navy's StanFlex modular mission payload system.*

mission and the mission changes? If a ship is thousands of kilometres from home port, can modules economically and efficiently be changed? Can they be forward or sea based, or air delivered? The answer is yes, but it might negate the cost savings to do so. The Royal Danish Navy does not change modules in overseas operation areas, although it is possible. The Danish navy, which operates mainly in the North Atlantic, but also the Indian Ocean, the Caribbean and the Mediterranean, deploys its ships in the configuration needed for operations which can last up to 12 months. For Denmark, the configuration of the modules is decided in the preparation phase of a deployment, and the configuration stays the same until the ship returns to home port.[4] As noted, there is no reason why the modules couldn't be changed while a ship is at sea, but Denmark for one chooses not to do so. In extreme circumstances, the decision might be different.


Credit: Sandy McClearn

*Looking forward from the quarterdeck on HMCS **Glace Bay**. Note the modular cargo container in the middle.*

Two other challenges that arise with modularity are weight and power. What if the different 'mission packages' are significantly different in terms of weight? That will affect the amount of power the ship will need, so these factors have to be calculated in the design of the ship. As well you need to have a certain size of ship that allows the weight to be added and subtracted and still maintain stability, and that has enough deck space.

Clearly, the world has lessons to teach Canada about modularity and naval shipbuilding, but how well do those lessons apply to the Canadian context? While its experience is not as extensive as the Royal Danish Navy with StanFlex, or as ambitious as the US Navy with the Littoral Combat Ships, the Royal Canadian Navy is certainly familiar with modularity. The 12 Canadian *Kingston*-class Maritime Coastal Defence Vessels (MCDVs), introduced in the 1990s, were designed to carry modular mine warfare payloads. The first modules to enter service were designed for route survey and mine-sweeping missions. The plan was to change from one role to another by swapping containers, which are literally standard, 20-foot ISO containers. According to Vice Admiral (ret'd) Ron Buck who was Project Manager for the MCDVs, "[i]t was what I would call classic or basic modularity, because in theory, anyway, you can change roles simply by changing boxes."[5]

Modular technology has the potential to support a range of missions across civilian and military platforms, increasing capability and sharing costs under a 'whole of government' approach. For example, ThyssenKrupp Marine Systems offers modules for public authorities such as the navy, police, coast guard and customs agencies to use in 'operations other than war.' This includes weapons, medical facilities/equipment, sensors, oil recovery equipment and even a jail.

As Marc Levinson makes clear in his book *The Box*, the standard container only had an impact when companies and seaports learned how to use it.[6] However, once one company began to use it and discovered its benefits, then the world changed very quickly. The more companies adopted the containers, the more the costs fell, and the more companies used the containers. And this meant that shipping goods by sea became both much cheaper and much easier.

With dozens of military and government ships to be built under the National Shipbuilding Procurement Strategy, modularity offers designers and shipbuilders an opportunity and a challenge to shape Canada's maritime future.

**Notes**

1. Marc Levinson, *The Box* (Princeton, NJ: Princeton University Press, 2006).
2. Consulting and Audit Canada, "Modular Capabilities for the Canadian Navy's Single Class Surface Combatant, A Perspective on Flexibility," February 2006.
3. Norman Friedman, "Transformation and Technology for Medium Navies," keynote paper presented at the conference "Transformation and Technology," hosted by the Centre for Foreign Policy Studies, Dalhousie University, Halifax, June 2006.
4. Email conversation, Per Bigum Christensen, Technical Director, Danish Navy, December 2012.
5. Interview with Vice-Admiral (ret'd) Ron Buck, Project Manager for the MCDVs, December 2012.
6. Levinson, *The Box*.

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

# Making Waves

## *A Necessary Capability*

Brian Wentzell

In a 2012 interview in the *Canadian Defence Review* the Commander of the Royal Canadian Navy (RCN), Vice Admiral Paul Maddison, revisited the need for a 'Big Honking Ship' for the Canadian Forces.[1] The RCN's Deputy Commander Rear Admiral Mark Norman, using almost identical words, made the same case for a ship designed to participate in humanitarian operations and disaster recovery – describing the ship as "an ideal platform for joint action across a range of relatively permissive expeditionary scenarios."[2] Both Admirals thought that this vessel could become the principal diplomatic asset of the Canadian Forces.

Is this a realistic idea in light of the serious budgetary pressures facing the federal government? Does this idea undermine the National Shipbuilding Procurement Strategy (NSPS) that underlies the Canada First Defence Strategy? More importantly, is this a capability that is consistent with Canada's national interests?

Canada's national interests include protecting national security, the security of North America, and traditional social, economic and defence relationships with allies. The national interest also includes maintaining international relations through the United Nations, NATO, the Organization of American States, and bilateral agreements. With Canada's growing population based upon large-scale immigration, the country has an interest in supporting countries that have been the primary source of immigrants. The Caribbean Basin, Middle East and Indian Ocean regions have provided many immigrants in recent years displacing traditional European immigration. Most new Canadians are conscious of their roots and retain strong relations with their countries of origin. Therefore, Canada has an interest in alleviating suffering when disasters strike, including earthquakes, storms, famine, political strife, war, or economic and social failure. In extreme cases, military intervention as part of an alliance or coalition may be necessary. In less extreme situations the Canadian Forces may still be tasked by the government to undertake humanitarian operations. The RCN has a role to play across this spectrum.

In providing humanitarian assistance, one has to define carefully the navy's role, the concept of operations and the logistics required to sustain the capability. Vice Admiral Maddison emphasized that he envisages the capability to be used in a relatively permissive environment such as the 2010 humanitarian assistance mission to Haiti, not a military assault on heavily defended beaches. He went on to state that designing new ships with more flexible deck space, larger ship's boats, more robust command and, presumably, aviation facilities would provide important additional humanitarian operation capabilities. This could be achieved by designing these capabilities into the new surface combatant or operational support ships, or both, as they take shape under NSPS.


*HMNZS **Canterbury** is a key New Zealand contribution to the Pacific Partnership (14 October 2009).*

Amphibious operations are not simple activities in either peace or war. An amphibious capability is not cheap, or easy to implement and sustain. For example, the experience in providing relief to Haiti in 2010 demonstrated the limits of the current destroyer and frigate fleet. These capable warships lacked the means to deliver, over the shore, sufficient supplies, equipment and people needed to address the misery and destruction of a massive earthquake. If HMCS *Preserver* or *Protecteur* had been available, the naval capability would have been greater but still limited. The need for a true landing ship was demonstrated. However, unless the government has decided to redefine the new surface combatant or operational support ship proposed under NSPS, there appears to be nothing in the acquisition strategy for such a vessel.

Canada has given thought to amphibious operations in the past. The Integrated Tactical Effects Experiment in 2006 demonstrated the requirements for the landing of an infantry company and its equipment over a beach. USS


*USS **Gunston Hall** (LSD 44) conducts surface action group operations during Exercise Nautical Union, Persian Gulf, 19 July 2005.*

*Gunston Hall*, a purpose-designed Landing Ship Dock (LSD) and a relatively 'Big Honking Ship,' supported by a Canadian task group, landed a company from the Royal 22nd Regiment with its vehicles and equipment in a permissive environment. *Gunston Hall* is a combatant ship with a helicopter landing deck and a docking well for landing craft. Normally it would be the smallest of a three-ship landing force carrying about 2,000 US Marines in addition to the ships' complements. The main lesson from the Canadian experiment seems to have been that Canada would have to invest significant resources to create a credible landing task group and this is beyond its means. Australia, not feeling so constrained, is doing just that.

As the new surface combatant has yet to be designed, there is an opportunity to develop a flexible support ship design such as the Royal Danish Navy's two-ship *Absalon*-class. This class has the capabilities of a frigate, the ability to accommodate up to a company-size army unit with vehicles or portable medical facilities or a command facility, and a medium helicopter. It has a roll-on/roll-off ramp as well as a landing craft. The concept deserves careful study. It could equip the Canadian Forces with a landing capability in a semi-permissive environment.

New Zealand has taken a different tack. The Royal New Zealand Navy has acquired HMNZS *Canterbury*. She is a multi-role vessel based on a civilian short sea ferry, the MV *Ben-my-Chee*, operating in the Irish Sea. *Canterbury* can carry 250 crew and passengers and is equipped with two medium landing craft, one Seasprite helicopter and has a ramp to facilitate over-the-dock loading of equipment. It can provide command and communication services, medical support and transport up to four medium NH 90 helicopters. It can serve as a training and patrol ship, and supported disaster recovery operations in the February 2011 Christchurch earthquake.

Canadian friends in the Caribbean Basin have recurring exposure to hurricanes, earthquakes and the illegal drug trade. With this in mind, the government can make a strong case for the Canadian Forces to continue counter-drug operations and to develop humanitarian operations and disaster relief capabilities that are extendable to the Caribbean.

Today the Canadian Forces depend upon functional infrastructure to access an operational area. The RCAF, which has airlift capabilities, requires suitable, albeit austere, airfields for humanitarian operations. Without an over-the-shore landing capability, the RCN needs a functioning port for effective use of its ships. Unfortunately, Haiti had very limited airfield availability and virtually no functioning ports after the earthquake. Improvisation and help from the US Navy offset the shortage of port facilities and the lack of Canadian over-the-beach capabilities, and initiative permitted the air force to improve a short airfield for limited operations.

Canada also needs to respond to domestic disasters. While New Zealand is a small country, Canada has three long and remote coastlines. The West Coast has a high threat of earthquakes while the East Coast has severe weather events. The north is sparsely populated and has very limited facilities. There is justification for two, not one, humanitarian operation and disaster recovery ships. One would be based on each coast and one should be available

as a high readiness unit. The ships could be inspired by either *Absalon* or *Canterbury*. The ships require military features to permit either independent operation or use within a Canadian task group or international force. If necessary, the Canada First Defence Strategy and NSPS should be adjusted to address such high-profile operations and support Canadian national interests. Such a focus will enhance Canada's international presence and reputation, and these new ships would be a source of pride for all Canadians.

Without diminishing the value of the response to the Haitian earthquake, Canada's most successful amphibious operation was the assault on Juno Beach on 6 June 1944. In memory of those members of the RCN, Canadian Army and RCAF who served in that operation, I suggest that the first ship be named HMCS *Juno*. As a reminder of the sacrifice such operations may bring, the second ship should be named HMCS *Dieppe*.

**Notes**

1. Feature Interview with Vice Admiral Paul Maddison, *Canadian Defence Review*, Vol. 18, Issue 4 (August 2012), pp. 10-20.
2. *Ibid*., p. 20; and Rear Admiral Mark Norman, "Into the Contested Littorals: Navy Prepares for Complex Operational Environment," *Vanguard*, August/September 2012.

## *Criticism for the Sake of Criticism*

Peter Haydon

Every now and again the volume of public chatter on Canadian naval policy rises because of some new incident or revelation that, for some, brings into question the need for robust naval capabilities in Canada. This chatter is not limited to submarines, although submarines are a sure-fire guarantee to raise the blood pressure and the level of rhetoric. Lately, the National Shipbuilding Procurement Strategy (NSPS) has become the target of public criticism by a core of self-styled experts who, it seems, criticize for the sake of criticizing rather than offer constructive criticism of the strategy. Worse, many of these comments are based on incomplete and inaccurate knowledge of the basic facts. This should not be surprising given that many of those who criticize naval programs do so to further their own agendas. Unfortunately, the media continually listen to the dissenting voices over other opinions.

That said, however, the government and the Naval Staff do not always explain new programs and their rationale as clearly as they could. Part of the problem is political but part reflects an annoying institutional inability to explain complex policy issues in easily understood language. The private sector, on the other hand, has provided several succinct explanations of Canada's strategic need for a versatile and robust navy, all of which are readily available on the internet. One would think that by now there have been more than enough public explanations of the NSPS and the related strategies to entrench the basic arguments.

Let me restate a simple fact that seems to escape the critics, the experience of past RCN shipbuilding programs, especially the *Halifax*-class frigates, tells us that it takes 12-15 years to design and build a new warship in Canada. It follows that approval in principle is but the first step in a lengthy process that eventually sees the approval of designs for new ships and the provision of funds to begin cutting steel. There are many stages between the initial political announcement and the first industrial activity. The NSPS, like earlier shipbuilding programs, has a long, complex road to travel before new ships begin to take shape.

Admirals and their staffs know that every assumption, every piece of strategic rationale, and every cost projection will be scrutinized by an army of bureaucrats and accountants before any shipyard gets the go-ahead to start building a ship. The relatively simple process of 'design and build' is long gone, and the contemporary, convoluted, procurement gauntlet established by the Treasury Board is fraught with political obstacles. This should not be surprising. Politicians and senior bureaucrats are wary of change and only commit to new concepts after intense evaluation unless, of course, the proposal has Cabinet-level origins such as Defence Minister Paul Hellyer's 1964 radical force restructuring. Moreover, Canadian politicians are invariably risk-averse and thus reluctant to commit public funds to projects that cannot be seen immediately by the public to be in the national interest.

Naval procurement during the Cold War was innovative as the Naval Staff attempted to keep pace with emerging anti-submarine warfare technologies and an increasingly sophisticated Soviet submarine threat. Nonetheless, it was often difficult to impress on politicians and generals that for the RCN to remain relevant it had to modernize. For instance, plans for the acquisition of modern submarines were rejected time and time again for petty rather than strategic or economic reasons, and concepts for general-purpose frigates with air-defence missile systems were similarly rejected despite the commitment of RCN ships to areas of high air threat.

The submarine procurement program of the early 1960s is an example of the government's difficulty in coming to grips with a force requirement that made strategic sense

but was difficult politically because of misperceptions of the value of the submarine in modern warfare. This myopic view persists today.

Politicians always demand maximum flexibility (to keep their options open) for minimum cost. The 1994 Defence Policy Review is one example: in its quest for new ideas the government had the opportunity to choose between a cheap, paramilitary coast guard and a more expensive, traditional navy. The latter carried the day because it had operational flexibility whereas the coast guard option did not, but that conclusion was not reached easily.


Credit: MC2 Kristopher Wilson, USN

*The Canadian patrol frigate HMCS* ***Halifax*** *(FFH 330) transits the Caribbean Sea en route to Haiti, 18 January 2010. Initially much-criticized, this class of ships has since gained widespread acclaim.*

However, it is bureaucrats who scrutinize the proposals on behalf of their political masters and this invariably introduces the agendas of other departments into the approval process. As a result, bureaucrats need to be brought on side early in the procurement process – the cost of not doing this is enormous. The 1987 Defence White Paper included a proposal to buy 10-12 nuclear-powered submarines, but despite the military strategic logic of the concept, DND failed to get the support of other key departments, especially External Affairs, and the resulting inter-departmental squabble eventually led to divisions in Cabinet that assured the demise of the program.

In view of the intensity of the politics, it should be no surprise that it takes far longer than ideal to design and build a new warship in Canada, and almost certainly takes longer than in most other major maritime states. That need not be an insurmountable obstacle to innovation, but it does make gaining political support for new ideas more difficult. The successful Canadian admirals are those who have understood the axiom 'politics is the art of the possible.'[1] In terms of Cold War force planning, Admirals Harold Grant, Harry DeWolf and Ken Dyer understood this and were able to read the political situation and propose shipbuilding programs that fell into the political comfort zone and were approved with relative ease. Experience from both successes and failures over the years shows that when the best and the brightest officers form the Naval Staff, the navy as a whole invariably benefits. But even they can have their hands tied by government-imposed constraints on public discussion. This makes the role of institutions such as *CNR*, the Naval Association of Canada and the Navy League of Canada in the public debate on naval policy all the more important. But to be useful, criticism and comment needs to be constructive and informative.

Hopefully, those who contribute to *CNR* adhere to the founding concept of the journal that constructive criticism of the policy process is both useful and necessary, and that idle criticism for the sake of criticizing has no value. Throw-away comments or comments made to further an individual or institutional agenda rather than address the facts do not help the public understand what is invariably a complex issue. More importantly, criticizing the navy for the perceived shortcomings of a particular piece of maritime security policy shows a lack of understanding of the overall policy process in Canada. The navy is no more an independent actor in the defence policy process than farmers are in shaping agricultural policy. The Prime Minister's Office, Treasury Board, Public Works Canada, and many other government departments make inputs to major policy decisions laid before Cabinet.

Not understanding the unique and complex Canadian policy process is not an excuse for poorly reasoned public comment, nor is it an excuse for publishing controversial comments as a way of gaining a market advantage.

**Notes**

1. This quotation is attributed to Otto von Bismark as *Die Politik ist die Kunst des Möglichen* in August 1867.

## *The Reflection Project at HMCS Prevost*

Sub-Lieutenant David Lewis

Sunday, 28 October 2012 was the third annual poppy placing at the Battle of the Atlantic Memorial at HMCS *Prevost* Naval Memorial Park in London, Ontario. The poppy placing tradition began in 2010 as a project for the Royal Canadian Navy (RCN) centennial celebrations. The


Credit: HMCS Prevost

*The Reflection Project plans to put a face to every life lost in the Battle of the Atlantic.*

first installation in the park was the Battle of the Atlantic Memorial. It is a series of 24 granite stones, each engraved with the name, hull number and date of loss of an RCN ship during the Battle of the Atlantic. The stones are placed along a steep hillside in chronological order. Information panels along the base of the hill give visitors the story of each ship and crew. The memorial was dedicated in May of 2010.

As Remembrance Day 2010 approached, there was a desire to honour those represented in this memorial, without detracting from the official ceremony at the city cenotaph. The result was a poppy placing ceremony a week or so before Remembrance Day – it is called the Reflection Project. At the Memorial each stone commemorates a ship and the men who perished with her. To honour these men a single poppy for each life lost is placed alongside that ship's stone. Some stones have a few poppies while others have well over 100. The view of the memorial hillside as it turns red with poppies is overpowering as you realize each poppy signifies an individual sacrifice.

As the 2012 ceremony approached the thoughts of HMCS *Prevost* turned again to those members of the ships' companies who had perished. It was decided to acknowledge them by placing a small framed photo at the appropriate stone. A few photos were placed on the hill. These young faces reflecting back from the hillside produced a very emotional impact. It was then decided that every poppy on the memorial should be accompanied by a photo of the young Canadian it honours.

"This is an aggressive undertaking by HMCS *Prevost*," said Lieutenant Commander Iain Findlater, Commanding Officer, "but the end-state of almost 1500 young faces reflecting from the hillside will be incredibly moving. We owe it to them. This will help us remember that these were young men with families, with friends, with hopes and plans and dreams which were all ended too soon."

To locate, copy and frame a photo of everyone lost is a monumental task. The 2012 poppy placing featured the first 50 photos. It is hoped that by next year the majority of photos will be found and placed. To do so HMCS *Prevost* needs help. They are calling on every Royal Canadian Legion, every Naval Reserve Division, local Books of Remembrance, Navy Leagues, newspaper archives, surviving family members, etc. If you have a photo of a RCN sailor who perished in the Battle of the Atlantic, please contact HMCS *Prevost* (hmcsprevost@gmail.com).

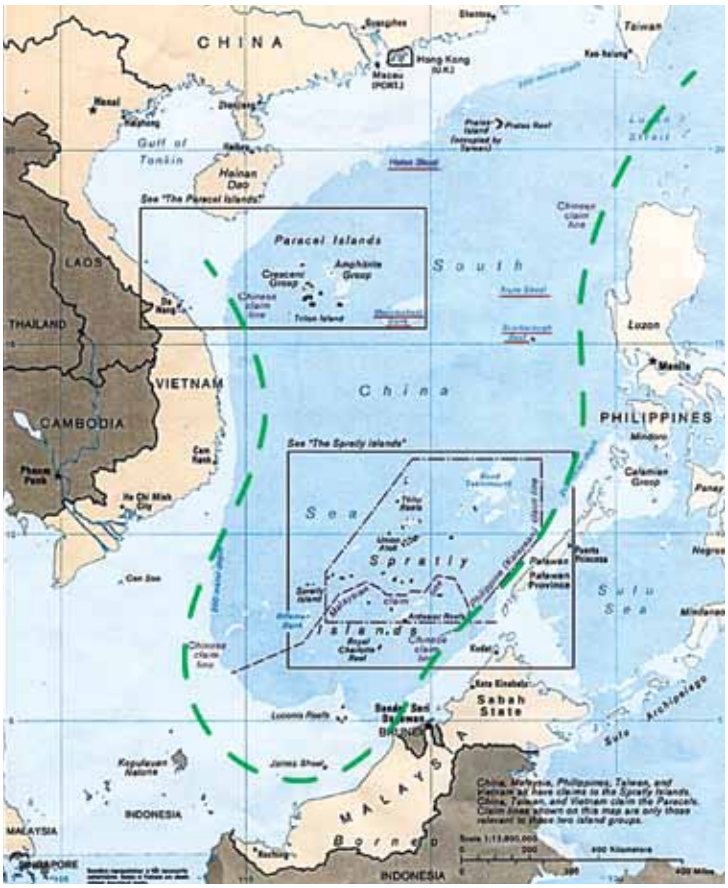
The Reflection Project is truly a reflection on all of us.

*A View from the West:*

# The Role of Fishing Fleets in Maritime Boundary Disputes

**Daniel Baart**

The summer of 2012 was tense for states involved in several maritime boundary disputes in East Asia. Japan and South Korea once again squared off over Takeshima/Dokdo, while Japan also quarrelled with Taiwan and China over the Senkaku/Diaoyu islets, and China continued its belligerence in the South China Sea (SCS). None of these diplomatic flare-ups resulted in any progress towards resolution but there has been much discussion about all of them. It is interesting, however, that a potentially significant group of actors – the vessels of the disputant states' fishing fleets – constantly appear in media reports but there has been little analysis of the wider role these civilian vessels play in boundary disputes. Much of the commentary portrays the fishing fleets as hapless actors trapped in the midst of a larger diplomatic quagmire while struggling to secure their daily catch amongst the invisible boundaries of contested state jurisdictions.




Credit: US CIA

*The South China Sea – China's 'U-shaped line' maritime claims is highlighted in green.*

Is this an accurate portrayal, or can these civilian vessels be viewed as active participants in the conduct of international boundary disputes?

If fishing vessels do contribute to the conduct of boundary disputes, logic suggests that they would be from China, a state with a commercial fishing fleet of over 3,000 vessels and a newfound penchant for aggressively pursuing settlement of its numerous boundary disputes. Various examples can be found of civilian fishing vessels engaging in activities to assist in bolstering China's claims, particularly in the SCS, although these efforts have not always produced positive outcomes.

While the influence of fishing fleets as a whole in the SCS has received scant analytical attention, fisheries themselves are widely regarded as an important part of international territorial disputes, although such disputes are never just about fish. It has been argued that the emphasis on potential petroleum reserves in the SCS is meant to distract from the true prize in the dispute, the local fish stocks.[1] It might be more realistic to assume, however, that arguments over fishing rights are a small part of greater efforts to justify, enhance and back up legal claims to territorial sovereignty in disputed areas. Fisheries therefore should not be viewed as separate from other dimensions of the territorial squabbles because efforts to secure access to fisheries are tied to efforts to secure sovereignty as a whole, including fish and petroleum.

The basis for this sovereignty is, of course, dictated by international law. The UN Convention on the Law of the Sea (UNCLOS) provides a legal framework for the settlement of disputes by drawing sea boundaries derived from land territories, but these often do not reflect what states feel is the rightful bounds of their claims. China has signalled its opposition to the boundary delimitation portions of UNCLOS with regards to the SCS, much of which Beijing insists are its own territorial waters. As a result, China has made appeals to older, more established forms of customary law to establish a claim to disputed areas. This generally requires a state to demonstrate that it has held exclusive jurisdiction, which has not been challenged by other states, for an 'appreciable' period of time.[2] It is obvious that the Chinese claims in the SCS are indeed contested by other claimant states, but China is pursuing this campaign of legitimization regardless.

Fishing boats have played an important role in this effort which can be demonstrated through China's apparent strategy of incremental action. Observers have suggested that this approach involves a drawn-out process to "gradually accumulate, through small but persistent acts, evidence of China's enduring presence in its claimed territory."[3] Fishing vessels are extremely useful in this regard as they are highly mobile, self-sufficient and also self-motivated in that their reward for assisting the state is access to previously inaccessible fish stocks. More importantly, the presence of civilian vessels also justifies the presence of fisheries enforcement and coast guard vessels, which ostensibly protect their state's commercial vessels but further demonstrate state jurisdiction by interdicting and harassing foreign vessels trying to fish in the disputed area. China employed this strategy during the Scarborough Shoals incident with the Philippines in summer 2012, to the degree that some commentators now refer to the fishing and law enforcement tandem as the Scarborough Shoals Model.

The supporters of incremental action suggest that the attempts to disrupt foreign fisheries do not reach the threshold necessary to elicit strong foreign responses – either armed or diplomatic. If the protesting state did respond with armed resources, it would appear rash, reactionary, or irresponsible. That is also part of the appeal of utilizing fishing vessels as a state that responds to the unwanted presence of civilian mariners with violence would appear to be the aggressor, perhaps regardless of the prior provocations.[4] Although fishery enforcement and coast guard vessels are typically armed to some degree, they do not present the symbolism of a naval vessel, and thus do not signal a state's willingness to militarize a dispute. The Scarborough Shoals Model is designed to wear down the resolve of other states to deal with continual provocation represented by a steady stream of fishing violations by foreign boats and harassment of their own vessels in the disputed waters. The final result is that the state is overwhelmed and unable or unwilling to further challenge China's self-proclaimed jurisdictional rights. Whether this will work remains to be seen, but engaging civilian fishing boats to support a state goal, while facilitating their access to new fishing grounds, is undoubtedly a mutually-beneficial arrangement.

Not all maritime disputes in which fishing boats are involved are directed by the state. The civilian vessels are motivated by the desire to secure their livelihoods. But their actions have the potential to upset state plans concerning the conduct of politically sensitive territorial disputes. The actions of fishermen have been the cause of diplomatic rows between China and its neighbours,


*South Korean Coast Guard units attempt dangerous boarding of illegal Chinese fishing vessels, 2011.*

such as the 2010 ramming of a Japanese coast guard ship near the Senkaku Islands and the 2011 stabbing death of a member of the South Korean Coast Guard. Various commentators have pointed to incidents like these as evidence that inflated nationalist rhetoric has an effect on the attitudes of fishermen, both in terms of supporting state attempts to increase sovereignty but also in ways that could prove detrimental to state interests.[5] Recent incidents led to increased international scrutiny of China's fishing fleet which has embraced the popular nationalism to an extent that the civilian vessels commonly engage in aggressive encounters with foreign authorities to the chagrin of Chinese authorities.

Although fishing vessels may not contribute to the settlement of these intractable boundary disputes, they are active participants in the day-to-day conduct of these disagreements, and their activities are often the most visible sign of the continuing diplomatic impasse. While some civilian vessels have involuntarily or accidentally become involved in maritime disputes, the shared interests of national governments and self-interested fishermen mean that we are likely to continue to see their involvement, with or without the approval or direction of state authorities.

**Notes**

1. Stephanie Klein-Alhbrandt, "Fish Story," *Foreign Policy*, 25 June 2012, available at www.foreignpolicy.com/articles/2012/06/25/fish_story.
2. Government of Canada, François Côté, Industry, Infrastructure and Resources Division, and Robert Dufresne, International Affairs, Trade and Finance Division, *The Arctic: Canada's Legal Claims*, October 2008, p. 3.
3. Ronald O'Rourke, "Maritime Territorial and Exclusive Economic Zone (EEZ) Disputes Involving China," Congressional Research Services, 22 October 2012, p. 14.
4. See Robert Haddick, "Salami Slicing in the South China Sea," *Small Wars Journal*, 3 August 2012, available at http://smallwarsjournal.com/blog/this-week-at-war-salami-slicing-in-the-south-china-sea.
5. International Crisis Group, "Stirring Up the South China Sea (I)," Asia Report No. 223, April 2012, pp. 26-27.

*Daniel Baart is a security analyst with the Office of the Asia Pacific Advisor at Maritime Forces Pacific.*

*Plain Talk:*

# Up Ship Creek Without an Explanation

**Sharon Hobson**

Vice-Admiral Paul Maddison, Chief of the Maritime Staff, clearly understands the navy's public relations problem. But the question is, can he fix it? In a speech to the 2011 Supply Chain and Logistics Association Conference, Admiral Maddison stated, "most Canadians have neither an understanding of their nation's relationship with the sea nor a sense of how the work of their navy relates directly to their daily lives."

He explained the challenge of informing Canadians about the navy's role and work by pointing to two very different photographs.

> Consider this first photo. A caring soldier takes time from her patrol to speak to a girl holding a young child. In the background the remainder of her combat team is clearly evident…. Is there anyone in this country who wouldn't know what that soldier was doing or why it needed the likes of him or her in that far-distant place of need, or whose heart would not swell with pride in the fact that a maple leaf was on their shoulders? …
>
> Now look at this second photo of a sleek warship at sea with little else than the horizon as her constant companion.… [W]hat ordinary citizen from the Greater Toronto area would understand from that photo why this country has and needs a navy, and what that navy does?[1]

That sums up the navy's PR problem – static equipment images without a dynamic narrative. And as the navy heads into a major recapitalization program while the government looks for ways to save money, that's a big problem.

In accordance with government election promises, the navy is planning to acquire six to eight Arctic/Offshore Patrol Ships (A/OPS) at a cost of $3.1 billion. There is also a longstanding – but much delayed – requirement for the navy to replace its two Auxiliary Oiler Replenishment ships with $2.6 billion worth of Joint Support Ships. Both these programs are supposed to be moving ahead, but they are making haste slowly. Whatever their challenges, however, these programs are relatively easy to understand and support – it's the program that is lurking in the shadows that is going to be a difficult sell to the politicians and the public if the navy doesn't start talking now.


*Pride, yes, but to the average Canadian is this money well spent? HMCS* ***Fredericton*** *leaves Halifax Harbour for six months on* ***Operation Saiph*** *as part of the Standing NATO Maritime Group 1, 23 October 2009.*

The Canadian Surface Combatant (CSC) project to acquire 15 warships to replace the three *Iroquois*-class and 12 *Halifax*-class ships has been publicly costed at about $26 billion. However, informed observers expect that the project, as currently defined for three Area Air Defence and Task Group Command and Control variants and 12 General Purpose variants, will cost $30-40 billion. How is the navy going to help people understand why this kind of expenditure is necessary in a time of economic restraint?

Certainly, talking about "rules-based freedom of the sea," a "warship underway with a bone in her teeth" and a "new naval system of systems" will not do the trick.[2] That insider terminology may work for those who deal with the navy on a regular basis, such as industry or lobby groups, but if the navy wants to talk to ordinary Canadians (including politicians), then it needs to use plain language that conveys clear pictures of what the navy does and what equipment it needs to do it.

That means getting out and talking to community groups, having specialists (not Public Affairs Officers reading from a list of talking points) respond to media inquiries and, most importantly, reaching out to individual reporters before any aspect of the multi-billion dollar project becomes controversial.

In a November 2012 article in *Forbes*, journalist Willy Stern sets out 20 guidelines for generating positive media coverage and avoiding the feeding frenzy that develops when things are perceived to have gone awry.[3] Chief among his observations is that good military commanders deal directly with the media, and do not rely on their Public Affairs Officers. Stern says it's important to "get off your arse and start cultivating" good quality relationships with the media. But he cautions commanders to remember that "the journalist is not your friend. You may treat each other like friends, but ultimately he has a job to do. As do you."

The key is that if the groundwork of a good relationship has been laid, when things go wrong – and there are always things that don't go as planned – there will be reporters who are informed and will want the full story, not just the shocking bits. But to get that kind of balanced coverage, the navy must be willing to share information and build trust. It needs to make openness and transparency a part of the fleet planning process.

One of the problems that the navy has is that it operates on the world's oceans, away from Canada's population centres. It is out of sight, out of mind, for most Canadians. But the navy shouldn't be adding to that problem by operating away from public scrutiny. To win public support, it must be willing to talk about what it is doing, what it needs to do it, and what its options are.

Unfortunately, given this government's proclivity for secrecy, Admiral Maddison is facing a tough battle. For example, the recent Industry Day for the CSC was not open to the media. Why not? Why not let the media (and the public) know that the government is consulting with industry on the best procurement approach, the scheduling, the design and the risk? Why not talk openly about the capabilities and the costs and the potential trade-offs? Keeping these things secret now will cause the navy much heartache in the future. Imagine the reaction when the government announces a few years from now that after cutting back on social programs, it is buying 15 ships for more than $30 billion, three of which will have a theatre ballistic missile defence capability. Without any public discussion of the requirements and the options, the one thing the navy can count on is that there will be a public backlash.

When Admiral Maddison showed the audience the two photos, he described how in the second photo, the ship, far from sailing serenely on the open ocean by itself, was actually escorting a merchant vessel which was bringing relief supplies to East Africa. In 2008, the UN World Food Program had requested help because piracy off the coast of Somalia was a major concern and ships were refusing to make deliveries. HMCS *Ville de Quebec* was reassigned to the Indian Ocean from a NATO task group in the Mediterranean and began escorting cargo ships to Mogadishu. Over the next two months, 150,000 tons of food were delivered – enough to feed over a million people.


*Responding to a request in 2008 from the UN World Food Program and the International Maritime Organization, HMCS **Ville de Quebec** escorts **Golina** near Somalia, the third World Food Program ship to be escorted.*

That's a story that can make people understand some of what Canada's navy does. But it is important not to overemphasize the humanitarian roles at the expense of the security and defence roles. Yes, the humanitarian work makes Canadians feel good, but if they are (mis)led to believe that that is the primary role for Canada's navy, they are not going to understand why the government is planning to spend billions of dollars on heavily armed combatant vessels.

So the narrative must be comprehensive as well as compelling. The navy needs to be honest with the Canadian public. If the ships are necessary, if the expenditure can be justified, if the fleet plan is sound, tell us why, how and at what cost. Canadians deserve nothing less.

**Notes**

1. Vice-Admiral Paul Maddison, address to the 2011 Supply Chain and Logistics Association Conference, available at www.navy.forces.gc.ca/cms/10/10-a_eng.asp?category=57&id=870.
2. Vice-Admiral Paul Maddison, address to the Canadian Surface Combatant Industry Day, 15 November 2012, available at www.navy.forces.gc.ca/cms/10/10-a_eng.sasp?id-922.
3. Willy Stern, "How David Petraeus Mastered the Media", in *Forbes*, 19 November 2012, available at www.forbes.com/sites/randalliance/2012/11/19/how-david-petraeus-mastered-the-media.

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

# *Warship Developments:* Update Snippets

**Doug Thomas**

This column will look at developments taking place with some of the equipment and platforms I've discussed in past issues of *CNR*. It will conclude with a brief item on the seizure by Ghana of a commissioned vessel of the Argentine Navy as a consequence of debt Argentina (allegedly) owes from 2002.

## *Indian Aircraft Carriers*

The latest on the Russian carrier ex-*Admiral Gorshkov* (to be commissioned as INS *Vikramaditya*) being re-built for the Indian Navy is that delivery will be delayed for about a year, due to boiler defects discovered during sea trials. These trials had included aircraft qualification and landing tests, with the first trap of a MiG-29K fighter-bomber taking place in early August 2012. This announcement has not gone over well in India, as it will likely mean a higher final price tag for the carrier and further delays are possible based on the history of this acquisition. Furthermore, there are concerns in India because China appears to be doing well with trials of its carrier *Liaoning*. All is not lost, however, as many of *Vikramaditya*'s aircraft have been delivered to India after training of their pilots in Russia, and these aircraft will operate from an Indian Naval Air Station pending delivery of the carrier.

India's indigenous aircraft carrier, the first of at least two 40,000-tonne ships, is also delayed until at least 2018. As well, costs continue to escalate on this program, which is by far the most ambitious shipbuilding project in India's history. Construction has already commenced on the second home-built aircraft carrier.


*Indian aircraft carrier* ***Vikramaditya****, ex-****Admiral Gorshkov****.*

The delay of the Indian-built aircraft carriers will put further pressure on the Indian Navy to extend the service life of the British-built INS *Viraat* (ex-*Hermes*) which was launched in 1944. *Viraat* is currently in what is supposed to be her last refit but will reportedly be available to serve until 2020 after recent machinery and electronic updates. However, the relatively small *Viraat* has a limited number of Sea Harrier aircraft available and cannot operate the large MiG-29K, therefore her capability as an attack carrier would be very limited. Nevertheless, her utility as a large vessel with the capacity to carry a considerable number of troops and operate helicopters and landing craft means that she could continue to operate as an amphibious vessel as long as she can safely steam, and the Indian Navy is willing to pay her very large complement.

## *Russian* Mistral-*Class LHDs*

Russia is acquiring up to four *Mistral*-class amphibious vessels. The first two are under construction in St. Nazaire, France. The follow-on vessels may be built – at least partly – in Russian shipyards. A recent Russian announcement indicates that these LHDs will be equipped with the French L-CAT fast-landing craft – a 30-metre catamaran landing craft designed to carry a payload of 80 tons at 18 knots.

## *Chinese Aircraft Carrier* Liaoning

I recently opined in *CNR* that *Liaoning* would be a training and/or trials carrier, and not become truly operational. That may yet prove to be so, but she has been observed recently conducting touch-and-go operations with a number of indigenously-built J-15 fighters (based on the Russian Su-33, but with Chinese avionics and weapons). She has also conducted arrested landings and launching from the bow ski-jump ramp.

China Central Television broadcast footage of the landing and takeoff, showing a J-15, which took off from an airport in an unidentified location, approaching the *Liaoning*. The pilot then lowered the tailhook and used it to decelerate rapidly during landing, and engaged the second arresting cable. The J-15 taxied about 50 metres and stopped. The plane folded its wings and technical checks were made. After takeoff preparations were complete, the pilot restarted the engines and flew off the deck.


*PRC Shenyang (Flying Shark) J-15 fighter lands on the Chinese aircraft carrier,* ***Liaoning****.*

The professional manner in which the flight-deck crews operated is an indication that her ship's company is well-prepared for the operations they are currently conducting. These operations include sea trials of machinery and combat systems, including its primary offensive capability – fixed-wing high-performance aircraft. However, there is still much to be done to achieve a true blue-water operational capability.

## *HMAS* Choules

All is not well with the bargain-basement acquisition by the Royal Australian Navy (RAN) of the ex-Royal Fleet Auxiliary (RFA) Landing Ship Dock (LSD) *Largs Bay*. HMAS *Choules* was steaming to an exercise this past summer when an electrical propulsion transformer failed, forcing her to return to her home port in Sydney. Repairs will take at least until April 2013, and are estimated to cost in excess of $10 million (US). There is concern that there may be further problems with the propulsion system, and consideration is being given to recovering costs from the manufacturer.

## *ARA* Libertad

The sail-training vessel ARA *Libertad*, frequently seen at tall ship festivals and fleet review events and a commissioned vessel in the Argentine Navy, was detained in the Ghanaian port of Tema in early October 2012. The ship's complement – except for a small skeleton crew – were flown home. The seizure was at the request of the hedge fund NML Capital, which says Argentina owes it $370 million on bonds which have been in default since 2002.

On 29 November, both sides made their case in a hearing at the seat of the International Tribunal for the Law of the Sea in Hamburg. Argentina asked the tribunal to order the immediate release of the training vessel being held in Ghana. The tribunal announced its decision on the case on 15 December 2012. It ruled that Ghana should release the ship, agreeing with Argentina's argument that a UN Convention gives warships immunity from civil claims when they dock at foreign ports. The ship sailed from Ghana on 19 December. It will arrive back in Argentina in early January.


*HMAS* ***Choules****, formerly RFA* ***Largs Bay****, in Falmouth Docks, 5 August 2011.*

# Book Reviews

*Australian Maritime Doctrine – RAN Doctrine 1*, Royal Australian Navy, 2nd edition, 2010, 258 pages, ISBN 978-0-642-29722-8

### Reviewed by Dave Mugridge

This robust and authoritative document demands the consideration of the Canadian reader. Its clear unambiguous language illustrates why the Royal Australian Navy (RAN) has come to dominate defence thinking in its region and why it was the big winner in the most recent articulation of national defence policy. I have always suggested that the links between Canada's navy and the RAN should be stronger than a common Royal Navy-based heritage. We are both rich continental-sized maritime countries with relatively small, concentrated populations and even smaller, highly professional defence forces. As allies of the United States, we need to consider interoperability, so have to embrace the technology required to keep pace with our American counterparts. Yet Canberra understands maritime security, navies and maritime doctrine whereas Ottawa considers them but a fringe player to its focus on land.

This book is the RAN's capstone document and while many of its central tenets were published 10 years ago, it intelligently considers how the world's security environment has changed and embraces ideas such as the US-led Global Maritime Partnership and Proliferation Security Initiative. This evolving security environment illustrates that maritime security needs to evolve into a comprehensive whole of government approach; not some illogical repetition of Cold War mantras and procurement.

This is a book which combines the high-brow and the authoritative – it provides a strategic overview while allowing the reader to explore the detail. And, unlike in Canada, the authors seem to realise that unless their arguments chime with the public then sea-blindness will take hold and the RAN will become as dislocated from its population as the RCN is in Canada and RN is in Britain. Vice-Admiral Russell Crane (Chief of RAN at the time this was written) and his team should be commended for their work on this document, the fact that they call for the country to contribute to future editions suggests they are confident of their place in defending Australian society.

In the 14 chapters readers are taken through the arguments of why have a navy. They are made aware of the synergy among the human factor, industry, the environment and national strategy. So by the time they read about the spectrum of operations, readers understand these philosophical foundations and where they sit with the Australian approach to national security.

I would commend this book to academic, military and civilian audiences alike. Perhaps Canada can look to Australia for a lead and then produce something of marketable quality itself. Personally I have resolved my dilemma on what to buy Admiral Sir Trevor Soar RN (CINCFLEET) for Christmas – his very own copy as an alternative to the unpalatable and unendorsed FMOC/FNOC which the Naval Staff in London produce while watching the RN go the way of buggy whips and frock coats. Way to go Oz. Keep the doctrine coming and illustrate why maritime countries need navies.

---

*The Seabound Coast: The Official History of the Royal Canadian Navy, 1867-1939*, by William Johnston, William G.P. Rawling, Richard H. Gimblett and John MacFarlane, Toronto: Dundurn Press, 2010, 1014 pages, $70.00 (hardcover), ISBN 978-1-55488-907-5

### Reviewed by Colonel P.J. Williams

Well, I can't say I wasn't warned about the size of the book. When I selected this book to review, *CNR*'s Editor cautioned me, and correctly so. It's a big book (weighing 2.5 kilograms according to my kitchen scales), but a good read nonetheless. This volume, covering the period from Confederation until 1939, is part of the Royal Canadian Navy History Project which supplements the already published history of the RCN in the Second World War.

Before, and indeed following, Confederation, the requirement for Canada to have its own navy was not one which occupied much time with the governments of the day. Certainly Prime Minister Wilfrid Laurier felt this way, thinking the entire naval question to be academic as he believed the probability of war in North America was low. Besides, Britain's Royal Navy (RN) would come to the aid of overseas dominions, including Canada. This view was not universally accepted within Canada and branches of the Navy League pressed for a separate Canadian Naval Service, calls which were increasingly echoed by Britain as it sought to defray some of the costs of imperial defence by suggesting that the colonies provide a degree of this defence themselves. In the end, as a result of the Naval Service Bill, introduced by Laurier in 1910, Canada established its own navy.

This signal act notwithstanding, the early years of the

navy were not easy as subsequent governments sought to maintain the service on a miserly budget with a mandate that was largely limited to port defence and fisheries protection, which was not what Britain and lobbyists in Canada had envisaged. Many, such as First World War Prime Minister Robert Borden, were content to rely on advice from the British Admiralty, as well as a continuing assumption that in times of emergency Canada could rely on the RN and the US Navy for maritime defence. Indeed, the authors contend that during the Great War, the USN was far more forthcoming in providing the RCN with materiel than the RN.

The RCN's role in the First World War is covered in some detail. The RCN focused largely on defence of Canadian shipping lanes from the threat of long-range German U-boats, one of which eventually sank the Canadian tanker *Luz Blanca* off Halifax's supposedly well-defended harbour. The authors also cover lesser known episodes in Canadian naval history such as HMCS *Rainbow*'s operation off Mexico in 1916 against German raiders and HMCS *Thiepval*'s epic voyage to Japan in 1924 in support of trans-Pacific aircraft flights.

These events chronicle the birth, unsteady growth and indeed survival of the RCN, which by the time of the outbreak of the Second World War in 1939 was a service worthy of being called, in the authors' words, "a true navy."

You may be thinking that this book is merely dry history – but it's not. While there is considerable detail about the political battles to realize and nurture the RCN, several themes emerge with modern relevance, such as the tricky issue of national shipbuilding capability and the importance of bilingualism. Indeed, as early as 1924, there was an article in *La Presse* entitled "Are French Canadians [in the RCN] Being Held Back?" The subject of annual Performance Evaluation Reports is even addressed and the book includes reports in which one Commanding Officer who, while being described as "apt to drink too much and always seems a bit dopey and nervous," is nonetheless believed to be useful as "he possesses an amiable disposition and a fair knowledge of naval customs."

The book is organized into three sections which cover the RCN's formative years pre-1914, the Great War and the interwar years. The Prologue covers the period before 1867. The books is well illustrated with maps, diagrams, photos, paintings and a 16-page bibliography. This book is highly recommended.

*Lucky 73: USS Pampanito's Unlikely Rescue of Allied POWs in WWII*, by Aldona Sendzikas, Gainesville, Florida: University Press of Florida, New Perspectives on Maritime History and Nautical Archaeology, 2010, 258 pages, index, photos, ISBN 978-0-8130-3427-0

Reviewed by Ann Griffiths

This book focuses on USS *Pampanito*, a submarine active in the war in the Pacific during the Second World War, and now tourist destination in San Francisco Bay. Submarines were extremely useful on both sides of the war and, although they made up only 1.9% of US naval strength, they were responsible for 59% of Japanese ships sunk (p. xiii). Submarines had an excellent record, and *Pampanito* did its share.

Being a submariner during war was a dangerous business – one in five US submarines were lost – but being a Japanese prisoner of war was even worse. And that's really what this book is about – the intersection of the lives of some British and Australian POWs with *Pampanito*. The title *Lucky 73* refers to the rescue by *Pampanito* of 73 Australian and British POWs from the South China Sea in September 1944. The book focuses on two stories. First, it gives a brief history of *Pampanito* in the Pacific arena. Then the book examines the lives of the men who were taken prisoner by the Japanese at the fall of Singapore and the horrendous conditions they endured as they were forced to build the Burma-Thai Railroad. The few who survived were then to be transferred via the 'hellships' to fill labour shortages in Japan. It was while en route to Japan that their lives intersected with *Pampanito*.

In September 1944 *Pampanito*, in company of other US submarines, sunk several large Japanese ships. The submarines left the area to pursue ships that had escaped, and when they returned a few days later, they discovered survivors of the ships they had sunk. When approaching the survivors with guns at the ready in case they were Japanese, they were surprised to be hailed in English. And in typical dry Australian fashion one of the half-dead survivors called out "[y]ou bloody Yanks. First you sink us, now you want to shoot us" (p. 5). And so began the rescue. The crew apparently gave their all to rescue and then treat their 73 guests. Simply fitting 73 extra people into a boat with a usual crew of 89 was a feat, never mind feeding and clothing the weakened, half-starved men.

The irony of this book that celebrates *Pampanito* rescuing the 73 survivors is that it was part of the group that torpedoed the two transport ships in the first place. The ships were carrying – without any symbol indicating what their

cargo was – 2,218 Allied POWs (roughly 700 Australians and 600 British POWs on *Rakuyo Maru*, and 900 British POWs on *Kachidoki Maru*).

The book provides fascinating firsthand accounts from the POWs of their life as prisoners and their ordeal after the ships they were on were sunk. It also includes the original photos of the rescue. The accounts and the photos are very moving. Clearly a very strong bond was formed between the POWs and their rescuers, and the crew of *Pampanito* apparently saw this episode – rescuing rather than destroying – as one of their proudest acts.

An interesting chapter recounts what happened to the Australians when they were returned home (for some reason there is no discussion of what happened to the British survivors). In what seems cruel, the Australians were kept in seclusion and even their families were not notified that they were there. The government didn't know what to do with them. Thousands of Australians were being held by the Japanese, and there was concern that there would be widespread unrest as the story of the rescued POWs got out, particularly when news of the treatment they received at the hands of the Japanese circulated to anxious families of those missing. And, when the government finally did allow them out of seclusion, there was indeed chaos as people pursued them hoping for any news of their relatives.

The final chapter discusses the sensitive issues of warfare at sea. The survivors recounted how the Japanese rescue ships pointedly refused to rescue them, and left them to die on their makeshift rafts. But the American ships were also armed when first encountering survivors – would they have fired their guns if the survivors had been Japanese? As well, there has always been debate about whether US senior commanders at Pearl Harbor knew that the ships were carrying POWs, and allowed them to be sunk anyway. These issues are difficult even many years after the war, but the book does a good job of asking the questions.

All in all, this is an interesting book and worth reading for its tale of 73 men unlucky enough to be taken prisoner by the Japanese, but lucky enough to survive the ordeal and be rescued by an American submarine.

# Announcing the 7th Bruce S. Oland Essay Competition

The *Canadian Naval Review* will be holding its annual essay competition, the Bruce S. Oland Essay Competition, again in 2013. The winning essay will receive a prize of $1,000. The first prize will be provided by Commander Richard Oland in memory of his father Commodore Bruce S. Oland. The first and second place essays will be published in *CNR*. (Other non-winning essays will also be considered for publication, subject to editorial review.)

Essays should relate to the following topics:

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

### *Contest Guidelines and Judging*

- Submissions must be received at naval.review@dal.ca by **21 June 2013**.
- Essays are not to exceed 3,000 words. Longer submissions will be disqualified.
- Essays must not have been published elsewhere. Essays that have been published elsewhere will not be accepted.
- 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.

For more details, questions about subject matter, or information about the adjudication process and criteria for judging, please visit our website at www.navalreview.ca or email us at naval.review@dal.ca.

# The Last Flower: HMCS *Sackville*

**Doug Thomas**

Credit: Wikipedia

*USS **Intensity**, a **Flower**-class corvette/patrol gunboat.*

*Flower*-class corvettes were based on a British whale-catcher design to meet the demand for a small, seaworthy and inexpensive escort vessel – particularly for work in coastal waters. Many were ordered in the early months of World War II from shipyards in the UK and Canada, and they were soon employed in all areas, including blue-water operations across the Atlantic.

A total of 269 were built and served in the Royal Navy, the Royal Canadian Navy (RCN), the US Navy and US Coast Guard, as well as the Free French and Norwegian Navies. They also served for the other side: four *Flowers* laid down for the French Navy were captured on the building slips in St. Nazaire, France, as German forces overran the country in the spring of 1940, and three of them were completed for service in the Kreigsmarine as coastal escorts.

The US Navy was critically short of anti-submarine resources, particularly along the Atlantic seaboard as many US ships were deployed to the Pacific after Pearl Harbor. The corvette helped to fill this void: 15 corvettes built in Canada (in Collingwood, Midland, Kingston and Quebec City) to British order served with the USN and were referred to as patrol gunboats (PG). These PGs were modified with a different gun armament, usually a single 3-inch, 50-calibre (3"50) forward in place of the 4" gun, and another single 3"50 replacing the British and Canadian practice of a single 2-pounder pom-pom anti-aircraft gun aft. In total 122 corvettes were built in Canada, and 123 were commissioned into the RCN, including four *Revised Flowers* and 12 of the larger *Castle*-class built in the UK and exchanged for Canadian-built *Algerine*-class minesweepers.

HMCS *Sackville* is the sole survivor of this once-numerous class. They were named after flowers in Britain, such as HMS *Buttercup* and HMS *Poppy*, but only 10 of the Canadian *Flowers* were so named, as they were laid-down for the RN in Canadian shipyards. The Brits courteously named them after Canadian wildflowers (plus Fennel, a herb), but they were manned by RCN crews and commissioned into the RCN in 1941, retaining such names as *Spikenard*, *Windflower* and *Arrowhead* – named for the flower but adopted by the town of Arrowhead, BC. The British corvettes perpetuated the names of RN WW I *Flower*-class minesweeping sloops (except for *Pansy* which was thankfully renamed *Heartsease* before commissioning), but most Canadian corvettes were named for towns and cities, as were 60 out of 70 frigates that served in the RCN. This was a popular decision, as many of the towns and cities established a warm and supportive relationship with 'their' ship, supplying them comforts such as hand-knitted mittens, scarves and toques and such entertainment items as radios, phonographs and pianos. Also, to paraphrase a politician's comment about ship-naming policy, flowers don't vote!

Ship names are an important morale issue to their crews. It is routine to refer to the ship's company by their ship's name when they fall in for ceremonial occasions. One has to wonder whether the ship's companies of HMS *Buttercup* and HMS *Poppy* had a problem with being referred to as Buttercups and Poppys.

I once read an autobiography of Lord Louis Mountbatten who in 1934 assumed command of the new destroyer HMS *Daring*, but when he delivered the ship to Singapore, Mountbatten and his officers and men were posted to an elderly WW I destroyer – HMS *Wishart*. The men were depressed about the change, including the name, until Mountbatten told them that the name was used in the Bible: "Our Father, Wishart in Heaven…!"

Fully half of all Allied convoy escort vessels in the North Atlantic were *Flower*-class corvettes. A total of 36 were lost in the war, 10 of them Canadian.

# *Operation Active Endeavour*

*Operation Active Endeavour* is a NATO maritime operation in the Mediterranean Sea to prevent the movement of terrorists or weapons of mass destruction, and to enhance the security of shipping in general.

The tasks of Canadian ships participating in the operation include locating, tracking and reporting 'vessels of interest' which are suspected of involvement in terrorism. This role has helped to enhance security and stability in the Mediterranean Sea area.

*All photos from Canadian Forces Combat Camera*