



# CANADIAN NAVAL REVIEW

VOLUME 9, NUMBER 2 (2013)

**Migrant Smuggling in  
Canadian Waters**

**Perseverance: Some Reflections on  
50 Years of the Canadian Sea King**

**Protection of Canadian Ships  
Against Piracy**

**A Review of  
"That Sinking Feeling"**



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# CANADIAN NAVAL REVIEW

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Two CH-124 Sea King helicopters conduct a fly pass during the International Fleet Review, Halifax, NS, 10 June 2010. This year, Canada celebrates 50 years of dedicated service by the Sea Kings.

## Contents

|   |    |
|---|----|
| EDITORIAL: TIME FOR A CANADIAN PACIFIC PIVOT?<br>ERIC LERHE   | 2  |
| MIGRANT SMUGGLING IN CANADIAN WATERS<br>DARRYL ANDERSON   | 5  |
| PERSEVERANCE: SOME REFLECTIONS ON 50 YEARS<br>OF THE CANADIAN SEA KING<br>JOHN ORR                    | 11 |
| PROTECTION OF CANADIAN SHIPS AGAINST PIRACY<br>HUGH WILLIAMSON  | 17 |
| A REVIEW OF "THAT SINKING FEELING: CANADA'S<br>SUBMARINE PROGRAM SPRINGS A LEAK"<br>KEN HANSEN        | 22 |
| LESSONS FROM CANADA'S CORVETTES<br>JANET THORSTEINSON   | 27 |
| MAKING WAVES<br>THE ORCA PROJECT: A PROCUREMENT SUCCESS<br>DAVID PEER                                 | 29 |
| MARITIME COMMERCE RESILIENCE<br>DR. ALLAN BARTLEY AND CAPTAIN ANDREW TUCCI                            | 31 |
| KEEPING FAITH<br>COLIN ROBERTSON  | 32 |
| LEARNING ABOUT AMPHIBIOUS OPERATIONS FROM NELSON<br>KEN HANSEN  | 33 |
| A VIEW FROM THE WEST: SMALL STATE HYDROCARBON<br>EXPLORATION IN THE SOUTH CHINA SEA<br>NICOLE JOHNSON | 36 |
| DOLLARS AND SENSE: WHAT CONSTITUTES 'BEST VALUE'?<br>DAVE PERRY                                       | 39 |
| WARSHIP DEVELOPMENTS: AFLOAT LOGISTICS SUPPORT<br>OR JOINT SUPPORT SHIP?<br>DOUG THOMAS               | 41 |
| BOOK REVIEWS  | 43 |



# Editorial

## Time for a Canadian Pacific Pivot?<sup>1</sup>

A country deploys its navy using any number of rationales. Certainly the perception of the threat plays a large role. In both World War II and the Cold War the dominant oceanic threat was enemy submarines cutting the Atlantic sea lanes to Europe. Alliance commitments reinforced Canada's Atlantic-dominant posture, and this led to the majority of the Royal Canadian Navy (RCN) being based in Halifax.

Trade has also guided naval deployments but until now this was not a significant determinant in Canadian naval basing. Under the government of Stephen Harper this may change. Defence Minister Peter Mackay seemed to confirm this in Singapore this June, declaring that the Canadian military had "dialed up" its presence in the region as part of a wider plan to get the Canadian government admitted to critical Asian trade forums.<sup>2</sup>

Canada's trade is not the only new input to naval posture. It would be hard for Canada to ignore the recent US 'Pacific Pivot,' its just-released National Strategy for the Arctic Region, and other elements of what has become known as the Obama Doctrine. Over 70% of Canadian trade is with the United States. Military strategy and trade are linked.

### *The Atlantic*

Given these new factors, the RCN's current 'Three Ocean' posture needs review. Despite recent efforts to conclude a Canada-European Union (EU) trade agreement, the government is concerned that Canada is too dependent on trade with slow- or no-growth economies, such as those in Europe. Unsurprisingly the Harper government wants a greater focus on trade with the rapidly growing, younger economies of Asia and the South.

Europe also suffers from being on the wrong side of the Obama Doctrine. This policy argues that the United States cannot do it all in the world and that it expects lead states in a region to take greater responsibility in meeting local security challenges. Declining European defence spending and a lack of will are problematic here. Initially only two European states joined the aggressive response to the 2011 Libyan civil war. A month later only seven of the 27 EU states had committed to combat missions.

However, Europe and North America are united in NATO – the world's only effective security organization. NATO leads the worldwide military interoperability effort to which Canada contributes significantly while also benefitting directly from it. Moreover, cutting commitments to Europe while expecting a new trade deal has



Credit: Internet

*This photo illustrates the multi-state fleet participating in Rim of the Pacific (RIMPAC) 2012.*

been proven a bone-headed strategy. The government of Pierre Trudeau attempted just that in the early 1970s by cutting its NATO Europe commitment while attempting to broaden Canada-European trade. The plan's rejection was summed up by German Chancellor Helmut Kohl telling Trudeau "No Tanks No Trade." All this suggests that cutting the ships that make up Canada's largest and most rapidly sent commitment to NATO must be done with skill.

### *The Pacific*

The government's trade logic and the US Pacific 'rebalancing' – 'Pacific Pivot' is no longer used – support calls for more naval forces. The government's foreign policy plan declares that "[t]he situation is stark: Canada's trade and investment relations with new economies, leading with Asia, must deepen, and as a country we must become more relevant to our new partners."<sup>3</sup> More specifically Defence Minister MacKay has made clear that Canada wants a seat at the Association of South East Asian Nations (ASEAN) Defence Ministers' Meeting and the indications are that Canada's defence forces will be the key to getting that seat. It is expected that membership will then provide an entry to other forums that manage Asian trade. As Canada scrambles to get involved in Asia, the US Navy is moving 60% of its ships to the Pacific, half of which will be forward deployed.

The Pacific presents challenges for Canada. The distances are immense and this means that forces must be both forward deployed and supported by significant at-sea

logistics capability to be credible. Canada has, by many reports, weak credibility in the region because it has none of this and because it has pointedly ignored the region until very recently.

The opportunities are certainly there for the RCN to play a role. The Pacific has always been a maritime theatre. Navies, amphibious forces and long-range aircraft dominated the Pacific War and they continue to dominate in the new US Air-Sea Battle doctrine. Canada could contribute CP140s and submarines to this mix but they will only be credible if they are permanently forward deployed – perhaps at Guam. Canada should also soon be able to send frigates to forward-deployed US carrier groups in the Indo-Pacific region, but they must be maintained permanently.

These deployments would also ensure that the RCN remains at the cutting edge of interoperability and provide a hedge should purely US tactical developments leave NATO behind. A Canadian task group cannot be permanently forward deployed but to be a credible response force, Canada requires a second supply ship there to cover availability gaps. In fact, a second supply ship is arguably more important to the Pacific fleet than the long-sought sixth frigate.

### ***The Arctic***

The Arctic also calls out for naval attention although the concerns here have less to do with Canada's trade than that of others. Arctic warming has already increased shipping and fishing. These are not, however, Canada's greatest security problem nor is the Northwest Passage. The fact that some 30% of the world's oil and gas is in the Arctic presents the real challenge. A recent editorial in the *Ottawa Citizen* states that "[t]he geopolitics of the Arctic melt requires Canada to join the Great Game. We either play the game, and play it well, or our nation will be the pawn of more assertive powers."<sup>4</sup>

Again, it is worth examining the US response. While the US Strategy for the Arctic Region hopes for a peaceful outcome to disputes, advancing US security interests is listed as the first of its three pillars. The US Navy is currently planning to increase operational capabilities and infrastructure in the Arctic with a view to operating there routinely.<sup>5</sup> In parallel, the US Coast Guard outlined its extensive collaboration with the RCN in the north (so did the USN) and hinted at a potential opportunity to split responsibility – the United States covering the western Arctic and Canada the east.<sup>6</sup>

Given the lack of ship assets of both states, this is a good offer especially as both also lack the ability to detect and

intercept problematic activity there quickly. The NORAD example is compelling. The Arctic and Offshore Patrol Ships (AOPS) will provide a significant contributor. Regrettably, these ships will only boost security if they are naval-crewed as progress in arming the Canadian Coast Guard is slow and will fall well short of need in any case.

As there may be a need for all our submarines in the Pacific, there will likely be a need for most if not all of the AOPS to be based in Halifax. This reflects the fact that it is only 2,800 miles to the central Canadian Arctic from Halifax, where it is 4,600 miles from Victoria. This posture would also align with the option of dividing Arctic responsibilities with the United States. However, the distances to and within the Arctic are extreme, and a refueling facility at Nanisivik and at-sea logistics will be key. Thus the new *Berlin*-class supply ships will need some modest cold weather capability.



Credit: Internet

USS *Nimitz* (CVN-68) demonstrates US strike power at Rim of the Pacific (RIMPAC) 2012 off Hawaii.

### ***Conclusions***

The RCN's commitments go well beyond the three Canadian oceans. Canadian ships regularly support counter-drug operations in the Caribbean. At the same time, naval and air forces are called on to provide relief after natural disasters. These are increasing and are predicted to continue increasing because of climate change. Unless the hurricanes and earthquakes miraculously spare airports and rail systems, sea-based helicopters and over-the-shore delivery are likely to remain the surest route for relief supplies.





The Canadian *Halifax*-class frigate HMCS *Ottawa* (FFH 341) participates in a sail-past at Rim of the Pacific (RIMPAC) 2012.

The government also recognizes that Africa and other parts of the South will not always be dominated by economic under-development, conflict and disaster. Indeed, some African countries have experienced remarkable economic growth in the past decade. It seems logical to expect that the RCN will be used to advance Canada's access to those markets.

The Canadian military has partially responded to the needs of the South with drug patrols, engagement in the regional security forums and training missions. But action by military forces must be undertaken with care – many in the region are wary of gunboat diplomacy and any whiff of colonialism. The Canadian navy must tread carefully, and not jeopardise the fact that it still enjoys a superb welcome in almost every state. To maintain this, it should participate in exercises and expand its junior officer at-sea training exchanges.

The government expects the navy to support its economic goals. When trade and security were not linked, policy failure was the result. The navy has always been uniquely capable of this diplomatic work – as some wag once noted, “armoured divisions do not do courtesy calls.” Moreover, only naval units can forward deploy on a permanent basis without the need for a massive overseas base investment.

At the same time, some Asian states are aware of Canada's

past unreliability and ‘drive by’ approach to a Pacific defence presence. A country seeking greater political heft in the region via an enhanced security commitment must assign the resources to the units that can achieve this. These will be naval. They are also the forces most needed in the Arctic and in a disaster response. This may not mean a bigger total defence budget but one must ask why the navy has the lowest priority in that budget and the fewest personnel of the three services. 🇨🇦

Eric Lerhe

#### Notes

1. Much of the material here was obtained at the superb Naval Association of Canada conference on the Asia-Pacific region and its impact on the Canadian Navy held in Victoria, BC, on 7 June 2013.
2. Campbell Clark, “Defence Minister Presses China to take Regional Disputes to UN,” *The Globe and Mail*, 4 June 2013, pp. A1, A12.
3. Greg Weston, “Harper Government Leaked Canadian Foreign Policy Plan, Secret Document Details New Canadian Foreign Policy,” *CBC News*, 19 November 2012.
4. Editorial, “Our Arctic Rights,” *Ottawa Citizen*, 17 May 2013.
5. Rear-Admiral Jon White, the US Navy's director of Task Force Climate Change has stated “[t]he US Navy is currently engaged in strategic planning to increase operational capabilities and infrastructure in the Arctic in future years. Within the next decade. I believe we'll be operating entirely in the Arctic with an appropriate presence that includes more than just submarines.” Cited in Bob Freeman, “New National Strategy for the Arctic Region has Implications for Navy,” 15 May 2013, available at [www.navy.mil/submit/display.asp?story\\_id=74168](http://www.navy.mil/submit/display.asp?story_id=74168).
6. Sydney J. Freedberg Jr., “Coast Guard to Navy: Arctic's Covered; White House OKs Arctic Icebreaker,” *breakingdefense.com*, 21 May 2013.

# Migrant Smuggling in Canadian Waters

Darryl Anderson

According to the United Nations (UN), migrant smuggling is “the procurement, in order to obtain, directly or indirectly, a financial or other material benefit, of the illegal entry of a person into a state party of which the person is not a national.”<sup>1</sup> While it is possible to provide a definition, the full extent of the problem is much harder to determine. Nevertheless, we can say with some certainty that international smuggling organizations move hundreds of thousands of people from less-developed countries to industrialized countries every year.

Migration by sea is often the only option for economically disadvantaged migrants. Research suggests that although smuggling by sea represents only a small proportion of the migrant smuggling problem,<sup>2</sup> the inherent dangers to the migrants by using this form of travel make it important to address. While the total number of deaths of smuggled migrants at sea is not known, it is likely to be increasing because as immigration channels become more limited, more people turn to smugglers for assistance.

In 2011, the UN Office on Drugs and Crime (UNODC) released an issue paper entitled *Smuggling of Migrants by Sea*. This paper acknowledges the complexities and challenges associated with addressing the crime of migrant smuggling by ship. Some of its key points are:

- it is a competitive criminal business with high profits for smugglers and all the risks borne by migrants;
- it cannot be separated from smuggling by land or air because of complex interconnections. There is mounting evidence that an effective response to smuggling by sea requires that the issues be addressed where land and air movements occur in countries of origin and transit, and where smugglers organize sea smuggling. Such locations are a considerable distance from the high-tide mark;
- detecting smuggling vessels at sea is a key challenge for coastal states;
- coastal states face significant challenges balancing border protection and respecting the legal rights of migrants; and
- international cooperation is essential to tackling the problem of smuggling migrants by sea. Efforts need to focus on the criminalization (and prosecution) of smugglers and the protection of migrant rights.<sup>3</sup>

## *Incidents of Migrant Smuggling on Canada's Coasts*

Canada is geographically isolated from most of the world but that does not make it immune from migrant smuggling. Thus, for example, in July 1987, 173 migrants, who were mainly Sikhs from India, were detained on the freighter *Amelia* and taken to Halifax after attempting to enter Canada illegally. And in 2005, 47 Chinese nationals were smuggled via four cruise ships on the East Coast, which was the first identified use of this mode of transport to Canada. However, it is the West Coast of Canada that has received the most attention in recent years, and it is on the West Coast that this article will focus.

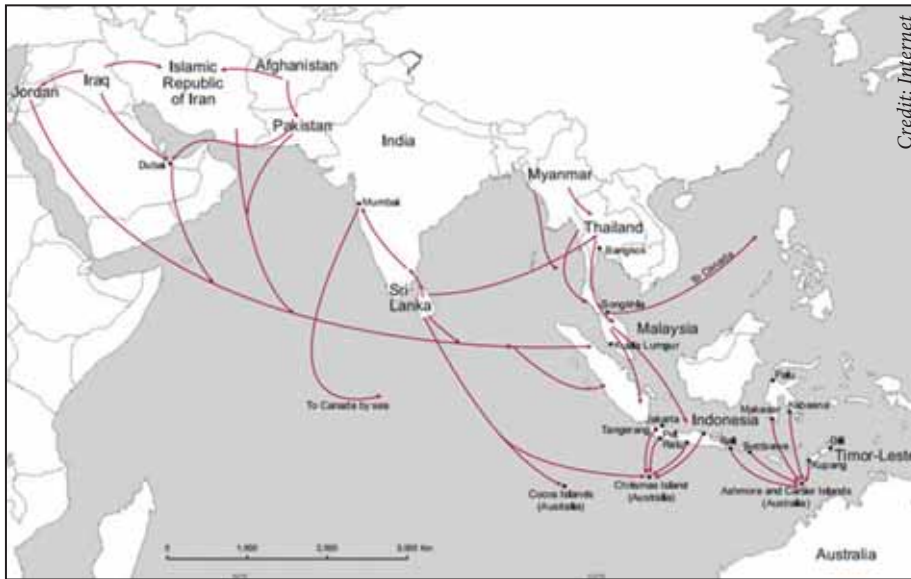
On 29 June 2012 Jason Kenney, Minister of Citizenship, Immigration and Multiculturalism announced new legislation entitled *Protecting Canada's Immigration System Act*. His announcement specifically cited the large-scale arrival of illegal migrants smuggled by ship as undermining Canada's security. The two most recent incidents on Canada's Pacific Coast were mentioned as proof that human smuggling networks were a large and growing concern for Canada.<sup>4</sup>



HMCS *Whitehorse* assists in the escort of MV *Sun Sea* to port on Vancouver Island in August 2010.

Credit: MCpl Angela Abbey, Canadian Forces Combat Camera





*This map shows some of the maritime migrant smuggling routes in the Indian Ocean.*

Migrant smuggling by ship does not occur frequently on Canada's West Coast. Rather, as far as we know, there are only occasional incidents within Canadian territorial seas. Table 1, compiled from media, UBC Library, information from the RCMP website and data provided by the Canadian Border Service Agency (CBSA), indicates that only the MV *Sun Sea* incident of 2010 could be described as a mass irregular migration incident.<sup>5</sup> Nonetheless, the issue is of concern to many people.

Canada is a signatory to the UN Protocol against the Smuggling of Migrants by Land, Sea and Air. As a signatory Canada has an obligation to rescue and afford

protection to irregular migrants even though this obligation often conflicts with border protection and immigration policy concerns. The duty to rescue migrants at sea is paramount, taking priority over other concerns including law enforcement objectives. Protection of migrants must be undertaken even if this means that the objectives of smugglers are met when rescuing authorities assume responsibility for migrants.

Ship masters also have an obligation to rescue migrants in distress. Yet one of the issues faced by the shipping community is the reluctance of ship masters to fulfill obligations to assist migrants in distress at sea. This is partly because some countries, including Australia, deny entry to a ship that has rescued migrants on board. Thus, a key challenge for the international community is how to support ship masters to fulfill their obligations while at the same time combating the smuggling that leads to the need for rescue in the first place. The UN acknowledges that while the obligation to protect and assist persons rescued at sea is clear, how to uphold this in practice while also addressing migrant smuggling at sea is not. To date, Canadian decision-makers have made few, if any, suggestions on how to meet these obligations.

**Table 1. West Coast Migrant Smuggling by Ship Incident 1999-2010**

| Vessel Name  | Date          | Location   | Est. Length of Journey | Total Migrants | Minors | Adult Males               | Adult Females | Refugee Claimants | Exclusion Orders                                     |
|--------------|---------------|--|------------------------|----------------|--------|---------------------------|---------------|-------------------|--|
| Not reported | July 20, 1999 | North Vancouver Island                             | 39 days                | 123            | 9      | 96                        | 18            | 123               | None   |
| Not reported | Aug. 9, 1999  | Queen Charlotte Islands                            | 58-60 days             | 140            | 38     | 54 (not including 9 crew) | 39            | 130               | 1  |
| Not reported | Aug. 30, 1999 | North Vancouver Island                             | 30-35 days             | 190            | 16     | 145                       | 29            | 157               | 33   |
| Not reported | Sept. 9, 1999 | Nootka Sound                                       | 35 days                | 146            | 11     | 123                       | 12            | 139               | 7  |
| Ocean Lady   | Oct. 17, 2009 | Intercepted off Vancouver Island                   | 45 days                | 76             | None   | 76                        | None          | 76                | 15 refugee applications rejected and 4 accepted      |
| MV Sun Sea   | Aug. 12, 2010 | Intercepted 12 nautical miles off Vancouver Island | 90 days                | 492            | 54     | 413                       | 25            | 492               | 19 deportation orders; 6 claims accepted; 6 rejected |

Credit: author





Credit: Cpl Pier-Adam Turcotte

A boat from HMCS **Regina** helps escort the 350-foot commercial vessel **Ocean Lady** to Ogden Point, British Columbia, on 17 October 2009 in response to a request for assistance from the RCMP.

The main features of the new Canadian legislation, *Protecting Canada's Immigration System Act*, appear to be directed towards border protection and deterrence. For example, the Minister of Public Safety will now be able to designate the arrival of a group of persons into Canada as an "irregular arrival," and make those involved over the age of 16 subject to the new legislation. The government claims that the new legislation will make it easier to prosecute human smugglers. The law was amended to include new mandatory minimum prison sentences for convicted smugglers.<sup>6</sup>

The government has also amended the *Marine Transportation Security Act* (MTSA). Under the pre-existing MTSA, certain types and size of vessels bound for Canada had to file pre-arrival information at a specific time before entering Canadian waters. The amended MTSA has increased penalties for failing to provide this pre-arrival information, failing to comply with ministerial direction, and/or providing false or misleading information. It also provides increased penalties for repeat offences of this nature by individuals and corporations.<sup>7</sup> These kinds of policy measures seem to be influenced by the type of migrant smuggling incidents that have happened on Canada's West Coast.

When announcing the changes outlined above, the federal government reminded those in the shipping community

that the MTSA currently provides the Minister of Transport with the authority to direct any vessel to remain outside Canadian waters, to proceed out of Canada or to proceed to any place as specified by the Minister when there are reasonable grounds to believe the vessel may pose a security threat. Such powers would seem to imply that the irregular movement of migrants by ship is a security threat.

The CBSA plays a key role in preventing and detecting irregular migration and human smuggling ventures. Its primary focus is on pushing the border out by identifying and dealing with threats as early as possible. This means a greater focus on preventing the ships from leaving ports of origin in the first place. Jennifer Bourque, CBSA spokesperson, indicated in an email exchange with this author that "the government of Canada is taking a multi-faceted approach to detect and prevent human smugglers from departing for Canada through international cooperation and capacity building, investigating human smugglers and deterring human smuggling ventures."

Canada has also increased its international engagement with partners and allies overseas and has raised human smuggling in bilateral and multilateral discussions with governments throughout the Asia-Pacific region. As well, Canada has strengthened cooperation with transit countries. This has involved capacity building, information

exchange and identifying practices that will deter future human smuggling operations. Since late 2010, for example, Thailand has cooperated closely with Canadian enforcement officials in disrupting several potential human smuggling ventures. Thailand is not considered a source country for illegal migrants but has been used as a transit country by criminal syndicates.

The CBSA also participates in international forums on human smuggling – most recently, the working group that was established in Vienna at the end of May 2012. The CBSA has also provided input into government submissions for international conferences, including a meeting of the Bali Process workshop on irregular migration hosted in Kuala Lumpur in June 2012. Migrant vessels were part of the discussion at this meeting and Canada's approach to dealing with the problem was considered. CBSA officials in personal communication with this author indicated that they met with a Chinese delegation from the Guangdong Provincial Anti-Smuggling Office in September 2012. Yet, none of the CBSA's international meetings to date have been dedicated to the maritime transport mode.

Canadian government departments recognize their international obligations to deal with illegal migrant smuggling by ship. A number of federal departments are involved – CBSA, RCMP, Transport Canada/Canadian Coast Guard and the Royal Canadian Navy. What exactly is the role of the navy in illegal migrant smuggling by sea? In Atlantic Canada, RCN Captain Steve Wilson was the lead exercise planner for Exercise Frontier Sentinel 12. Captain Wilson stated in a personal interview with this author that “[t]he main objective of one training scenario was to practise the activation of the regional migrant vessel plan and the different government departments' roles and responsibilities, including the boarding of a vessel and the processing of 70 migrants.”<sup>8</sup> The scenario was part of the annual Joint Task Force Atlantic, US Fleet Forces, US Coast Guard exercise that also involved federal and provincial government departments, hospital officials and non-governmental agencies such as the Red Cross. During our discussion, Captain Wilson stressed the importance of such collaborative exercises in helping the RCN and other departments and agencies to develop a better understanding of their interoperability capabilities and



Credit: Corporal Martin Roy, Formation Imaging Services, Halifax, Nova Scotia

HMCS *Summerside* (left) and HMCS *Moncton* (right) at Sydney Marine Terminal jetty during Exercise Frontier Sentinel 12.





Credit: Mass Communication Specialist 3rd Class Christopher Farrington, USN

*Armidale-class patrol boat HMAS Albany in the Timor Sea in April 2012. These ships patrol the waters around Australia, and are designed for standard patrols of 21 days, with a maximum endurance of 42 days.*

resource requirements. The situation in Atlantic Canada is somewhat different than the Pacific Coast but the insights gained from the training exercise will be available for all naval planners.

What many Canadians may not realize is that the navy does not play a lead role in stopping human smuggling by sea; it plays a supporting role for other departments. Not only must the navy's involvement be requested by the lead law enforcement agency, the lead agency also retains full responsibility for conducting any operation. Thus, in the instance of migrant smuggling, the use of naval resources for a constabulary function (i.e., policing and managing the tasks that take place in Canada's territorial waters and Exclusive Economic Zone) is in support of other departments' mandates and jurisdiction.

Some observers have suggested that the new Canadian approach is modeled after the policy responses of the Australian government. To reduce the flow of maritime migrants, Australia has explored a range of options, most notably turning back suspected irregular entry vessels from Australian waters and assessing asylum claims outside of the country. For example, from 1999-2011 a number of turn-back operations were led by Australian Defence Forces.<sup>9</sup> One thing that the Australians have learned is that migrant smugglers do not operate in a uniform manner or have a standard business model.

Dr. Andreas Schloenhardt at the University of Queensland has observed that the Australian navy's role in addressing

human smuggling by sea has become politicized. Recently, retired navy officials have criticized the country's approach to the migrant issue. Dr. Schloenhardt has concluded that "after a decade of scare campaigns about 'floods of asylum seekers,' of attacks on so called queue-jumpers, of demonising migrant smugglers, and drastic measures that turned around boats and detained thousands of genuine refugees on remote islands for months and years, Australia is left with a lot of empty rhetoric, criticism by the international community and human rights organizations, and with no clue about how to prevent the smuggling of migrants to its shores."<sup>10</sup>

Dr. Schloenhardt's research reveals that "the nexus, if any, between migrant smuggling and organized crime also remains poorly understood.... If prosecutions are to have any impact on migrant smuggling ventures ... the focus must shift from prosecuting those at the end of the chain to those higher up in the organizations who arrange for, and profit from, these ventures."<sup>11</sup> This can be a problem, however, because the criminal leaders involved in organizing migrant smuggling are often outside of the geographic location of the recipient coastal states. Thus, it is extremely important for countries to cooperate and share criminal intelligence as part of a strategy to deal with migrant smuggling. During an email discussion with the author, Dr. Schloenhardt indicated that he was not aware of how much criminal intelligence is shared in individual cases, but he suspected that there were major reservations about Indonesian and Malaysian cooperation with Australia.



## Conclusions

While Canadian exporters may lament the long distance from international markets, Canada's distance from the world's major population centres has an influence on the scale of illegal migrants arriving by sea.

To the extent that the recent changes to Canadian legislation create a disincentive for those who organize maritime migrant smuggling, there would seem to be some justification for a revised approach. Yet, there is ample reason to question certain aspects of Canada's current policy approach. It remains to be seen if there is validity to the federal government's contention that large-scale arrivals of irregular migrants make it difficult to investigate properly and whether those who arrive on Canada's shores pose a risk to Canada. Based on the available evidence, Canada may indeed experience periodic episodes of large-scale irregular migrants but it does not appear to face a tsunami of illegal migrants arriving by ship – as Table 1 illustrates, from 1999 to 2010 there was a total of only 1,117 refugee claimants smuggled by sea to BC. The scale of the navy's recent training scenario suggests that at least on the Atlantic coast government officials are not planning for a major incident.

Credit: Jonathan Hayward, Canadian Press



Prime Minister Stephen Harper and Citizenship Minister Jason Kenney aboard MV *Ocean Lady* in Delta, BC, February 2011.

Data secrecy makes it hard to determine if any RCMP, CBSA or RCN efforts, such as collaboration or sharing criminal intelligence, have been effective in preventing further maritime incidents from happening at the overseas point of departure. It is difficult, however, to accept at face value the assertion made by the Ministry of Citizenship, Immigration and Multiculturalism that the large-scale arrival of illegal migrants smuggled by maritime transport is undermining Canada's security. In addition, notably absent from the new policy announcements is any discussion of steps that Canada is undertaking to fulfill international obligations to rescue and afford protection

to irregular migrants at sea, or to provide practical guidance to support ship masters to fulfill their obligations when faced with such a difficult situation.

In addition to their constabulary role, maritime forces also make an important contribution to Canada's foreign policy objectives. This raises an important question of whether the navy should be used to turn back migrant vessels in Canada's Exclusive Economic Zone, or become involved in surveillance and deterrence efforts in regions of the world far from Canadian waters, and where international cooperation is truly needed to combat the problem effectively. 🍷

## Notes

1. United Nations Office on Drugs and Crime (UNODC), *Smuggling of Migrants: A Global Review and Annotated Bibliography of Recent Publications* (Geneva: UNODC, 2011).
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# Perseverance: Some Reflections on 50 Years of the Canadian Sea King

John Orr

This summer will mark 50 years since the arrival of the first Canadian Sea Kings at Shearwater. What follows is a sampler of some of the more significant developments in those 50 years. As will be appreciated, it is impossible to cover the whole period in a few pages and therefore, the following four topics are examined: procurement and fleet introduction; the first Gulf War (*Operation Friction*); Somalia (*Operation Deliverance*); and Sea King activities in 2010.

## 1963-1969 Procurement and Fleet Introduction

With the arrival of the nuclear-powered submarine in the mid- to late 1950s, the Royal Canadian Navy (RCN) faced a profound dilemma as the balance of anti-submarine warfare (ASW) swung dramatically in favour of the submarine – some would say forever. The upshot was that an upgrade of Canada's ASW forces was in order so that Canada could meet its alliance obligations.

On the air side, first the Tracker (1956) and then the Argus (1957) were introduced. On the surface side, the aircraft carrier *Magnificent* was replaced by *Bonaventure* – a far more capable platform with an angled flight deck, steam catapults and a mirror landing system. This left a deci-

sion as to what to do with the *St. Laurent*-class escorts, commissioned in 1955, and the Sikorsky HO4S-3 ASW helicopter which had been introduced in 1955 as well but operated exclusively from the aircraft carrier and only in daylight conditions.

The RCN of this period was a hotbed of revolutionary ideas. This was the era that led to the development of the variable depth sonar and the modern ASW hydrofoil, HMCS *Bras d'Or*. The challenge for destroyer-escorts such as the *St. Laurent* was how to extend the ship's detection and attack range to be able to handle nuclear-powered submarines.

One concept that merited further evaluation was the marriage of an ASW helicopter with an escort-sized vessel – a concept that was later termed the 'DDH concept' – which would vault Canada and the Canadian navy to the forefront of maritime helicopter aviation. To evaluate the concept, a series of trials was carried out onboard two escorts of the day. The first was conducted in 1956 in HMCS *Buckingham* using a temporary flight deck installed over the anti-submarine mortar. These trials illustrated one of the inherent challenges of operating a helicopter at sea. It is relatively easy to land it on deck but the problem is how to secure and handle the helicopter once it is there.

The trials in *Buckingham* were followed by trials in *Ottawa*, one of the new *St. Laurent*-class destroyer-escorts. The same temporary flight deck that had been mounted in *Buckingham* was transferred to *Ottawa* and a Sikorsky S-58 was borrowed from the Royal Canadian Air Force (RCAF) for a trial in the North Atlantic in company with *Bonaventure*. Both sets of trials indicated that it was possible to operate a helicopter from an escort for a significant portion of the year. It also became clear that a hangar was essential. In fact, the RCAF helicopter suffered so much corrosion damage that it required a special inspection at the contractor's upon return.

Additionally, the report of the trials indicated that "the pilot does not require any special skill or knowledge in this particular application of helicopter operations."<sup>1</sup> The report went on to recommend that "in view of the favourable



The first Canadian Sea King was accepted by Lieutenant-Commanders Shel Rowell, CO VX 10, and Ted Fallen, CO HS 50, on 24 May 1963 at the Sikorsky plant in Stratford, Connecticut.





How do you secure a large helicopter on a pitching ship's deck at sea? Very carefully!

results of these trials and the tactical potential that can be afforded by a helicopter operational platform, the *St. Laurent* and *Restigouche*-class escort vessels should be modified without further delay.”<sup>2</sup> And so the decision was made to modify the *St. Laurent*-class escorts to accommodate an as-yet undetermined ASW helicopter to operate from these ships.

Now all that had to be done was to select a helicopter. The competition eventually ended up between the Kaman Seasprite and the Sikorsky Sea King. Both helicopters were undergoing their USN acceptance at approximately the same time. The Seasprite was a new single-engine utility helicopter and the Sea King was a new, purpose-built, twin-engine anti-submarine helicopter. From the navy's perspective, the Seasprite was the preferred option for the escort-based ASW helicopter, principally because of its size. The RCN persuaded the Treasury Board that this helicopter, suitably modified to carry a tethered sonar, was the answer.

At this point, one of the key players in the Canadian Sea King saga enters the picture. His name was Joe Sosnkowski and he was an RCN jet fighter pilot. He attended the USN test pilot course in Patuxent River, Maryland, in 1960 and topped his class. The USN knew that Canada was in the market for a new helicopter and offered a position to Sosnkowski to participate in the Seasprite Evaluation Team.

To put it mildly, Sosnkowski was not a fan of the Seasprite. Some of his reluctance may be traced to a horrendous crash that he survived following a gearbox malfunction.

After the crash, Sosnkowski had the following conversation with the occupant of the house in whose backyard they had landed:

Well, he came out, there was a bit of blood around and these two people lying in his bushes and he came out, a shift worker, in his underwear. He asked me, “What are you doing here?” and I said, “Well, what does it look like, we came to mow your lawn!”<sup>3</sup>

Sosnkowski reported the problems relating to the Seasprite up the line to Ottawa. Coincidentally, the Seasprite was already in trouble as negotiations for a firm, fixed price between Kaman and the Department of Defence Production had revealed that the cost had increased substantially.<sup>4</sup>

The upshot was that the RCN acquired the Sikorsky Sea King to replace the HO4S-3 in both the carrier role and destroyer-escort role. In all, 41 Sea Kings were acquired. The first four were manufactured in the United States and the remaining 37 were assembled in Canada at United Aircraft of Canada Limited, now Pratt & Whitney Canada, in Montreal. The first ‘Canadian’ Sea King, 4005, was accepted on 27 August 1964 and the final aircraft was delivered to Shearwater, Nova Scotia, on 3 May 1969. It was anticipated that the Sea Kings would have to be replaced beginning in 1975!

Much of the success of the Sea King in Canadian service is attributable to the development of the ‘instantaneous securing device’ or more formally the Helicopter Haul-down and Rapid Securing Device – commonly referred to as the Beartrap. Once again, Joe Sosnkowski features prominently in this as he had recently returned to VX 10, the RCN's Air Experimental Squadron, as the Project Pilot for the evaluation of the hauldown system.

In his account of the project, the VX 10 Project Engineer, Peter Charlton, wrote that Commander John Frank, Director of Aircraft Design and Development in Naval



The Sikorsky Sea King was selected to replace the HO4S-3 in the carrier role as well as for the destroyer-escort role.



Headquarters, came up with the idea for the rapid securing device by using his son's Meccano set. The concept that emerged was a set of opposing beams inside an approximately three-foot square frame that would lock around a probe on the aircraft to secure the helicopter to the flight deck. Once the aircraft was shut down, it would be centred inside the frame and then traversed into the hangar without the requirement to manhandle the aircraft on deck. To assist the pilot in landing inside the Beartrap, it was decided to use a constant tension winch on a cable to guide the helicopter to a landing position. Reflecting on the concept several years later, Commander Frank noted that "there were many skeptics, not only within the R.C.N., but in the U.S.N., R.N., the helicopter industry and even in the Treasury Board."<sup>5</sup> But the system worked, and the skeptics were gradually won over.

*Annapolis* was the first ship cleared for flight operations with the Beartrap in April 1967, although she was restricted to daytime operations. With the completion of night flying and heavy weather trials, the system was cleared for day and night operations to 30 degrees of roll and 9 degrees of pitch. The final ship, *Margaree*, was eventually declared fully operational in November 1968.

The techniques developed by VX 10 for what has become known as 'ship-helicopter interface testing' are now commonly accepted around the world. Canada literally wrote the book on ship-helicopter operating procedures and provided the expertise that standardized these operations in NATO, inter-American, Middle Eastern and Pacific navies and coast guards.

### ***The First Gulf War 1990***

It is now time to fast forward through the Cold War until we arrive at August 1990. On 1 August, the Sea Kings at Shearwater were busy preparing for the fall NATO exercise. On 2 August, when Iraq invaded Kuwait, the Sea King saga took a dramatic turn. In fact, the preparation of the Sea Kings for *Operation Friction* and their subsequent deployment and operations in the Persian Gulf were, without question, the Sea King community's finest hour. This also set in train a series of events that would dramatically change the role of the Sea King from an anti-submarine helicopter to a surface surveillance platform.

The time-line for *Operation Friction* was very compressed. The Warning Order was received at Shearwater on 10 August and over the weekend of 10-12 August, the opera-



*This photo illustrates early tests of the Helicopter Hauldown and Rapid Securing Device – the innovative Beartrap system.*

Credit: <http://www.seaking50.ca>

tional and maintenance staff at Shearwater and Maritime Air Group Headquarters determined the roles, missions and aircraft configuration for the deployment. Then the staff had to explore price and availability, procure, ship, design, manufacture, build prototypes, install, test, evaluate and deploy some seven major and a number of minor modifications on the Sea King.

The key to getting the Sea Kings ready for the deployment was the establishment of an Installation Control Team at Shearwater that placed all the relevant engineering and operational staff in one place. The major items installed for *Operation Friction* were the following:

- forward-looking infra-red (FLIR) camera system;
- infra-red guided-missile countermeasure system;
- radar warning receiver;
- Global Positioning System (GPS); and
- C-9 light machine gun with a 5.56 round.

All of this equipment was installed in two weeks, and on 24 August, five modified Sea Kings were embarked in *Athabaskan* and *Protecteur*. During *Operation Friction*, the deployed Sea Kings flew a total of 2,500 hours and achieved an aircraft availability and mission completion rate of 98% – no mean feat!<sup>6</sup>

### ***Somalia 1992-1993***

The next major event during the early 1990s involved the deployment to Somalia (*Operation Deliverance*). During this operation, the Sea Kings spent more time in operations over land than over the sea. In fact, it was suggested that the aircraft's name should be changed to *Sand Kings* from *Sea Kings*.<sup>7</sup>



This shows the first flight of Sea King 440. HMCS Athabaskan's replacement Sea King was delivered to Malaga, Spain, 8 March 2006.

On 4 September 1992, HMCS *Preserver* and her assigned helicopter detachment were initially issued a Warning Order for *Operation Cordon* in which it was intended that *Preserver* support the Canadian Airborne Regiment ashore in northern Somalia. *Preserver* left Halifax on 16 November with three Sea Kings and on 5 December, as she was nearing her destination, the ship was informed that the operation was cancelled due to the rapidly changing situation in Somalia. Eventually, *Preserver* was tasked to be part of the US-led coalition forces in Somalia and would support a Canadian Joint Force Headquarters Staff as well as a Canadian battle group ashore as part of *Operation Deliverance*. After provisioning, the ship finally arrived off Mogadishu, Somalia, on 13 December 1992. The helicopters were pressed into service immediately with their primary task to sling supplies to the Canadian battle group deployment area, an airfield near the town of Baledogle, about 55 km to the northwest of Mogadishu.

When the battle group was later relocated to Belet Uen nearly 400 km inland, it became obvious that slinging stores by helicopter was no longer an option and it was decided instead to sling stores ashore to the Mogadishu airport from where a Canadian C-130 Hercules would fly them on to Belet Uen. The helicopters would ultimately transport nearly 300 tons of army stores during this phase of the operation.

When the battle group carried out its road move from Baledogle to Belet Uen, the Sea Kings provided route reconnaissance. Illustrating their flexibility, the Sea Kings were then switched to providing overland reconnaissance for the Canadian battle group in its area of operations. These flights were of long duration and refueling in Belet Uen was necessary on both the outbound and return legs. The forward-looking infra-red (FLIR) camera, with its video replay capability, was key to this task.

When it was discovered that the Sea Kings were the only aircraft with this equipment in theatre, they were in high demand to conduct nightly reconnaissance sorties for the coalition forces and were airborne nearly every night during the month of February 1993. One of these flights was of particular interest. On the night of 21 February, a FLIR search was conducted northeast of Kismayu, a coastal city south of Mogadishu. A review of FLIR tapes from an earlier mission had revealed what appeared to be 300 troops on a

road approximately 14 miles from the city. After carrying out an initial pass over Kismayu at 300-400 feet, the crew commander related:

We proceeded out over the harbour to discuss the situation and what to report. To get an accurate picture of the battle, we decided on one more pass in the opposite direction. Unfortunately, the harbour was well-lit and the moon was to our backs, so the troops, alerted to our presence after the first pass, were ready and had a better target.... [While evading the small arms fire] the TACCO stuck his head up front in time to see .50 calibre tracer cross 100 yards ahead of the nose. He decided not to look out again.<sup>8</sup>

All in all, this deployment was successful for both *Preserver* and her helicopter detachment – the Sea Kings, the maintainers and the aircrew had demonstrated, yet again, their inherent flexibility.

### 2010: A Year in the Life

It is now time to fast forward again, this time to 2010. Regrettably, this means skipping over the Canadian at-sea response to the 9/11 attacks as the Sea Kings, along with the navy, supported a demanding and prolonged series of deployments to the Arabian Sea in *Operation Apollo*.

The year 2010 was an exceptional year – even by Sea King standards. The year began with *Fredericton* conducting operations in the Internationally Recognized Transit Corridor for counter-piracy operations in the Horn of Africa. In this capacity, the helicopter conducted routine surface surveillance patrols to build a recognized maritime picture. Following this, *Fredericton* carried out a port visit to Dubai in mid-February and while there, an aircraft exchange was carried out by an RCAF C-17. Both *Fredericton* and her new Sea King performed well





Members of the community of Tiburon in Haiti watch the landing of Sea King transporting bags of rice in September 2008.

and after conducting operations in the Gulf and Strait of Hormuz, the ship headed home on 8 April to arrive in Halifax on 4 May.

Back in the Western Hemisphere, on 12 January 2010 a devastating earthquake struck Haiti. *Athabaskan* and her helicopter deployed from Halifax 36 hours later on 14 January in order to provide disaster relief as part of *Operation Hestia*. In this operation, the Sea King once again demonstrated its inherent flexibility. Initial flights were spent in conducting reconnaissance and then the heavy lifting began. The Disaster Assistance Response Team (DART) and its equipment were airlifted from Port-au-Prince airport to Jacmel and the Royal 22<sup>nd</sup> Regiment was moved from Jacmel to Leogane. Next, the Sea King was slinging fresh water in 750 litre containers called Rhinos from *Athabaskan* and *Halifax* to depots ashore. In all, *Athabaskan's* Sea King moved 597 personnel and nearly 10 tons of equipment and supplies to assist the people of Haiti. Included in that weight total are 63 Rhinos, equivalent to nearly 50,000 litres of water delivered ashore.<sup>9</sup> *Athabaskan* returned to Halifax on 17 March having completed a successful and rewarding deployment.

At the same time the Sea Kings were involved in operations in the Arabian Gulf and Caribbean, they were also involved in *Operation Podium* in support of the RCMP-led Integrated Security Unit during the 2010 Vancouver Olympic Games (12-28 February) and the Paralympic Games (12-21 March). Three helicopters and

the accompanying personnel were transported from Shearwater via C-17 to augment the helicopters, maintenance crews and aircrews of 443 Squadron in Patricia Bay.

During *Operation Podium*, the Sea Kings proved to be the most versatile of the assigned aircraft and carried out the widest variety of tasks. Missions were divided between the Maritime Component Commander who required daily surveillance of the approaches to Vancouver through dawn and dusk patrols, and the Air Component Commander who would task the Sea Kings for personnel transfers, logistics runs and RCMP support. Happily, everything went smoothly and the Sea Kings returned home without incident.

Back on the East Coast, HMCS *Montreal* carried out ship-helicopter operating limits trials for the Cyclone helicopter – using the same techniques and procedures developed by VX 10 nearly 50 years before.

The next major activity took place in Ontario where from 16-30 June, the Sea Kings participated in *Operation Cadence*, which was Canadian Forces support to the RCMP-led Integrated Security Unit for the G8 (Huntsville, ON) and G20 (Toronto, ON) Summit meetings. For this operation the Sea Kings were formed as a Rotary Wing Air Intercept Detachment to respond to low/slow aircraft operating in the restricted zones surrounding the summit sites.

While the Sea Kings were standing guard over the summits, *Calgary* and *Algonquin* departed Esquimalt on 14 June for the Rim of the Pacific Exercise (RIMPAC) 2010. *Calgary* returned home on 30 July while *Algonquin* continued on a SOUTHPLY to South America in which she was joined by *Vancouver*. Both ships returned home on 18 October.

Next, *Toronto* sailed from Halifax for *Operation Caribbe* from 7 September to 20 October. Two patrols were conducted in the Caribbean Basin and during the latter part of the second patrol, a US Coast Guard Law Enforcement Detachment was embarked in *Toronto* under the terms of a newly approved Memorandum of Understanding.

On 21 September, Hurricane Igor struck Newfoundland and three Sea Kings were promptly deployed to Gander to provide humanitarian assistance to outlying communities cut off by the hurricane and to carry out damage assessment.

And if these missions were not enough, throughout the year, Sea Kings held the Primary Search and Rescue (SAR) Standby Role for their respective SAR regions on both coasts as the Cormorant SAR helicopter experienced





Credit: Corporal Roderick Hopp, CFB Esquimalt a Services

A Sea King from 443 Squadron in Victoria, BC, takes off from HMCS *Discovery* in Vancouver, BC, during Exercises Pegasus Guardian 3 and Spartan Rings, 19 October 2009, in preparation for the Vancouver Winter Olympics.

ongoing serviceability problems. As well, *Operation Sabot* (counter-drug) operations were conducted in support of the RCMP, and coastal patrols were carried out on both coasts as tasked by the respective coastal commanders.

Looking back on 2010, it is hard not to think that it was perhaps an atypical year. However, reflecting on the 50 years of Canadian Sea King operations, it can safely be claimed that no year was ever typical. Each challenge was surmounted in one way or another by dedicated personnel who have left a legacy that is hard to imagine will ever be duplicated.

## Conclusion

There are plenty of lessons to be learned from the Canadian Sea King experience. First and foremost, the aircraft, despite its age, continues to make a positive contribution to supporting the interests of Canada and Canadians both domestically and abroad. That the Cyclone helicopter could deliver so much more underlines the necessity for its prompt introduction.

Secondly, the aircrews have consistently demonstrated a high degree of innovation, flying skill and dedication. And they do this despite the fact that they are often thrust into last-minute deployments to foreign environments and missions for which they have had little formal training.

Likewise, the maintenance personnel, upon whose shoulders the principal effort for the continued operation of the

Sea King falls, have time and again demonstrated competence, ingenuity and stamina in keeping a sometimes recalcitrant aircraft flying safely. As well, staff at all levels, complemented by supply and civilian maintenance organizations, have contributed immensely to the success achieved by those on the flight deck and the flight line.

And finally, despite the carping of all the naysayers, the soundness of the DDH concept has been fully vindicated. Bravo Zulu Sea Kings! 🇨🇦

## Notes

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# Protection of Canadian Ships Against Piracy

Hugh Williamson

It's a common error to think that Canada has very few Canadian flag vessels sailing the world's oceans and involved in international maritime commerce. This may be true in terms of larger cargo-carrying vessels but there are numerous smaller tugs, offshore supply vessels, research and survey ships and cable ships which regularly operate internationally, and often find themselves in waters frequented by pirates. These vessels will provide a tempting target for pirates, since they are small, have low freeboards and operate at relatively slow speeds. Canada does not provide a suitable operational and legal environment for the protection of these vessels, and it is not alone in this. Canada should take the opportunity to improve the protective environment by making some necessary legislative changes rather than waiting until the first Canadian vessel is captured before taking action.

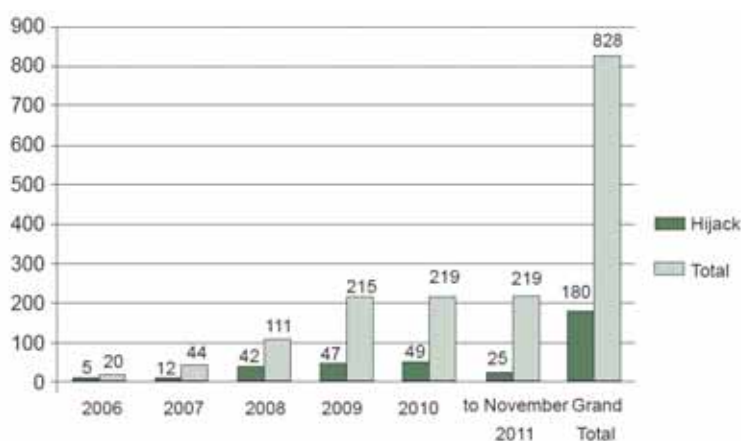
Piracy, and the armed robbery of vessels at sea, is an old problem. But contemporary piracy and the taking of vessels in territorial waters have exposed the shortcomings of both international and national laws in dealing with the problem.<sup>1</sup> Piracy, as it is defined under international law in the UN Convention on the Law of the Sea (UNCLOS) Articles 100-105, takes place on the high seas, and involves an attack on a vessel by a second vessel. Piracy is considered a crime of universal jurisdiction, meaning that any state can arrest and prosecute pirates found on the high seas. Attacks which take place within the 12 nautical mile territorial seas are under the criminal jurisdiction of the coastal state and are not considered piracy for the purposes of universal jurisdiction.

Due to the proliferation of pirate attacks off the Horn of Africa in recent years, there has been a flurry of activities, international agreements, operational responses and scholarly legal analysis on the problem. Because most of the piracy was rooted in Somalia, under the authority of several UN Security Council Resolutions, the universal jurisdiction for high seas piracy was extended into the territorial seas and on to the land of Somalia.<sup>2</sup> This allowed foreign militaries to take action against suspected pirate vessels or pirate bases ashore. It was made very plain, however, that this situation applied only to Somalia, and did not expand the international laws dealing with piracy with respect to other states. So, while the responses to pirate attacks off the Horn of Africa have led to the development of practices and policies for the prevention and suppression of piracy, these are not always

transferable to other areas around the globe. What is appropriate and legal will depend on how international law is being interpreted, and how the national law of the coastal states is being applied.

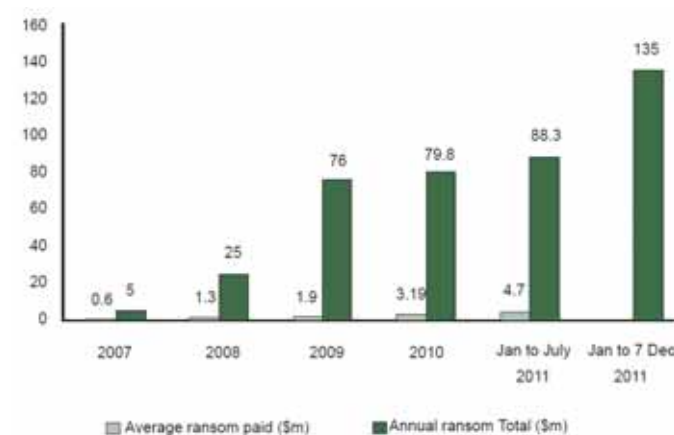
The international maritime shipping community has produced a number of recommended practices, referred to as 'best maritime practices' (BMP4), for the use of ships transiting or entering ports in areas frequented by pirates and armed gangs.<sup>3</sup> These are essentially self-protective measures, including maintaining adequate

**Table 1. Total Attacks and Hijackings by Somali Pirates as of November 2011**

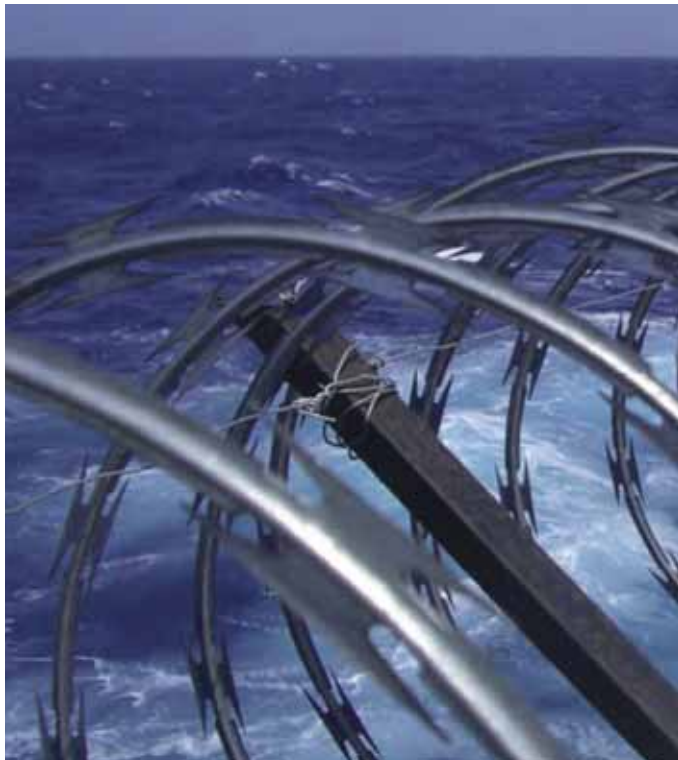


Source: International Maritime Bureau

**Table 2. Ransom Paid Each Year to Somali Pirates**



Source: UK Parliament, House of Commons, Foreign Affairs Committee, "Piracy off the Coast of Somalia," Tenth Report of Session 2010-12, p. 56, citing the Foreign and Commonwealth Office and NATO.



Barbed, self-defence rails for ships help deter pirates.

lookout, locking external hatches and doors, reporting to local naval authorities, stringing barbed wire along the ship sides to discourage access, etc. While offering some protection and reducing the number of successful attacks, these practices have by no means prevented all pirate hijackings. As a response, more robust (i.e., armed) precautions have been put in place by many ship operators. While initially discouraged, these practices have over time been tacitly accepted by the International Maritime Organization (IMO) and other shipping organizations.<sup>4</sup> This leaves commercial shipping operators in the position of having to determine the level of protection necessary for their vessels, and the options available for its provision. The major considerations will be what is practicable, affordable, available and legal. For Canadian ship operators the answer to this is by no means clear.

There are three options for providing armed security on commercial vessels. These are self-protection, military protection and private security protection. Depending on the national laws and policies of the country of ship registration, these options may either not be available or, alternatively, they may be mandatory. There is no consistent international legal practice on the subject, and a considerable variation among flag states. The situation for Canadian-flagged vessels is similar to most maritime jurisdictions in that there are no specific national legal requirements dealing directly with the subject. Instead, while no specific Canadian law or policy exists, vessels are “expected to comply with all relevant Canadian legislation.”<sup>5</sup> This is generally interpreted to include the *Canada Shipping Act*, Criminal Code of Canada, Canadian firearms legislation and Canadian customs import and export regulations. Since the government has not provided a direct solution, the best that can be done is

to analyse the options available and the consequences of implementation.

The first option for a ship operator is self-protection. While in earlier centuries, merchant ships were often armed, both for self-defence and as privateers, current international law does not recognize the right of a merchant vessel to carry offensive naval weaponry. This right is restricted to warships. Merchant ships may carry small arms, subject to their national legislation, but the IMO and the insurance industry have discouraged shipowners from arming their crews, especially for counter-piracy purposes.<sup>6</sup> This is due to concern about the lack of specialized training in the use of weapons, and the reluctance of crews to take on the additional duty of providing armed security. The insurance industry also feels that arming crews would increase the likelihood of a serious accident if an untrained crew engaged in a firefight with a suspected pirate gang.

The second option for ship protection, and the one which is regularly demanded by the international shipping community, is protection provided by naval or other military forces. This can mean either providing a warship as an escort or embarking a vessel protective detail (VPD) of armed military personnel. Currently there are warships of a number of states off the Horn of Africa as part of NATO (*Operation Ocean Shield*), European Union (*Operation Atalanta*), joint naval forces (Combined Maritime Forces CTF 151) or individual states (Russia, China, Ukraine) patrolling to form convoys or escort individual ships. While this strategy appears successful, it is an expensive option and one which is unlikely to be duplicated off West Africa or in Southeast Asian waters. Warships have an internationally recognized role in the suppression of piracy on the high seas (UNCLOS Article 29), but they have no right to enter the territorial seas of another state for enforcement purposes without either UN Security Council authorization or a formal agreement with the coastal state. Warships could arguably escort vessels through territorial seas in innocent passage, and while in proximity take measures to protect them in the event of an attack. This situation would also apply while passing through international straits under the regime of transit passage (UNCLOS, Articles 38, 39). The problem is that in some cases states bordering the straits have made it clear that action by foreign warships is not permitted – this is the case in the Straits of Malacca.<sup>7</sup>

There are two alternatives for Canadian vessels present in waters where pirates operate. First, there is military escort. However, this is not a viable option as it is unlikely that a Canadian warship will be present for escorting duties when vessels are transiting in distant waters. Foreign naval vessels may be in proximity but could not



be specifically ordered to escort a Canadian ship. The other situation is that Canadian vessels may be working in these waters in an offshore support or scientific research capacity, rather than in innocent passage, and are thus operating under the authority of the coastal state. In this capacity, they are likely to be present for a considerable time making them an attractive target for piracy. Any Canadian warship accompanying them would be in violation of the rules of innocent passage and could only be present with the consent of the coastal state.



Credit: Aijaz Rahi, AP

Indian police disembark the Italian cargo vessel *Enrica Lexie* during an investigation into the shooting of fishermen by the ship's security team, which mistook them for pirates.

A second alternative would be to provide a Canadian vessel with a protective detail of armed Canadian military personnel. Since they would be present on a Canadian-flagged vessel they would be subject to Canadian jurisdiction. While some countries have legislation about this – under Dutch law, for example, Netherlands-flagged vessels may not use private security guards but may obtain a military VPD at cost – there are no Canadian laws to allow the deployment of Canadian military personnel on board Canadian merchant vessels. In Canada, the military is normally called out to provide ‘aid to the civil power’ at the request of the provincial Attorneys-General in situations of emergency. This would not apply to providing armed guards on ships. Moreover, the Canadian military is not permitted to compete with Canadian companies in providing commercial services.<sup>8</sup> Since there are several Canadian companies providing armed vessel protection services, Canadian Armed Forces VPDs would probably not be authorized. Furthermore, because VPDs would remain under military chain of command there would also need to be clear lines of authority and communication between the military authorities and the ship’s owner and captain. Moreover, should the vessel enter into a foreign port, or be present in the territorial seas for other than innocent passage, there would need to be a status of forces agreement, memorandum of understanding, or diplomatic note between Canada and the coastal state concerning the presence of Canadian military personnel.

Until recently, a national VPD operating on board its own flagged vessel and on the high seas was considered not to be subject to the jurisdiction of another state. This is currently being challenged in a dispute between Italy and India involving the tanker M/V *Enrica Lexie*. In February 2012, a VPD of Italian Marines stationed on board *Enrica Lexie* fired what they claim were warning shots at an approaching vessel and killed several crew members of an Indian fishing boat. This took place beyond Indian territorial waters but India arrested the Marines and is

putting them on trial in an Indian court. There have been a number of diplomatic incidents resulting from this case and it remains to be seen how international law will be interpreted. It is widely accepted, however, that the presence of a VPD does not accord warship status to a commercial vessel.

In several countries, notably Nigeria, commercial vessels are required to take a national military VPD on board for protection while in port, at anchor, or working within the territorial sea.<sup>9</sup> The service must be paid for by the shipowner. This would be a commercial contract between the shipowner and the national government of the VPD, and not involve the Canadian government. However, if criminal or other actions took place on board involving the VPD and a Canadian crew, Canada would have concurrent jurisdiction as the responsible flag state.

The final option for ship protection is private maritime security companies. The use of a private security contractor to provide armed security guards to protect the vessel while in transit or operating in dangerous waters is more common than using military forces. It has become a common industry practice, especially off the Horn of Africa. This practice, however, leads to a number of legal problems which have not yet been resolved.

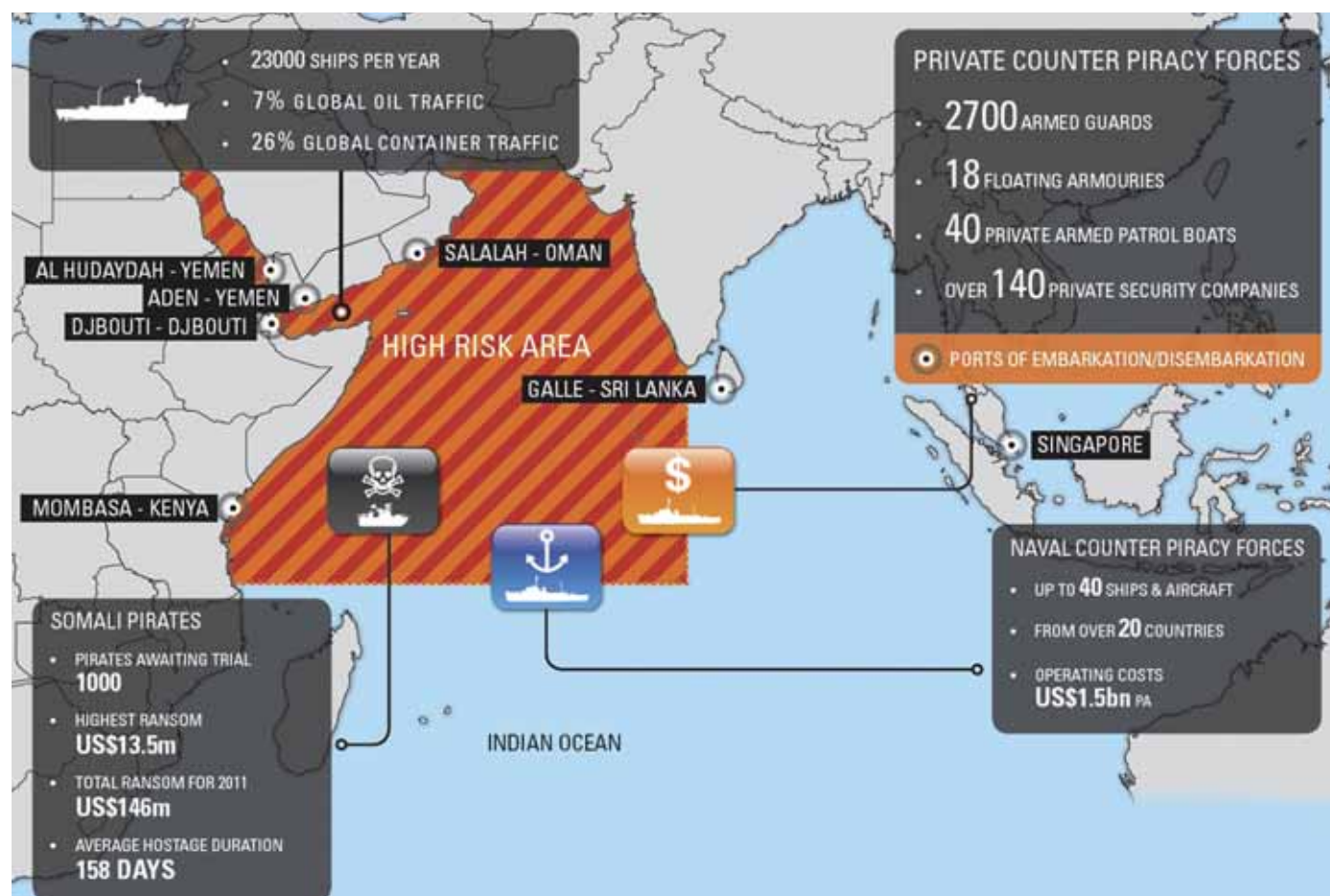
A private maritime security company (PMSC) is in the business of providing privately contracted armed security personnel to commercial ships for protection against pirates and armed robbers. There are currently numerous companies, of varying standards of competence, offering the service on a global basis. A shipowner enters into a contract with the security company to provide an armed presence. The Baltic and International Maritime Council (BIMCO), an international shipping organization representing shipowners, has developed the standard form contract (GUARDCON) for use by the industry, which among other things specifies the level of service and the responsibilities and authorities of both the ship captain and the private security detail.

There is a wide variation among the PMSCs in terms of training and experience of personnel and the level of service and oversight which will be provided. Following a number of serious incidents in the private security field, most notably in Iraq and Afghanistan, several industry associations have been established to provide increased standards of performance and accountability. The Security Association of the Maritime Industry (SAMI) and the International Association of Marine Security Professionals (IAMSP) are both working to increase the level of professionalism in the industry, and have developed vetting criteria and codes of conduct for their membership. Also, the International Standards Organization (ISO) and the American National Standards Institute (ANSI) have developed quality assurance standards for the accreditation of PMSCs.<sup>10</sup> Several companies are currently undertaking accreditation, however none have achieved certification as of the time of writing in June 2013. The Norwegian war risk insurance group DNK has also published guidelines for its members in the selection of private security contractors.<sup>11</sup>

For Canada, there is an additional problem of jurisdiction. Under Canadian law, maritime transportation and

shipping are the responsibility of the federal government, while the regulation of private security companies comes under provincial jurisdiction. Thus, the federal nature of Canada and the way that jurisdiction is divided complicate the legislative framework in terms of protection against piracy.

Among the most contentious issues facing merchant vessels is the presence and use of firearms on board by VPDs, private security personnel or the ship's crew. The primary legal jurisdiction over the vessel is that of the flag state, and so national firearms legislation will apply on board the state's ships. In addition, the national legislation of any port state will apply when a vessel enters into territorial waters for non-transit purposes. This means that for a Canadian ship, anyone possessing a firearm would need to possess a Canadian firearm license, restricted weapons such as handguns would need to be registered, and prohibited weapons such as assault rifles, automatic weapons, military sniper rifles, pepper spray or taser-like weapons would not be permitted. As the latter weapons are part of the standard equipment of private security teams, this would put any Canadian vessel at a disadvantage when facing heavily armed pirates. For this reason,



Pirates and private security companies in the Indian Ocean September 2012 compiled by the Lowy Institute for International Policy.

Credit: James Brown, Lowy Institute



while there are a number of Canadian-owned PMSCs, most are registered overseas.

It is unclear how Canadian customs law relating to the import or export of firearms would apply to the situation of armed security teams on board ships. Most jurisdictions require that a ship entering its port report the presence of any weapons and provide details of their storage. Some states allow the weapons to be retained under seal, while others such as Canada may forbid the possession of certain types of weapons. There have been two responses to these requirements. The first is that PMSC teams will sometimes dump their weapons over the side when they reached the 12 mile territorial limit prior to entering harbour. The second is the development of operator support vessels which are essentially floating armories which wait just outside the 12 mile limit and will either store weapons, or rent weapons and deliver them to the vessel after it has left the territorial sea. There is considerable unease among coastal states to having large quantities of military-grade weaponry located just outside their territorial waters and under questionable safeguards.

There are concerns about the use of force by VPDs and private maritime security contractors, highlighted by a number of incidents, including *MV Enrica Lexie*. Since merchant ships are not warships and private maritime security generally have no law enforcement status, vessels are restricted in the use of force to acting in self-defence. While self-defence as a concept is recognized by both international and national laws, the specific actions which may be taken will be determined by the appropriate law of the state involved. If the incident takes place on the high seas it would be the law of the flag state, and if it takes place in territorial waters it would be the law of the coastal state which takes precedence.

Since the improper use of force may result in criminal charges or civil liability, the contract between the shipowner and the PMSC should clearly state who can authorize the use of force and under what circumstances. Under the recently developed 100 Series Rules, which are industry rules for the use of force, it is normally the commander of the security team who determines whether or not force is to be used, and not the ship's captain, who has the authority to order a ceasefire.<sup>12</sup> Making rules on the use of force part of the contract will help to apportion liability and establish the level of performance of the parties, demonstrating due diligence by the shipowners and the PMSC.

For Canadian ship operators wishing to establish a higher level of anti-piracy security than provided by BMP4, the choices are difficult. Strict adherence to Canadian



*The US Navy ship USS Dubuque deploys US Marine Corps Cobra helicopters for a board and seize operation after MV Magellan Star was seized by pirates in September 2010.*

law would mean not meeting the level of deterrence and protection recommended by the security or insurance industry. This would leave in the ship and crew vulnerable to pirate attack and to possible lawsuits by the crew for not providing the appropriate level of protection. On the other hand, the presence of heavily armed security personnel on board a Canadian ship would violate a number of Canadian laws. Since these activities are currently taking place far from Canada, it is likely that until Canadian law is changed, the government and industry will exercise a 'don't ask, don't tell' policy. This situation may persist until an attack on a Canadian vessel brings the matter to the government's attention. 🇨🇦

#### Notes

1. See Lucia Fanning, Hugh Williamson and S. Douglas, "Dalhousie Marine Piracy Project: Legal, Institutional and Governance Arrangements for Apprehending and Prosecuting Marine Pirates," Marine Affairs Program, Dalhousie University, Technical Report #2, 2012.
2. United Nations Documents on Piracy, 2012 at [www.un.org/depts/los/piracy/piracy\\_documents.htm](http://www.un.org/depts/los/piracy/piracy_documents.htm).
3. UKMTO, "Best Management Practices for Protection Against Somali Based Piracy" (BMP4), Version 4, 2011.
4. International Maritime Organization (IMO), "Revised Guidance to Ship Owners and Ship Operators, Ship Masters and Crews on Preventing and Suppressing Acts of Piracy and Armed Robbery Against Ships," MSC.1/Circ.1334 23 June 2009.
5. Personal conversations with security representatives of several Canadian shipping companies.
6. IMO, "Revised Interim Guidance to Shipowners, Ship Operators and Shipmasters on the Use of Privately Contracted Armed Security Personnel on Board Ships in the High Risk Area," MSC.1/Circ.1405/Rev.2 25 May 2012.
7. MNE-7, "Regional Study: ReCAAP ISC," 2012.
8. Department of National Defence, "Canadian Forces Military Administrative Law Manual Chapter 7 - Provision of Defence Resources," 2012.
9. Freedom C. Onuoha, "National Security Implications of Sea Piracy in Nigeria's Territorial Waters," *Nigerian Army Quarterly Journal*, 2009.
10. See ISO 28007 and ANSI PSc.4.
11. Norwegian Hull Club, "SafeGage Vetting of Private Maritime Security Companies," available at [www.norclub.no/safegage-vetting-of-private-maritime-security-companies-pmsc](http://www.norclub.no/safegage-vetting-of-private-maritime-security-companies-pmsc).
12. See 100 Series, "An International Model Set of Maritime Rules on the Use of Force," updated 2013, available at [www.100seriesrules.com](http://www.100seriesrules.com).

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# A Review of “That Sinking Feeling: Canada’s Submarine Program Springs a Leak”

Ken Hansen



Credit: Lt. Ed Early, USN

*The Royal Canadian Navy long-range patrol submarine HMCS Victoria (SSK 876) arrives at Naval Base Kitsap-Bangor for a port call and routine maintenance, 12 December 2011.*

The Canadian Centre for Policy Alternatives and the Rideau Institute jointly released a report on 11 June by Michael Byers and Stewart Webb entitled “That Sinking Feeling: Canada’s Submarine Program Springs a Leak.” I have examined the report in detail and would like to respond to it.

The desire of Byers and Webb to stir debate around the future of submarines is commendable. The introductory section of the report contains an accurate summation of the problems experienced to date with the *Victoria*-class submarines and it raises important general policy questions to a wide audience. However, there has been insufficient academic rigour in the development of the authors’ arguments. Their case relies primarily on rhetoric, a very selective use of facts and incomplete analysis.

The release of the report was a well-crafted event, accompanied by media releases and an opinion piece in *The Globe and Mail*, all of which appeared to be designed to create a groundswell of opinion against submarines and the government’s system of defence procurement. I disagree with the opinion as presented by the authors that the public is either observing serious mismanagement in the navy or being misled by secret decisions in government. In my view, this is simply implausible and the report does not offer substantive evidence to prove these allegations.

The authors base their conclusions on the scope of the National Shipbuilding Procurement Strategy (NSPS) and a history of technical and managerial problems with the submarines. While it may seem that the report is calling for a debate on the future of submarines in Canadian maritime security, I think this call for debate is disingenuous. Byers’ opinion of submarines is already on the record – he has stated “I don’t see a strong case for Canada to require submarines.”<sup>1</sup> The real motivation for the report is suspect, therefore. While interesting questions are raised, it seems that the authors deliberately ignore some of the most obvious answers and miss an opportunity to present sound academic analysis.

The entire report hangs on three underlying assertions. I’d like to examine these assertions in the interest of prompting a balanced discussion of the issues. Here are what I see as the assertions made by Byers and Webb:

- the omission of submarines from the NSPS indicates either that the government has already made a decision on the future of submarines, or that the government has no plan;
- the *Victoria*-class submarines have a history of design, manufacturing and operational problems that will continue in the future; and
- the options for renewal of the submarine fleet do not need to consider the operational requirement.





Credit: MCpl Colin Kelley, Formation Imaging Services, CFB Halifax

Army Patrol Pathfinders tie up their inflatable boat to a line aboard HMCS *Windsor* during Exercise Joint Express in St. Margaret's Bay, NS, 28 March 2006.

### ***The Omission of Submarines from NSPS***

The government announced the National Shipbuilding Procurement Strategy with great fanfare on 3 June 2010. It was originally a Department of National Defence (DND) initiative which evolved into a multi-departmental secretariat with participation from DND, the Department of Fisheries and Oceans (DFO) (Canadian Coast Guard), Industry Canada, and Public Works and Government Services Canada.

The literature on the development of the strategy reveals that in early 2009 senior naval engineers in DND were advocating for a national procurement strategy as a way of responding to a unique challenge faced by the department.<sup>2</sup> It was a bottom-up solution to a national strategic problem. The government had announced fleet renewal projects for DND and DFO with acquisition costs worth approximately \$43 billion. But even with funding promised, the failure of two ship acquisitions in 2008 happened in good part because DND had not maintained essential expertise after the delivery of the Canadian Patrol Frigates. The Canadian shipbuilding industry had received no substantial or complex new shipbuilding work since the mid-1990s, creating a 'boom and bust' cycle in the marine industry and leading to atrophy of industrial infrastructure, design capacity, marine supply lines and skilled labour. A final concern was that the government's 'build in Canada' approach to shipbuilding, which was intended to create a robust Canadian shipbuilding capability, could seriously worsen the boom/bust cycle unless it managed federal fleet procurement to even out the workload in Canada.

The case for a national shipbuilding strategy was first made by then-Captain (N) Pat Finn at a conference at Queen's University in 2009. Finn, now a Rear-Admiral and Chief of Staff at DND's materiel support arm, argued that government commitment to the industry was key to a more competent and efficient world-class shipbuilding capability. A long-term government strategy for building surface ships would provide an opportunity to take advantage of known shipbuilding demand to provide more predictable work for Canadian industry. A continuous

flow of work would allow industry to improve infrastructure plus create, stabilize and renew a skilled Canadian workforce. Contrary to the claims made in the report by Byers and Webb, Finn offered a bottom-up solution to a national strategic problem, which was the boom and bust cycle in industry caused by government practices with shipbuilding projects.

Byers and Webb infer that the NSPS somehow reflects high-level government strategy about submarines. The fact that submarines are not in the NSPS does not mean that DND or the government has made any "secret decisions." DND considers military procurement in plans updated and revised annually. These plans look at all navy, army and air force procurement projections. Submarines are not yet at a stage where they need to be built into these plans.

On 27 February 2012, Vice-Admiral Paul Maddison, the outgoing Commander of the Royal Canadian Navy, testified before the Senate Standing Committee on National Security that he "would envision initiating a next-generation submarine discussion within the next three or four years, in order to go through the various procurement and project planning approval and funding gates to ensure that there is no gap in submarine capability."<sup>3</sup> This indicates that the submarine program is at least three or four years away from any official decision about beginning the project-planning process. Neither the government nor the navy has formed any plans regarding future submarines.

The NSPS is what it purports to be: a tool for the government to implement a cross-departmental integrated procurement strategy for surface ships only. Submarines are not in the NSPS because they would not help create the stable demand industry needs to avoid the boom and bust cycle. The reason for this is that the design and construction of submarines and surface ships are very different. In many ways submarines have more in common with space ships than surface ships. Safety is a primary concern. Submarines are designed to operate self-contained under great pressures in a very hostile environment. Their design problems and issues are not shared with surface ships. Ship and submarine designs may use the same core



Credit: MCpl Paul MacGregor, CF Combat Camera

HMCS *Chicoutimi* is helped to the jetty by two Royal Navy tug boats in Faslane, Scotland. HMCS *Chicoutimi* experienced a fire while at sea off the west coast of Ireland on 5 October 2004.

naval architecture, engineering knowledge and trade skills, but they are applied differently. For these reasons, American shipyards specialize in either submarines or surface warships, but never both.

Adding a submarine component to the NSPS would be like asking a car plant to retool to build tour buses. The retooling would create a mini boom and then a bust at the plant that would kill efficiency. The simple reason that submarines are not included in the shipbuilding strategy is that building a small fleet of four or even eight submarines would detract from the goal of the strategy. There is no synergy gained by adding submarines to a coordinated approach for surface ship construction. Submarines are not included in the NSPS because it makes no military, economic or industrial sense to do so. The number of submarines cannot reasonably support continuous work, so adding them to the NSPS would promote the very boom and bust cycle that the strategy was intended to solve. There is no government conspiracy behind the NSPS with regard to submarines.

### ***The History of Victoria-class Problems***

Byers and Webb assert that the history of design, manufacturing and operational problems of the *Victoria*-class indicates a future fraught with trouble. They select historical examples of design problems to bolster their deduction that Canada's submarine program most likely suffers from gross mismanagement and that the program will end through neglect and obsolescence. The authors also suggest that a low purchase price was an indicator that the design had flaws. They ignore the possibility that the price might have reflected an accurate assessment of the engineering challenges Canada faced in bringing the submarines into service in accordance with our national operating standards.

No one familiar with the acquisition of the submarines from Great Britain would deny that the project has

suffered its share of errors and misfortune. Given the challenges that the navy has faced getting these submarines operational, hindsight would certainly suggest that the work and training plan was too optimistic. However, much more evidence is necessary to support a claim that the British knew there were problems (and that's why the submarines were sold at fire sale prices) or that the submarine program was mismanaged by Canada.

A report issued in 2003 by the Chief of Review Services, DND's audit organization, observed that the project under-estimated the challenges associated with submarine reactivation and the Canadianization work to be done.<sup>4</sup> An assumption that off-the-shelf procurement is generally low risk proved wrong. Under-estimating the technical risks certainly contributed to an overly optimistic schedule. So did a number of technical issues that could not have been foreseen.

Submarines operate in a harsh environment and face tremendous strains on equipment. That is a general fact of life for naval equipment but it is especially true of submarines. Given their unforgiving operating environment, it is important for our sailors that submarines are safe to operate.

Canadian ingenuity overcame all the problems Byers and Webb identified. Their report would be more balanced if it included recent evidence of the current state of Canada's submarines. The facts are these: Canada now has two submarines operating, one on either coast. The damage to HMCS *Windsor*'s diesel generator will be repaired by late summer or early fall and it should be stressed that the problems with *Windsor*'s generator are not considered to be a class-wide problem. HMCS *Chicoutimi*, which experienced the damaging fire on its transfer voyage to Canada, will leave the dock in 2013 and follow the same path to readiness as *Windsor*, but another year behind.





Credit: Mass Communication Specialist 1st Class Steven Myers, USN

The Canadian submarine HMCS *Corner Brook* (SSK 878) arrives at Naval Submarine Base New London for a scheduled port visit, 16 August 2010.

That leaves HMCS *Corner Brook*, as planned, as the boat going into ‘deep maintenance’ status. The navy will reach an operational steady state over the next couple of years with one submarine in deep maintenance, two at high readiness, and the third available at a reduced state of readiness. This is a far cry from the sorry state Byers and Webb would have readers believe.

The proposal made by Byers and Webb to quit or start over is a solution looking for a new problem. Starting a new program now would not give us enough information and experience operating the current submarines to gain a solid understanding of their strengths and weaknesses. When the RCN begins in the next five years to define the requirements for the next generation of Canadian submarines it must be able to say exactly how the *Victoria*-class submarines exceeded, met or failed to meet requirements. Starting a new requirement process without knowing whether or not the existing class of submarines performed satisfactorily in operational settings is a poor way to start the search for the next one.

### Options for Renewal

The weakness of this section of the Byers and Webb report stems from the fundamental error of assuming all diesel-electric submarines are the same. Submarines come with different capabilities, roles and costs, so it is critical to ensure that any alternative to the *Victoria*-class meets a carefully planned capability requirement. Buying a new submarine is not that different from choosing a family’s next new car. This analogy may seem far-fetched, but no one would buy a car without having some idea of what the vehicle should do and what is affordable.

A better comparison for the cost of options than the submarines described in the report would have been the Australian *Collins*-class. These submarines are sufficiently similar to the *Victoria*-class in mission and capability to offer a fair comparison. The Australian Submarine Corporation states that a *Collins*-class submarine costs around \$1 billion, which is considerably more than the

alternatives in the report.<sup>5</sup> All of the prices in the report, with the possible exception of the \$970 million paid by India for the *Scorpene*-class, are so suspiciously low that they are likely a subsidized ‘bare-boat’ price that does not include rights to intellectual properties, spare parts, weapons or in-service support. The Canadian Chief of Review Services report on the submarine program identified a decade ago that “[t]he cost of these [*Victoria*-class] submarines, relative to that projected for the acquisition of new boats – \$3B to \$5B – established a significant margin for value.”<sup>6</sup> Despite the unanticipated maintenance and repair costs, a significant margin for value over the purchase cost of new submarines still exists even if part of the operational life of the *Victoria*-class submarines must be discounted.

### Conclusions

The composition of Canada’s navy is an important topic and stirring the debate is a worthwhile endeavour. The navy should be obliged to convince policy-makers and Canadians of the value of ships and submarines. Byers and Webb include a section that considers the arguments for and against submarines. The problem is that, rather than a balanced assessment, their goal appears to be countering any case for a navy with submarines. The section could benefit from a more complete assessment of the place of submarines in Canadian naval capabilities. For example, their section on the risk of conflict in the Pacific dismisses any threat from submarines despite the rapid growth in submarine capability in the region. The number of submarines operational worldwide is now 450, up from 400 just a few years ago. A naval arms race is



Credit: Mass Communication Seaman James R. Evans

Australian submarine HMAS *Rankin* (Hull 6) prepares to join a multinational formation with other ships to commemorate the last day of Exercise Rim of the Pacific 2006 in the waters off Hawaii, 25 August 2006.



This photo provides a rare sight of two Canadian submarines sailing together into home port for the Christmas holidays. Seen leading the pack is HMCS *Corner Brook* with HMCS *Windsor* following into Halifax Harbour, NS, 21 December 2006.

underway in the Pacific and Indian Oceans; submarines are a weapon of choice for all countries in these regions.

The report fails to recognize the importance of a national submarine capability to Canada's expertise in anti-submarine warfare (ASW). The RCN has a niche capability in this area that is unique among middle power navies. Canada formerly ranked very highly in ASW capability and one of the main reasons was the availability of its submarines to train and operate with Canada's own air and surface forces, rather than those of the US Navy as Byers and Webb maintain. The significant drop in Canadian ASW capability is largely due to the delays in the *Victoria*-class program.

The *Victoria*-class will eventually play an essential role in maintaining and developing the RCN's ASW expertise. The first time Canadian frigates encounter a real submarine should not be on operations. This is the key lesson of the Second World War for Canada: ASW forces cannot be improvised. Inadequate equipment, training and force structure will lead only to unnecessary losses and possibly to defeat.

From an institutional perspective, jettisoning submarines is simply an unworkable – and undesirable – option. The gap in capability between the *Oberon*-class' demise and the *Victoria*-class' arrival is still affecting the navy, even years after acquiring the replacements. The Commander RCN has noted the challenges that this has placed on the navy's ability to train submariners and qualify crews.

An argument to buy new submarines must recognize the importance of the timing aspects of training issues and the institutional importance of continuity in supporting and operating a submarine fleet. This is not an emotional attachment to existing capability but a realistic appraisal of the human, material and financial shut-down costs and eventual start-up costs when we re-learn the lessons of our history the hard way.

The proposal in the Byers and Webb report to buy new submarines is not currently feasible due to the national economic circumstances. The *Victoria*-class boats were always a bargain basement solution to a vitally important military and naval problem. The RCN is on the verge of reaching operational steady state with the class. If a submarine capability is important, it is far better to operate the class, reach steady state, and then examine any gap between the capability

and the requirement.

Promoting debate around the future of submarines is a worthwhile endeavour. Canadians should welcome an examination of the roles, missions and tasks of submarines. The goal for everyone considering whether Canada needs submarines should be an informed discussion based on accurate facts. Hopefully, this article will have helped move the discussion forward. I look forward to the next exchange of ideas and information. 🇨🇦

#### Notes

1. Michael Byers quoted in Sandra McCulloch, "Think-tanks Call for Scrapping of Sub Fleet: Former Rear Admiral Disagrees," *Victoria Times Colonist*, 11 June 2011.
2. Lieutenant-Commander Rohit Gulati, Lieutenant-Commander Ted Summers and Lieutenant-Commander Jean-François Séguin, "Getting Rid of 'Boom and Bust' in Federal Shipbuilding – An Inside Look at the National Shipbuilding Procurement Strategy," *Marine Engineering Journal*, Summer 2012, pp. 6-10.
3. Parliament of Canada, "Proceedings of the Standing Committee on National Security and Defence," Issue 4, Evidence, 27 February 2012.
4. Department of National Defence (DND), Chief of Review Services, "Review of the Submarine Acquisition/Capability Life-Extension Program 7050-11-33 (CRS)," May 2003.
5. The Byers and Webb report gives the following alternatives: the French *Scorpene*-class for widely ranging prices of \$390M to \$970M; the German U-214-class at \$500M; and the Swedish *Gotland*-class at \$315M.
6. DND, Chief of Review Services, "Review of the Submarine Acquisition/Capability-Extension Program 7050-11-33 (CRS)," May 2003.

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# Lessons from Canada's Corvettes

Janet Thorsteinson

James Lamb begins his 1977 book *The Corvette Navy* by stating, “[a]s these words are written, a small steel steamship lies deserted in a corner of the dockyard in Halifax, her work done, her future uncertain.”<sup>1</sup> Today, HMCS *Sackville*, the last corvette from the Second World War, has been retrieved from obscurity to prominence on the Halifax waterfront through the efforts of many dedicated individuals and supportive institutions. The Canadian Naval Memorial Trust (CNMT) literally and figuratively keeps HMCS *Sackville* afloat today as a memorial to the Royal Canadian Navy (RCN) and its sailors.

The ship survived Nazis and neglect only to face accelerating deterioration from the elements, so today the CNMT has ambitious plans for a 4.5-acre waterfront site that would preserve the ship inside its own permanent building near the Maritime Museum of the Atlantic in Halifax. The building would also include displays and interpretative facilities. In all, it will need about \$100 million to complete the project by 2017 for Canada's 150<sup>th</sup> birthday. Among other contributors that include my organization, the Canadian Association of Defence and Security Industries, the federal government has donated \$240,000 towards the design costs of the buildings.

The 123 corvettes built in Canada were central to this country's contribution to the war effort. Many have written eloquently about the hardships shared by the corvette crews and their battles with the U-boats that threatened the convoys they were assigned to protect. Hollywood recognized the contribution of the Canadian corvettes to the war effort in the 1943 film “Corvette K-225,” starring Randolph Scott and Ella Raines. With real footage of shipbuilding, Halifax Harbour, convoys and mid-ocean combat, “Corvette K-225” put human, albeit somewhat American faces to the corvette story. As they paint the fictional HMCS *Donnacona* in the fictional Dominion Shipbuilding Works, a new dockyard worker asks another (with an accent more Brooklyn than Bedford), “what's this tub we're paintin'? It ain't a destroyer and it ain't a motorboat and it sure don't look like no aircraft carrier.” Told that it's a corvette, he responds “that still don't tell me nothin'.” Informed of Canada's prodigious shipbuilding efforts, he then asks, “yeah, but who's crazy enough to go to sea in 'em?” Thousands were and did eventually sail in Canada's corvette fleet.

As electronics like radar and sonar became more important to winning the Battle of the Atlantic, the corvettes and their crews faced technological challenges that courage and endurance could not overcome. In part, this was related to reliance on Britain and a lack of focus on technology in Canada. In *The Politics of Procurement*, Aaron Plamondon writes, “[a]t the outbreak of the war, ... there was not one technical or scientific adviser in Naval Service Headquarters in Ottawa. All of the RCN's weaponry came from Britain, and after the war started and British supplies disappeared, Canada was on its own.”<sup>2</sup>

As Marc Milner writes in the prologue to *The U-boat Hunters*, “[u]p to the end of 1942, the desperate state of asdic and navigational equipments aboard RCN corvettes undoubtedly cost the navy a number of U-boat kills.” He notes that by 1942, similar British ships had the type 271 radar while, “[i]n contrast, the most common radar on RCN escorts until 1943 was the Canadian built SW1C and SW2C, a set based on the earlier British type 286.”<sup>3</sup> The lack of modern equipment led to operational failure in some instances. Thus, for example, *Sackville* detected two U-boats by SW1C radar around a convoy in July 1942, but the radar could not provide enough information to get a fix and poor visibility hampered the hunt.

Some people have argued that Canadian weapon design was a failure because Canadian institutions could not



HMCS *Sackville* in October 2006, berthed near the Maritime Museum of the Atlantic in Halifax, NS, and restored to her 1944 configuration.

Credit: Bryson/Wikipedia



This is an aerial photograph of a Flower-class corvette HMCS *Snowberry* (K166), May 1943.

align their efforts. According to David Zimmerman, “[t]he National Research Council of Canada, the supreme war-time scientific agency, and Naval Service Headquarters did not succeed in resolving their difficulties, the effects of which on the anti-submarine campaign were profound as RCN escorts went to sea with inferior, outdated, or unusable equipment.”<sup>4</sup>

On the other side, the Germans were working hard to develop new technologies to aid their war effort. The results were often unpleasant for the Allied forces. For example in fall 1943 a new offensive weapon was launched in the Mediterranean – “the radio-controlled glider bomb, launched from high-flying aircraft and guided by radio signals,” the HS293.<sup>5</sup> In fact, it was a radio-guided missile, and the direct ancestor of many of today’s precision weapons. Lieutenant Barry O’Brien, Captain of corvette HMCS *Snowberry*, was in the Bay of Biscay during the first attacks of August, 1943. He wrote that “each bomb appeared to shoot out from under the planes for a distance of 200 feet or so, leaving a trail of white vapour. First the bomb ran on a parallel course to the target ship, then it suddenly made a right-angle turn towards the target and followed any evasive actions of the ship.”<sup>6</sup> HMS *Bideford* was damaged on 25 August and on 27 August, HMS *Egret* was sunk and HMCS *Athabaskan* seriously damaged.

As the war went on, Canada did eventually record a number of technological successes, both in weapons development and in breaking through the bureaucratic and institutional barriers to technological development. Indeed, Canada was quickly able to develop a defence against the HS293. A sufficiently powerful frequency modulated transmitter could jam the radio link so that the aimer in the aircraft lost control of the missile. In February 1944 the navy

urgently requested countermeasures from the National Research Council. The Canadian Naval Jammer was the result. The navy requested five transmitters, and the parts for 20 more, which were to be built in St. Hyacinthe, Quebec. Remarkably, the first equipment, with spares, was shipped to Halifax by the end of March. Although the equipment was not difficult to construct as it wasn’t extremely sophisticated, this case illustrates how quickly a response could be made in an emergency.

The trials and the triumphs of Canada’s corvette navy offer lessons today. In this 70<sup>th</sup> anniversary year of the Battle of the Atlantic, the same issues of industrial preparedness, interdependence with stronger allies and national sovereignty are with us. We should keep them in mind as this country embarks on a postwar shipbuilding program of unprecedented scope for the Royal Canadian Navy. 🇨🇦

#### Notes

1. James B. Lamb, *The Corvette Navy* (Toronto: Macmillan, 1977), p. 1.
2. Aaron Plamondon, *The Politics of Procurement: Military Acquisition in Canada and the Sea King Helicopter* (Vancouver: University British Columbia Press, 2010).
3. Marc Milner, *The U-boat Hunters* (Toronto: University of Toronto Press, 1994), p. 14.
4. David Zimmerman, *The Great Naval Battle of Ottawa* (Toronto: University of Toronto Press 1989).
5. W.E. Knowles Middleton, *Radar Development in Canada: The Radio Branch of the National Research Council of Canada 1939-1946* (St. Catharines, ON: Wilfrid Laurier University Press, 1981), pp. 62-63.
6. Mac Johnston, *Corvettes Canada: Convoy Veterans of WWII Tell their True Stories* (Mississauga, ON: John Wiley and Sons, 2008), p. 158.

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

## *The Orca Project: A Procurement Success*

David Peer

Recently in the news Canadians have been assailed with negative opinions on the ability of the Department of National Defence (DND) to buy ships. Media tend to concentrate on the problems; it sells papers and attracts the public interest. Unfortunately, in this media race to the bottom many good stories get lost. One example is the *Orca* project where I was the Project Manager from 2007 to 2010.

At the turn of the century, the navy began the process to replace the 1950s-era wooden-hulled training tenders. As the navy moved toward training ship operators in modern land-based simulators, a comparable sea-based training vessel became essential. The goal was to replicate the conditions aboard larger ships. On 8 November 2004, DND announced a contract for six new ships, with an option for two more, for a total budget of almost C\$100 million. The *Orca* project delivered operationally ready ships to the specifications, within budget and ahead of schedule – indeed, the final patrol craft was delivered 15 months early. The project met every milestone in the contract.

**Table 1. PCT Orca-class Design Characteristics**

|                            |  |
|----------------------------|--|
| <b>Length</b>              | 33.00 metres   |
| <b>Beam</b>                | 8.34 metres  |
| <b>Draught</b>             | 2.00 metres  |
| <b>Displacement</b>        | 210 tonnes   |
| <b>Speed</b>               | 20 knots   |
| <b>Range</b>               | 660 nautical miles   |
| <b>Propulsion</b>          | Two Caterpillar diesel engines, twin shafts, two rudders   |
| <b>Berthing</b>            | 24 total - 5 crew & 19 others  |
| <b>Armament</b>            | None fitted. Strengthened foredeck to mount a machine gun  |
| <b>Command and Control</b> | Integrated platform control system and integrated navigation and electronic chart display information system |



The *Orca*-class patrol vessel, *Raven*, is in Vancouver Harbour 22 February 2010 during *Operation Podium*, the CF contribution to the security of the Vancouver 2010 Olympic and Paralympic Winter Games and part of the RCMP-led Integrated Security Unit.

Credit: MCpl Chris Ward, Canadian Forces Base Esquimalt Imaging Services

**Table 2. Delivery Schedule for the Orca-Class PCTs**

| Name             | Contracted Delivery | Actual Delivery | Schedule impact        |
|------------------|---------------------|-----------------|------------------------|
| Orca (PCT 55)    | November 2006       | November 2006   | On time, as contracted |
| Raven (PCT 56)   | March 2007          | March 2007      | 3 weeks early          |
| Caribou (PCT 57) | September 2007      | July 2007       | 2 months early         |
| Renard (PCT 58)  | February 08         | September 2007  | 5 months early         |
| Wolf (PCT 59)    | July 08             | November 2007   | 8 months early         |
| Grizzly (PCT 60) | February 09         | March 2008      | 11 months early        |
| Cougar (PCT 61)  | August 09           | October 2008    | 10 months early        |
| Moose (PCT 62)   | February 10         | November 2008   | 15 months early        |

The *Orca*-class ships are designated as Patrol Craft Training (PCTs) ships and are primarily used for naval officer training, but they can conduct other training and operational roles for the navy. The home port for the entire class is Esquimalt where they provide the training link between bridge simulators and larger ships. The *Orcas* offer training at sea. Their command and control capability, high speed and excellent manoeuvrability also allow them to conduct port security operations, search and rescue, exercises and other similar duties. Two of them were temporarily modified to accept .50 calibre machine guns for port security during *Operation Podium*, the Canadian Forces support to the 2010 Vancouver Winter Olympics.

All eight ships were built at Victoria Shipyards, in Victoria, BC. The shipyard started construction of the first ship, PCT *Orca* in September 2005 and delivered the final vessel, PCT *Moose*, on 27 November 2008. DND closed the *Orca* project at the end of May 2012, just less than 11 years after authorizing approval to start. The final tally for the project was eight vessels which exceeded contracted performance requirements that cost 1.1% below budget, and arrived 15 months early.

Despite this excellent result, the project had its share of challenges right from the beginning. The *Orca*-class was developed using a proven vessel design as a point of departure. It is an approach that the Arctic Offshore Patrol Ships (AOPS) project is following with the use of the Norwegian *Svalbard*-class. The key to success in the *Orca* project was that the designer understood the capabilities and limitations of the existing design, and the constraints and requirements of the new design, which helped quantify the change and what that might mean to the design process. It turned out to be significant.

The *Orca* design started with the Australian *Seahorse Mercator* ship design but finished considerably different. The two designs share a geometrically similar hull form,

but all other systems and materials were changed. This is a natural consequence of tailoring an existing design to meet specific Canadian requirements because as soon as one aspect of a design changes it must be adapted to all other systems.

PCT *Orca* has 15% greater displacement than *Mercator*. The three main design drivers were requirements for increased power, Canadian accommodation standards and a significant allowance in the design for growth in weight and volume of equipment. These drivers caused an increase in hull dimensions and structural weight increased causing the speed-displacement relationship to change. The proven propulsion system of *Mercator* then ended up being too small to achieve the desired speed.

The electrical system needed a complete redesign including the addition of a third generator. Among other design



Defence Maritime Services vessel *Seahorse Mecator* passes under Sydney Harbour Bridge, 29 August 2007.





challenges, conforming to Canadian naval requirements and *Canada Shipping Act* standards meant changing electrical supply from 220Volts/50Hertz to 120Volts/60Hertz. The additional generator also triggered a complete re-design of the cooling water system.

The requirement for a 'fitted-for-but-not-with' heavy machine gun meant not only a strengthened foredeck, but the addition of extra fire protection. The designers added a firemain supply to the new ammunition storage lockers to flood them in case of a nearby fire. This requirement and a specific Canadian naval requirement for fire stations led to a complete redesign of the firemain, the auxiliary seawater system and the bilge system. As well, the Canadian habitability standards forced a complete redesign of accommodation, and the electronic navigation suite required on the bridge for officer training triggered a complete redesign of the wheelhouse layout.

The project success was due in no small part to the Deputy Project Manager, the project staff and Victoria Shipyards. The close teamwork made it happen. It is unfortunate that successes like *Orca* never reach the national stage. The project demonstrates that Canadian industry and government are capable of delivering a project to specification on time and on budget. 🍷

### Maritime Commerce Resilience

Dr. Allan Bartley (Transport Canada) and Captain Andrew Tucci (US Coast Guard)

The Eastern Seaboard of the United States was hammered in October 2012 by Hurricane Sandy, one of the most destructive storms to hit the continent in recent years. Besides the devastating human impacts of the storm, including loss of life and the destruction of entire neighbourhoods, the shipping community suffered significant losses. The northeast cargo industry alone was crippled by an estimated \$1 billion in damage.<sup>1</sup>

Hurricane Sandy provided a tragic but important reminder of the need to prepare for disasters. In today's reality of highly integrated global supply chains that rely heavily on just-in-time delivery, any disruption, from a minor accident to a major natural disaster like Hurricane Sandy, can have widespread impact – both at home and abroad – on the economy.

Post-hurricane analysis suggests that some problems reported in the storm's aftermath might have been averted



Containers were thrown around like matchsticks as Hurricane Sandy hit the Port of Newark, 29 October 2012.

Credit: Peter Tirschwell tweet

through pre-event resilience planning. Gasoline shortages were widespread, causing transportation problems throughout the region, further compounded by a poor response from utility companies.<sup>2</sup> Even the United Nations headquarters was affected, including its data centre being flooded, and reportedly poor communications caused by many out-of-date and incorrect email addresses.<sup>3</sup>

To help mitigate the impacts of supply chain disruptions such as these and help the maritime domain return to pre-event operations as quickly as possible, the public and private sectors are actively engaged in resilience planning in some places.

Maritime commerce resilience planning encourages the development of all-hazard plans, agreements, protocols and tools that result in improved coordination, resilience, resumption and recovery. Resilience planning promotes an up-front reduction of gaps and vulnerabilities in the maritime supply chain, with an integrated approach bringing together multiple jurisdictions and sectors to capture a range of potential concerns and issues. After a disruptive event, resilience planning speeds recovery and helps provide a quick return to operations. As well, it helps maintain global confidence in the maritime supply chain and enhances the reputation of Canada and the United States as secure links of that chain. Recognizing this importance, both countries have embarked on joint maritime commerce resilience-related activities.

In 2011, as part of the United States-Canada Perimeter Security and Economic Competitiveness Action Plan, Transport Canada and the United States Coast Guard launched a binational initiative to develop a framework for managing maritime traffic in event of an emergency. The first phase of this initiative was a pilot project in the US Pacific Northwest/British Columbia Lower Mainland region in collaboration with the Pacific Northwest Economic Region Organization, other levels of govern-

global maritime supply chains. Many of the impacts on supply chains from Hurricane Sandy could have been mitigated through resilience planning, highlighting the importance of the work being undertaken by Transport Canada and the US Coast Guard in this regard.

Both countries are committed to work together to ensure the development of binational relationships, partnerships, communication mechanisms and processes that will assist in the event of a disruption. Together, Canada and the United States envision a maritime supply chain that is dynamic, resilient, safe and secure and will continue work in tandem to realize these goals. 🇺🇸

#### Notes

1. "Shipping Losses from Superstorm Sandy at \$1B Says Consultant," *Cargo Business News*, 5 November 2012, available at [www.cargobusinessnews.com/news/110512/news1.html](http://www.cargobusinessnews.com/news/110512/news1.html).
2. Vivian Yee, "Schools Reopen to Snarls; Transit Headaches Persist," *The New York Times*, 5 November 2012.
3. Matthew Berger, "The New Normal: Hurricane Sandy and the UN Response," *The Interdependent*, 26 November 2012.

### Keeping Faith

Colin Robertson

Today, despite oceans at our back and the longest coastline in the world, our warship complement ranks well back, behind the Turks, Indonesians and Greeks. This is a different world from that of the brave Canadians who, 70 years ago, fought and won the Battle of the Atlantic.

At the outset of the Second World War the Royal Canadian Navy (RCN) possessed six warships and a complement of 3,500. At war's end the RCN was the world's third largest navy with a complement of 95,000 and 270 warships. It played a central role in the Battle of the Atlantic having safely escorted over 25,000 merchant ships across the North Atlantic and providing a lifeline to Britain. Our shipyards, employing more than 125,000 people, built over 4,000 vessels. Merchant ships were constructed in an average of 307 days.

This was a long time ago, but is today's world really that different? In their April communiqué, the G8 Foreign Ministers described maritime security as the "critical enabler of economic development, trade, and regional stability." Between 2003 and 2007 global maritime traffic nearly doubled. Trade has lifted hundreds of millions of people out of poverty, especially in Asia. Prime Minister Stephen Harper has said that Canada and its economy "float on salt water." On any given day, one-third of Canadian Tire's inventory is at sea.

Our maritime interests can be grouped into three baskets: advancing international law as surety for our sovereignty;



Satellite image of Hurricane Sandy approaching the US east coast 29 October 2012.

ment and industry stakeholders on both sides of the border. Through the pilot project, information-sharing protocols and communication mechanisms have been developed and were successfully validated at a table-top exercise held in fall 2012. Over the course of 2013, this initiative will be expanded to include the Great Lakes and Atlantic regions.

From a global perspective the US Coast Guard and Transport Canada have co-led a committee with 38 international participants to develop voluntary trade recovery guidelines for the International Maritime Organization's (IMO) Facilitation Committee. The guidelines are best practices intended for use by both countries and industry worldwide to help minimize disruptions to the supply chain in the event of large-scale emergencies or disruption. The guidelines were endorsed by the IMO Facilitation Committee in April 2013.

These two major international initiatives between Transport Canada and the US Coast Guard, as well as domestic projects being undertaken on both sides of the border, have increased resilience in the North American and





freedom of the seas for our trade and commerce; and the ability to project power through naval power.

Negotiation of the United Nations Convention on Law of the Sea (UNCLOS) is one of the greatest triumphs of Canadian diplomacy. Canadian jurisdiction was extended to the continental shelf, effectively doubling our ocean estate. And with 40% of our landmass in our northern territories, and 25% of the global Arctic, securing international recognition for Canada's extended continental shelf is a priority.

Threats on the oceans come in two categories. The first includes threats to the good order at sea, including containing piracy and the trafficking of guns, drugs and people that in 2012 cost the global economy over \$6 billion.<sup>1</sup> In order to promote order at sea, our warships are part of the international force in the Persian Gulf working to stop piracy, and last November, HMCS *Ottawa* participated in a major drug interdiction off the east coast of Costa Rica that netted over 1,000 kilograms of narcotics.

The second threat is to our strategic security – our sovereignty and resources as well as free passage on the high seas. For the last two centuries first the Royal Navy and then the US Navy have preserved maritime order and secured the sea lanes of commerce. Fiscal constraint is now straining the US capacity to do this, and it has called on allies to share the burden. For reasons of collective security and self-interest we need to do our part. We can do this if we have the maritime resources. Luckily, our *Halifax*-class frigates are being refurbished and, after a troubled refit, our *Victoria*-class submarines will soon be patrolling our waters.

An ambitious shipbuilding program has been launched to provide the coast guard with Arctic patrol vessels and the navy with new warships. The program acknowledges that ships made in Canada will cost more than buying off-the-shelf but the goal is to resurrect the Canadian shipbuilding industry. Today's warships are less about cutting steel than advanced technology and integrator systems.

Our model should be the revitalized Canadian aerospace industry. It is ranked fifth in the world in overall aerospace production, third in civil aircraft production and is well integrated in global value chains.<sup>2</sup> It is hoped that we can leverage our shipbuilding procurement to develop key industrial capabilities. It won't be easy. Experience tells us that it is critical to keep to agreed schedules and buy off-

the-shelf as much as possible. Otherwise, we will likely have to settle for less ships and less ship.

The Auditor General has found our procurement process wanting and the Parliamentary Budget Office has already warned that replacement of our supply ships is over budget and behind schedule. We should heed the bean-counters, not just for their advice, but because their reports point out problems that do much damage to public confidence in the project.

The admirals, commodores and captains involved in the program have a lot of sleepless nights ahead of them. In addition to the seltzer, they should keep a copy of former Lockheed Martin CEO Norman Augustine's 'Augustine's Laws' close to them. Two of my favourite 'laws' are:

- Law XVI (applies equally to ships): Defence budgets grow linearly but the cost of military aircraft grows exponentially.
- Law XLVIII: The more time you spend talking about what you have been doing, the less time you have to spend doing what you have been talking about. Eventually, you spend more and more time talking about less and less until finally you spend all your time talking about nothing.

Our economy does float on salt water. Our national interest requires a strong navy, backed by a healthy shipbuilding and ship-repair industry. This is also how we will keep faith with the sailors and shipyards that won the Battle of the Atlantic. 🇨🇦

#### Notes

1. "The Economic Costs of Piracy," Oceans Beyond Piracy, 2012, available at <http://oceansbeyondpiracy.org/cost-of-piracy/economic>.
2. Industry Canada, Press Release, "Minister Paradis Welcomes the Aerospace Review Report," 29 November 2012.

## ***Learning about Amphibious Operations from Nelson***

Ken Hansen

Pat Bolen's analysis in the Fall 2012 issue of *CNR* (Vol. 8, No. 3) of the difficulties Admiral Nelson experienced in the conduct of amphibious operations left me wanting more detail. Bolen's only recommendation was that "the Canadian navy ... will need to be prepared to learn a whole new series of lessons." For an article with a title that suggests something could be learned by the Royal Canadian Navy (RCN) from an analysis of Nelson's defeats,



Credit: Warrant Officer Randolph Rice, ADM (Public Affairs), Ottawa

*A Royal 22<sup>nd</sup> Regiment light armoured vehicle (LAV 111) disembarks from a US Navy landing craft. The Integrated Tactical Effects Experiment took place on the US eastern seaboard in November 2006 to evaluate the feasibility of the deployment of a high readiness sea-based joint expeditionary task force for Canada.*

this is precious little reward for the time it takes to read through the historical accounts.

Bolen attributes Nelson's problems achieving success in battles ashore to a basic fact: "battles on land are different from battles at sea." While this is true, the problem is more complex than the simple presence or absence of water. In fact, amphibious operations have a long history – the Romans were adept at them. So, the lessons of amphibious warfare stem from antiquity and the general assessment is always the same. From Demosthenes, in 452 BC, to James Wolfe in 1758, leaders would agree with the assessment made by American General George C. Marshall in 1944 that "[a] landing against organized and highly trained opposition is probably the most difficult undertaking which military forces are called upon to face." He reportedly made this remark during planning for the Sicilian landings. So, for assaults and raids, only two of the many forms of amphibious operations, the risk is always high.

Bolen faults Nelson for rushing to the attack during the actions he described, but provides no insights into the reason for this. He states that "Nelson's greatest strength

at sea – his willingness to gamble all and win – was his greatest weakness ashore." I think there is more to it than a character flaw.

The first issue is the speed of execution. Amphibious forces of the Napoleonic age were wind driven and approached the landing zone by boats under oars. The urgency for speed was a constant frustration for commanders who strove to reach objectives before enemy forces could be alerted and moved to defensive positions. While ships of sail could move more swiftly than armies on foot, attacks at ports and other prepared positions relied on stealth and speed of approach for success. Urgency was a natural condition for all commanders attempting amphibious landings.

The second issue was the general meagreness of the landing force. Amphibious forces are always constrained by the space made available to them within the ships. Warships are not designed with consideration for troops and their equipment. Marines were integral to the crew of a British sailing warship and their disembarkation meant that the ship became less effective at its primary function.





While Admiral David B. Porter said in 1863 that, “[a] ship without marines is like a garment without buttons,”<sup>1</sup> the truth was that they were ancillary, and not primary, to the main purpose of a warship.

The third issue was the lack of firepower and logistical support for the landing force. Boats could only transport limited weaponry beyond muskets, and these only in a disassembled condition. Unloading at the beach was difficult for the assault force and painfully slow for the naval gun teams that manned the heavier weapons. Only in the modern era have aircraft, landing craft and precision weaponry alleviated so many of the problems of effectiveness that naval commanders faced in earlier amphibious operations.

But, was Nelson’s desire for swift assault out of place in the Napoleonic era? The best answer to this question comes from Napoleon Bonaparte himself. Many of his utterances urged speed, including “[h]esitation and half measures lose all in war,” and, in 1803, “[y]ou can ask me for anything you like, except time.”<sup>2</sup> Napoleon thought a plan going awry was no reason to abandon the effort and his ability to see opportunity in the face of adversity was his greatest skill. As he phrased it, “I engage and after that

I see what to do.” This was a remark made in 1796 during the Italian campaign. So, Nelson’s comment about time – “Time is everything: five minutes makes the difference between victory and defeat” – is not at all out of place against the Napoleonic standard. Nelson was not alone in this regard. A wide array of famous naval and military leaders recommended speed for everything from strategic initiation of war to the tactical conclusion of battles.

The real lessons for Canadian naval force planners considering an amphibious future for the RCN do not pertain simply to the fact that Nelson suffered defeats. Rather, they relate to the timeless issues of speed, volumetrics and effectiveness. These doctrinal concepts are just as pertinent to missions designed to relieve human suffering as they are to missions in support of military combat objectives. It is possible to distil lessons from history, but they must be conceptualised through a process of analysis that goes far beyond a recounting of the events. 🍷

#### Notes

1. Admiral David B. Porter, quoted in Colonel Robert Heinl, Jr., *Dictionary of Military and Naval Quotations* (Annapolis: Naval Institute Press, 1966).
2. Napoleon Bonaparte, quoted in *ibid*.

### Editor’s Note

On page 23 of “A Preliminary Analysis of the AOPS Design” by Ken Hansen in the Spring issue (Vol. 9, No. 2 ), an incorrect number appeared in Table 2. The range of the T1200-class ship is 15,000 nautical miles. The table should appear as follows. The material has been corrected in the electronic version. 🍷

**Table 2. Comparison of First and Second AOPS designs with T1200-class CCG Ship**

| Class                | T1200-class        | AOPS V1               | AOPS V2          | Change      |
|----------------------|--------------------|-----------------------|------------------|-------------|
| <b>Displacement</b>  | 8,090 tonnes       | 6,940 tonnes          | 5,730 tonnes     | -17.4%      |
| <b>Length</b>        | 98.2 metres        | 109.6 metres          | 97.5 metres      | -11.0%      |
| <b>Beam</b>          | 19.5 metres        | 18.2 metres           | 19.0 metres      | +4.4%       |
| <b>Draught</b>       | 7.2 metres         | 7.0 metres            | 5.7 metres       | -18.6%      |
| <b>Engine Power</b>  | 17,700 kilowatts   | 18,000 kilowatts      | 13,200 kilowatts | -27%        |
| <b>Motor Power</b>   | 10,142 kilowatts   | 15,000 kilowatts      | 9,000 kilowatts  | -40%        |
| <b>Maximum Speed</b> | 16 knots           | 20 knots              | 17 knots         | -15%        |
| <b>Range</b>         | 15,000 n. miles    | 8,000 n. miles est.   | 6,800 n. miles   | -17.4%      |
| <b>Endurance</b>     | 192 days           | 120 days              | 120 days         | NC          |
| <b>Bunkers</b>       | 2,450 cubic metres | 810 cubic metres est. | 690 cubic metres | -17.4% est. |

Note: Estimated data are calculated using a linear relationship for displacement.

# A View from the West

## Small State Hydrocarbon Exploration in the South China Sea

Nicole Johnson

The territorial disputes in the South China Sea are increasing tension between China and the smaller countries of Southeast Asia. These disputes over the ownership and control of the region's waters and islands involve seven countries – Brunei, Indonesia, Malaysia, the Philippines, Taiwan, Vietnam and China (which claims almost 80% of the South China Sea). Many of these disputes have been driven by a desire to gain access to the sea's potential hydrocarbon resources. Some believe that these resources will solve the region's energy needs.

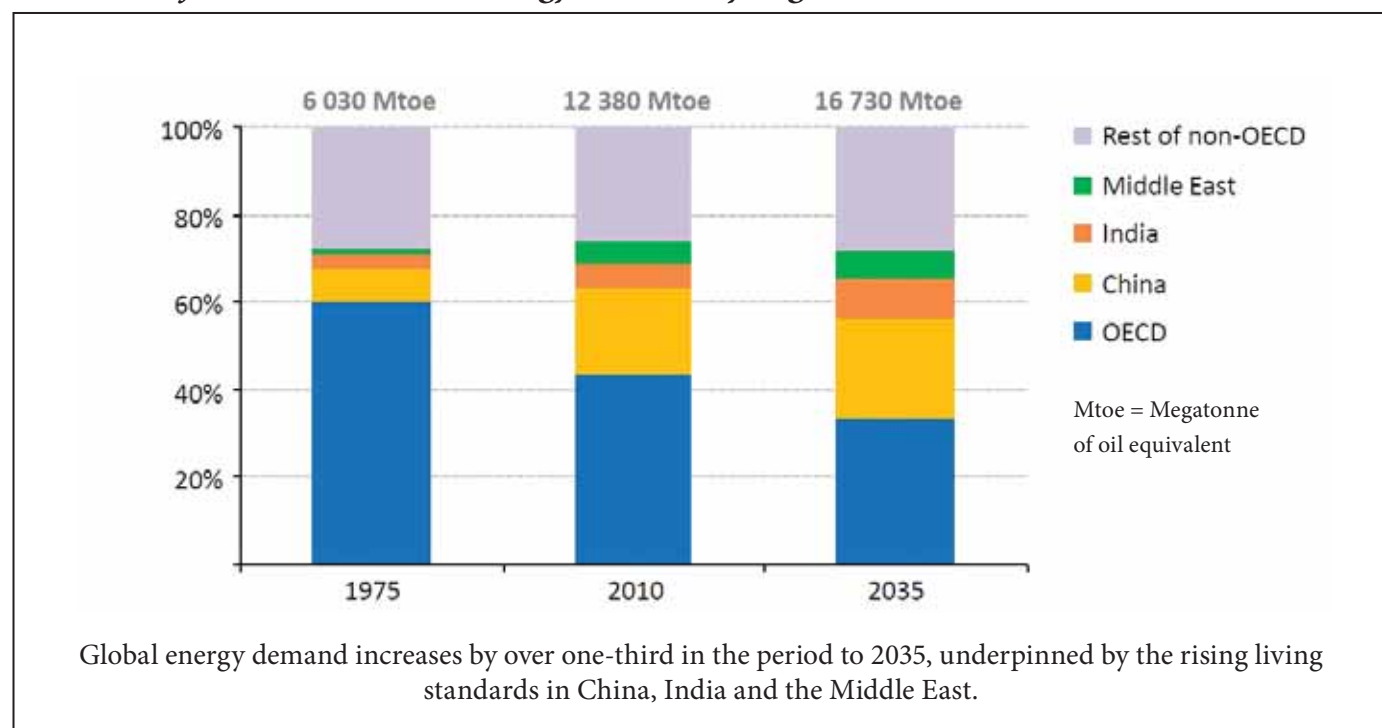
The drive to achieve energy security has prompted countries in the region to pursue offshore hydrocarbon exploration and production activities. While the majority of these activities have been limited to shallow, uncontested regional waters, claimant states are now beginning to pursue offshore activities in the deeper, disputed waters of the sea. These developments have been seen as a means of buttressing maritime territorial claims while simultaneously enhancing energy resources. However, given China's growing offshore technological capabilities,

assertiveness with respect to its claims in the South China Sea, and uncertainty over the existence of commercially viable hydrocarbon reserves, smaller claimant states may have few options in achieving sovereignty over disputed areas through offshore exploration activities.

The rapid industrialization of China and Southeast Asia has led to a surge in energy demand. This demand is projected to increase by 76% in the members of the Association of South East Asian Nations (ASEAN) between 2007 and 2030,<sup>1</sup> and by at least 75% in the case of China between 2008 and 2035.<sup>2</sup> To manage this increase, countries have begun to explore new energy sources in the South China Sea, an enclosed sea widely regarded as a significant repository of hydrocarbon resources. According to a 2012 US Energy Information Administration report, the South China Sea is believed to contain approximately 11 billion barrels (bbl) of oil, and 190 trillion cubic feet (tcf) of natural gas in recoverable reserves.<sup>3</sup>

However, these findings are restricted to offshore surveys that have focused on exploration in waters less than 200

**Table 1. Projected Rise in World Energy Demand by Region**



Source: World Energy Outlook 2012, Presentation, International Energy Agency.





*The semi-submersible oil rig CNOOC 981 in the South China Sea, 320 kilometres southeast of Hong Kong, May 2012.*

metres deep (roughly one million square kilometres of the ocean floor), rather than contested waters deeper than 200 metres (roughly two million square kilometres of the seabed) that have not been explored extensively due to territorial disputes.<sup>4</sup> As a result, resource estimates are highly variable and rely on speculative geology-based methodologies that have not been proven scientifically. A 2010 US Geological Survey report, for example, estimated that the South China Sea contained anywhere between 5 and 22 bbl of oil and between 70 and 290 tcf of natural gas in under-explored areas.<sup>5</sup> In contrast, the Chinese National Offshore Oil Corporation (CNOOC) estimated that the region held around 125 bbl of oil and 500 tcf of natural gas.<sup>6</sup> This data spread has led to speculation that China has purposely exaggerated the statistics to justify its exploration activities in the South China Sea. It has also led to a great deal of uncertainty over how technologically and economically feasible hydrocarbon exploration and exploitation will be for smaller claimant countries.

The movement of offshore hydrocarbon operations into deeper disputed waters can be an extremely costly venture that could potentially undermine the business case for such activities by small countries. Many deep-sea hydrocarbon reservoirs are located thousands of metres below the surface, under kilometres of rock, thick salt and sand deposits. Deep-water exploratory drilling activities, therefore, require advanced equipment and technology capable of withstanding unbelievable depths, enormous pressures and extreme temperatures, in areas

that experience regular typhoons and tropical storms. Moreover, if a hydrocarbon reservoir is discovered, producers have to construct very costly production platforms and sub-sea pipelines that have to bypass complex arrays of submarine canyons and strong currents to reach onshore processing facilities.

Given that the majority of small claimant countries typically do not possess these advanced capabilities, they would have to lease deep-water oil rigs from foreign firms. This equipment can be extraordinary expensive, with day rates costing two to 10 times more than shallow-water offshore equipment, depending upon rig availability and market and supply forces, which could potentially delay exploration operations.<sup>7</sup> While smaller claimant countries could, conceivably, develop drilling technologies unilaterally to avoid being subject to market conditions, the

uncertainty surrounding the extent and accessibility of commercially viable hydrocarbon resources in the South China Sea makes such investment remarkably risky.

Despite this uncertainty, however, China has begun to expand its offshore technological capabilities to claim territory and advance its energy interests in contested areas of the South China Sea using its state energy giant, CNOOC. In December 2012, the Canadian government approved a USD \$15.1 billion takeover bid for the Calgary-based energy giant, Nexen Inc. by CNOOC. Many argued that the deal would give China instant access to Nexen's technological expertise, such as fracking and drilling techniques used in offshore operations in the Gulf of Mexico – although the US government has yet to approve the CNOOC acquisition of Nexen's Gulf of Mexico assets. It is likely that China will continue to pursue similar foreign acquisitions in an effort to broaden its strategic position in the South China Sea.

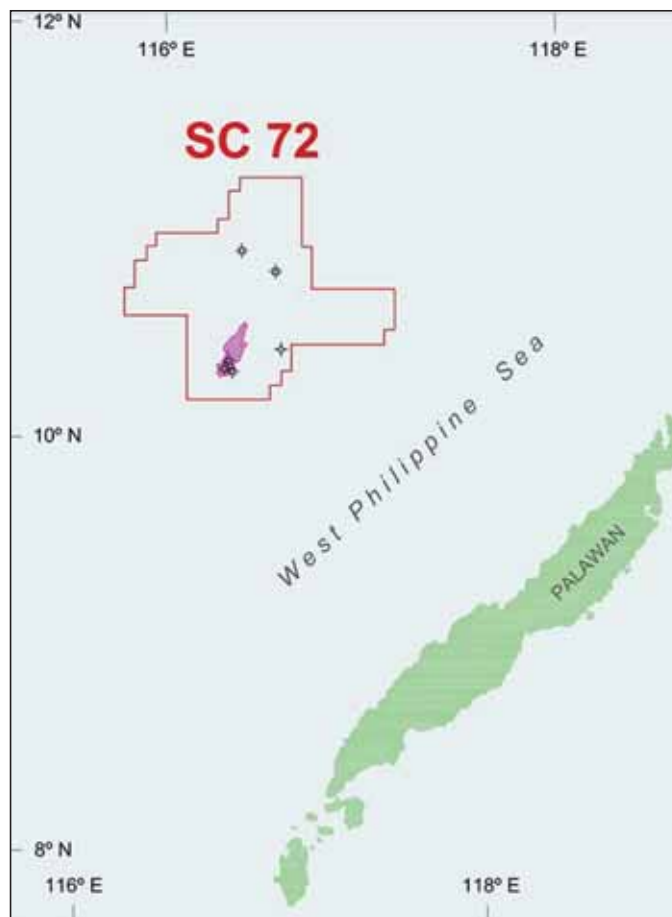
China has also begun to develop its technological capabilities unilaterally. In May 2012, CNOOC officially launched its first domestically developed deep-water semi-submersible drilling rig, CNOOC Hai Yang Shi You 981, off the southeastern shores of Hong Kong.<sup>8</sup> The oil rig, which CNOOC Chairman Wang Yilin described as “national territory and a strategic weapon for promoting the development of China's oil industry,”<sup>9</sup> marked a substantial step in deep-water oil and gas exploration efforts, enabling China to drill in waters up to 3,000 metres

deep. This development will not only enable China to expand its technological reach, it will also strengthen its ability to compete more effectively with smaller claimant countries that lack offshore capabilities.

To overcome the challenge of developing costly offshore capabilities while simultaneously gaining a strategic foothold in the region, smaller claimant countries have pursued joint ventures with foreign oil companies. Vietnam's state-owned oil company PetroVietnam, for example, has signed various offshore hydrocarbon exploration agreements with Italy's Eni S.p.A., India's Oil and Natural Gas Corp. (ONGC) Videsh, and the US-based Exxon Mobil. These joint ventures may provide smaller claimant countries with both increased offshore capabilities and political backing for regional territorial claims, but it will be difficult to convince foreign countries and companies to cooperate if hydrocarbon resources are limited. India's ONGC Videsh, for instance, is still conducting joint exploration activities with Vietnam in the South China Sea but it has abandoned a block due to logistic challenges involved in anchoring an oil rig to the sea floor.<sup>10</sup>

Smaller countries could also pursue joint ventures with China. Forum Energy, a subsidiary of Philippines-based Philex Petroleum, for example, is considering partnering with CNOOC to explore disputed regions off Reed Bank. While the Chinese have attempted to publicize these negotiations as joint, cooperative activities, the partnership will likely remain in the nascent stages for the short term as a result of heightened diplomatic tensions between Manila and Beijing over competing maritime territorial claims. Partnering with China may appear to be a cost-effective solution for smaller regional countries, but it comes with political costs – Beijing may use this joint development in disputed areas as evidence that other countries recognize its territorial claims. Political tensions, therefore, will substantially limit, or even derail, joint energy development between China and smaller countries in the waters of the South China Sea. This delay will hinder the ability of smaller claimant countries to conduct exploration activities and, as time goes by, China will develop its offshore capabilities in order to undergird its maritime territorial claims.

The South China Sea's offshore hydrocarbon resources may not be commercially viable or significant enough to meet the energy demands of China and Southeast Asia. All the claimant countries, however, will continue to conduct offshore activities whether by expanding technological capabilities or pursuing joint ventures with foreign companies to substantiate their maritime



The Recto Bank concession, or SC72, is located in the West Philippine Sea west of Palawan Island.

Credit: Forum Energy/Internet

territorial resources. With its rapidly expanding offshore technological capabilities, China will have the upper hand when it comes to using offshore exploration activities as a way of achieving sovereignty over disputed waters of the South China Sea. 🇨🇳

#### Notes

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# Dollars and Sense: What Constitutes ‘Best Value’?

Dave Perry

What criteria are used to determine who wins contracts to supply the Canadian Forces with a new piece of kit? Following a recent speech by the Minister for Public Works and Government Services Canada, The Honourable Rona Ambrose, this is not clear.

Speaking to the annual CANSEC conference, Ambrose announced that the government of Canada was adopting a “best-value procurement” approach to acquiring defence equipment that “explicitly recognizes value to the Canadian economy and the Canadian industry.”<sup>1</sup> This whole-of-government framework for leveraging military procurement will see the implementation of Key Industrial Capabilities (KICs), a strategy recommended by the Jenkins Report.<sup>2</sup> Jenkins identified a list of interim KICs – Arctic and maritime security, protecting the soldier, command and support, cyber security, training systems and in-service support – that will serve as the industrial focal points of a reoriented defence procurement strategy designed to leverage military procurement for economic benefit. Beginning with immediate and pending procurements, the official government strategy will be to implement this approach. While this move immediately received plaudits from the Canadian Association of Defence and Security Industries (CADSI), what this new policy actually entails and how, and how quickly, it can be implemented is not clear.

The speech announcing this procurement change was also notable for following shortly on the heels of an announcement by Vice-Admiral Paul Maddison, Commander RCN, that a winning design had been selected for the Joint Support Ship (JSS). In a major milestone for the National Shipbuilding Procurement Strategy (NSPS), Maddison declared that a winning design had been chosen for the much-needed replacement of Canada’s supply ships but, strangely, Maddison did not announce which design had been selected. This information was provided in a press release issued by the Department of National Defence (DND) four days later which stated that a “proven off-the-shelf design by ThyssenKrupp Marine Systems Canada” (TKMS) had been chosen.<sup>3</sup>

Notable in the context of the Ambrose speech was that the JSS design selection appears to have been predicated on the traditional means of selecting winning procurements. According to Maddison, the TKMS design was selected based on a comparative evaluation of “capability, cost, and risk.”<sup>4</sup> Relative to a new design based on Canadian requirements put forward by BMT Fleet Technology, the



*This photo shows the German Berlin-class supply vessel Frankfurt am Main, 11 October 2007.*

TKMS design promises an expected 15% lower cost and reduced risks in terms of both cost and operation.<sup>5</sup> On balance, the evaluation assessed the capabilities inherent in the Berlin-class, which fall short of the previously stated requirement for fuel volume, refueling stations and helicopter capacity, represented a better option than a custom-designed BMT vessel that would presumably have come closer to meeting the desired capabilities. The TKMS design will capably fulfill the primary role of providing at-sea replenishment, with some additional abilities to support forces ashore, while incurring less cost and schedule risk than the alternative. Overall, this seems a very prudent decision, given the fixed budget envelope for the project.

Absent from the criteria used to select the TKMS design was any consideration of how the selection would “maximize job creation, support Canadian manufacturing capabilities, foster innovation and bolster economic growth in Canada.”<sup>6</sup> Furthermore, the criteria used to select the design (capability, cost and risk) do not reflect those which Ambrose stated will influence decisions as of 3 June 2013 (the date the new strategy took effect). For procurements from this point forward, the new strategy will “enable decision makers like me to have the benefit of a comprehensive analysis of the trade-offs among capabilities, cost and *value added to Canada* as key elements needed to inform our procurement decisions around the Cabinet table.”<sup>7</sup>



Credit: Petty Officer 1<sup>st</sup> Class P.O. Gharufu, Nigerian Navy

The German Navy Type 702 **Berlin**-class combat support ship **Frankfurt am Main** (A 1412) conducts a refueling at sea with USS **Gunston Hall** (LSD44) in the Gulf of Guinea, 24 March 2010.

How much weight would be given to this new value-added criteria, how that would be applied, to which procurements, and to what sub-components of the procurements, specifically, was not explained. But it was pledged that KICs will be used as the lens for instituting a value proposition component where the “value and associated weighting of bid criteria will be awarded for sustainable job creation, technology transfers, intellectual property transfers and for the creation of export oriented defence industry.”<sup>8</sup> Since the NSPS umbrella agreements already contain a value proposition, it is not evident whether others would be forthcoming for shipbuilding contracts.

Given the emphasis being placed on developing an export-oriented industry, it appears that Foreign Affairs and International Trade Canada will now join the existing members of the defence procurement whole-of-government team – Industry Canada, Treasury Board, DND and Public Works and Government Services Canada. And given the focus the new strategy accords to industrial development, Industry Canada will presumably play an enhanced role. Expanding the members of this whole-of-government team might prove problematic as procurement delays are frequently attributed to the actions of those members whose core institutional interests do not include the timely delivery of military capability (i.e., all those other than DND). Since the team has just gained an additional member and a second member has been given a more prominent role, further delay could be introduced with implications for cost increases due to inflationary pressures. As the Jenkins Report stated, “[a] KICs-centred defence procurement strategy would not be without cost. For example, there may be extra risk to supporting a home-based supplier of a sophisticated product, or some price premium relative to lowest cost globally.”<sup>9</sup> So while these measures are unquestionably good news for some sectors of the Canadian economy, the details of the new strategy’s implementation will determine how the new best value strategy affects defence procurements.

An additional change to the procurement framework is the institutionalization of the independent challenge function for operational requirements currently being implemented by the National Fighter Procurement Secretariat for the CF-18 replacement. This engages independent third parties to provide an outside challenge function “to ensure government makes the right decisions on options, solutions, costs, opportunities and procurement approaches.”<sup>10</sup> While this will presumably introduce an additional step into the increasingly lengthy process of procuring major capital equipment, in the end this might actually expedite overall timelines by avoiding occasional, ad hoc reviews like that currently underway to re-examine the F35 purchase.

Cognisant of the possible downsides of the new approach, at the conclusion of her speech, Ambrose placed the onus on the defence industry to prove the ‘critics’ wrong, and demonstrate that these changes will not cost more money or introduce delays. Hopefully, industry can deliver and the fact that the design selection for JSS was the last major procurement decision taken under the old rules will be of no consequence to the Canadian military. 🍷

#### Notes

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# Warship Developments: Afloat Logistics Support or Joint Support Ship?

Doug Thomas

The saga of the Joint Support Ship continues, but there is now some light at the end of the tunnel. It was announced on 2 June 2013 that the design of the German *Berlin*-class replenishment vessels has been selected as the basis for the replacements for HMC Ships *Protecteur* and *Preserver*.<sup>1</sup>

In the period 1993-1995 I served on the staff of the Director-General Maritime Force Development in Ottawa. One of our tasks at that time was to develop the characteristics and operating model for an Afloat Logistics Support Concept (ALSC) as a replacement for the then-existing three naval Auxiliary Oiler Replenishment vessels (AORs), which were 23-30 years old in 1993. As the decade moved on, the term Joint Support Ship (JSS) came into use: it was intended that these new multi-purpose vessels would be designed for much more than support of naval task group operations.

The flavour of the 1990s was active involvement in peace-support operations, a broader term than peacekeeping, including the navy in such deployments as that of HMCS *Preserver* (AOR 510) to Somalia in 1992, in order to support a Canadian Army battle group. From a naval perspective, that deployment was very successful but the experience highlighted a number of capability deficiencies that should be addressed in the next generation of new construction. Improvements were needed to the ship's ability to support joint operations where port facilities were non-existent or unavailable due to conflict or disaster

– a common experience in failed or failing states, or in the case of major natural disasters.

As an example, *Preserver* had to remain at an unprotected anchorage off Mogadishu for an extended period with a continuous 20-foot sea and swell. This meant that boat-handling alongside with the ship's 36-foot landing craft was hazardous. One solution to that problem would be a dock in the stern, such as that found in amphibious vessels like HMS *Bulwark* or USS *New Orleans*. Could a dock be fitted in a future multi-purpose vessel which could be used for humanitarian assistance/disaster relief in addition to replenishing and supporting more typical naval task group operations? Or would it make more sense to build or buy a specialist landing ship, which would also be a highly suitable vessel to conduct such operations? The RCN's experience over the past 20 years indicates that this would be a highly desirable capability in either case, although it may be possible to achieve much of this using deck-mounted landing craft deployed via motion-compensating cranes.

Further experience with AORs performing non-traditional roles in the 1990s included disaster relief operations after hurricanes in the Caribbean and Florida, and replenishment and joint headquarters operations supporting United Nations activity in East Timor. It soon became obvious to the non-naval members of the Department of National Defence and the government that an



The Canadian Navy auxiliary oiler HMCS *Preserver* participates in the Parade of Ships kicking off the start of New York City Fleet Week 2009, 20 May 2009.

Credit: Mass Communication Specialist Petty Officer 2<sup>nd</sup>  
Class Erica R. Gardner, USN



The German Navy naval replenishment oiler **Frankfurt am Main** (A 1412) departing Portsmouth Naval Base, UK, 26 January 2009.

AOR – with characteristics such as embarked landing craft and helicopters, the capacity to carry large quantities of food, relief supplies and various types of fuel, and a skilled workforce which could help re-establish essential services ashore – could make an impressive and very useful contribution abroad as well as respond to emergencies in Canada. (An AOR would have been sent to other relief operations in recent years – such as a deployment of the Disaster Assistance Relief Team (DART) after a major hurricane in Nicaragua and New Orleans, the earthquake in Haiti and post-Hurricane Igor relief operations in Newfoundland – if one had been available.)

It made sense to the navy in the 1990s to improve the design of the AOR replacement so that it could do a better job in the future of supporting joint operations and humanitarian assistance/disaster relief. The concept was discussed with army and air force development staff, and there was broad agreement that these were desirable capabilities for the department. It was appreciated that there would be an increase in cost to achieve these capabilities – an estimated difference of about 15% to build an Afloat Logistic Support Ship over the cost of a naval AOR. It was thought that up to four of these vessels would be built so that two could be based on each coast and at least one would be readily available to respond to disaster relief/humanitarian assistance missions. Indeed, the vessel was renamed the Joint Support Ship (JSS), to describe better this ship's role and capabilities.

However, the tortuous approval process that major equipment projects go through these days is delaying the acquisition of these new ships, and it will likely be 2018 – at best – before the first one is commissioned. It seems likely that there will only be two, as costs mushroom for what is after

all a pretty basic support ship not a major surface combatant! A problem with the projected schedule for building these ships may be a timing conflict with constructing the new Arctic icebreaker *John G. Diefenbaker* at the same shipyard.

In my opinion, this modified *Berlin*-class AOR should be fine as a replacement for *Protecteur* and *Preserver* but it will not be a true Joint Support Ship as originally envisaged. It is similar in size and speed to our current ships, has less capacity for liquid cargo, but has twin-screw diesel propulsion (rather than a single-screw steam turbine), and a great deal of automation which will result in a ship's company of little more than half that of our existing AORs.

In conclusion, it seems to me that the navy did the right thing in trying to replace the AOR with a multi-purpose vessel but it over-complicated matters for decision-makers most of whom do not really appreciate the vast improvement in capability that could be achieved by a true JSS for a relatively small premium in cost over a basic AOR. It is likely that the AOR replacement will be called a JSS but the enhancement over the existing AORs will be minimal. Nevertheless, as new, dependable, large-capacity vessels, they will be very capable. Let us hope that a third ship can be authorized, as experience has shown that these ships will be enormously useful and in high demand to do many tasks over their long life, some of which we can't even envision today. 🍷

#### Notes

1. Government of Canada, Press Release, "The Government of Canada today announced that a ship design for the Joint Support Ships being acquired for the Royal Canadian Navy has been selected, as part of the National Shipbuilding Procurement Strategy," 2 June 2013.



# Book Reviews

*The China Challenge: Sino-Canadian Relations in the 21<sup>st</sup> Century*, edited by Huhua Cao and Vivienne Poy, Ottawa: University of Ottawa Press, 2011, 294 pages, \$34.95 paper, ISBN 978-0776607641

Reviewed by Sean Clark

It would have been impossible for a visitor to Shanghai in 1970 – the year that Prime Minister Pierre Trudeau re-established official Canadian ties with China – to have foreseen the changes to come. The city and its surrounding countryside stood amidst a backdrop of grinding poverty. Famine had swept across the Middle Kingdom just a decade previous, killing tens of millions. As the diplomatic thaw began, China's Gross Domestic Product (GDP) per capita measured a paltry \$111 US and less than a third of all Chinese children attended secondary school. This combination of penury and hunger ensured China bought Canadian grain and little else. The matter of Sino-Canadian foreign policy was thus consigned to unkempt corners in Ottawa's halls of power.

Since then, however, China has experienced one of the most remarkable economic booms of all time. Stunning export-led growth has ballooned China's GDP to more than \$6,000 US per person. Secondary school enrolment now sits in excess of 80% and Chinese firms compete fiercely in sectors that range from steel to semiconductors. In 2007, China surpassed the US share of global exports. In 2009, it overtook the United States in terms of fixed investment. In 2010, it passed the United States in manufacturing output, energy consumption, car sales and patents granted to residents. Unable to feed itself two generations ago, China today boasts a net foreign asset stock worth a stunning two *trillion* dollars. Perhaps most telling of this transformative change is that Shanghai has been transformed from a drab and decaying backwater into a city with so many new skyscrapers that it is physically sinking.

Not even a country with as deeply ingrained Atlanticist proclivities as Canada can ignore such a remarkable renaissance. Thus, *The China Challenge: Sino-Canadian Relations in the 21<sup>st</sup> Century* is a welcome addition to the growing number of books about China. The country is now Canada's third largest export market and second largest source of imported merchandise. But Canada's relationship with China is more than a story of economic opportunism; it is a deeply personal one as well. An estimated 300,000 Canadians live in Hong Kong alone, with

perhaps another 20,000 on the mainland proper. The number of people of Chinese descent living in Canada is even larger. At 1.3 million, Canada is home to the seventh largest Chinese diaspora in the world. Chinese is now the third mostly widely spoken language in Canada after French and English. The implication is that Canada and China have close personal and cultural links, and thus good incentive to maintain warm and neighbourly relations. Many of these dynamics are covered in this timely collection edited by Huhua Cao and Vivienne Poy.

Alas, as this book makes clear, international politics is more than just commerce and warm wishes. Deep-seated perils stalk relations between the two. Most obvious is the fact that China is the strategic rival of Canada's chief benefactor, the United States. Sustained antagonism between the Pacific's two behemoths would cause intense discomfort to even the most dispassionate of bystanders. Second is that such close cultural and personal links transform the well-documented human rights abuses of the Chinese government from matters of purely cosmopolitan concern into a core state interest. A good many Canadians, after all, have grandmothers, siblings and cousins living under the thumb of China's still repressive regime. Third is the considerable unease much of the Canadian public harbours for dealing with the agents of a communist government. This has been made apparent by the sound and fury surrounding the \$15.1 billion takeover by Chinese state-owned China National Offshore Oil Corporation (CNOOC) of the Canadian oil firm Nexen. Some have gone so far as to spout fears of Canada becoming a mere 'resource colony' of Beijing. Burgeoning trade, it appears, is a salve neither to the legacy of the Tiananmen Square massacre nor the protectionist instinct inherent within even ostensibly 'open' economies.

The contention of the editors is that with "the exception of the relationship with the United States, Canada's relationship with China is likely to be its most significant foreign connection in the 21<sup>st</sup> century." Given both the enormity of the economic transformation China has undergone since the late 1970s, and the close and substantial cultural ties Canada and China share, there is little reason to quibble with this claim. To their credit, Cao and Poy have collected a wide-ranging set of works from a variety of contributors, including Allan Rock, Charles Burton, Ming K. Chan and Yuen Pau Woo. The material covered runs the gamut from diplomacy to geriatrics, migration to education.

While this book is useful and interesting, there is an unfortunate tendency within its pages to consider the associated challenges as mere obstacles, easily surmount-

able with proper application of elbow grease and careful diplomacy, rather than as the potentially unavoidable pitfalls they really are. Beneath calm waters lurk dark currents far more powerful than Canada, ever-ready to tear the present arrangement of cordial profitability asunder. Prudence and clever planning can only go so far for a middle power. Indeed, Canadians would do well to remember that sometimes the most important decisions are made by others. 🍷

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*The History of the RCMP Marine Services*, by Kenneth John Haycock, British Columbia: Pacific Marine Publishing, 2012, 340 pages, ISBN 978-0919317475

Reviewed by K. Joseph Spears

In Canada in recent years, the warming Arctic and increasing concern about marine security in the post-9/11 world have focused discussion on the constabulary role of the Royal Canadian Navy (RCN) and the arming of the Canadian Coast Guard. What most Canadians don't realize is that the RCMP Marine Services, operating under a variety of names, has been very active in Canadian waters and had a long history of maritime law enforcement, and even search and rescue, prior to the creation of the Canadian Coast Guard in 1962. *The History of the RCMP Marine Services* by the late Kenneth John Haycock is a must-read for anyone interested in Canada's ocean management. The book is a welcome addition to the discussion about managing the 7.3 million square kilometres of Canada's ocean space. It is important to understand that these are not new issues and that the RCMP has been active at sea for a long time.

The book outlines in very readable fashion the little-known fact that for much of Canada's history the RCMP provided the primary maritime federal presence on the Atlantic, Pacific and Arctic Oceans, and the Great Lakes and inland waters. The book provides a summary of the over 200 vessels operated by the RCMP. The history of RCMP Marine Services is a fascinating read. Most Canadians are familiar with the RCMPV *St Roch* which transited the Northwest Passage both east and west during World War II – this story is now part of the rich fabric of Canada's Arctic history. This was a routine patrol. The final chapter of the book details the voyage undertaken by the RCMPV *St Roch II*, a light aluminum patrol vessel, through the Northwest Passage in 2000. Many of the RCMP vessels were seagoing armed vessels and had dedicated RCMP Marine Division crew operating under a complex jurisdictional mandate. Sound familiar to the present discussion?

This book grew out of the fact that Constable Haycock, a West Coast Marine Services member, learned that there was very little record and no complete history of RCMP Marine Services. Constable Haycock started this project in 2005 and worked on it through a lengthy illness. The book was edited by noted marine author Peter Vassilopoulos and was published after Haycock's death. It is dedicated to the author's unfailing interest in the rich marine fabric that makes up the federal police force, and Haycock was officially commended for this outstanding work.

The book is in a coffee table format with a variety of photographs with rich images and sidebars and details of the vessels operated both in peace and war by the RCMP. There are photographs of all of the vessels operated by the RCMP. It traces the evolution of the RCMP salty side that formed its own Marine Section on 1 April 1932 and absorbed all the duties of the Department of Revenue's Preventative Service section.

The RCMP was very active on Canada's coasts during the Prohibition era in the United States and its work included the seizure of one of the vessels operated by Al Capone. Haycock outlines the Marine Section and its evolution to today. He discusses how the RCMP currently operates a number of state-of-the-art vessels working in conjunction with other government departments to ensure the safety and security of Canadian waters. What becomes very clear from this book, is that the challenges of marine law enforcement in Canadian waters are not new.

This book is an essential read to understand the background of the pressing issues of marine security and enforcement in Canada. The book makes it clear that the RCMP is very comfortable at sea and in the Arctic. We owe a debt of gratitude to Constable Haycock for this piece of marine scholarship recording an important element of Canada's ocean management. 🍷

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*HMCS Sackville berthed on the Halifax waterfront, 9 August 2006.*



The Canadian government recently announced the purchase of Joint Support Ships based on the latest *Berlin*-class design. This photo shows the German Navy fleet replenishment vessel *Frankfurt am Main* departing Portsmouth Naval Base, UK, after a short visit, 12 March 2012.

Credit: Brian Burnell/Wikipedia