



CANADIAN NAVAL REVIEW

VOLUME 8, NUMBER 3 (FALL 2012)

Piracy in a Modern World

**The Cuban Missile Crisis
50 Years Later**

**Canada's Defence
Research Ships: Part of a
Balanced Navy?**

**The RCN Can Learn
from Admiral Nelson's
Amphibious Defeats**

**Modern Piracy and
Current Counter-
Measures**



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Phone: (902) 494-3769

Fax: (902) 494-3825

Email: naval.review@dal.ca

Website: www.naval.review.cfps.dal.ca

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Credit: Corporal Jax Kennedy, Canadian Forces Combat Camera

Sergeant Dan Leger, Search and Rescue Technician, is hoisted into a CH-149 Cormorant helicopter during a 103 Squadron search and rescue exercise in St. John's, Newfoundland and Labrador.

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Editorial

The Navy after the Canada First Defence Strategy

The Canada First Defence Strategy (CFDS) is officially dead. The CFDS was launched in 2008 with the goal of providing predictable, long-term funding for the Canadian military. It did not. The centrepiece of the document was a pledge to raise the automatic increase in defence funding (the defence escalator) from 1.5 to 2% annually beginning in 2011/2012. Building on significant budget infusions in 2005 and 2006, this pledge to provide long-term, real budgetary growth was supposed to lay the groundwork for 20 years of defence planning.

Unfortunately, CFDS was almost immediately thwarted by the 'Great Recession.' Less than 22 months into the 20-year CFDS spending plan, departmental operating budgets were frozen by federal budget 2010. As a result, the Department of National Defence (DND) has been forced to compensate its employees for negotiated wage increases by re-allocating funding internally away from other departmental spending plans.

This single budgetary measure effectively cancelled out the impact of the CFDS escalator increase for 2011/2012 and 2012/2013. On its own, this move would have rendered CFDS fiscally untenable. Unfortunately, federal budgets 2011 and 2012 have also mandated steep spending cuts over the next three years, slashing spending by a combined \$2.1 billion, or 11% by 2014/2015. Although the official government rhetoric insists that defence spending will continue to rise over time because of the escalator, in reality, the defence budget will drop, sharply.

As a result, as of September 2012, DND is in the midst of revising the CFDS, to re-align defence policy with the new budget framework. At the same time, the Canadian Forces have launched another round of transformation. What all this means for the Royal Canadian Navy (RCN) is not entirely clear, but significant change is coming as the Canadian defence establishment adjusts to a much-reduced budget envelope.

A key challenge as defence policy is reset will be rebalancing the defence budget. CFDS made careful mention that it would provide "balanced investments across the four pillars upon which military capabilities are built – personnel, equipment, readiness and infrastructure."¹ The limited budget-cutting details divulged so far, however, suggest that the current spending reduction is anything but balanced. Budget 2012 explicitly states that regular force end strength will be preserved at current levels, and the capital equipment plan will be protected. And aside

from amalgamating a few Area Support Units, no significant infrastructure closures have been announced.

Consequently, the bulk of the budget cut will fall on the readiness pillar. The implications of this for the RCN will likely include reduced training and fuel budgets and a smaller national procurement allotment for maintenance and spare parts. This means Canada's sailors will go to sea less and fewer vessels will be available to deploy on short notice.

The more worrisome development for the RCN is significant additional delay in the capital investment plan. Although budget 2012 states that the government remains committed to "purchasing new ships built in Canada through the National Shipbuilding Procurement Strategy," it announced that \$3.5 billion in capital equipment funding would be re-profiled into the future.² This move appears to be part of an effort to re-align DND's investment plan to a more realistic and manageable timetable, since the spending plans outlined under CFDS were simply too ambitious. The department is attempting to move four to five times more major capital projects than it was in 2000 through an Assistant Deputy Minister Matériel organization whose staffing levels are virtually unchanged. Coupled with industry delays in delivering equipment on schedule and an inexperienced procurement workforce, this major increase in volume has been too much for a constrained procurement system to handle. As a result, \$3.7 billion went unspent in the year intended and was subsequently re-profiled between 2004 and 2010.³



A CH-124 Sea King helicopter from HMCS *St. John's* circles the ship as it sits in the waters of Resolute Bay, Nunavut, during *Operation Nanook* 2011, 22 August 2011.

Credit: Sgt Norm McLean Canadian Forces Combat Camera

Canada's maritime forces are already seeing the results of such delay with both the Cyclone and Arctic/Offshore Patrol Ship (AOPS) projects. This project slippage is troublesome both for deferring the acquisition of needed equipment, and also because it erodes the purchasing power of the assigned project budgets. Defence-specific inflation in Canada averages 7%, while for naval ships it can reach as high as 11% annually. As a result, delays of only a few years can see massive erosions of project budgets resulting in the acquisition of less capable platforms, reduced quantities or both. The Joint Support Ship (JSS) project encapsulates this dilemma perfectly. The project has faced long delays, and the original plan to acquire three vessels with significant sea lift and joint capabilities was reduced to the acquisition of only two supply vessels due to the unavailability of funds. Any similar delay in the Canadian Surface Combatant project would be perilous as that project's notional budget of \$26 billion may be roughly \$14 billion short of what is needed to acquire 15 vessels of the desired capability.

At the same time that these measures are occurring, the CF has entered into a new phase of transformation, based on the work of Lieutenant-General (ret'd) Andrew Leslie. The key initiatives announced to date are the amalgamation of the force employment commands into a single Canadian Joint Operations Command (CJOC) and a reduction of up to 25% of the regular force staff in the National Capital Region headquarters. The goal of the move is to free up 3,500 personnel to devote to 'emerging' capabilities such as space and cyber. This will obviously place additional pressures on a NDHQ-based naval staff that is already wrestling with wholesale fleet re-capitalization.

Given these pressures, the navy deserves significant credit for being the first service to act on the recommendation of the Leslie Report to reform its force generation practices – announcing navy transformation the same day as the wider CF transformation effort was launched. The naval variant envisions a number of measures to reduce overhead and create staffing efficiencies, including the creation of submarine and new capability introduction directorates, consolidation of the naval schools and personnel management, and the establishment of a Readiness Management Authority and Maritime Component Commander. These efforts to maximize the efficiency of the RCN's internal processes should be applauded.

How all of these moves will come together under a new policy remains to be seen. The full range of capabilities outlined in the CFDS is unaffordable and new priorities continue to be identified. Perhaps the most interesting of these for the RCN is the need to acquire a "dedicated platform to support operations from the sea, including for



Credit: Internet image

Artist's impression of the proposed Arctic Offshore Patrol Ship for the Canadian Navy.

humanitarian operations and disaster response scenarios.²⁴ Envisioning a strategic landscape dominated by operations in the contested littoral regions, senior naval officers contend that a purpose-built amphibious vessel could be the most heavily used asset in the CF's inventory. While this might be the case, how would such a platform be funded?

Barring a decision by the navy to alter its own fleet renewal plans, or alternatively, a significant reduction in the CF's overall end strength, an amphibious vessel seems destined to remain a desirable but ultimately unaffordable dream. Indeed, without a significant infusion of both procurement and operating funds, the RCN as a whole is destined for a much different future than what was originally envisioned under the CFDS.

Unless the CF budget fortunes change, the navy's long-term plans will need to be adjusted significantly. There simply aren't enough defence dollars to go around. 🍷

Dave Perry
PhD Candidate, Carleton University, Defence Analyst,
CDA Institute

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Winner of the 2012 Bruce S. Oland Essay Competition

Piracy in a Modern World

Jeffrey Lucas



Credit: Specialist 2nd Class Jason R. Zalasky, USN

Photos taken of Somali pirates on board the captured MV *Faina*, 9 November 2008.

Introduction

Piracy is deeply rooted in human history. Although the days of half-drunk buccaneers aboard wooden galleons sailing under the Jolly Roger are gone, piracy is still a very real threat today. From the Strait of Malacca in southeast Asia to the Gulf of Guinea to the Horn of Africa off the coast of Somalia, piracy is a threat to modern-day maritime traffic. With all our technology and modernization in the 21st century, how can piracy still be a threat, why is it suddenly on the rise, can it be combated and what does it mean for Canada?

I will answer these questions by analysing the operations of Somali pirates, illustrating how profiteering is driving the piracy, and explaining how economic factors, such as environmental disasters and foreign illegal fishing, contributed to the birth of piracy in Somalia. As well, I will briefly discuss Canada's role in the international response to the piracy, and explore the situation in the Malacca Strait as a possible solution to the piracy problem in Somalia.

Somalia: Pirates of Today

It was once said that where there is a sea there are pirates. This seemed more relevant in the 16th and 17th centuries when the world was still industrializing and globalizing than it does today. Yet, piracy seems to be experiencing a resurgence. Before we proceed, it is important to define what piracy is in a modern-day context. Piracy is defined in Article 101 of the United Nations Convention on the Law of the Sea as,

(a) any illegal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed—

(i) on the high seas against another ship or aircraft, or against persons or property on board such ship or aircraft;

(ii) against a ship, aircraft, persons or property in a place outside the jurisdiction of any State;

(b) any act of voluntary participation in the operation of a ship or of an aircraft with knowledge of

facts making it a pirate ship or aircraft;
(c) any act of inciting or of intentionally facilitating an act described in subparagraph (a) or (b).¹

With this definition in mind, we can now turn to the waters off Somalia and examine why exactly there has been a surge of piracy there in recent years, what is driving the piracy and how the international community is attempting to respond.

Piracy off the coast of Somalia first gained international attention in 2005 with the hijacking of MV *Semlow*, a 58-metre cargo ship on charter by the UN World Food Program, delivering aid to Somalia. A second hijacking of another World Food Program ship, MV *Miltzow* only a few months later put the issue into the international spotlight. The hijackings were condemned by the UN and due to international pressure ransoms were paid for the release of the crew – contrary to the policy that ransoms should not be paid because this encourages more hijackings.²

Since 2005, piracy based in Somalia has become a serious problem in the Gulf of Aden, and has occurred farther and farther from the Somali coast. The shipping lanes in the area are extremely important – some 30,000 merchant vessels pass through the Gulf of Aden, directly off the coast of Somalia, each year.³ In 2008, there were 111 reported attacks, 42 of which were successful. In 2009, that number rose to 198 reported attacks, a 62% increase from 2008 with 44 successful.⁴ Information released by the US Navy in August 2012 indicates that there were 239 pirate attacks off Somalia in 2010 (68 successful) and 222 in 2011 (34 successful).⁵ Thus far in 2012, the numbers are down, perhaps because ships have taken precautions or because of the presence of naval ships in the region, but the threat has not disappeared.

As the rate of attacks grew, so did the sophistication of the weaponry and the tactics, and the ransom demands. Pirates are now well equipped with AK-47s and rocket-propelled grenade launchers. And ransoms have increased from an average of \$500,000 per ship in 2007 to much more than that.⁶ With such lucrative payoffs and a relatively compliant international community, it's no wonder piracy spiked in a three-year

period. According to a report released in 2011 by Geopolity, a political and economic intelligence organization based in London, England, "Somali piracy was worth \$238m last year and is set to rise to \$400m by 2015. The costs of piracy could virtually double in that time – from \$8.3bn in 2010 to more than \$15bn (£9.1bn) by 2015."⁷

Profiteering is certainly a major driving factor now, but there are a few other factors that are worth analysing to determine how the problem arose in the first place. In particular, we could point to Somalia's status as a failed state with no effective government, a long coastline on a busy shipping route, illegal fishing by foreign vessels, and destruction caused by the tsunami of 2004.⁸ These factors combined to create a breeding ground for piracy. The lack of a central government structure can be seen as the most important factor from which a web of problems has expanded. With no effective governing body, people are left to fend for themselves. This has been the case since the early 1990s and foreign fishermen are more than aware of this fact. Since there is no central power to assert its dominance or right to rule in the region, and thus no financial resources for a navy or coast guard, illegal fishing has become a huge problem. Foreign fishing vessels – particularly after Somali fishing vessels and equipment were damaged by the tsunami that hit the coast in December 2004 – could not be deterred or apprehended, and they became a catalyst for action that Somalis took in defence of their livelihoods. And so began Somali piracy with



Pirates holding the Chinese fishing vessel *Tianyu 8* guard the crew in November 2008 as the ship passes through the Indian Ocean.

three Taiwanese trawlers being hijacked in August 2005. The trawlers were 'impounded' for illegal fishing by a group referring to itself as the Somali Volunteer National Coast Guard, and 'fined' US\$5,000 for each of the 48 crew members for this criminal act. Thus "[t]he frustration of local young fishermen provides one answer to the 'who done it' question regarding piracy: seeing their waters being exploited by technically more advanced foreign high-sea trawlers forced them to start looking elsewhere for livelihood."⁹



*The remnants of a rocket-propelled grenade shown after striking the cruise liner **Seabourn Spirit** during a 5 November 2005 attack by pirates near the coast of Somalia.*

This certainly provides us with one solid answer as to how piracy started in Somalia. With no real navy or way of defending the coast and waters, people of small coastal communities felt themselves forced to take matters into their own hands in order to survive. These actors 'impounded' and 'fined' foreign ships as a means to defend their livelihood. Based on the definition given earlier, these early acts may not be considered acts of piracy but rather actions taken by citizens to fulfill the functions of a state in the absence of a state.

However, the lucrative pay-outs received for these acts, combined with the relative ease in which they can be conducted, either attracted a much more sophisticated class of criminal or made the poor fishermen greedy or, as is most likely the case, both. This leads us to a second factor in the growth of the piracy – the existence of networks that link most coastal communities to inner land gangs. Because there is no central government, much of the country is controlled by a variety of warlords. The warlords, who at worst run criminal gangs, at best allow them to operate, attempt to extract the resources out of pirate operations in order to further their power. Although there has been little study of this, it is entirely possible that the surge in piracy has political elements as warlords attempt to increase their economic power in order to increase their control of territory or impose their own form of authority. The piracy could, therefore, have been born out of natural desperation but has evolved based on political and economic opportunism.

The degree of sophistication of pirate operations now signals a major transformation from groups of poor fishermen to inter-connected gangs with profit as their primary drive. Since 2005, the pirate attacks have been occurring well outside Somali territory, with better boats and more effective weapons. Furthermore, these attacks are largely against ships that are not involved in illegal activities in Somali waters but rather are simply passing through the busy shipping lanes in the area, and the ransom demands have been growing exponentially. As such, it seems that piracy in Somalia has now transformed from natural self-defence into a form of entrepreneurial profiteering, with projected earnings skyrocketing. So this leaves one last question, how can it be combated? Let's look at Canada and the international community's response.

à e Canadian and International Response

The piracy issue in Somalia has obviously not escaped the attention of the international community. With the hijacking of UN ships, a response was clearly necessary. Members of both the European Union (EU) and the North Atlantic Treaty Organization (NATO) responded with their militaries through the Combined Maritime Force (CMF). The CMF is a multinational naval cooperative established by the international community to ensure security and stability in an important shipping route. CMF is made up of three task forces: Combined Task Force (CTF) 150 (maritime security and counter-terrorism); CTF-151 (counter-piracy) and CTF-152 (Arabian Gulf security and cooperation).¹⁰ Other countries such as China, India and Japan have also contributed naval forces to the counter-piracy efforts.



Credit: Corporal Peter Reed, Formation Imaging Services, Halifax

The boarding party from HMCS *Fredericton* conducts an approach and boarding operation to investigate a skiå on 28 January 2010 during *Operation Saiph*.

Canada's naval operations are conducted under *Operation Saiph*. The operation is defined as "Canada's participation in the international campaign to enhance maritime security in the North Arabian Sea, the Persian Gulf and the waters around the Horn of Africa."¹¹ On 6 August 2008, HMCS *Ville de Quebec* was tasked from NATO's Standing NATO Maritime Group-1 (SNMG-1) to escort a World Food Program ship from Kenya to Somalia.¹² In 2009, NATO formally committed SNMG-1 to the Gulf of Aden. Under *Operation Sextant*, HMCS *Winnipeg* represented Canada's commitment to the international response by patrolling the waters off Somalia in order to stop and deter acts of piracy. This commitment was continued in 2010 with the deployment of HMCS *Fredericton* to the newly established NATO *Operation Ocean Shield*. This operation is currently undertaken in conjunction with CTF-150 and ensures Canada's continued commitment to the international effort. As of July 2012, HMCS *Regina* is representing Canada's commitment to CTF-150 in the Gulf of Aden.

This is, however, merely a temporary fix to the piracy problem. As Rear-Admiral Jose Domingos Pereira da Cunha, former Commander of SNMG-1, states, "NATO is not a solution for all the problems, and we are here only to participate and contribute with our effort, but this is a large area that needs a lot of assets, and a lot of contributions."¹³ As well, there are two facets to the problem of piracy – one on the water, the other on the land. The

international community is addressing the problem on water but that leaves the more difficult task of developing rule of law on land. If indeed the pirates are operating as little more than organized crime on water, then the conditions ashore that facilitate this must be addressed. Clearly the current international efforts are only short term. The increased vigilance and defensive counter-tactics taken by the international shipping industry, combined with the presence of international navies have been effective in countering the pirates for now, but the root of the problem still exists. So how do we solve the problem of piracy in the long run? It is encouraging that Somalia's first formal Parliament in more than 20 years was recently sworn in just as the mandate of the UN-backed Transitional Federal Government expired at the end of August 2012. If – and this is a big if – the new Parliament can survive and extend its authority, it will be a big step to dealing with piracy.

Strait of Malacca: Lessons to be Learned

To answer how piracy off the coast of Somalia can be combated successfully in the long term, we have to look to another area of the world that had a similar problem. The Strait of Malacca in southeast Asia has been a major hotspot for pirate activity for centuries. Since the early days of the spice trade between India and Western markets, the strait has been a popular route for commercial shipping and pirate activities alike. Today, some 40% of the world's trade passes through these straits a year in 50,000

vessels.¹⁴ Everything from oil to manufactured goods is transported through these narrow channels, making it enticing and easy for pirates to attack their targets. Moreover, the geostrategic make-up of the coast enables them to disappear in the shallow river networks and bays. According to the International Maritime Bureau, in 2004 the straits experienced some 38 actual or attempted acts of piracy, a record for the region but the peak of the attacks.¹⁵

Since the geography of the coast in the strait mirrors the coast of Somalia, with small coves and inlets in which pirates can hide, a comparison can be drawn between the two cases. As well, although the countries bordering the Malacca Strait are mid-income countries, they did not possess the technical capability – such as first-class destroyers, satellite surveillance and drones – to monitor the strait. This, combined with the lack of communication and cooperation between the governments, enabled the pirates to operate relatively unopposed. Like Somalia, piracy in the Strait of Malacca has economic origins too. The first modern trigger was the 1997 Asian financial crisis which “had a debilitating effect on the entire region and forced many people residing in the coastal areas, especially in Malaysia and Indonesia, to seek sustenance in piracy in order to expand their diminished earnings.”¹⁶ Clearly there is a resemblance between the situation in Somalia and the situation in the Strait of Malacca. Yet,

today piracy in the strait has nearly been eliminated. In 2011 Malaysian Defence Forces Chief Jen Tan Sri Azizan Ariffin said the Straits of Malacca had achieved a “close to zero incident level” due to the collaboration among Malaysia, Singapore, Indonesia and Thailand in the Malacca Straits Patrol.¹⁷

So how did these developing countries stamp out piracy in the course of a few years? The answer is simple, cooperation and coordination on a local level. As well, many of the pirates active in the Malacca Straits were from Aceh an Indonesian territory involved in a violent dispute with the central government. The devastating effects of the 2004 tsunami – which killed about 200,000 people in Aceh – helped lead to talks in 2005 which led to the resolution of some of the grievances, and in turn to a reduction in piracy. The countries bordering the strait had previously refused to cooperate but they all realized that their economies relied on the free movement of trade, and that there was huge economic incentive to fix the problem. This led to the establishment of the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP) which was signed in November 2004. The establishment of bilateral and multilateral agreements among the members of the Association of South East Asian Nations (ASEAN) was key in facilitating the exchange of intelligence, capacity building



HMCS Fredericton conducts an approach operation to investigate two dhows.

Credit: MCpl Kelvin Card, AES OP, Air Det, HMCS Fredericton

and technology building.¹⁸ Combining intelligence and open sea patrols with military presence reduced acts of piracy within a few short years in the strait.

However, this is not to say that it will be this easy for Somalia. The members of ASEAN have functioning government bodies and relatively strong economies that can support these efforts, and ASEAN is a much more effective regional body than the African Union. It would appear that the key to combating any piracy problem lies at a local level. The case of the Malacca Strait is a compelling and indeed hopeful example of how local governments can join forces to combat this issue. Since the Somalia case and the Malacca Strait cases have some similarities, possibly one can be solved as the other was. Both cases were started by economic hardships, both saw desperation turn into violence and greed by non-state actors, both locations have geostrategic significance, and both coastlines offer possibilities for pirates to hide.

The major difference is that the countries bordering Malacca have stable government structures and strong economies. This is perhaps the greatest challenge facing Somalia. Its lack of a strong central government and economy will be a major and persistent problem in combating piracy. A real solution must come from a local and even regional response. The countries around Somalia must cooperate and coordinate efforts if there is ever going to be a long-term feasible solution. There are some hopeful signs, in particular the signing in 2009 of the Djibouti Code of Conduct – which was inspired by ReCAAP – by states in the region in order to promote cooperation in dealing with piracy in the western Indian Ocean and the Gulf of Aden. For now international military patrols only serve as a band-aid, a quick fix to a far deeper and complex issue.

Conclusion

In conclusion, piracy is still a threat today in the 21st century. Starting with the ‘impounding’ of fishing trawlers off the coast, Somali piracy has become an increasingly profitable operation, resulting in payouts of hundreds of thousands to millions of dollars. Furthermore, the relative ease at which it can be carried out makes it a growth industry in countries where the law is absent or weak. While incidents of piracy off Somalia are down in 2012 – due probably to better defensive measures on ships and the presence of international naval task forces – being prepared for pirate attacks has meant significant costs both for shipping companies and for countries which have provided naval forces. The international Combined Maritime Force with three separate task forces designed to combat terrorism and piracy has been in the area for

a number of years, at great cost. This is, however, a short-term fix. The case of the Malacca Strait provides reason for optimism. Through military and intelligence cooperation and coordination, piracy threats were nearly eliminated.

It is the final conclusion of this article that, although piracy in southeast Asia has been contained, the same cannot be done to Somali piracy until a strong central government is formed and surrounding regional powers can create a uniform and effective response to the piracy problem. Until this happens, piracy off the coast of Somalia will continue to be a problem. And, as we have seen in recent months, piracy is a growing problem off the west coast of Africa – particularly in the Gulf of Guinea – so it is important to learn lessons that can be applied there too. 🍷

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10. See Combined Maritime Forces, “About CMF/Combined Maritime Forces,” available at <http://combinedmaritimeforces.com/about>.
11. Department of National Defence, “Operation SAIPH/International Operations,” Canadian Expeditionary Force Command.
12. See Combined Maritime Forces, “About CMF/Combined Maritime Forces.”
13. Rear-Admiral Jose Domingos Pereira da Cunha quoted in Department of National Defence, “Operation SEXTANT/Past Operations,” Canadian Expeditionary Force Command, 11 January 2012.
14. Michael Schuman, “How to Defeat Pirates: Success in the Strait of Malacca,” *TIME World*, 22 April 2009.
15. *Ibid.*
16. Harnit Kaur Kang, “The Gulf of Aden vs Malacca Strait: Piracy and Counter-Piracy Efforts,” IPCS, New Delhi, December 2009, p. 2.
17. Malaysian Defence Forces Chief Jen Tan Sri Azizan Ariffin, quoted in Maritime Security Asia, 21 April 2011, available at <http://maritimesecurity.asia/free-2/piracy-2/drastic-drop-in-piracy-in-malacca-straits/>.
18. See Chris Raham, “The International Politics of Combating Piracy in South East Asia,” in Lehr (ed.), *Violence at Sea*, p. 186.

Jeàrey Lucas is from Calgary, Alberta, and currently is finishing the final semester of his undergraduate degree in Political Science at Dalhousie University.

The Cuban Missile Crisis 50 Years Later

Peter Haydon¹

On the evening of Monday, 22 October 1962 as the Soviet Union's strategic gamble to put nuclear missiles into Cuba became public knowledge many believed the world stood at the brink of nuclear war. Fortunately, that war didn't happen and by the following Monday the world was slowly returning to a more stable condition. The Cuban crisis was a milestone of the Cold War from which many valuable lessons were learned. The question now is, 50 years after the crisis, are any of those lessons still useful?

Perhaps a prior question is whether analyses of past political and military events really help us understand and deal with present-day incidents. Some people believe that such history is now irrelevant and has nothing to teach them, others believe that the lessons of history are important and go to great lengths to develop 'lesson learned' from past crises and wars. Who is right? That is not an easy question to answer. I still find it surprising how often parallels exist between present-day political and military incidents and past events. That said, I must admit that at times detailed analysis and lessons drawn from the past can be misleading while at other times such lessons are invaluable. For instance, an analysis of British battle fleet tactics in the First World War has little or no relevance to contemporary naval operations but understanding the workings of the naval staffs that controlled those fleets holds the promise of gaining insights into the complicated relationships between politicians and the naval leadership – a relationship that remains complex in most countries.

Naval operations, high-level diplomacy and intense political wrangling in Canada, the Soviet Union and the United States were central to the evolution and resolution of the Cuban Missile Crisis. There were other participants

in the crisis – obviously Cuba was involved, while some NATO countries, the Organization of American States (OAS) and the United Nations were engaged on the margins. In many ways, it was a textbook political crisis but with nuclear weapons thrown in for added intensity. At the time, we learned a great deal from the crisis particularly about what became known as nuclear diplomacy. The crisis scared many politicians and a new respect for nuclear weapons emerged. From a Canadian point of view, some aspects of the crisis still have relevance, some of which might come under the uncomfortable heading of 'lessons not learned.' To explain these we need to review the key events.

The way in which the crisis was managed politically in Canada remains controversial. The accepted explanation of the government's handling of the crisis is that the Prime Minister, John Diefenbaker, refused to put the military and thus the Emergency Measures Organization on a higher state of alert to match the changes made by the Americans. He claimed that he had not been adequately consulted beforehand by President John F. Kennedy under what he believed, wrongly, was an agreed procedure. Despite a careful explanation of the situation and intended American response by US Ambassador Livingston Merchant, who was handpicked by Kennedy to go to Ottawa to brief the Prime Minister, Diefenbaker believed the President was overreacting and saw no need for a nation-wide Canadian alert – he said he did not want to alarm the people needlessly. Whether any part of his decision was a reflection of his difficult relationship with Kennedy is open for debate. What is very clear is that Diefenbaker either did not understand or chose to ignore the provisions of the Canada-US agreements for continental defence under situations like those of the evolving missile crisis.

Normally, the War Book gave the Minister of National Defence authority to raise the alert state to the first level, but in October 1962 the War Book had been withdrawn for revision and technically the Minister's authority was rescinded. Hence, Defence Minister Douglas Harkness took the request to increase the alert state directly to Diefenbaker believing he would approve the change without delay. The Prime Minister refused the request and said it would be discussed at Cabinet the next day. The refusal left Harkness shocked and facing a quandary. Believing that the threat to national security was real he considered



USN P-2H Neptune flying over a Soviet merchant ship, October 1962.



Credit: Diefenbaker Centre Archive

President John Kennedy and Prime Minister John Diefenbaker meet in the Oval Office, February 1961.

Diefenbaker's delay unconscionable and so ordered the military to begin taking the necessary steps to increase the alert state quietly.

Harkness took the request back to Cabinet the next day, 23 October, but despite his explanations of the obligations under the bilateral defence agreements and his belief that taking no action could leave the country needlessly vulnerable, Diefenbaker again refused to increase the alert state. Going against the Prime Minister's direction Harkness then told the military to begin implementing the measures to increase the alert state but to do so unobtrusively. Harkness went back to Diefenbaker again next morning, Wednesday, 24 October, and managed to get Cabinet to revisit the situation, but without success. Diefenbaker remained adamant that he would not be forced into taking action. Later that day the Americans increased the alert state even further, to DEFCON 2, and Harkness once again confronted Diefenbaker, and after a stormy session obtained permission to match the American alert state. The Canadian military began the formal process of increasing the alert state at 10:00 that morning.

Diefenbaker's indecisiveness can be attributed in part to the fact that he had systematically divorced himself from military advice over the previous two years. It is fair to say that in the fall of 1962 he did not understand the military issues implicit in the evolving crisis. It is often said that the Cuban Missile Crisis represented a dangerous failure in Canadian civil-military relations because the military,

albeit with the Minister's blessing, took independent action in the face of the deepening crisis. This is nonsense, as I have argued elsewhere. The real crisis in Canadian civil-military relations was the failure of the Prime Minister to respond to sound military advice on the situation thereby potentially putting national security at risk. This situation and its implications remain controversial. Why?

Civil-military relations can be seen as a contract or understanding between a government and its military leaders: just as the political leadership expects the military leadership to be sensitive to political imperatives, so the military leadership has an expectation that the political leadership will show executive competence and also have knowledge of what various military forces can and cannot do. In October 1962, Diefenbaker did not display executive competence in responding to the crisis and was only forced into taking appropriate action by his Minister of National Defence.

Today, in a vastly different world to that of 1962 and one which is far more complex technologically, one can't really expect Cabinet Ministers and members of parliamentary committees to be experts on military matters – the issues are far too technical for part-time study. However, it is vital that senior decision-makers be fully aware of national obligations inherent in standing security agreements and understand the implications of any military commitment. In this respect, advice by the country's military leadership must be taken carefully into consideration whenever

a military commitment is being considered. The Prime Minister and members of Cabinet cannot afford to isolate themselves from the military in the way John Diefenbaker did in October 1962 especially in an era when the unexpected can happen quickly.

Even in the early years of the Cold War, the process by which the Canadian military and the Emergency Measures Organization (EMO) – which was run by the army in those days – were placed on a higher state of operational readiness was efficient and well rehearsed. EMO was organized to alert the Canadian population of an impending nuclear attack and to set in motion the civil defence organization to minimize the effects of that attack. The RCAF Air Defence Command was integrated with the US Air Force under the NORAD agreement. The RCN and RCAF Maritime Air Command were integrated operationally in Halifax and Esquimalt with the task of finding, tracking and, when ordered, attacking Soviet submarines and ships in the Canadian areas of responsibility which extended well to seaward beyond submarine-launched missile range.² The aim was to conduct surveillance with patrol aircraft, ships, submarines and the passive sonar system, SOSUS, to gain advance warning of any increase or change in Soviet submarine activity in the western North Atlantic. These activities were dovetailed into similar operations conducted by the US Navy to the south of the Canadian area and in the vicinity of the Grand Banks where combined operations were routinely scheduled. All these operations were coordinated and conducted under a series of nationally-approved contingency plans.

On 17 October Canadian maritime forces were alerted to a possible increase in Soviet submarine activity. This was confirmed a few days later by a sighting of a Soviet submarine refueling from an auxiliary tanker well to the west of the Azores. Surveillance was increased on 18 October and intensified on 22 October just before President Kennedy announced the nature of the crisis to the world. These actions were completely within the established authority of the Maritime Commander in Halifax, Admiral Kenneth Dyer. The Minister's discrete direction to begin increasing the readiness state didn't really make any difference to maritime operations – the ships, submarines and aircraft were already at an appropriate level of readiness in keeping with approved procedures. When the formal notice to increase the readiness state came on the morning of 24 October, the fleet was quickly brought to war readiness and sailed to

conduct anti-submarine warfare (ASW) surveillance over the entire Canadian area of responsibility as called for by the bilateral contingency plans.

Even though the RCN and RCAF Maritime Air Command were able to rise quickly to the challenge of the new situation and conduct sustained ASW operations in conjunction with the US Navy over a large area for almost two months, those operations were not undertaken without difficulty. Nevertheless, by late November 1962, the combined Canadian and American maritime forces were able to send the Soviet submarines back to the Soviet Union with their tails between their legs. The Soviet Navy did not try to return to the Caribbean in strength until the fall of 1969 but continued to deploy one or two submarines into western North Atlantic waters on a near-constant basis where they were routinely found and tracked by Canadian and American ASW forces.

Despite the soundness of the contingency plans and the many hours of practice, there were problems with the potential to de-rail them. For instance, the intensity of ASW operations conducted over such a large area for extended periods resulted in acute shortages in some key operational stores, particularly sonobuoys. Although reserve stocks of sonobuoys existed they were under the control of the central staff in Ottawa which was reluctant to release them because the full nature of the operations was not understood at all staff levels. Also, RCAF maritime patrol aircraft had to exceed maximum flying hours to meet the operational requirement and the central staff



A Soviet *Foxtrot*-class submarine.

Credit: From author's collection



Credit: Robert L. Knudsen

President Kennedy signing the Cuba Quarantine Proclamation, White House Oval Office, 23 October 1962.

were reluctant to authorize extensions. Simply, despite an adequate exchange of information at the higher staff levels, the subordinate staffs did not understand the operational imperative. The RCN had similar staff problems over fuel and the Naval Staff tried to impose constraints on operations as a means of conserving fuel. In several instances while the RCN and RCAF operational staffs tried to resolve logistic problems, the US Navy loaned the Canadians enough stores to maintain the level of operations.

The problem, in a nutshell, was that the national command and control system, especially for maritime operations, was virtually the same as that used during the Second World War whereby headquarters staff in Ottawa looked after procurement with virtually no direct influence on or over operations.

Political involvement in the crisis lasted for 13 days, from 15 October when the Soviet missile sites were discovered in Cuba until 28 October when Soviet leader Nikita Khrushchev ordered an end to the arms shipments to Cuba and the withdrawal of the missiles. The maritime

dimension stretched from 17 October when the first Soviet submarine was detected until mid-November when all the submarines were confirmed as being on their way back to Murmansk. The Canadian role in the political phase of the crisis was badly handled and deeply angered the Americans. RCN and RCAF ASW operations, however, were excellent especially where cooperation was needed with the US Navy. The Naval and Air Headquarters staffs in Ottawa did not cover themselves with glory; in fact, there were times when they could be considered obstacles to the operations. But, it must be remembered that the staffs were not structured or trained to oversee or support operations – they remained constrained by Second World War concepts.

So, can the lessons of history still provide useful guidance for handling present-day situations? Using the Cuban Missile Crisis as a case study I hope I have shown that some historical facts remain valid over time because the basic determining factors in crisis management do not change. Human nature is a constant, and political suspicion of the military is an ever-present factor. Under our Western concept of civil control of the military that suspicion is healthy but only to a point. Here, a basic premise of the civil-military relations contract I introduced earlier is key: *just as the political leadership expects the military leadership to be sensitive to political imperatives, so the military leadership has an expectation that the political leadership will show executive competence and also have knowledge of what various military forces can and cannot*



Credit: Shearwater Naval Aviation Museum

An RCAF Argus long-range patrol aircraft overflying an 'A'-class submarine of the Halifax-based 6th S/M Division in 1960.

do. Except for the efforts by Defence Minister Harkness in October 1962 the Canadian government certainly seemed to lack executive competence in its initial handling of the Cuban Missile Crisis.

This concept of civil-military relations goes further than crisis management situations; it is equally important in the day-to-day management of the military infrastructure. Politicians must accept the fact that if they expect the military to respond quickly to situations, it must be appropriately structured. Because it takes 10-15 years to bring a new ship, aircraft, or fighting vehicle into service, military modernization plans presented to government invariably represent major capital expenditures outside the mandate of the government of the day. Somehow, the notion that major defence spending represents a political partisan opportunity has to be put aside in favour of the concept that such defence spending is for the national good and thus above partisan politics.



Credit: UN photo archive

Fidel Castro gives a speech to the General Assembly at the United Nations.

In 1962, centralized control of fuel and operational stores could have severely restricted the ability of the RCN and RCAF to conduct ASW operation against the Soviet submarines. Had the operational commanders not forced the issue with their superiors in Ottawa, ASW operations would have ground to halt well before the last Soviet submarine had left the western North Atlantic. Because

operations were eventually and somewhat reluctantly given priority, the combined Canadian and US maritime forces were able to send the Soviet submarines home. The simple lesson from this is that excessive centralized bureaucratic control of operational stores and fuel is counter-productive in crisis management and war. Moreover, it makes the point that logistics, writ large, need to be an integral part of any contingency or operations plan. We should know that by now.

The last point to make is that time spent developing versatile contingency plans is time well spent. That the RCN and RCAF had a well-tested and up-to-date series of contingency plans to deal with Soviet submarine intrusions saved the day in the Cuban Missile Crisis. Today, when the scenarios to which the Canadian military may need to respond are more numerous and, in all probability, more complex the need for contingency planning is far greater. But contingency plans that are not routinely practiced have little value – to do this requires resources and once again, excessive centralized control of those resources and the fuel and operational stores defeats the basic aim of maintaining effective, ready armed forces.

To many, the 1962 Cuban Missile Crisis was just one incident a long time ago and should be committed to the dusty history books. To others, that crisis provided some useful lessons that remain valid today despite the changes in the international political structure and the technology of naval operations. Who can honestly say that Canadian or North American security will never be challenged from the sea again?

It is said that those who do not learn the lessons of history are doomed to repeat its mistakes. The Cuban Missile Crisis remains a great case study of Canadian civil-military relations and a first-rate example of the benefits of sound contingency planning. 🇺🇸

Notes

1. This article is based on: my book *The 1962 Cuban Missile Crisis: Canadian Involvement Reconsidered* (Toronto: Canadian Institute of Strategic Studies, 1993); my article "Canadian Involvement in the Cuban Missile Crisis Re-considered," *The Northern Mariner*, Vol. XVII, No. 2 (April 2007), pp. 39-65; and related research, mainly about civil-military relations in Canada at the time, that has not yet been published.
2. In 1962, the Soviet capability to launch cruise missiles from submarines was relatively new and although the concept had been tested for several years the first missile-firing submarines only became operational in the early 1960s. The range of the first cruise missiles was about 300 nautical miles. At the time of the Cuban crisis Canadian and US naval authorities believed the Soviets would deploy missile-firing submarines in a strategic role.

Peter Haydon is a Senior Research Fellow at the Centre for Foreign Policy Studies at Dalhousie University, Halifax.

Canada's Defence Research Ships: Part of a Balanced Navy?

Mark Tunnicliffe

Introduction

On 6 May 1910, two days after the proclamation of the *Act Respecting the Naval Service of Canada* (NSA), the Naval Service got its first ship. That ship was not some secondhand cruiser, but a brand-new vessel built in England to Canadian government specifications. The 556 ton CGS *Cartier* was a hydrographic survey vessel intended for service in the St. Lawrence River. She was the newest member of a fleet operated by the Canadian Hydrographic Survey, which, as a consequence of the NSA had been transferred to the Department of the Naval Service as a separate branch in that department.

Research vessels and functions have been a part of the Canadian navy since its inception – albeit not continuously. Nonetheless, while the navy has for much of its history found it necessary to have an organic capability for marine research, the requirement for specialized defence research vessels has generally not been top of mind for Canadian naval planners. It is not surprising then, that a fall 2011 article by Doug Thomas in *Canadian Naval Review* proposing a balanced fleet structure for the RCN for the 21st century did not consider research vessels as a component of a future Canadian fleet.¹ True, research ships are considered ‘auxiliary’ vessels not typically included in a force structure, but Canada has habitually employed them on operations in support of its maritime interests and sovereignty much like a warship. Furthermore, a scientific and technical capacity is not something that can be built up overnight, and just as a peacetime

navy forms a basis for response and expansion, a solid naval science and technology foundation must exist if Canada is to respond to a naval technological challenge in a crisis. Canada is planning a future fleet to replace its current inventory of combatant, logistic and patrol ships but, given its history, will that fleet not also require the support of a dedicated defence research vessel?

à e Early Years

The branch that *Cartier* joined in 1910 had little to do with defence *per se*, but was nevertheless in the forefront of national maritime sovereignty and development. The Canadian Hydrographic Survey had originally been established within the Department of Marine and Fisheries to institutionalize a national capability for marine survey. Given the new prevalence of steamships in marine commerce, mariners increasingly tended to exploit coastal waters rather than heading from harbour straight for the safety of open waters as sailing ships had been forced to do. This, in turn, led to a demand for more extensive inshore charts. The initial surveys of Canadian waters had been undertaken by the Royal Navy (RN), but its commitment to the burgeoning Canadian requirement for quality navigation charts ended in 1904 when that responsibility was assumed by the Dominions. Six years later, Canada assigned this function to the Department of the Naval Service giving the new department the national mandate for marine survey and exploration.

That decision is not particularly surprising for two reasons. First, since the Minister for the Department of Marine and Fisheries, L.P. Brodeur, was also the first Minister of the Naval Service, the transfer of the survey work resulted in little discontinuity in policy and administrative direction. Second, and perhaps more important, hydrographic survey had become recognized as an integral part of a navy's function. The RN had confirmed its mandate for ocean science and exploration with the voyage of HMS *Challenger* in the 1870s while the US Navy defined its pre-eminent role in ocean science with the pioneering oceanographic work of its famous Assistant Director of the US Hydrographic Office, Lieutenant Matthew Maury. It is not surprising, therefore, that the structure of the Naval Service of Canada would mirror the mandates of the other two major English-speaking navies. Indeed, for a country whose

Credit: Ottawa, King's Printer, 1915



A scan of CGS *Acadia* from the Report of the Department of Naval Service in 1914.

principal maritime threats lay in poorly charted waters and contestable sovereignty claims, it was a reasonable expectation that the mandate of its naval service would include a strong survey and exploration role.

It engaged that role with enthusiasm. Although the navy's two old cruisers were soon suffering from neglect, the Hydrographic Service's activities received active support and interest from Parliament and the Canadian public. This was particularly true of its Arctic operations, which commenced in the summer of 1910 with the task of surveying Hudson Bay. By 1913, supported by the brand new CGS *Acadia* (designed for operations in ice) and a couple of schooners purchased for the purpose, the Hydrographic Branch was heavily engaged in developing charts for the approaches to Port Nelson and Churchill as potential northern ports for shipping Western grain. There was a sovereignty issue at play as well. While Canadian claims to the eastern Arctic were being cemented by the voyages of Captain Joseph-Elzéar Bernier in his Marine and Fisheries ship *Arctic* in the early years of the 20th century, Canadian claims to sovereignty in the west were less secure. Consequently, the federal government commissioned Vilhjalmur Stefansson, an anthropologist and explorer, to lead an expedition to the western Arctic to chart the archipelago north of Alaska and conduct ethnographic, biological and mineral surveys. Executed under the auspices of the Department of the Naval Service, the 1913/16 expedition captured the attention of the Canadian public and Parliament, helping to secure Canada's claim to a portion of the Arctic that had, until this time, largely been explored by Norwegians.²

Further south, the department also got involved in laying

the foundations for Canadian oceanography. Spurred by a request from the Biological Board of Canada, *Acadia* was deployed off the East Coast in the first systematic oceanographic investigation of Canadian coastal waters. The report of the 1915 Canadian Fisheries Expedition, published under the authority of the Naval Service, proved to be the seminal work for Canadian oceanographers for the next 50 years. While the department appeared less than enthusiastic about the project, the data would turn out to be useful to its military operations in the years to come.

With the 1922 *National Defence Act*, the Naval Service of Canada and its associated department ceased to exist and its non-combatant branches were returned to the Department of Marine and Fisheries. The latter continued a program of marine research in the inter-war years, largely driven by the requirements of the fisheries. In British Columbia this resulted in an oceanographic program that once again turned to the RCN for help. The investigator, a Fisheries Research Board scientist named John Tully, was assigned the old *Battle*-class trawler HMCS *Armentières* for a couple of months each year from 1936 to 1938 and conducted the first oceanographic survey of the waters off Canada's West Coast.

the War Years and After

Up to this point, little of the marine research work accomplished in Canada had had any apparent application to naval requirements but this changed dramatically in the Second World War.³ The lack of success experienced by the RCN in its encounters with U-boats off the coast of Nova Scotia and in the Gulf of St. Lawrence was a result of a number of factors but chief amongst these was the



CNAV *Ehkoli* tows an acoustic target in Nodales Channel, British Columbia, in 1949.

Credit: Canadian Meteorological and Oceanographic Society



HMCS *Cedarwood* played a role in ocean research, and helped to develop precise oceanographic data of the British Columbia coastline.

impact of coastal ocean thermal structure conditions on sonar/ASDIC performance. In 1942, the navy turned to the National Research Council (NRC) and John Tully for help.

NRC's response was a program of activities that engaged scientists in rapidly expanding the oceanographic database of Canada's offshore regions. The goal was to understand the implications of ocean conditions for sonar system performance by exploiting the recently invented bathy-thermograph to investigate ocean thermal structure and its implications for ASDIC performance and naval tactics. The navy determined that an oceanographic survey vessel was required on each coast⁴ and in 1944 assigned HMCS *Ehkoli* (an ex-seiner) as a dedicated research vessel on the West Coast. Later that year, using data from her survey work (assisted by the corvettes *Moncton* and *Sudbury*), Tully published the first Canadian sonar performance charts. On the East Coast, the navy had identified the yacht HMCS *Culver* for the purpose but her engineering defects proved insurmountable. *Acadia*, which at this time was operating as a patrol ship, was also found to be too worn out for the purpose and, as a result, Tully's East Coast counterpart (H.B. Hachey) had to fall back largely on pre-war oceanographic data (including information from the 1915 Fisheries Expedition) to develop ASDIC performance estimates for the fleet.

The wartime maritime research program underscored the impact of focused research on military equipment and tactics, and the need for a defence research capability. Consequently, in 1947, Canada established the Defence Research Board to give the Department of National Defence (DND) its own research and development capability, but even before this, the RCN was including defence research capability in its post-war planning. In August 1945, it met with representatives of the NRC, the Meteorological Service and the Department of Fisheries to establish the Canadian Joint Committee on Oceanography to provide a framework under which other government departments

provided scientific expertise to support the navy while the latter supplied the ships to conduct research.

In response, the RCN commissioned a former army supply vessel as HMCS *Cedarwood* to join *Ehkoli* on the West Coast while in Nova Scotia the minesweeper *New Liskeard* was assigned as an 'experimental tender' for the Naval Research Establishment (NRE) in Dartmouth. The navy also supplied a meteorological ship in the Pacific, continuing the function that the corvette HMCS *Woodstock* had commenced in 1945.

The result of these initiatives was a research program that focused on oceanographic work addressing both military and academic objectives. In June 1950, *New Liskeard* participated in *Operation Cabot*, a Canada-US bathymetric survey of the ocean environment between Nova Scotia and Bermuda which led not only to foundational work on the physical oceanography of the region but also to the development of deep sonobuoy hydrophones and variable depth sonar to exploit the sound channels characteristic of the area.

The ocean research program also reinforced Canadian sovereignty. The United States had commenced probing the Arctic as a locale for future military operations through a number of warship deployments with little particular deference to Canadian sensitivities. The RCN responded in 1948 by deploying the carrier *Magnificent* and the destroyers *Haida* and *Nootka* to Davis Strait and Hudson Bay on a cruise the objectives of which included an oceanographic data collection program investigating sonar performance in the Arctic.⁵ On the West Coast, *Cedarwood* joined a 1949 US expedition to the Chukchi and Bering Seas collecting oceanographic



CFAV *Endeavour*, launched in 1965, was used in variety of research projects ranging from propeller and wake trials, to sea-keeping problems and signature reduction work.



This photo shows CFAV *Quest* during the Joint Arctic Experiment conducted off Gascoyne Inlet and in Hudson Bay, summer 2012.

and sonar performance data supported by Tully's Pacific Oceanographic Group at Nanaimo. This was followed up by a 1951 cruise by the Defence Research Board's vessel, CGMV *Cancolim II* to the Beaufort Sea and by further investigations of the north Pacific and Bering Sea in 1955 from the frigate HMCS *Ste Thérèse*.

By 1960, the cooperation amongst various government departments in marine research was well established and, while some departments now operated their own ships, Canada's research fleet was still dominated by RCN and ex-RCN vessels. An inventory conducted that year by the Fisheries Research Board enumerated a federal maritime research fleet that included 17 vessels, of which seven were DND ships and another four were former HMC ships. However, as none of these ships had been specifically designed for defence research, the RCN recognized its future need for defence research ships with "unique characteristics which affect their design from the keel up."⁶ The ship which resulted from this requirement was CNAV *Endeavour*, launched in 1965 at a cost of \$6.5M. Designed primarily for anti-submarine warfare (ASW) systems research, *Endeavour* was fitted with a small flight deck, a heavy winch for towing sonar equipment, a bow thruster for precise positioning and noise reduction features. In her long career with DND, *Endeavour* was employed in projects that ranged from one of the first demonstrations of the modern towed array sonar concept for ASW operations (using a modified survey array), to propeller and wake trials, sea-keeping problems and signature reduction work. Her design proved successful and in 1969 DND commissioned a larger version of *Endeavour* with an even greater focus on acoustic silencing. That ship, CFAV *Quest*, rated Lloyd's 100A1 Ice Class

1, was constructed with specially rafted main propulsion diesel engines encased in an acoustic hood with a small gas turbine and batteries for even quieter operations. Even 40 years after her launch, *Quest* remains one of the world's quietest ships.

From the Past to the Future

Today, *Quest* pursues the maritime defence research role alone (*Endeavour* having been sold in 1998). Her research mandate still includes acoustic systems development but it also includes the entire range of technologies and concepts needed to support the requirement specifications for the next generation of Canadian warships. In 2011, for example, *Quest* completed a trip to Europe conducting signature reduction trials, decked out in a novel paint scheme intended to demonstrate the art of becoming invisible (in the infra-red band at least). Her 2012 program included an extended deployment to the Arctic in support of a number of objectives – for example, an investigation into the use of unmanned air, surface and subsurface vehicles (UXVs), an experimental Arctic surveillance system, and work supporting other government departments.

Given Canada's history of inter-agency cooperation, should DND continue operating its own purpose-designed defence research vessel? Since the Department of Fisheries and Oceans (DFO) is currently constructing four new research vessels, the question is bound to arise concerning their potential to meet DND's needs. This issue is not a new one – it was raised in 1990 in a study commissioned by the Treasury Board into the potential for consolidation of much of the federal government's fleet. The result was a report entitled "All the Ships that Sail," more commonly known as the Osbaldeston Report, which considered the capabilities of the various departmental research vessels. The report observed that while DND's two defence research vessels had an "excellent" capability for defence marine research and a "good" potential for oceanographic/hydrographic work, the reverse was not true – other government research vessels were seen as having "excellent" designs for their civilian roles, but were rated as "poor" options for defence work.⁷ Given the constraints imposed on the new DFO research fleet, it is likely that a similar study would come to the same conclusion today.

The history of Canada's defence research vessels also indicates another role: they have been a ready source of vessels for commissioning as warships in a crisis. Indeed, *Acadia*, preserved at Halifax as a survey ship, is Canada's only surviving warship from both World Wars.⁸ While these reserve ships were used as patrol vessels in past conflicts,

the design of a modern defence research ship indicates a much greater potential as a national asset for employment in future crises. An ultra quiet ship with towing capability, precision positioning thrusters, facilities for modular command, control and intelligence systems, and gantries for equipment launch and recovery can be employed as a surveillance towed array ship, a bottom intervention vessel for mine hunting/clearance or recovery operations or as a UXV control vessel.

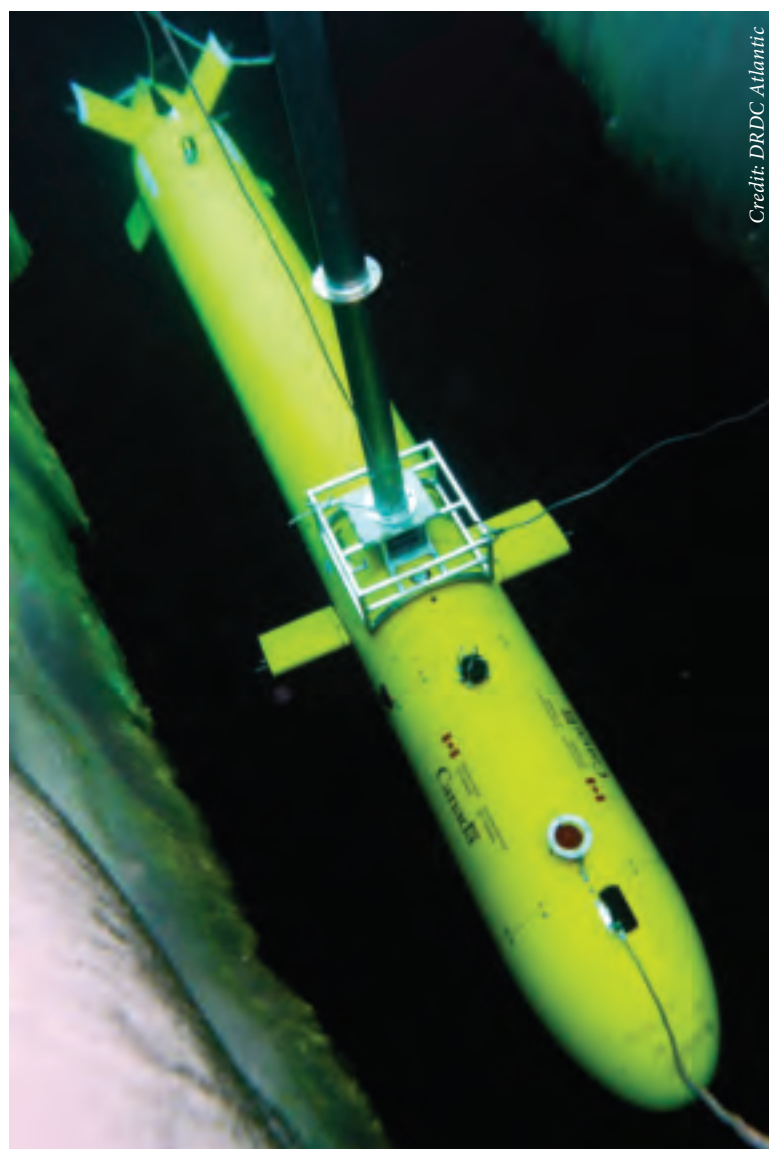
Conclusion

DND's role in defence research at sea is part of the broader national defence debate, but events in both the past and present suggest a continuing requirement for it. Today's revival of interest in the Arctic is a reflection of increasing concerns about national sovereignty there, just as it was in 1913 and 1948. The response has been similar, but the technology is new. Project Cornerstone, a multi-departmental project involving Natural Resources Canada, DFO and DND, to survey the northern portion of Canada's continental shelf also involved DND vessels deployed to the high Arctic – albeit rather unique ones. In expeditions conducted in 2010 and 2011, two DRDC Explorer underwater autonomous vehicles (AUVs) charted thousands of kilometres of the shelf under the Arctic ice in support of the Canada's sovereignty claims under the terms of the UN Convention on the Law of the Sea.

Throughout much of the history of the RCN, its fleet composition has included research ships. The Defence Department's research vessels have played a key role not only in supporting the combatant navy but in representing the country and asserting its sovereignty in coastal waters, in the Arctic and even overseas. While DND is no longer responsible for the survey function that *Cartier* was designed to fulfill, today's maritime research needs extend beyond just hydrographic work. Canada's navy had a mandate for ocean research and exploration at its inception and its sovereignty protection role dictates that it will continue to do so in the future. The balanced fleet for the 21st century as described by Doug Thomas needs just one more element to round out its traditional role in national sovereignty development and enforcement – the defence research vessel. 🇨🇦

Notes

1. Doug Thomas, "A Balanced Fleet for the 21st Century," *Canadian Naval Review*, Vol. 7, No. 3 (Fall 2011), pp. 41-43.
2. The expedition was reported in much more detail than the activities of the rest of the department in its annual reports to Parliament in the war years. See "Report of the Department of the Naval Service for the Fiscal Year ended March 31 1917 – Sessional Paper No 38" (Ottawa: King's Printer, 1917), pp. 22-64.
3. It should be noted that there is a cryptic reference made in a 1936 International Hydrographic Bureau publication to trials conducted in the St. Lawrence River by Dr. L. King of McGill on an echo sounding oscillator system in 1916. Little information is available on this



Credit: DRDC Atlantic

Unmanned underwater vehicles open up new possibilities. Here Explorer UUV is deployed in Project Cornerstone to map the Canadian Arctic sea floor.

work but it was probably the first work done on active sonar for ASW in Canada.

4. The recommendation was to purchase "A/S Research Vessels – 2 in No.," see 130th Naval Board Minutes 25 August 1943. *Ehkoli* and *Culver* had been identified as candidate ships.
5. Isabel Campbell, "RCN Cruises in Northern Waters in 1948: A Glimpse of Global Warming?" paper presented at the conference "The Canadian Navy Yesterday Today and Tomorrow," Centre for Foreign Policy Studies, Dalhousie University, Halifax, 16-18 June 2010.
6. NSS 8000-34-2(SA/CNS DRBS 367-10/0 (SA/CNS), "RCN Provision of a New Research Ship – East Coast, New Liskeard Replacement," 11 July 1963.
7. Gordon F. Osbaldeston, "All the Ships that Sail: A Study of Canada's Fleets" (Ottawa: Treasury Board, 1990).
8. She served as an armed patrol ship. Ironically, HMCS *Sackville*, now preserved as a warship, spent more of her career as a research ship than she did as a combatant.

Mark Tunnicliffe retired from the Royal Canadian Navy in 2007 after 35 years of service.

The RCN Can Learn from Admiral Nelson's Amphibious Defeats

Pat Bolen

While the Royal Canadian Navy (RCN) Joint Support Ship (JSS) project took a small step forward in March 2012 with the awarding of two contracts for potential designs, even a limited amphibious capability remains far over the horizon for the RCN. But with other Pacific Rim countries such as China and Australia expanding their abilities for landings from the sea, and the US Marine Corps returning to its traditional mission of seaborne landings after a decade ashore in Iraq and Afghanistan, amphibious capability remains a high priority for navies in both peace and war. With that continued emphasis, RCN planners looking at potential seaborne landings should note that 200 years ago, Admiral Horatio Nelson himself often foundered on the rocks of opposed landings. His difficulties with amphibious tactics, terrain and intelligence provide a reminder that assault from the sea is warfare's toughest mission.

With his victories at the battles of the Nile, Copenhagen and Trafalgar, Nelson has few equals in the history of naval warfare. Nelson also helped lead British forces to victory at Cape St. Vincent, but his record ashore was mixed, as he often sent his forces against superior numbers of defenders based on inadequate intelligence to secure objectives of limited value. We should examine Nelson's amphibious defeats and see what we can learn from them.

à e Man and his Opponents

Nelson possessed the traits of a great commander – the ability to inspire as well as trust his subordinates, courage, aggressiveness, initiative and clarity in battle – yet he was unable to employ those traits on land. While Nelson had not been trained in land operations and the Royal Navy (RN) lacked a formal amphibious doctrine, several of his peers achieved great success with operations on land.

Amphibious warfare was practiced successfully by the RN in the Napoleonic Wars in the early 1800s, both at the tactical and strategic level. It ranged from small-scale cutting-out operations in French and Spanish harbours, to Admiral Cuthbert Collingwood supporting the army in the Spanish Peninsula campaign. The RN also conducted amphibious attacks against the United States during the War of 1812, with Rear-Admiral George Cockburn initiating raids on Chesapeake Bay in 1813 and penetrating far upriver. In 1814 under Commander-in-Chief Sir Alexander Cochrane, and bolstered by army regiments, the campaign was expanded, including a raid up the Potomac River aimed at Washington.

Why then did Nelson fail where other admirals succeeded? According to some historians, Nelson did not appreciate the fact that wars on land are fought based on different principles and tactics than wars at sea. He was bred in the RN tradition of using superior sailing skills, faster gunnery, initiative and leadership to allow smaller forces to defeat larger numbers, but couldn't duplicate his success on land. As well, Nelson did not have good relations with army officers, indeed the relations "were seldom collegial, often tense and sometimes bad and counterproductive."¹

For 20 years Nelson and Napoleon Bonaparte faced each other across the English Channel and, militarily, they were mirrors of each other: both experts in manoeuvre warfare but neither able to cross the water's edge into the other's dominion. Napoleon was unable to accept that he couldn't dictate schedules to wind and waves, while Nelson couldn't accept that his naval tactics were at a disadvantage against fixed defences, superior numbers and massed dug-in firepower.

The key to Nelson's success at sea was the ability to take advantage of an opponent's smallest mistake. But the circumstances were different on land, and there was a thin margin for error in amphibious landings. With the small possibility of reinforcements, the difficulty of achieving surprise and unable to manoeuvre his forces, he had less chance of winning on land.

Nelson's first experience of combat ashore was in 1780 when he commanded HMS *Hinchinbrooke* while escorting



HMCS *Protecteur*, oiler replenishment ship, in Kiel Canal, Sehestedt, Germany, in October 2011.

an expedition to capture the Spanish fortress of San Juan in Nicaragua. It was “the first of those rash amphibious expeditions that would blight Nelson’s war record for the next 20 years,”² as he disobeyed orders and stayed with the force as it attempted to capture the fort miles up the San Juan River.

Nelson made his decision to join the expedition after seeing several of the boats overturn at the mouth of the river. He offered his boat-handling experience to Captain John Polson, who was in command of the attack. Leading the force up the river, and discovering a Spanish battery guarding the approaches to the fort, Nelson organized an attack that overran the battery, although not before the Spanish sent a warning to the fort.³

Closing on the fort, Nelson pressed for an immediate attack without understanding its defences. He was basing his desire for an attack on his experience of war at sea, where getting past the main line of guns usually meant an attack would be successful. But with no experience of land fortifications, he wasn’t taking into account that land fortifications had multiple defensive layers and the attackers would not only be crossing difficult terrain, they would also be vulnerable in cleared fields of fire.⁴ Seeing the strength of the fort, Polson ignored Nelson’s suggestion for an attack and opted for a siege, which took 11 days to force a surrender. Nelson, who had become seriously ill and was transported home before the fort’s surrender, was praised by Polson for his ability to position artillery, an experience he would later draw on to good effect on Corsica.

Nelson’s next amphibious experience occurred in 1783 while commanding HMS *Albemarle*. After being informed that a French flotilla had captured the Turks and Caicos Islands, and acting without orders, Nelson determined to retake the islands. With only *Albemarle* and two other ships, and no intelligence on the defences, Nelson demanded the surrender of the island before opening fire. He landed 167 sailors and marines, but soon discovered that they were outnumbered by the French defenders. After suffering a few wounded, Nelson re-embarked and withdrew.⁵

Nelson’s thirst for action led him to make decisions that, at best, were against the wishes of his commanders and, at worst, were potentially disastrous, particularly in actions ashore. At the siege of Bastia in 1794, for example, Nelson withheld information from Lord Samuel Hood on the strength of the forces opposing the British. Nelson had only disdain for a failure to attack which he saw as a failure to try. He held “the conviction that his sailors could master any situation given the proper leadership...



Credit: Wikipedia

Rear-Admiral Sir Horatio Nelson, 1758-1805.

It worked at sea and much of his future glory depended on it.”⁶

Like Napoleon, Nelson had the ability to create confusion from which he took advantage, as at Cape St. Vincent on 14 February 1797, where he disobeyed orders and broke from the battle line to engage the Spanish independently. While this move caused confusion and surprise among his own forces, it caused more disruption to the Spanish. According to one historian, “[t]hey never recovered from it, for Nelson’s action destroyed all semblance of formal battle. The Spanish ships had maintained no proper order... It became [a] melee.”⁷ But Nelson’s success at sea, which stemmed from his ability instantly to evaluate a situation, depended on the skill, initiative and courage of those around him to follow and, if necessary, extricate him. Thus, at Cape St. Vincent he found himself out-gunned by several Spanish ships and needed help from *Culloden*, leader of the British line, to resolve the situation.⁸

Just weeks later Nelson was again rescued from his recklessness at Cadiz on 3 July 1797. Fresh from his triumph at Cape St. Vincent, Nelson was under the command of Admiral Earl St. Vincent, who intended to bombard Cadiz to force the Spanish fleet out to battle. Nelson commanded the inshore squadron to escort the bomb vessel. But with the bombardment doing little damage and the Spanish rowing out to engage the British launches, Nelson sent his own launch to the heart of the action. In bitter hand-to-hand fighting his coxswain John Sykes twice took sword cuts meant for Nelson.⁹

Despite repeated attempts at opposed landings, Nelson disagreed with what Napoleon noted in his memoirs of

the difference between land and sea battles. Napoleon wrote that “[a] marine general has nothing to guess; he knows where his enemy is and knows his strength. A land general never knows anything with certainty, never sees his enemy plainly.”¹⁰ This view of naval warfare was not shared by Nelson, who observed before Trafalgar, “[s]omething must be left to chance; nothing is sure in a sea fight beyond all others.”¹¹

Success

Nelson enjoyed his only successes on land in 1794 when he was part of the British forces attempting to capture the island of Corsica to secure a new Mediterranean port for the RN. Nelson took part in the capture of the forts of Bastia and Calvi. These forts, however, were not taken by assault but by siege – and Nelson preferred attack to a siege. In January 1794, Admiral Hood ordered Nelson, commanding *Agamemnon*, to blockade Bastia in preparation for the British attack, and Nelson went about the task with his usual enthusiasm for action. As well as blockading the Corsican coastline, Nelson destroyed French ships and supplies and led sailors ashore, as they conducted reconnaissance and hauled cannons up mountains thought by the French to be too steep for such operations.

Nelson was in favour of an immediate attack, but Lieutenant General Sir David Dundas, who was commanding the

British army, believed starvation by blockade would bring the surrender of the fort without the loss of life from a direct assault. Dundas and Hood believed that Bastia held 2,000 defenders, yet Nelson had known for two months that the number of French forces was much higher. *Agamemnon* had captured a packet boat with a mailbag on board holding a message from Corsica’s commissioner indicating a need for supplies for 8,000 French and Corsican soldiers. Nelson withheld the information from Admiral Hood, knowing it would cause him to resist an assault. Even so, he still could not persuade Hood into an attack, which is fortunate as they would likely have suffered heavy losses.

Despite having his suggestion for an attack turned down, it was Nelson who had been the driving force behind the victory when the fort surrendered on 19 May. In the fight for Corsica Nelson managed to shape the sort of command that suited his best qualities, i.e., in which he could be independent and make his own choices.

A month later, Nelson was ashore as British forces laid siege to the nearby fortress of Calvi, which was even better defended than Bastia. Nelson was again on the front lines, and on 12 July a shot from a Calvi battery sprayed his face with sand and stone, injuring and eventually blinding his right eye. Although injured, Nelson was off duty only 24



Nelson's attack on Santa Cruz de Tenerife, 22-25 July 1797.



Credit: Internet image

Artist's early depiction of the Canadian Joint Support Ship which could be used to support amphibious landings.

hours before returning as liaison with the army, while British guns pounded the fortress until it surrendered on 10 August.

Much of what Nelson would become, both good and bad, was shaped on Corsica that summer, learning to coordinate with the army at the tactical level. But at the command level, Nelson was unimpressed with the army's leaders, who he saw as overly timid. He disapproved of their apparent preference for siege warfare rather than attacks. It was an experience that haunted him at Tenerife in July 1797, as lacking the support of army troops, he pressed ahead with insufficient forces.

Biggest Defeats

The Tenerife operation came three weeks after Cadiz, with an amphibious landing at the town of Santa Cruz de Tenerife in the Canary Islands and it was Nelson's worst defeat. It cost him his arm, 250 British dead and a good deal of his pride. Nelson believed that the Spanish treasure fleet had taken refuge at Santa Cruz and declared that capturing the fleet would represent an addition of six to seven million pounds to the British economy.¹²

The plan called for a powerful night attack to take the heights overlooking Santa Cruz, which would allow an artillery barrage before storming the town. Nelson and Admiral St. Vincent realized that to accomplish the plan additional soldiers were necessary. However both Lieutenant General John de Burgh and Gibraltar Governor General Charles O'Hara saw the idea as impracticable and made no reinforcements available. Nelson was apparently not concerned. With insufficient forces to allow the original plan, Nelson abandoned his usual manoeuvre tactics and opted for a frontal assault.

The difficulty in assaulting the island was well-known – it had heavy defences, a deep harbour which prevented

anchoring, rocky beaches, a continuous pounding surf and sudden violent squalls. Despite the obstacles, Nelson believed luck and good fortune were tactical possibilities, as well as knowing the island had been captured by Admiral Robert Blake in 1657 by laying his ships close inshore. "Fortune favoured the gallant attempt, and may do so again," observed Nelson before the attack.¹³

With his recent experience, Nelson had gained a high impression of his ability to fight on land, remarking in 1796, "I am vain enough to think I could command on shore as well as some of the Generals I have heard of."¹⁴ With a force of three 74-gun ships of the line as well as the 50-gun *Leander*, three frigates, a cutter and a mortar boat, the plan was to put 1,000 sailors and marines ashore on the night of 21 July under the command of Captain Thomas Troubridge. But the attackers were delayed due to a gale and the violent tides before being driven back by the defenders. At 9 am, again under the command of Troubridge, the original plan to seize the heights was set in motion, but failed due to difficulties crossing terrain not foreseen prior to the invasion. On the night of 24 July, Nelson made the fateful decision to violate the military principle of not reinforcing failure by trying to overwhelm the town with an assault into the teeth of the Spanish defences. Taking command of the third attempt and in the first boat to land, Nelson was met with heavy fire as he stepped ashore, with grape shot shattering his right arm above the elbow.

With Nelson close to death, the British forces retreated. Responsibility for this defeat fell on Nelson whose idea the attack had been and who had taken too little account of the geographic difficulties. He took full blame for the failure, and humbled from his earlier pronouncement of his ability to fight on land, realized his experiences had not equipped him to master the art of land warfare.



Credit: Warrant Officer Randolph Rice

A Canadian armoured vehicle exits a US Navy landing craft utility during the Integrated Tactical Effects Experiment (ITEE) on the eastern seaboard of the United States, 2-20 November 2006.

His second big defeat took place on the coast of France. By 1801, with fear of a French invasion of England at its height, Nelson was ordered to begin anti-invasion operations in the English Channel. Despite believing no embarkation was possible from the French port of Boulogne, Nelson prepared to assault it. The port contained more than 100 rafts capable of carrying 150 soldiers apiece and guarded by gunships with up to 36-pounder guns. On the night of 15 August, Nelson sent in 57 boats, but the current caused the boats to become separated and they lost the benefits from a combined assault. The waiting French met the attackers with grape shot and musket fire and the British were driven off without being able to burn any of the boats they boarded. Forced to withdraw, Nelson's forces suffered 45 dead and 130 wounded. Nelson was apparently determined to gain revenge by personally leading another attack on Boulogne, but it was not to be. The Peace of Amiens was signed 1 October 1801, and held until May 1803.

Back at Sea

Boulogne was to be Nelson's last opposed landing, as upon the new declaration of war with France in 1803, he returned to the sea of which he was master. At sea he began the countdown to his greatest and final battle at Trafalgar. Nelson's greatest strength at sea – his willingness to gamble all and win – was his greatest weakness ashore. Nonetheless, Nelson's career was not affected by his defeats at Tenerife, the Turks and Caicos, and Boulogne, as they were either strategically insignificant or overshadowed by events before or after, such as Cape St. Vincent immediately before Tenerife or the October Peace of Amiens, which followed the Boulogne attack. And despite defeating Nelson ashore, the French and Spanish eventually emerged from their harbours to give battle

where they found a different Nelson and a different result.

So, what can the Canadian Navy learn from all this? Nelson's defeats ashore did not lessen his reputation but instead emphasized his qualities at sea of daring, courage, initiative and trust in his men to overcome any enemy. And if his relations with army commanders were not as good as they might have been, it is a reminder of the bond he had with his captains and men, that was the 'Nelson Touch.' As well, Nelson learned the hard way that battles on land are different from battles at sea. If the Canadian Navy is interested in amphibious operations in the future, it will need to be prepared to learn a whole new series of lessons. 🇨🇦

Notes

1. See Joel Hayward, *For God and Glory* (Annapolis: Naval Institute Press, 2003), p. 164.
2. Max Adams, *Admiral Collingwood: Nelson's Own Hero* (London, Weidenfeld & Nicolson, 2005), p. 78.
3. Hayward, *For God and Glory*, p. 135.
4. *Ibid.*
5. Terry Coleman, *The Nelson Touch* (London: Oxford University Press, 2002), p. 42.
6. See Noel Mostert, *The Line Upon a Wind: The Great War at Sea 1793-1815* (New York: W.W. Norton & Company, 2007), p. 127.
7. *Ibid.*, p. 195.
8. *Ibid.*, p. 196.
9. *Ibid.*, p. 218.
10. Napoleon Bonaparte, quoted in Mostert, *The Line Upon a Wind*, p. 127.
11. Horatio Nelson quoted in David Howarth, *British Sea Power: How Britain Became Sovereign of the Seas* (London: Constable & Robinson, 2003), p. 340.
12. Mostert, *The Line Upon a Wind*, p. 219.
13. *Ibid.*, p. 219.
14. Hayward, *For God and Glory*, p. 162.

Pat Bolen served in the Canadian Navy. He is a newspaper reporter and freelance writer.

Modern Piracy and Current Counter-Measures

Jared M. Ben-Caro

Piracy has been in existence since the inception of maritime trade. The first recorded examples of piracy occurred in the 14th century BCE, when various settlements in the eastern Mediterranean and Aegean Seas were raided. Piracy has continued, reaching its 'Golden Age' in the late 17th and early 18th centuries. And it was the threat of Barbary Pirates in 1794 that motivated the creation of the US Navy.

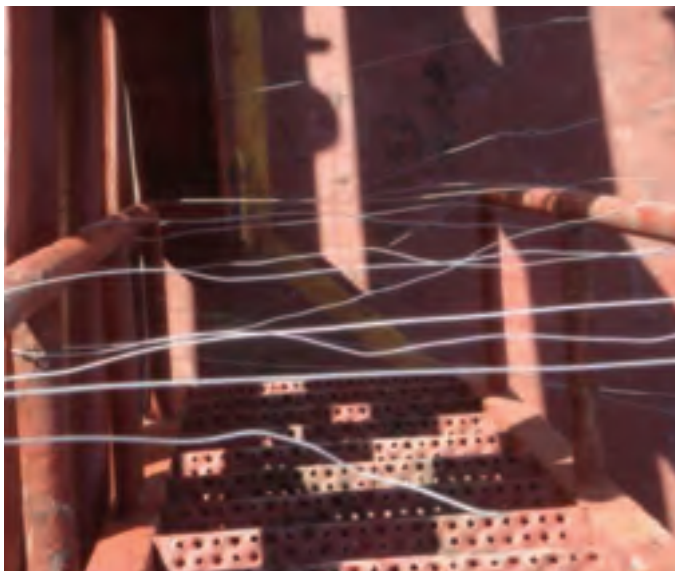
Although the weapons, technology and tactics have altered in some cases, most of the common denominators of piracy remain the same today. Pirates still prey on weak and unprotected commercial shipping and civilian ports. Pirates still take advantage of fragile governments and unstable political environments as an opportunity as well as an excuse for their activities. And pirates still thrive on using innocent people for profit. In previous times, piracy directly profited from the slave market and the acquiring of ransom money. In modern years, pirates still take mariners hostage, force maritime personnel to operate 'mother ships' against their will to mount attacks, and the ransom money continues to be the primary source of incoming funds.

If piracy has existed for thousands of years, then is its eradication regionally and even globally a realistic goal? The conclusion here is in the affirmative. It is possible to achieve this goal if a threefold strategy is implemented, including: defensive measures; offensive measures; and political and economic stability. We will discuss these elements in turn with a focus on piracy rooted in Somalia.

Defensive Measures

The first and most obvious step to combating piracy is to establish appropriate defensive measures. Passive defence systems are the first layer of defence against piracy in that they do not actively seek out or aggressively respond to a threat. Their most important function is to serve as a deterrent, dissuading opportunists so they abandon their assault.

The Maritime Security Centre Horn of Africa and the NATO Shipping Centre have adopted a series of guidelines entitled Best Management Practices Version 4 (BMP4). BMP4 outlines a suggested strategy for commercial shipping vessels to avoid being victims of piracy by utilizing a series of ship protection measures. The underlying principle of BMP4 is "[i]f pirates are unable to board a ship they cannot hijack it."¹



On board protective measures include blocked passageways.

One of the primary recommendations of BMP4 is that strongholds and citadels be established on the ship.² The idea is for the crew to have a place to which they can retreat in the event of a pirate attack. These citadels are a fundamental aspect of the basic protection for a crew and have thwarted many attacks. However, the flaw of the citadel is that the crew must be alerted in advance to an impending pirate assault.

Dummies and mannequins are also a tactic suggested by BMP4 and are being utilized in maritime security operations.³ The idea is to give the illusion that a ship is more heavily protected than it really is. While this method is clearly cost-effective, its long-term benefits are questionable.

Credit: NATO Shipping Centre

It will only be a matter of time before pirates realize that this extra personnel on a ship is merely a decoy. At that point the dummies will no longer be effective. Additionally, the use of mannequins might actually encourage pirates to assault ships that are legitimately armed and guarded, if only to determine which vessels have real maritime security teams and which vessels do not.

Security cameras, surveillance devices and alarm systems are all finding their way aboard commercial ships. These products have obvious value in alerting the crew to the imminent danger of unauthorized boarding. However, most of these systems are little more than a warning system. The Trident Group, for example, has developed a product called Maritime Boarding Alert Device (MBAD). MBAD uses electronic equipment to detect an oncoming pirate attack and repel it by overloading the visual and auditory senses of the would-be boarders.

Shipboard Defense Systems in collaboration with Mace Personal Defense, Inc., has created a maritime defence product in which a series of pipes surround the perimeter of a ship and excrete pepper spray or similar substance. While the concept has merit, some maritime security companies are skeptical of this device. Human involvement is required to detect the threat and activate the device. Automatic detection and activation systems are possible but significantly increase the price. The device is further limited in that once the pepper spray is depleted, the ship no longer has a defence system. Also, it wouldn't be long before the pirates realized that gas masks and other protective clothing would render this product ineffective.

Other methods of passive defence mentioned by BMP4 include the usage of fire hoses and water cannons.⁴ Human involvement is a vital component of these devices as well. However, using fire hoses to fight off pirates or terrorists sporting assault rifles and/or rocket-propelled grenades is dangerous and impractical to say the least.

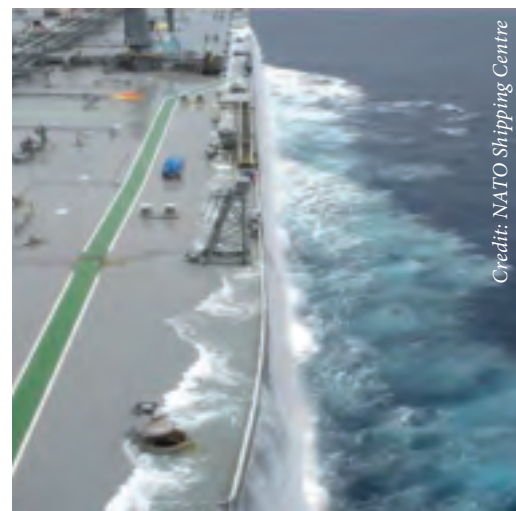
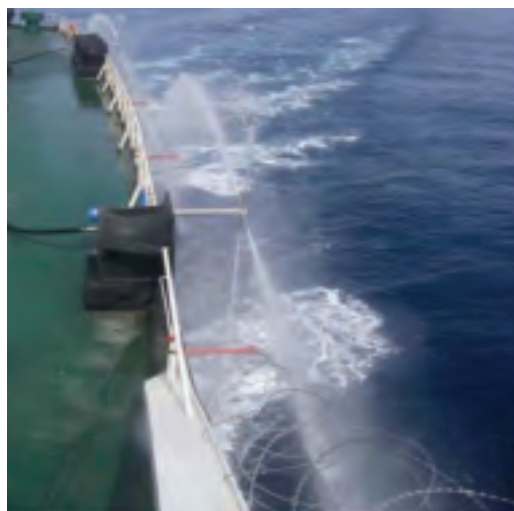
The LRAD Corporation has developed a series of Long-Range Acoustic Devices or 'sound cannons' – developed in response to the October 2000 attack on USS *Cole* in port in Yemen. These devices are one of the newer products in the counter-piracy and generic non-lethal weapons market, and have proven to be effective in a variety of scenarios. However, the primary drawback of the LRADs is

the fact that human involvement is needed to operate the device. Also, it is necessary for the crew to spot and identify a pirate threat long before it comes within boarding range of the vessel.

The most common passive defence system used is the installation of razor wire around the perimeter of a ship. The use of razor wire is a recommendation by BMP4.⁵ However, using razor wire in this manner is neither efficient nor cost-effective. The installation of the wire varies in cost depending on the size of the vessel, but can often be as expensive as \$15,000 (USD) for a single usage. In most ports razor wire is prohibited. This means that many vessels simply cut down the wire and dump it into the sea, creating an obvious environmental hazard. It is estimated that over \$434 million (USD) is spent annually on razor wire for commercial vessel hardening purposes.⁶

Razor wire is ultimately ineffective for a variety of reasons. First, it is usually installed on the rail of the ship or even the deck itself. Thus, most pirates do not encounter it until they are already onboard the ship. Second, it is a liability to the safety of the crew, and legislation in some countries has been enacted to curtail its use – such as the US *Merchant Marine Act* (the *Jones Act*) passed in 1920. Third, the razor wire is not always effective because quite often the pirates use grappling hooks to latch onto the razor wire and tear it down. Fourth, many of the pirates use *khat* or other drugs that allow them to ignore pain and disregard the razor wire. And finally, simple methods such as throwing a heavy blanket over the wire mitigate its effects.

A company called C-Snake Defense Products has developed two counter-piracy measures – Blue Briar and Blue Scimitar. Blue Briar employs the concept of protecting a ship with razor wire, but it consists of a series of units that



One method of passive defence is the use of fire hoses and water cannons.

Credit: NATO Shipping Centre

are installed side-by-side along the perimeter of a vessel. The units are made up of sheets of steel-reinforced rubber that are unfurled like a rug. When deployed, Blue Briar units expose two rolls of stainless steel razor wire that are designed to be grapple resistant. The units are reusable so they don't have to be thrown overboard when approaching port, and weather resistant, increasing their economic value and reducing negative effects to the environment. The unit also minimizes liability to the crew by containing the razor wire prior to deployment and hanging the razor wire below the deck when the unit is unfurled. Instead of grapple-resistant razor wire, Blue Scimitar incorporates a series of ultra-sharp fang-like protrusions and a grapple-resistant safety cage that provides an additional barrier against boarding. Both of these products were designed to be compliant with current BMP4 recommendations, which encourages the use of two rolls of razor wire as well as devices utilizing fixed metal spikes.⁷

With all of these products there are positive and negative traits. As with any purchases, the challenge is to find the best product at the best cost. As Chris Dunton, a former US Marine Force Reconnaissance operative and the co-founder of C-Snake Defense Products, phrases it, "[i]t's a balance that must be reached. You can design the best product on the market but if it's not competitive in cost, then your efforts are in vain. And if a security system has even a single flaw then the entire concept becomes useless. Your product has to have both aspects in order to be successful."⁸

The most obvious defence measure is the use of maritime security teams, both armed and unarmed. The purpose of unarmed security crews is to provide surveillance and early detection of an imminent pirate attack. In some cases these unarmed security teams will use non-lethal weapons in an attempt to ward off attackers. Again, the fact that most pirates are armed with automatic weapons and even explosives leaves unarmed teams at a clear disadvantage.

Several issues arise in relation to armed guards, however. First, there is a clear liability when weapons are involved. Second, many ports also do not allow weapons to leave or enter, providing a logistic headache, and in many cases the weapons are simply dumped into the sea in order to comply with local legislation. Third, in some cases the armed maritime security teams are untrained mercenaries and little better than the pirates themselves. Shipping companies prefer to use highly-trained operatives with backgrounds in various NATO militaries but such personnel can be costly. The average cost of contracting a maritime security team for a vessel is \$50,000 (USD) for



Credit: LRAD Corporation

Another method of defence is the use of Long-Range Acoustic Devices or 'sound cannons' to repel attackers.

a single voyage through a high risk area, and can easily reach as high as \$100,000 (USD).⁹ Some owners balk at such high costs. Despite these issues, however, it should be noted that up to early September 2012 no ships with privately contracted armed security personnel aboard have been taken by pirates. Thus, it could be asserted that armed security operatives are the most effective defence method currently available.

Offensive Measures

While defensive measures are the core of counter-piracy efforts, they will never provide an ultimate answer to the issue of Somali piracy. Thus, a series of measures that are more offensive in nature have been implemented.

Due to the political ramifications of military measures, many states are wary of sending military might to the region. As well, after the failure of *Operation Restore Hope* in Somalia – a United Nations military action in 1992 and 1993 to bring stability and disarm feuding warlords – most states are reluctant to get involved on land. Accordingly, the vast majority of these military operations have been restricted to naval activities in international waters, although the UN has authorized operations within Somali waters as well. The purpose of these naval activities is specifically the defence of commercial vessels passing through the high-risk area and is not a deployed expeditionary military force with corresponding political ramifications.

One major naval activity is Combined Task Force 150 (CTF-150). Originally a US Navy formation, it became an international naval coalition not long after the attacks against the United States on 11 September 2001. Although the initial purpose of CTF-150 was protection against maritime terrorism, the focus shifted to combating piracy

off the Horn of Africa. Later, Combined Task Force 151 (CTF-151) was created specifically to curtail Somali piracy.

Entities such as the Combined Joint Operations from the Sea Centre of Excellence (CJOS COE) have been created and sponsored by NATO in an effort to coordinate the efforts of multiple navies and intelligence services. The key to the success of these entities is establishing communication, cooperation and especially trust among the participating states and militaries. The ultimate goal is to set up a network that facilitates the efficient action of NATO navies and the safe operation of commercial shipping, as well as to provide an effective layer of defence against maritime terrorism.

Another example of active rather than passive measures is the Horn of Africa Facilities Management (HOA-FM) Company. The purpose of HOA-FM is to combat piracy from the inside. Established inside of Somaliland (a region of Somalia) in cooperation with the local government, the strategy of the HOA-FM is threefold: create a network of early detection; supplement the forces of the local (and legitimate) Somaliland Coast Guard; and enhance the abilities of the coast guard with training programs. Proponents of this program are optimistic about its potential for success, but a serious impediment is the fact that the Somaliland Coast Guard is suffering from a severe lack of funding and equipment. These shortages dramatically reduce its ability to patrol its waters.

One of the greatest challenges to these coalitions and similar entities is the legal situation. Quite often naval forces find themselves entangled in a web of conflicting international maritime legislation. The current laws

encourage naval forces and even maritime security teams to bring captured pirates to their country of origin and put them on trial there. In most cases this requirement is impractical since domestic civil and criminal courts are not designed to try non-nationals who committed a crime in international waters halfway around the planet. Under such circumstances naval forces frequently deem the most appropriate action to be a policy of 'catch and release,' a policy which has been criticized by many.

The positive impact of naval coalitions such as CTF-150 and CTF-151 as well as entities such as CJOS COE is a matter of debate. At the Maritime Security Conference in Halifax, Nova Scotia, in June of 2012, several speakers including Japanese Rear Admiral Umio Otsuka praised the effectiveness and tangible results of these coalitions.¹⁰ However, a report from the British Parliamentary Foreign Affairs Committee declared, "[t]hese [naval task forces] have contributed to a significant decrease in the ratio of successful hijackings to attempts, but have so far been unable to contain the growth in the overall number of attacks and the area in which pirates can operate.... The risk to pirates of serious consequences is still too low to outweigh the lucrative rewards from piracy."¹¹ Thus, the consensus seems to be that there are positive results from these naval coalitions, but as purely defensive mechanisms with impeding legal guidelines their effectiveness is clearly limited.

Developing Political and Economic Stability

The first two factors described here are both methods of containment. Neither of them provide an effective, long-term solution. While some would contend that perpetual containment is equivalent to a solution, this is neither ideal nor realistic. The real solution is to create a political and economic environment within Somalia that is stable and does not foster piracy. Piracy is rampant off the coast of Somalia due to a failed political and economic system. When the average annual income per capita is \$600 (USD),¹² it's not surprising that many Somalis would turn to more lucrative profiteering. The weak Transitional Federal Government has recently been replaced with a new Parliament which, unfortunately, is likely to continue to be weak in most areas and practically non-existent in others. The fledgling government cannot provide a realistic deterrent against piracy off of its own coast (or a solution to any other issue for that matter). The government cannot patrol its own waters not just against piracy but also against illegal fishing and the dumping of toxic wastes by outside parties.

Many are skeptical of the future of the new government. While these concerns are legitimate, it should be

Credit: Chris Duntun of C-Snake Defense Products



Blue Scimitar incorporates a series of sharp protrusions and a grapple-resistant safety cage that provides a barrier against boarding.



This shows the entire Somaliland Coast Guard, which includes only two serviceable boats of a total of three small boats.

supported, yet carefully scrutinized to minimize corruption and misconduct. It is important for the international community to be involved in the affairs of the Somali government while still encouraging it to take responsibility for its actions and policies.

Establishing a stable political and economic situation in Somalia is obviously easier said than done. However, it is still the most vital aspect of the threefold strategy. There are a variety of opinions on how to achieve this goal. The opinion here is that a system of both positive and negative incentives should be installed. Positive incentives would include assisting in the re-establishment and protection of local fisheries (perhaps through assistance to create and train a coast guard), education systems and other necessary infrastructure. This assistance would only occur, however, if the country becomes compliant with international laws. A judicial system needs to be created that can mete out firm but just consequences to

those who violate national and international laws. With a stable government may come economic opportunity to provide alternatives to piracy. As Ann Griffiths wrote in an Editorial in *CNR*, “[t]he piracy will only end when (a) there are other employment opportunities, or (b) it no longer makes money for the perpetrators, i.e., the costs become higher than the returns.”¹³ The suggestion here is to provide both economic alternatives and legal costs to engaging in piracy.

The conclusion is that it is possible to minimize the threat of piracy off the Horn of Africa. To protect commercial shipping an effective combination of passive and active defence systems must be utilized. A coalition of military vessels should patrol the entire region in a defensive and non-expeditionary capacity, with multiple states cooperating with each other and taking appropriate levels of responsibility. But most importantly, careful and strategic plans must be developed to help Somalis install a workable political and economic structure. This structure must not only establish the methods of apprehending and prosecuting maritime criminals, but also enable Somali citizens to find more constructive means of earning an income. Only then will an enduring solution to Somali piracy be achieved. 🇸🇴

Notes

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The Somaliland Coast Guard has fairly sparse accommodations.

After finishing his active duty in the Israel Defense Force Paratroopers, Jared M. Ben-Caro turned his attention to the international private security market, in particular the maritime security industry. He is the co-founder of C-Snake Defense Products LLC and Magnum-8 Security Services LLC.

Development of China's Polar Linkages*

Dr. Huigen Yang

China is neither an Arctic nor an Antarctic country but increasing linkages have been identified with both areas. China initiated its Antarctic research program at the beginning of the 1980s by sending scientists to Antarctic research programs of other countries such as Australia, Chile and Japan. The Chinese National Antarctic Research Expedition (CHINARE) was first organized in 1984 and 28 Antarctic expeditions have been dispatched since then. So far four national Arctic research expeditions have been sent to the Arctic Ocean as well. This commentary will review Chinese Arctic and Antarctic programs during the International Polar Year (IPY) 2007-2008. An outline of IPY legacies in China will be examined and a perspective on China's polar developments will be discussed.

Let's start with some public acknowledgement of the polar linkages of China. We understand that changes in polar climate will affect China. The Chinese public has understood the linkage between the unprecedented sea-ice retreat in the Arctic Ocean in September 2007 and the heavy snow disasters that happened in southern China in January of 2008. Many Chinese have also realized that if all Arctic and Antarctic ice sheets melt, the consequent sea level rise would affect China's coastline and the most populated and prosperous regions such as Guangzhou, Shanghai and Tianjin would be totally under water. Chinese scientists have attached great importance to the Arctic and Antarctic regions in understanding the earth system and its global changes and in pursuit of sustainable developments on this planet.

There are social reasons as well for China to be interested in polar regions. The opening of Arctic passages will shorten the sea route from Shanghai to North America and Europe by as much as 3,000 miles. This will have important implications not only for international trade, but also for social developments in some regions such as northeast China. As well, more and more Chinese tourists have shown increasing interest in going into the Arctic and Antarctic regions.

à e IPY China Program

Based on these general acknowledgements of the significance of the poles to China, the Chinese government approved full participation in International Polar Year (IPY) 2007-2008 by launching the IPY China program, covering the period from 2007 to 2010. The IPY China program consisted of two dedicated scientific research projects in the Arctic and Antarctic, one project of

enhanced international cooperation and data sharing, and one project on outreach and education. The two scientific research projects – PANDA in the Antarctic and ARCTIML in the Arctic – have increased Chinese polar activities to an unprecedented level.

The name of the Chinese Antarctic IPY project PANDA comes from the research sector of the Antarctic covering Prydz Bay, Amery Ice Shelf and Dome A, where China has carried out comprehensive investigations since 1989. The PANDA project aimed to carry out multidisciplinary observation and/or investigation for four years in this Antarctic sector and assess the change of and interaction among ocean, ice shelf and high plateau of the ice sheet. The PANDA project has set up about 30 observation/monitoring systems for bio-ecology, glaciology, oceanography, geology, geophysics, atmospheric physics/



Credit: Timo Palo, Wikimedia Commons

The ice camp is set up on sea ice during the Chinese CHINARE expedition by the icebreaker Xuelong to the central Arctic in summer 2010.



A model of the Chinese icebreaker vessel *Xuelong* is displayed at the Hong Kong Science Museum.

Credit: Timo Palo, Wikimedia Commons

chemistry, solar-terrestrial physics and astronomy through the four Chinese Antarctic expeditions and by international cooperation with Australia, Japan, UK and the United States, etc., during 2007-2010.

The name of the Chinese IPY Arctic project ARCTML comes from its research target – namely, Arctic Change and its Tele-impacts on Mid-Latitudes. ARCTML investigates Arctic change and assesses its impacts on climate change in mid-latitudes, especially China's climate. Two Arctic research expeditions – the 3rd and 4th Chinese National Arctic Research Expeditions – were dispatched onboard R/V *Xuelong* to implement ARCTML. The investigation was mainly focused in the Pacific Arctic region and four kinds of multidisciplinary sampling/observation were carried out with the two Arctic expeditions. The sampling/observations are carried out on different platforms, including: observation onboard *Xuelong* of meteorology, atmospheric chemistry and physics, marine hydrology and geophysics, as well as onboard sampling; ice camp sampling of radiation, snow and ice physics, zooplankton tows and particle flux; bottom mooring observation on vertical flux and marine currents, temperature and salinity; and measurements with autonomous underwater vehicles (AUVs) and remotely operated vehicles (ROVs). The IPY China Program was carried out in cooperation with the European Union's (EU) Damocles research project, and scientists from Canada, Finland, France, Norway and the United States have participated the ARCTML cruises of *Xuelong*.

Legacy of IPY in China

The first legacy was that in January 2009 China established its first inland research station, Kunlun, in the region of Dome Argus in the Antarctic ice sheet. CHINARE now has three stations in total in Antarctica. Second, China carried out four years of multidisciplinary observation at the Yellow River Arctic research station in Ny Alesund, and field investigation on marine biology and glaciology on the Svalbard islands in the Arctic Ocean. Third, China has renovated its icebreaker *Xuelong* and

equipped her with a new helicopter, which has improved scientific investigation capability. Fourth, a multinational collaboration on site test observation has proven that Dome Argus will be the best ground for an astronomical observatory on the planet. Fifth, a project of deep ice core drilling was launched on Dome Argus during the IPY, and a drilling workshop and a driller system have been developed and tested. Sixth, the observation of dayside aurora at the Antarctic Zhongshan Station has been further enhanced. A new aurora observatory replaced the upper atmospheric physics observation facility which had been a continuous and successful China-Japan collaboration since 1994. Meanwhile, an HF radar was deployed at Zhongshan Station and joined the Super Dual Auroral Radar Network (SuperDARN) to detect the global convection of the earth's ionosphere.

Finally, thousands of meteorites were collected by CHINARE inland traverse teams from the Grove Mountains. The total number of meteorites that CHINARE has collected is 11,400 which has put the Chinese collection at third largest after Japan and the United States. CHINARE's meteorite collection has proven that the Grove Mountain area is a venue of meteorite enrichment, where meteorites are moved together by glacier movements and sublimation of stopped ice by mountains. Meteorites are invaluable samples for mankind to understand the composition of the cosmos and its evolution.

In addition to investigation activities undertaken in the polar regions, China has conducted significant and comprehensive research as well. Important scientific findings have been achieved through international collaborative research with scientific data and samples collected through the IPY China program. For example, research of subglacial topography with CHINARE's ice radar detection on the Gamburtsev mountains has addressed the origin and early evolution of the Antarctic ice sheet and was published in *Nature*.¹ Another study, *Xuelong*'s high-resolution survey of sea-surface carbon dioxide (CO₂) concentration across the Canada Basin, revealed

a great increase relative to earlier observations. Contrary to the current view, this indicates that the Arctic Ocean basin might not become a large atmospheric CO₂ sink even under ice-free conditions. This finding was published in *Science*.² These studies illustrate that Chinese scientists have started to examine important issues of climate change in a global context.

Realizing that the Arctic is a region where natural and social developments are closely coupled, a new research division on polar social and human sciences was established in the Polar Research Institute of China. This research division has fostered a national network with more than 40 social scientists and 16 research universities and institutes. Topics on Arctic passages, law, economics, governance, geopolitics and international Arctic cooperation have been examined intensively and internationally.

Polar research has received ever-stronger support from the Chinese government. Public polar awareness has been raised to an unprecedented level and has included a university student expedition to the Arctic in 2008 which was jointly organized by China and Norway. As well, a great number and variety of polar thematic literature (including songs, stories, theatre plays) and art works (photographs, paintings and videos) were produced during the IPY.

CHINARE's Future Developments

Finally, let's take a look into the future polar development of China. First, a new icebreaker is under design which will have stronger icebreaking capacity and marine investigation than *Xuelong*. It will have a displacement of 8,000 tons, 20,000 nm of endurance and will be self-sustaining for 60 days. The new icebreaker will be designed in cooperation with an experienced international design company and built in one of China's major shipyards. Delivery of the new icebreaker will be at the end of 2014. Together *Xuelong* and the new icebreaker will give CHINARE stronger transportation capacity for polar operations.

Second, CHINARE is going to be equipped with a plane of the Bastler 67 type, which will establish an aviation support system for Antarctic operations – especially Dome A operations – and facilitate airborne remote sensing and atmospheric observation. Third, to facilitate an astronomy observatory, Kunlun station is to be expanded from a summer base to a year-round station. A roadmap up to 2030 has been planned for the Antarctic observatory, which aims to set up 6-8 metre optical telescopes and 15 metre THZ radio telescopes at Dome A. This observatory will be open for international cooperation.



Credit: pric.gov.cn photo

The icebreaker *Xuelong* (Snow Dragon) is a research vessel that has travelled to the Arctic and Antarctic.

Fourth, a new CHINARE initiative on systematic and long-term monitoring of polar environments has been launched to follow the IPY China Program and research expeditions in polar regions will remain a major element of polar research. Fifth, a domestic base for CHINARE activities is under construction in Shanghai and will be completed in 10-15 years. The base will be able to accommodate 1,000 people and include research labs, a polar science museum, conference facility, accommodations and a pier. And sixth, there is a plan to set up a polar education and outreach facility, the Polaris Climate Change Observatory Shanghai (PCCOS), in Shanghai in cooperation with Belgium.

In conclusion, IPY 2007-2008 provided China with a great opportunity to explore polar science frontiers and to raise public polar awareness through international cooperation. By participating in IPY with a national program, China achieved multidimensional polar linkages, increased its understanding of the earth's system and climate change, raised public awareness of polar environmental conservation and protection, and advanced polar science, technology and culture. In the coming decades, a more comprehensive development of polar linkages will be achieved for the benefit of mankind. And a more creative and harmonious polar culture will be cultivated for a sustainable planet. 🏆

Notes

* This article is based on Dr. Huigen Yang's presentation at the 2012 IPY Conference in Montreal on 23 April 2012, and a presentation made at Dalhousie University, 27 April 2012.

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Dr. Huigen Yang is the chief scientist of the IPY China Program and the director of the Polar Research Institute of China at Shanghai. As expedition leader and chief scientist, he commanded the 25th Chinese National Antarctic Research Expedition from November 2008 to April 2009, which established Kunlun Station at Dome Argus of the Antarctic ice sheet.

The Sparks of Innovation

Janet Thorsteinson

In Rudyard Kipling's short story "Wireless," radio communication in 1902 was still magical. Two characters talk about the mystery and pace of technological change in this exchange:

"Do you mean we're overhearing Portsmouth ships trying to talk to each other – that we're eavesdropping across half South England?"

"Just that. Their transmitters are all right, but their receivers are out of order, so they only get a dot here and a dash there. Nothing clear."

"Why is that?"

"God knows – and Science will know tomorrow."¹

Science did know, perhaps not the next day, but soon. Just 14 years later, Kipling was at a headquarters on the coast of England where directing ships by radio had become as familiar as railway signalling. Kipling offers this exchange in his classic naval book *Sea Warfare*:

Down coast someone asks by wireless if they shall hold up their traffic. It is exactly like a signaller 'offering' a train to the next block. "Yes," the Office replies. "Wait a while. If it's what we think, there will be a little delay."²

Then as now, development of electronics has been driven by commercial companies like Marconi and Telefunken. But the technologies have always been accessible to the hobbyist as well as the scientist, and to the civilian amateur as well as the military professional. Incremental improvements are inherent in wireless communications and digital computing. Unlike hulls or engines, software and hardware improvements can be done swiftly, and often at a distance. In the century since Kipling wrote, electronic technologies have transformed naval warfare. As US Navy Captain (ret'd) George Galdorisi wrote in 2010, "[o]f all the technological advances nations and navies have embraced, compelling evidence suggests that command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) technologies have advanced more rapidly than other technologies."³

Speaking about the National Shipbuilding Procurement Strategy at the 2012 Naval Association of Canada Conference, Rear-Admiral Mark Norman said that the efforts to build the fleet outlined in the Canada First Defence Strategy, "are being propelled forward through a transformational shipbuilding strategy that promises to unleash the creative talent and energies of Canadian industry."⁴



Crew members from HMCS *Regina* participate in an action stations drill in the South China Sea. At the time, *Regina* was in transit to the Arabian Sea to join *Operation Artemis*.

The challenge now, he said, "is to operationalize this unprecedented opportunity."

And a significant part of meeting this challenge will involve technology. The Royal Canadian Navy's electronics systems were put to the test last summer off the coast of Libya, as Canadian aircraft and warships joined NATO forces in *Operation Unified Protector*, supporting enforcement of an arms embargo and a no-fly zone. Predictions that navies would move to the world's coastlines had finally come true.

One lesson that can emerge from the experience is the value of agility, as a new, 'home-grown' Canadian-built capability joined *Operation Mobile*, the Canadian element of *Unified Protector*. A CH-124 Sea King helicopter, call-sign Trojan 12, flying from HMCS *Vancouver* used the new Augmented Surface Plot (ASP) system.

When the US Navy stopped supporting the Sea King's tactical navigation system, the ASN-123, Canada had a choice between buying a replacement and developing an augmented version of the current system. The Canadian

Credit: Corporal Rick Ayer, Formation Imaging Services, Halifax

navy chose an in-house development that would not only extend the usefulness of the current equipment but begin to deliver the same kind of information that operators will see when the new CH-148 Cyclone marine helicopter comes into service.⁵ The result, the Augmented Surface Plot system, was a new capability that delivered true operational value off the coast of Libya and began an early transition to the next generation of capability.



The first interim maritime helicopter, the CH-148 Cyclone, arrived at 12 Wing Shearwater, NS, in May 2011 to support training of Canadian Forces aircrew and technicians.

According to Captain Doug Keirstead, “[i]n a nutshell, the ASP system ... brings together traditional technical navigation data and radar information from the Sea King’s onboard sensors, overlays maps, and integrates data from the Global Positioning System (GPS) and the Automatic Identification System (AIS), an automated marine tracking system used for identifying and locating vessels.”⁶ It became clear to Canada’s allies during the operation that the helicopter was extremely useful in building the recognized maritime picture, and this was because of the ASP system. Master Corporal Terrance Chenard, the lead airborne electronic sensor operator with *Vancouver*’s helicopter air detachment during *Operation Mobile*, wrote “[t]he recognized maritime picture is a snapshot of everything that happens in our assigned area that provides the ship and our NATO partners with crucial information. Building the picture helped determine the pattern of life in the areas *Vancouver* patrolled. Understanding these patterns allowed the ship and the helicopter to identify vessels that were not behaving in accordance with established traffic patterns. Not bad for the oldest helicopter in the Task Group!”⁷

The accomplishment was recognized in April 2011 when the Canadian Aeronautics and Space Institute awarded ASP project leader Major Dwight Bazinet its Roméo Vachon Award. The award was presented for “outstanding

display of initiative, ingenuity and practical skills in the solution of a particular challenging problem or series of challenging problems in aeronautics and space activities in Canada.”⁸

An agile response can be complex or simple, but it is always fast. During the Second World War in the north Atlantic a new and deadly German torpedo variant appeared, using an acoustic guidance system to steer to its targets. Dozens of ships were destroyed. The RCN destroyer *St. Croix* was the first ship to be lost and the Royal Navy corvette *Polyanthus* was the second. Both these ships were hit 20 September 1943.⁹ Innovation to counter this threat was essential. Swiftly developed and put into service aboard Canadian warships, the simple Canadian anti-acoustic torpedo (CAAT) gear countered the threat.

Speaking in Ottawa in spring 2012 at an industry forum Vice-Admiral Paul Maddison, Commander of the RCN, called on the designers of Canada’s next generation of major surface combatants to “anticipate a need to introduce evolving capabilities” so that during their entire service lives ships could be agile and have the ability to evolve with threats to protect forces and populations ashore.¹⁰ Government may not be able to compel agility, but through the access to technology it negotiates with industry, the government can create the conditions that allow it to flourish. Empowered and challenged, Canadian engineers and scientists will be able to extend the capabilities of Canada’s new fleet in ways that can scarcely be imagined. 🍷

Notes

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



Making Waves

Hosaqami: A Totem Pole for Navies

William (Bill) Shead

A totem pole represents a family story. It stands for kinship. This totem bears three devices which symbolize our common purpose and the contribution we must make to our two Navies.

The Killer Whale stands for the sea, for its dangers and challenge.

The Thunderbird is the hunter who seeks out his prey in the sea.

The Speaker holds the staff of authority; he speaks with knowledge, he is the instructor.

Thus, our strength at sea lies firmly based upon the man who teaches and who leads. In the Kwakiutl tongue the name Hosaqami means that he who owns this pole is a man of integrity in his society.

May it ever proclaim the warmth of the bonds that join us. (*Extract from the Proclamation accompanying Hosaqami 28 July 1960.*)

From 1910 to 1960, the Royal Canadian Navy's (RCN) Gunnery personnel were trained at the Royal Navy's (RN) training establishment, HMS *Excellent*, on Whale Island in Portsmouth, England. At the end of this arrangement, Canadian graduates of the establishment wished to give the RN and *Excellent* something to remember Canadians and their friendly association over the RCN's first 50 years. They succeeded beyond their dreams with the presentation of Hosaqami – a totem pole.

Like all gifts, it is the thought behind the gift that counts. The proclamation that accompanied the presentation of Hosaqami to HMS *Excellent* on 28 July 1960 notes "the warmth of the bonds that join us," the RN and RCN. This gift required thought, commitment, cooperation and participation from every echelon of the RCN. The specifications for the gift were that it should be "large, useless and difficult to keep clean." In Victoria, Chief Mungo Martin, a renowned Kwakiutl carver, agreed to carve a totem pole – subsequently to be known as Hosaqami – for presentation. It certainly was large, weighing two tons and standing 25 feet tall, relatively useless and damned hard to clean, although the RN did succeed for about three decades.

On 1 May 1959 Chief Martin began carving Hosaqami assisted by his adoptive grandson Tony Hunt and Tony's father Henry. They completed their task on 10 July 1959.



Credit: Author

Hosaqami II being raised into position in September 2012.

Hosaqami was transported from the West Coast to Halifax in HMCS *New Waterford* and spent the winter of 1959-60 in the Gunnery School at HMCS *Stadacona*. On 15 July 1960 Hosaqami was embarked in HMCS *Kootenay* for passage to Portsmouth and a new home on Whale Island.

A call went out for volunteers to form a special escort for Hosaqami. Fifteen members of the RCN of native ancestry responded. The escort gathered in Halifax for the first time in mid-July. They included:

ABMA Wilfred Beaver, Six Nations; ABMA Gus Bisson, Ojibway; ABAF Russell Bomberry, Six Nations; LSEM Don Clouston, Crow; ABWS Jacques Fisher, Cree; ABAR Eric Jamieson, Six Nations; P2RT Fred Jamieson, Six Nations; ABWU Peter Jamieson, Six Nations; OSRS William Kenoshemeg, Ottawa; ABRP Hal Lecoy,

Saultaux; ABEM Gordon McBryan, Shoswap; ABLM John McHugh, Blackfoot; ABBN Charlie Rabbitt, Sioux; ABRP Dennis Timothy, Six Nations; and SLt Bill Shead, Cree.

At the outset no one really had any inkling of what role the escort would or should play. We came from several different aboriginal cultural and language groups from across Canada. There was no common tradition or ceremony that might serve as a model for our eventual role. However, as sailors and shipmates, we had our naval training and its traditions in common. We realized that we did have an important role to play and could not be passive participants. So we simply worked out the details of what the escort might do while at sea in HMCS *St. Croix* en route to Portsmouth. We carved and decorated 'lances' out of mop handles from ship's stores and decorated them with feathers dropped on deck by passing seagulls. Charlie Rabbitt carved a 'peace pipe.' We shared ideas of what our people might do in similar gatherings of friends. All the while we kept in mind the fact that Hosaqami was the focus of the event and our role should not distract in any way from the presentation, but should add some 'Canadian fun' to the day. We believe we accomplished that objective – thanks to help from our shipmates and families.



Hosaqami II being transported.

It may be incomprehensible today that such a young and inexperienced fellow would be given the responsibilities that I had for the escort and the role we (15 aboriginal members of the navy) played in the event. The older and senior ranking naval officers involved showed that they were prepared to take risks. They gave us all every encouragement, never questioned the role we defined for ourselves and appeared to be confident that whatever

we proposed to do we would do well and make the RCN proud. Surely it was their confidence that our naval training had prepared us to accept any challenge, to do our very best and succeed. In the end we all have fond memories of the event that have endured for more than half a century – and counting.

At the presentation the audience formed a huge circle around Hosaqami on *Excellent's* cricket pitch. After introductions, the Commanding Officer, Captain Dalglish, was made a member of the Sioux Nation. He was given a headdress and a blanket to wear. The 'Peace Pipe' was lit and passed around. As is the practice in many Indian ceremonies, there had to be a dance. Captain Dalglish and the two other officers took part. The escort did not look out of place; however, the Captains and Commander certainly did, but they participated with much good will and good humour. After this, Hosaqami was officially presented to HMS *Excellent*.

Hosaqami remained at Whale Island after the RN closed *Excellent* in 1985. The totem pole suffered from rot due to the UK climate and was virtually destroyed when a violent windstorm swept through in 1987. A smaller replica was placed in the Whale Island museum. The decaying original was returned to Halifax aboard HMCS *Algonquin* in 1990 to see if it could be restored. Unfortunately it could not. Hosaqami was returned to Esquimalt aboard HMCS *Protecteur* in 1992.

Tony Hunt – now Chief and a skilled carver and artist in his own right – advised the navy not to restore the totem pole, but to allow it to return to its natural state in a place of honour. On 30 April 2012, after several years at rest behind the memorial wall at the Chief and Petty Officer's Mess, Hosaqami was moved to Government House in Victoria. There it served as a model for a replica carved by Chief Tony Hunt. The new Hosaqami is a gift of Lieutenant Governor Steven Point to the people of British Columbia and to celebrate the Queen's Diamond Jubilee. The original will continue to decay at Government House.

The story of the 1960 presentation of the original Hosaqami had not been forgotten. The Lieutenant-Governor's office sent invitations to the escort members for the Traditional Pole Raising Ceremony of Hosaqami II on 8 September 2012. Three of us were able to attend – Hal Lecoy, Gordon McBryan and I.¹

I arrived at Government House Thursday, 6 September, to find carvers and painters working on Hosaqami. I too was drafted to assist. The Lieutenant-Governor chipped in, as did some members of Government House staff and the public. It really was a community project. We worked right up to the last second on Friday before the pole was

moved to the front of Government House for the Saturday morning ceremony. Tony had been asked by so many observers if it would be ready on time that he wrote on a sign 'YES! The Chief.' It was! And we all had fun making it happen.

His Honour Steven Point is an aboriginal person, an Honourary Captain RCN and former judge. He wore his Honourary Captain's uniform to underline the naval connection to Hosaqami. At the blessing ceremony, the original escort members presented the Lieutenant-Governor, Admiral Truelove and Tony Hunt with a book of photos and stories of the original Hosaqami. I also gave Admiral Truelove the 'lance' I had carved from the mop handle from *St. Croix's* ship's stores. The Pole Raising Ceremony was a wonderful event and we all enjoyed it very much indeed.

It is unlikely that Hosaqami II will experience the adventures and voyages of the original. Hosaqami sailed in four different ships of the RCN – HMCS *New Waterford*, Esquimalt to Halifax 1959; HMCS *Kootenay*, Halifax to Portsmouth 1960; HMCS *Algonquin*, Portsmouth to Halifax 1990; and HMCS *Protecteur*, Halifax to Esquimalt 1992. This most traveled totem pole crossed the Atlantic Ocean twice and transited the Panama Canal twice. Hosaqami surveyed the *Stadacona* parade square in Halifax over a winter and stood for over a quarter of century at the entry to Whale Island in Portsmouth.

It was a blessing that Chief Tony Hunt was involved in this project as well as the carving of the original Hosaqami. These are good omens that the spirit of the original Hosaqami will endure. 🍷

Notes

1. Three others were unable to attend. Don Clouston of Sooke was in northern BC visiting family. Russell Bomberry of Six Nations was home with his wife celebrating their 50th Wedding Anniversary also on 8 September. Although I had spoken with Eric Jamieson of Onieda we were unable to contact him to determine if he would be able to join us. Sadly John McHugh, Charlie Rabbitt and Eric's two brothers Fred and Peter had passed away. We have lost contact with Jacques Fisher, Dennis Timothy, William Kenoshemeg, Gus Bisson and Wilfred Beaver.

Oil and Water: A Whole of Government Response

K. Joseph Spears

The potential increase of marine tankers in Canadian waters has generated a great deal of public interest in Canada's marine pollution response capability. If two projects are approved – the Enbridge Northern Gateway pipeline and the twinning of the Kinder Morgan Trans-

mountain pipeline which has been in operation since 1953 – we are going to see a large increase in tanker traffic and frequency from both Vancouver and Kitimat.

With the Keystone XL pipeline in the United States (thus far) being denied US State Department approval, and increased American domestic oil production, the impetus is on Canadian producers to find a more diversified market which requires shipping. Given the increasing appetite for energy in Asia, it seems a likely destination for Canadian energy exports – in particular from oils sands production which is to increase to 3.5 million barrels a day in 2025 from the present production of 1.5 million barrels a day. Export to Asia requires marine tankers. And this in turn has important implications for Canada's ocean management which includes marine oil spill pollution response. The Canadian Forces and, in particular, the Royal Canadian Navy (RCN), may have to play a key role in oil spill response.

The Premier of British Columbia, Christy Clark, has called for a 'world-leading' marine pollution response capability as a condition of supporting future oil sands pipeline development in British Columbia. The province of BC recently released a technical analysis setting out in detail what a world-leading response could look like.¹ In Canada, marine pollution response is a federal responsibility under the *Canada Shipping Act, 2001* but it is clear that any major incident would include the government of Canada, provinces, municipalities, First Nations and the private sector. We can see two examples of the response in the Canadian Arctic where there were groundings of a marine tanker and a cruise ship in 2010.



CCG *Martha L. Black* and HMCS *Fredericton* in Frobisher Bay conducting a fueling during *Operation Nanook* 2007.

Credit: MCpl Blake Rodgers, Formation Imaging Services, Halifax

Canada's marine pollution response regime was considered in the fall 2010 Report by the Commissioner of Environment and Sustainable Development to the Auditor General. Chapter One, "Oil Spills from Ships," raised questions about Canada's ability to handle a major marine tanker pollution incident and made a series of detailed recommendations to improve the pollution response by the government of Canada.² When he tabled his report, Commissioner Scott Vaughan stated "[w]e note several areas of concern, from incomplete risk assessments to out-of-date emergency response plans.... These must be addressed to ensure the federal government is ready to respond to any ship-source oil spill occurring in Canadian waters."³ The bottom line was that Canada is not ready for a major oil spill.

To address this, the federal government struck an Interdepartmental Marine Pollution Committee (IMPC) to look at marine oil response and that work has been ongoing since 2010. The Canadian Coast Guard (CCG) is the lead agency on the IMPC. It is also the lead agency for ship-source oil spill response. The IMPC is mandated to address the report recommendations, and promote a whole of government approach to addressing marine pollution events. The last time Canada's maritime oil pollution response capability was examined comprehensively was in the early 1990s – over 20 years ago – by the Public Review Panel on Tanker Safety and Marine Spills Response Capability.⁴ The current Canadian regime outlines the shipowner/operator – i.e., the polluter – responsibility to a pollution incident, and CCG oversight. Canada has been very lucky that there have been no major spills in the recent past and the existing regime, which has been in place since 1995, has never been tested.

Although not designated as the lead agency, the RCN is no stranger to responding to maritime pollution incidents and would have a key role to play in Canada's response to a major incident. The RCN has the command and control capability, vessel capability, logistics and maritime experience to enhance response. We saw this capability displayed vividly in the aftermath of the *Swissair* crash off Peggy's Cove in 1998. The RCN also played a role after the tanker *Arrow* ran aground off Nova Scotia in 1970 and the tanker *Kurdistan* broke up in a storm off Nova Scotia in 1979. But in 2012, as a number of reports to government have indicated, there is a lack of crisis leadership skills with respect to marine response. This was highlighted in the spill from the Deepwater Horizon production platform off the United States.

The lack of crisis leadership skills shouldn't come as a surprise given that there have been so few major pollution

incidents in Canada in recent memory. The doctrine of training harder than you fight is one that needs to be applied to marine pollution response and integrate all levels of government in response training and exercises.

The *National Defence Act* lays out the circumstances and methods of aid to the civilian power that can be taken by the Canadian Forces. Unfortunately, the act is somewhat cumbersome and is not forward-looking to embrace new and emerging issues. These often require specialized training and equipment available well in advance. Under the legislative regime laid out in the *National Defence Act*, the Canadian Forces can become involved when asked by the relevant federal or provincial authority. This needs to change so that there is more input on an ongoing basis on new and emerging issues in a whole of government context. The IMPC is a good start. We need to take the critical skills the RCN has developed for war-fighting – such as, to name a few, command and control, communications, logistics, inter-agency cooperation and planning – and share these with other government departments and levels of government.

The annual *Operation Nanook* exercises in the Arctic are a good beginning in this evolving dialogue and skill set. The time of an incident is not the time to be looking at the inter-agency memorandum of understanding. The RCN can contribute greatly to developing a strengthened and resilient pollution response capability along all of Canada's coasts. This is going to be especially important with increased tanker traffic on the West Coast and in the Arctic. The discussion, dialogue and exercises need to happen now at the strategic, operational and tactical levels.

This whole of government response strategy goes hand-in-hand with Canada developing an energy and ocean policy. Fighting for the environment – in defence of the realm – is just one of the many skill sets of a robust and vigorous navy in the 21st century. Canada will be a better ocean state for it. 🇨🇦

Notes

1. Province of British Columbia, "Requirements for British Columbia to Consider Support for Heavy Oil Pipelines," 2012, available at www.env.gov.bc.ca/main/docs/2012/TechnicalAnalysis-HeavyOilPipeline_120723.pdf.
2. Fall 2010 Report by the Commissioner of Environment and Sustainable Development to the Office of Auditor General of Canada, available at www.oag-bvg.gc.ca/internet/English/parl_cesd_201012_01_e_34423.html.
3. Commissioner Scott Vaughan quoted in "Government Not Ready to Respond to a Major Oil Spill," Press Release, Office of the Attorney General of Canada, 7 December 2010, available at www.oag-bvg.gc.ca/internet/English/mr_20101207_e_34442.html.
4. The report issued in 1990 by this panel was called "Protecting Our Waters," commonly referred to as the Brander-Smith Report for its Chair David Brander-Smith.

A View from the West: RIMPAC 2012

Brett Witthoeft*

The biennial Rim of the Pacific (RIMPAC) exercise, hosted by the US Navy (USN) at Pearl Harbor, Hawaii, concluded at the beginning of August. The scope of players – 22 states – was up considerably from 14 in 2010. And the numbers involved – 40 surface ships, six submarines, over 200 aircraft and more than 25,000 civilian and military personnel – were impressive. RIMPAC 2012 featured a number of firsts including, among other things, the fact that Russia participated, sending two ships and a tug, and the demonstration of the USN's 'Great Green Fleet,' an aircraft carrier strike group powered by blended biofuel. As well, New Zealand returned to the exercise after an almost three decade absence following a dispute with the United States over the access of nuclear-powered and nuclear-armed vessels to Kiwi ports.

Perhaps more important than these impressive numbers and milestones was the context in which RIMPAC was situated. The strategic situation in the Indo-Pacific region has shifted since the last RIMPAC in 2010, with the 2012 iteration reflecting new political and economic considerations. The November 2011 announcement by the United States of its 'pivot' to Asia, plus China's increasing assertiveness in the South China Sea, declining defence budgets amid uninspiring economic growth, and the need for greater inter-military service and multinational cooperation were all apparent in RIMPAC 2012.

The pivot to Asia was intended to show that Washington's attention, long focused on the Atlantic and on nation-

building in Afghanistan and Iraq, has shifted to alliance-(re)building in Asia. The George W. Bush administration expended effort to woo India, ostensibly to engage it as a bulwark against a rising China. However, New Delhi, which has traditionally worked to remain aloof from great power politics, has largely resisted Washington's attempts to draw it within the American camp. This can be illustrated, for example, by the Indian decision to purchase 126 Dassault Rafale fighters from France instead of US-made F/A-18s or F-16s, either of which would have brought India closer in line with long-time US allies Japan and South Korea. India's inclusion in RIMPAC for the first time offered a compromise for mutually acceptable cooperation since it expanded maritime engagement in a US-sponsored multilateral context without unduly committing India.

The US pivot was also demonstrated by the inclusion of the Philippines in RIMPAC for the first time. Since 2009-2010, China has behaved more assertively than in previous years with regard to territorial disputes in the South China Sea, leading to several confrontations with other claimants. The Philippines is among those claimants, and had an extended standoff with China over the Scarborough Shoal this past summer. Manila has secured some American support on the issue, such as US Secretary of State Hillary Clinton's re-affirmation of the mutual defence treaty. However, the inclusion of the Philippines in RIMPAC drew it into a large multilateral setting along with other countries with concerns about China, and indicated that Washington believes that Manila should be a part of the world's largest naval drill.

Meanwhile, US-Vietnam relations have been steadily expanding as Hanoi seeks to balance its larger neighbour in the South China Sea. These enhanced ties include the signing in 2011 of the first formal US-Vietnam military agreement and increasing port visits to Vietnam by USN ships. Although Vietnam will take years to develop its manpower capability, when it receives its *Kilo* submarines beginning in 2014, it will have an interest in joining RIMPAC, particularly if a diplomatic solution to the disputes in the South China Sea has not been found.

Further expansion of RIMPAC in coming years is likely to become necessary as the United States faces significant financial challenges. Even the Department of Defense will not be immune from possible cuts. If American lawmakers cannot find USD \$1.5 trillion in overall budget cuts by 1 January 2013 – the 'supercommittee' appointed to undertake this task failed – a sequestration measure



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

HMCS *Algonquin* (DDG 283) arrives at Joint Base Pearl Harbor-Hickam, in Honolulu, Hawaii, on 29 June 2012 as part of RIMPAC 2012.

that takes \$55 billion annually from the defence budget will take effect. These sequestration cuts are in addition to a \$350 billion decrease to the defence budget over the next decade.

The axe is also being applied in other countries. Following their most recent government budgets, Canada's defence forces are seeing a reduction of over \$1 billion to 2015, while Australia has removed \$5.7 billion from defence coffers over the next five years. Japan's military budget too has been declining since its 2002 peak, attributed in part to Japan's general economic malaise. The cost of rebuilding after the March 2011 earthquake and tsunami is likely to put further pressure on Japan's defence spending.

As these cuts work their way through navies, multilateral cooperation will become increasingly important in order to ensure that a common security picture is understood and that security gaps do not emerge. A direct indication that RIMPAC organizers acknowledge this reality is the incorporation of non-American component commanders in 2012. Thus, Japanese Rear-Admiral Fumiyuki Kitagawa served as the exercise vice-commander, Canadian Rear-Admiral Ron Lloyd acted as deputy commander, Australian Commodore Stuart Mayer led RIMPAC's maritime forces, and Canadian Brigadier-General Michael Hood headed up the combined air forces. This is not to say that the Pacific will see a shift to NATO-style 'smart defence,' whereby niche capabilities are developed within a coalition context to reduce costs – the region is too fraught with security concerns for states to accept a reduction of their holistic capabilities – but RIMPAC offers an excellent platform by which navies in the region can develop complementary roles and skills.

Natural disasters over the past few years have highlighted the importance of joint responses as the scope of the disasters has demanded a reaction that no single military service and few overall armed forces alone can provide. The December 2004 earthquake and tsunami in the Indian Ocean killed hundreds of thousands of people in 14 countries, displaced millions more, and caused billions of dollars in damage. The March 2011 earthquake and tsunami in Japan killed over 15,000 people and caused billions in damage. In both instances, the quickest response was by naval forces, supported jointly by the other armed services.

To reflect this increasingly important role, for the first time, RIMPAC 2012 featured a joint humanitarian assistance and disaster response drill, *Operation Restore Chianti*, based on a tsunami response scenario. *Restore Chianti* included land, air, sea and civilian cooperation to evacuate and treat casualties from a 9.0 earthquake. The



Credit: MCpl Marc-Andre Gaudreault CF Combat Camera

Boatswains on board HMCS *Algonquin* launch an inflatable boat during a man overboard exercise in the Pacific Ocean during RIMPAC 2012, 26 July 2012.

possibility of a humanitarian assistance/disaster relief scenario in the region is likely to grow as the climate changes, requiring multiple partners to respond. Military planners are taking this likelihood seriously, and are including such scenarios in RIMPAC in order to be prepared.

Clearly, RIMPAC has reason to grow, with the United States renewing its focus on Asia and greater economic and security challenges across the region. However, a careful balance must be maintained. On the one hand, there must be greater participation of regional states. In particular, India, a sub-regional hegemon, could contribute ships and aircraft in addition to personnel, and with the impending arrival of its *Kilo* submarines, Vietnam could play a strong role. On the other hand, strategic depth for both the American hosts and international participants must be considered.

RIMPAC 2012 was a successful exercise and in the midst of some serious maritime disputes in Asia, such as in the South China Sea, it is useful to have an exercise like this. RIMPAC will undoubtedly continue to act as a platform for developing Asian maritime security, and will be adapted to address future maritime security challenges. 🍷

Notes

- * The views in this article are those of the author and do not reflect the position of the Department of National Defence.

Brett Witthoeft is the Senior Asia Security Analyst in the Office of the Asia-Pacific Advisor at Maritime Forces Pacific Headquarters, and a second-year MA student of Asia Pacific Policy at the University of British Columbia.

Plain Talk: Frank and Earnest Go Missing

Sharon Hobson

Obtaining information from the Department of National Defence (DND) should be a straightforward process. According to Lieutenant-General André Deschamps, “[w]e provide information when it is requested of us by anyone requesting it, as long as it is not classified or does not cross the boundaries of protected information.”¹ Certainly General Deschamps makes it sound easy. People – anyone, a politician, a member of the public, a reporter – can ask a question and expect an answer as long as the information is not considered secret or harmful to national security. And according to Defence Minister Peter MacKay, it makes no difference who is doing the asking. In a letter to the *Windsor Star*, he wrote, “I have access to the same public information as Parliamentarians, members of the media and all Canadians.”² (When the Minister spoke of “the same public information,” he appeared to be referring to non-classified information.) Further, both the Minister and General Deschamps are indicating that everyone is treated the same way when they make a request for information.

This may come as news to many. David Pugliese, for one. Pugliese is the defence reporter for the *Ottawa Citizen* and he also writes for *Defense News* in the United States. He’s been covering the defence beat for 30 years and is well known within the Canadian defence constituency. In May 2011, he phoned DND and requested a copy of a briefing given by the then-Assistant Deputy Minister for Public Affairs, Josée Touchette, to a NATO gathering in Europe in 2010. The presentation was unclassified, and had already been given to a CBC reporter, but Pugliese was stonewalled. He phoned numerous times over the months to find out when he would be receiving the presentation but, instead of being provided with this unclassified paper, he was asked questions such as what did he want it for and what was his article about. Finally, 13 months after he made the request, and one month after Touchette had been posted to another department, he received the presentation. Its subject? How to deal with the news media and the importance of responding quickly to inquiries.

This, unfortunately, is not a rare occurrence. Getting timely information, or indeed *any* information, has been difficult since 2006. Pugliese has been keeping track of his requests and says 70% of the time DND either misses his deadline or does not bother to respond. Even when the government or DND does respond and does so before a deadline, there is the further problem of getting accurate information – information you can trust.

Everyone is familiar by now with the discrepancies amongst the budget figures for acquiring the F-35 Joint Strike Fighter. It’s clear that when it comes to equipment budgets, nothing is clear. Different numbers can be used by different people but no one can be accused of lying because a rational case can be made for whatever number is paraded before the public.



Maritime Component Commander, Captain (N) Art McDonald speaks with members of the media in the hangar of HMCS Montreal about *Operation Nanook* prior to departing from St. John’s Harbour, 3 August 2010.

A lesser known example of budgetary sleight-of-hand is the Aurora Incremental Modernization Project (AIMP). This lengthy project – it started in 1998 but the RCAF won’t have an initial operational capability of the 10 aircraft being upgraded until 2013 – consists of numerous sub-projects, and has a budget of more than \$1 billion. The exact cost of the AIMP is publicly unknown because some of the upgrade projects are not listed under the capital budget in the *Report on Plans and Priorities*; they are being funded out of the department’s national procurement (NP) budget. For example, the \$370 million Data Management System (DMS) being developed and built by General Dynamics Canada started out as a major Crown project, but despite its hefty price tag and risky development, it is now considered a ‘capital betterment’ project and apparently funded out of DND’s national procurement budget.³ I asked why and received an email response from a Public Affairs Officer who told me “there is a simple explanation as to why the Data Management System is considered a capital betterment and not a major capital project. It is a legacy issue from when the Aurora Incremental Modernization Project was approved in 1998.”⁴ Simple but certainly not clear. Following this line of reasoning, couldn’t all upgrade projects be considered

Credit: Corporal Rick Ayer, Formation Imaging Services, Halifax



Minister of National Defence Peter MacKay keeps eye contact with the safety diver before exploring an iceberg in the Arctic waters of Resolute Bay, Nunavut, during *Operation Nanook* 2011, 18 August 2011.

‘a legacy issue’ and funded from the NP budget instead of the capital budget, bypassing the troublesome Treasury Board approval process? And interestingly, up until 2004-05, the DMS was considered part of the AIMP capital budget. It appears to have moved only after its cost climbed from \$198 million to its current \$370 million.

Hiding information from reporters and the public while appearing to be complying with information requests seems to have become part of DND’s mission statement. (Does the department offer special training courses in this area?)

I recently wrote a feature on the *Halifax-Class* Modernization Project. One of the questions I asked DND was “[h]ow have schedule delays to the Maritime Helicopter Project (Cyclone) affected the Halifax-class Modernization program?” In an email reply from a Public Affairs Officer on 22 June 2012 I was told “[t]he Halifax-class Modernization/Frigate Equipment Life Extension project schedule and budget are unaffected by delays to the Maritime Helicopter Project (Cyclone).” My scepticism on this issue (due to other interviews I had conducted) was justified when *The Globe and Mail* published a story regarding the deployment of HMCS *Regina* to the Arabian Gulf. The article quoted a DND official saying “[i]n preparation for the receipt of new maritime helicopters, the deck of the HMCS *Regina* [sic] was converted to accept a Cyclone.” He continued, “[g]iven Sikorsky’s recent delay to the delivery date set out in the contract, modifications were necessary to ensure the HMCS *Regina* [sic] would be deployable.”⁵

So *Regina*’s landing deck had to be reconverted in order to operate with the CH-124 Sea King helicopter. Apparently one other ship also had to be changed back. DND could make a case that the undoing of the modifications did

not represent a ‘significant’ impact, or that the cost and work did not come out of the *Halifax-class* Modernization Project, but to a rational observer, the answer I received was disingenuous. The ship was modified as part of the project, prior to entering into the dockyard for the rest of the modernization work, and then the modifications had to be undone because the helicopter was late and the ship was needed for an operational deployment. DND answered the question knowing that it was providing less than full information.

Yes, DND can hide behind semantics but this kind of word play does nothing to build confidence in what the department is saying to reporters, and through them, to the Canadian public. What this all comes down to is a question of trust. The military can tell us that the F-35 is the only aircraft that meets Canada’s requirements, that the Cyclone helicopters will be worth the wait, and that the 15-ship Canadian Surface Combatant program will cost just \$25 billion. The question is – given the ridiculous delays to requests for information, regular obfuscation and sleight-of-hand answers – do we trust them? 🇨🇦

Notes

1. Lieutenant-General André Deschamps, Commander of the Royal Canadian Air Force, Testimony before the Senate Standing Committee on National Security and Defence, 27 February 2012.
2. Peter MacKay, “Forces Do Speak Publicly: MacKay,” *The Windsor Star*, 8 August 2012.
3. Confidential communication with author, December 2010.
4. Email from Lindsay Hughes, 20 December 2010.
5. Daniel LeBlanc, “Sea King Substitute’s Delay Means a Scramble on the Landing Deck,” *The Globe and Mail*, 3 July 2012. (Fortunately this information came out before my deadline for the HCM feature.)

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

Warship Developments: Soviet Aircraft Carriers Then and Now

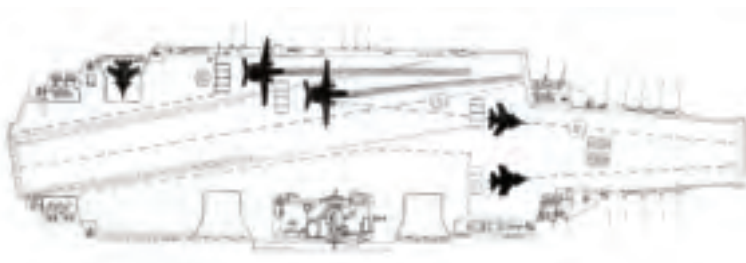
Doug Thomas

In the two decades prior to the demise of the Soviet Union and the end of the Cold War, the Soviet Navy expanded exponentially in all directions: total numbers, unit size and capability, fleet support, amphibious operations, you name it. They were exciting days for those of us interested in naval intelligence. The Soviet fleet included 500 submarines, from small coastal boats to the huge *Typhoon* nuclear-powered ballistic missile submarine (SSBN) and *Oscar*-class nuclear-powered guided-missile submarine (SSGN), and the surface fleet was growing too, including a program to counter Western carrier aviation. The strange-looking *Moskva*-class helicopter cruisers were followed by the much larger *Kiev*-class in the 1970s and 1980s. Two more classes of increasing complexity and capability were in the pipeline: the *Kuznetsov*-class of short-take-off-but-arrested-recovery (STOVAR) carriers (i.e., no catapults but a bow ramp and arrestor wires on the after flight deck to recover high-performance jet fighter-bombers); and the even larger nuclear-powered *Ulyanovsk*-class which would compete more directly with US Navy carriers of the *Nimitz*-class. Indeed *Ulyanovsk* was laid down and 40% complete before the program was cancelled and she was scrapped in 1992. The aircraft carrier *Kuznetsov*, an infrequently deployed and arguably somewhat unsuccessful ship, is the last remnant of these vessels in Russian service.

This article is about the last *Kiev* and the second *Kuznetsov*. The former (ex-*Admiral Gorshkov*) is in the process of being refitted for India and the other (ex-*Varyag*, ex-*Riga*) is now conducting sea trials in China and reportedly named *Liaoning* after the province where she was refitted. Politics and international intrigue have paid a big role in their lives to date, and I believe that will continue.

The empty hull that has become *Liaoning*, the first Chinese aircraft carrier, was bought from the Ukraine, the owner of the vessel after the break-up of the USSR. It was purchased for \$20 million by a Chinese travel agency ostensibly to be converted into a floating hotel and casino in Macao – ex-Soviet *Kiev*-class carriers *Kiev* and *Minsk* have already been preserved in China as part of military theme parks. Negotiations to permit her passage through the Bosphorus Strait were long and convoluted, as was the subsequent risky tow through the Straits of Gibraltar and around Africa en route to China, arriving in February 2002 – nearly four years after her purchase! In April 2005 she was moved to a dry dock and an exten-

sive restoration began. Her emergence as an apparently operational aircraft carrier after years of subterfuge and misinformation would make for improbable fiction, but it has now become fact. After what must have been a huge expenditure to fit her out with new propulsion machinery, weapons and sensors, initial sea trials were completed in August 2012 and media reports indicate that she has now embarked aircraft and missiles for weapon system trials.



Sketch of Soviet aircraft carrier *Ulyanovsk*.

Credit: Wikipedia

It seems likely that she will never be a front-line carrier, rather she will be employed in development and training, and a subsequent series of aircraft carriers, possibly based on her design or at least incorporating lessons learned from her operation, will be the basis of future Chinese blue-water aviation. In the meantime I believe she will be a ‘paper tiger,’ as the Chinese used to say, outwardly impressive, but with little offensive power. It is what comes next – perhaps real operational aircraft carriers based on the Soviet *Ulyanovsk* design – that will tell us whether the Chinese are serious about developing a global power-projection navy led by carrier-battle groups, or are simply interested in intimidating their neighbours in East Asia.

The Indian Carrier INS *Vikramaditya* is ex-*Admiral Gorshkov*, a modified *Kiev*-class aircraft carrier. The ship has missed numerous delivery dates from Russia where she has been extensively rebuilt and refitted, and appears likely to be delayed for as much as another year after engineering defects became apparent during sea trials. Delivery had been anticipated for 4 December 2012, India’s Navy Day, which was itself a four-year postponement of the original delivery date.

It is interesting to note that when India made the decision to take *Admiral Gorshkov* in 1999, she was to be a gift from Russia – the only cost was to be the embarked air group of Russian MiG-29K fighter-bombers. That ‘gift’



The former Soviet carrier *Varyag* was commissioned 25 September 2012 by China as *Liaoning*.

has morphed into a US\$2.3 billion extensive refit and what seems to be a continuing litany of problems and delays. The delay is an embarrassment to India and its navy, and this saga is doing Russia's reputation for quality shipbuilding no good.

When India expressed concern about construction setbacks and cost escalation in November 2008, a Russian defence ministry official stated that if India wouldn't pay the money – at this point about \$617 million – Russia would keep the ship for itself.¹ After all the delays and negotiations, I suspect that India's navy is crossing its fingers and hoping for the best. Certainly Russia has a lot to lose if the final product is defective after its delivery. For many years, India has been Russia's number one customer for defence equipment. However, poor quality workmanship and equipment in ships, submarines and other major acquisitions and refits since 1991 has led India to look to other states for some of its recent purchases, such as France for submarines.

Unlike China, India has operated carriers for many years. INS *Vikrant*,² a *Majestic*-class light fleet carrier similar to Canada's *Bonaventure*, initiated that capability after her commissioning in 1961, and was replaced by *Viraat* (ex-British *Hermes*) in the late 1980s. *Hermes* was laid down in 1944, so she is now more than ready for replacement. Indeed India is constructing its own aircraft carriers – also delayed – with plans to maintain three carriers in service, including *Vikramaditya*. The indigenous design is smaller than *Vikramaditya* and is a key part of the Indian Navy's expansion plans.

Both India and China will have discovered by this time

that building aircraft carriers is an expensive proposition. Costs will continue to mount when these and follow-on ships are built, together with the aircraft, supporting warships and tankers, and the extensive training and supply infrastructure necessary to equip and operate carrier battle groups. Such costs are not for the faint of heart, even for major states such as China and India. These large vessels confer prestige and combat capability upon their states, rather like dreadnought battleships did in the early 1900s. The other interesting factor to note about the dreadnoughts was that some aspiring states (Argentina, Brazil and Chile with their naval arms race come to mind) bought two or three

such vessels to show the flag and keep up with the Joneses. Will that be the case with *Liaoning* and *Vikramaditya*? Their story is about much more than just two large ships: it is about the states involved, many billions of dollars in defence expenditure, national prestige, big power politics and international diplomacy. Let us see what happens with them and their navies over the next few years. It may be a bumpy ride! 🚢

Notes

1. Quoted in a special report from Defense Industry Daily, 13 November 2008.
2. INS *Vikrant* is a museum ship in Mumbai, the only WW II-era British-built aircraft carrier to be preserved.



An artist conception of INS *Vikramaditya* escorted by a *Delhi*-class DDG.

Announcing the Winner of the 2012 Bruce S. Oland Essay Competition

Piracy in a Modern World

by Jeffrey Lucas



Stay tuned for details of the 2013 Essay Competition

Details will be posted on the *CNR* website
(www.naval.review.cpfs.dal.ca) and will appear in the
Winter issue of *CNR*.



Operation Saiph

From 25 October 2009 to 31 May 2012, *Operation Saiph* was Canada's periodic participation in the international campaign to enhance maritime security in the North Arabian Sea, the Persian Gulf and the waters around the Horn of Africa.

Operation Saiph had five areas of mission focus: counter-piracy efforts under *Operation Ocean Shield*, a continuing mission directed from the NATO Maritime Component Command Headquarters in Northwood, England; counter-terrorism operations as part of Combined Task Force 150 (CTF-150), a combatant flotilla of Combined Maritime Forces headquartered in Bahrain; military-to-military engagements with the states of the region; building and improving strategic relationships in the region; and helping the states of the region to develop their military capabilities.

All photos from Combat Camera