



# CANADIAN NAVAL REVIEW

VOLUME 11, NUMBER 3 (2016)

**Enlarging Fleet, Expanding Mandate:  
China's Determination to Become a  
Maritime Power**

**Implications for the Indian Ocean  
Region of the US 'Rebalance' to the  
Pacific**

**A Systems Approach to Naval Crewing  
Analysis**

**British Tradition as Canadian History  
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**The Suez Canal and the Egyptian Navy**



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# CANADIAN NAVAL REVIEW

VOLUME 11, NUMBER 3 (2016)

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Credit: Paul Whitelaw/  
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Container ship MS *Amorito*, later re-named MS *Asterix*. The ship is undergoing conversion at Chantier Davie (under Project Resolve) to provide an interim supply ship for the Canadian Navy.

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# Editorial

## ‘Real Change’ for the Canadian Navy?

Justin Trudeau and the Liberals ran on a platform of ‘Real Change.’ Now that they have formed the government they have the opportunity to do exactly that and actually live up to their campaign commitments including those about defence. The Liberals made a number of key defence commitments, including the following commitments in relation to the navy:

We will make investing in the Royal Canadian Navy a top priority. We will be able to invest in strengthening our Navy, while also meeting the commitments that were made as part of the National Shipbuilding and Procurement Strategy. Unlike Stephen Harper, we will have the funds that we need to build promised icebreakers, supply ships, Arctic and offshore patrol ships, surface combatants, and other resources required by the Navy. These investments will ensure that the Royal Canadian Navy is able to operate as a true blue-water maritime force, while also growing our economy and creating jobs.<sup>1</sup>

It has been stated by many credible voices including the Parliamentary Budget Officer, the Conference of Defence Associations Institute and the Canadian Global Affairs

Institute that the current defence program including the naval portion is underfunded. And in fact the budget has been reduced by the Conservatives by approximately 23% since 1997 and today has less buying power than in the early 1990s. To deliver on the Liberal Party platform commitments, and specifically the current shipbuilding programs, will require a rationalization of the current overall defence program and reallocation within it, or additional financial resources. The Liberal commitments point to a reallocation by moving funding to the shipbuilding programs. It is time to deliver on that commitment!

The time for action and decisions is now and one would hope that the government does not fall into the trap of protracted studies which change little except avoiding delivering the capabilities that Canada needs and Canadians expect. This is particularly true of the myriad of studies on efficiency that have been conducted since the late 1980s shaving this and that until there is today little room for simple efficiency savings without fundamentally changing the operational force structure (the teeth) which means significantly less operational capability. This is currently being demonstrated by an initiative called the Defence Renewal Team (DRT) which was struck to find ways to meet mandated financial reductions made by the Conservatives and to validate elements of the Leslie Report (*Report on Transformation 2011*) through efficiencies. It was recently reported that this initiative is two years behind schedule and has found less than 20% of the savings required.

In addition to providing the necessary financial resources it is also essential that there is a well-functioning procurement system. That is not the current situation. The key pieces from a naval perspective are the National Shipbuilding Procurement Strategy (NSPS) and more broadly the Defence Procurement Strategy (DPS).

The key attribute of the NSPS was the competitive selection of Halifax Shipyards and Seaspan to build all Canadian government ships of over 1,000 tons and to provide a stable and predictable base of work over the long term thus facilitating private sector investment. The idea was that this would prevent the boom-and-bust cycles that were anathema for the RCN/Canadian Coast Guard (CCG) and the Canadian shipbuilding industry. Implementation of NSPS has started and lessons are being learned. This is a decision that has been taken and



*An ambitious, and increasingly costly, national shipbuilding order book.*





*The Honourable Diane Finley, Minister of Public Works and Government Services, announced Canada's new Defence Procurement Strategy (DPS), 5 February 2014.*

revisiting it or fundamentally changing it would further delay delivery of ships needed now and potentially would be the death knell of maintaining a capability to build complex government ships in Canada.

That said, each specific project within the NSPS (Joint Support Ships (JSS), Canadian Surface Combatants (CSC), Polar Icebreaker, etc.) must also meet all of the many requirements of the DPS. The DPS objectives are clear – deliver the capabilities needed in a timely and in a fair/transparent manner. The reality however is that the DPS is so complex and time-consuming that it almost guarantees delayed delivery with less capability than needed due to price escalation during a process that takes years for shipbuilding projects. The DPS is an area where immediate improvement is needed and in particular the process needs to be simplified in order to deliver the capabilities as intended.

If the NSPS is allowed to deliver and the DPS is simplified, the RCN stands to be renewed over the next 20 to 25 years. However, given the recent retirement of the two AORs and all but one of the destroyers (the last soon to follow) the current surface combat fleet is solely based upon the modernized Canadian Patrol Frigates. Full operational status has been achieved by the submarine fleet and the frigate modernization program will be completed in 2018-2019. Thus the navy is currently able to meet patrol, surveillance and interdiction in its home waters east

and west and to a limited degree in the Arctic in ice-free waters. Deployed operations are currently limited on a continuous basis to a single frigate, a submarine on single deployments and a small commitment to anti-drug operations in the Caribbean and west of the Panama Canal.

As noted previously, building the future navy within the current budget has never been possible and as time passes even less so. This means that compromises will need to be made and this has already started. The construction of the first of a planned six to eight, AOPS commenced in 2015. The contract confirms five ships and makes provisions for a potential sixth. The JSS is in reality little more than the AOR that it is replacing and is to be based on the successful German *Berlin*-class Task Group Supply Vessel. Work is underway to modify and canadianize the design to meet mandatory requirements and purchase long-term lead items. There is no build contract for the planned two to three (if affordable) and construction is anticipated to start in 2017 at the earliest. The future frigate and destroyer replacement, the CSC, is still in procurement planning and is late to requirement. During the election the then Defence Minister Jason Kenney opined that the remaining funding would only provide 11 of the planned 15 vessels. Based on all this, it can easily be concluded that there are severe funding challenges and fortuitously the Liberal Party platform promises “to fast track and expand the capital renewal of the RCN.”

Returning the navy to the full operational capability of the late 1990s and early 2000s will take considerable time. It won't be until the early Area Air Defence CSCs enter service that the Canadian Maritime Task Group will be re-established and capable of significant NATO or coalition command. In the interim the command-fitted modernized *Halifax*-class frigates will provide a reduced capability. In due course the future of the submarine capability, a key element of any maritime force, will also need to be addressed.

Canada's place in the world can be defined in many ways. There can be no doubt that a fully modernized and capable RCN can maintain Canada's sovereignty in home waters and provide the government with meaningful options in the international arena such as visible presence, support or leadership in NATO or coalition operations. Simplifying the procurement system and providing additional funding for the RCN as a priority would be 'Real Change.' 🍷

Vice-Admiral Gary Garnett RCN (ret'd)  
Vice-Admiral Ron Buck RCN (ret'd)

#### Notes

1. Liberal Party of Canada Platform, 2015.

# Enlarging Fleet, Expanding Mandate: China's Determination to Become a Maritime Power

Adam P. MacDonald



Credit: nosint.blogspot.com

PLAN task group formed around China's first aircraft carrier, *Liaoning* (16).

Over the past three decades the Chinese navy – the People's Liberation Army Navy (PLAN) – has undergone an extensive and comprehensive transformation in size, capabilities, operations and overall importance as an instrument of state power. The most pronounced characteristic is the diversification and recapitalization of China's fleet, specifically procuring robust, multi-mission platforms capable of a variety of missions in waters close to home and further abroad. These efforts are not solely intended to update and modernize the current force composition, but to acquire new capacities and competencies including aircraft carriers, nuclear ballistic missile submarines, and task group operations beyond East Asia. Justifying these changes is an evolving declaratory policy expressing Beijing's determination to become a more involved actor in the maritime domain.

As Chinese warships prepare to operate more frequently and in larger numbers throughout the global commons, what are the implications (if any) for international maritime security? Will their presence uphold and strengthen maritime security or focus on projecting power at the expense of others? Is Beijing sincere in becoming a more

committed international partner or simply building capacities to reconfigure power relations to its advantage? While China has committed to the seas, its underlying rationales and future behavioural trajectories are unknown and intensely debated.

## ***From Coastal Defence to Open Seas Protection***

Historically, China's navy has been a small, auxiliary force playing a subordinate and supportive role to the army, including patrolling territorial waters and facilitating any planned invasion of Taiwan. Over the years, furthermore, the Chinese leadership has primarily been focused on the continental realm due to numerous security concerns, specifically with respect to the USSR. With the disintegration of the Soviet Union, the resolution of most (but not all) land-based boundary disputes with other neighbours and a rapidly growing economy dependent on exports via global commercial sea lanes, over the past 30 years Chinese leaders have shifted their geostrategic focus to the maritime domain.<sup>1</sup>

The first major policy announcement reconfiguring the role of the PLAN was in 1993 with the introduction of





Bottom, PLAN Type 052C destroyer, **Haikou** (171), with two PLAN Type 052B destroyers, **Wuhan** (169) and **Guangzhou** (168).

the strategic concept of ‘Offshore Active Defense,’ the maritime aspect of the PLA’s overarching doctrine of ‘Active Defense.’ China’s navy was tasked with developing the ability to fight and win local wars under conditions of ‘informationization’ – a Chinese term describing high-intensity operations defined by complex, real-time information technologies and robust command and control systems directing diverse units across a large and multi-layered battle space. Chinese naval strategy, as a result, shifted from immediate coastal defence towards warfare competencies in the adjacent seas. The employment of American aircraft carrier battle groups during the 1996 Taiwan Straits crisis, in particular, illustrated to Chinese leaders their utter inadequacy in projecting power at sea to defend their interests within the immediate locale.

Additionally to this focus, in 2004 President Hu Jintao ordered the PLA to prepare for ‘New Historic Missions’ with a particular emphasis on operating abroad. The PLA was tasked to be ready to deploy in a variety of contexts and contingencies – referred to as military operations other than warfare – signaling a move away from exclusively focusing on warfare competencies. For the PLAN, this new mandate necessitated the construction of more robust and self-sustaining platforms capable of long distance missions. As a result, over the past decade the PLAN has conducted a number of such overseas operations, largely within multilateral settings, which has increased interaction and exposure to other military forces in collaborative projects regarding common security issues.

In May 2015, China announced another policy shift in naval strategy in its latest Defence White Paper, including clearly articulating the Chinese leadership’s appreciation of and dedication towards constructing and enhancing military power in the maritime domain. China’s navy will

not abandon Offshore Active Defense but alongside this objective will focus now as well on ‘Open Seas Protection’ in order to develop a modern maritime military force structure capable of defending its national security and development interests which are expanding globally. Open Seas Protection, furthermore, extends and expands upon the mandate of the New Historic Missions by building a sustained international posture in support of direct Chinese interests rather than having a capability which is used selectively and sparingly in promoting more amorphous, status-oriented goals.



PLAN Type 052C destroyer, **Haikou** (171), during a Maritime Interdiction Operations Exercise (MIOEX) as part of Rim of the Pacific (RIMPAC) Exercise 2014, 16 July 2014.

The maritime environment is listed first of four ‘Critical Security Domains’ (another new concept in Chinese declaratory policy) – along with cyber, space and nuclear – prioritizing force development necessary to achieve and protect the state’s interests in these arenas. Of note is Beijing’s proclamation that “the traditional mentality that

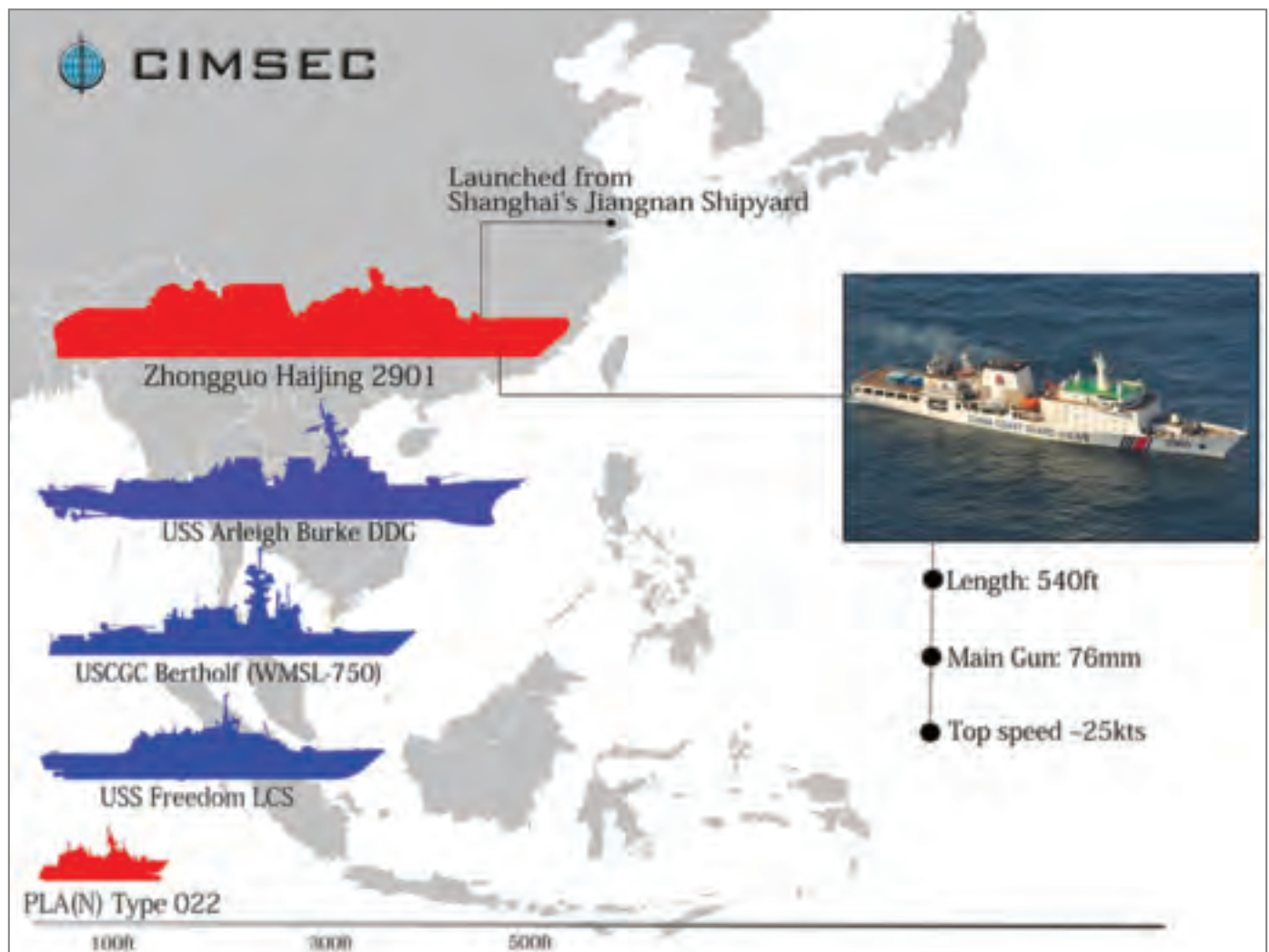
land outweighs sea must be abandoned, and great importance has to be attached to managing the seas and oceans and protecting maritime rights and interests.” Beijing has also declared that it would “shoulder more international responsibilities and obligations, provide more public security goods, and contribute more to world peace and common development.”<sup>2</sup>

### *The Navy as a Prioritized Service*

The 2015 Defence White Paper does not mark the beginning of a distinct shift in naval priorities but rather has entrenched a declaratory framework (largely targeted towards foreign audiences) explaining and justifying ongoing force developments and operations. While Chinese defence spending lacks transparency, including how the budget is divided amongst the PLA’s major branches,<sup>3</sup> extensive ongoing shipbuilding projects and increasing government support strongly indicate that the PLAN has become a prioritized service within the Chinese armed forces.

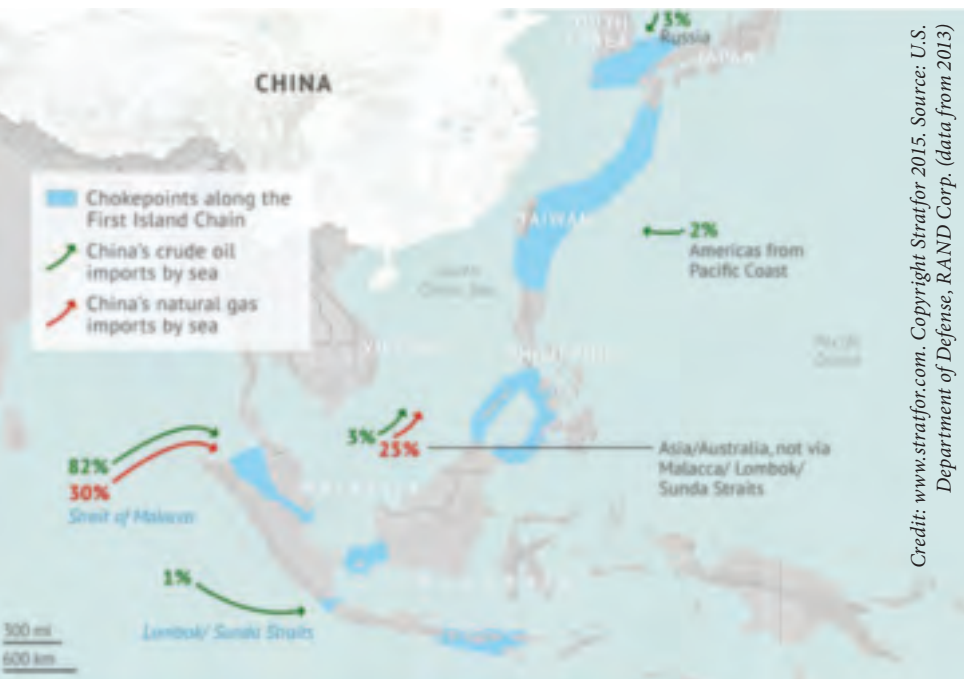
The PLAN is retiring older classes of vessels and replacing them with more modern platforms which are larger, multi-mission capable and equipped with advanced anti-ship, anti-air and anti-submarine weapons and sensors. Emphasizing such capabilities reflects the desire to construct naval units with self-defence capabilities, particularly as the PLAN prepares to operate beyond its immediate locale where its ships can rely on support from shore-based missiles and aircraft.

The total number of surface and sub-surface combatants is not expected to change radically, but the quality, capabilities and range of newer platforms is and will continue to augment the capacity of the PLAN to operate in larger numbers, with greater coherence and competency in a variety of operational contexts. Alongside building the next generation of destroyers, frigates and submarines, the PLAN is acquiring new capacities which offer a greater repertoire of capabilities and options to project power further abroad. This includes nuclear



The world's largest constabulary patrol ship, China's Coast Guard Ship *Zhongguo Haijing* (2901), is over 10,000 metric tons.





*China's key maritime transit routes.*

attack and ballistic missile submarine forces, a nascent aircraft carrier program and the Type 55 destroyer which should be more accurately be labeled a missile-cruiser due to its size and expected weapons load.<sup>4</sup> Advancements in cruise and ballistic missiles, including anti-ship variants, is another priority as Beijing increases its power projection capacity at sea in terms of both size and range. Sustained investments in command and control systems are also being designed to connect Chinese forces, which are becoming larger, more dispersed and increasingly operating within a joint environment, more effectively with other military elements. The PLAN, furthermore, is conducting more frequent joint exercises, including the 2013 Exercise Maneuver 5 in the Philippine Sea, the first involving all three of its regional fleets.

Caution, however, is needed in assessing the pace, scale and ramifications of these endeavours. It remains uncertain if Beijing and the PLA leadership have a specific force composition governing these modernizing efforts or if other more idiosyncratic interests are motivating certain capability developments including intra-PLA competition over budgets and resources, a sense of naval nationalism within the government and public, or the association of superpower status with possessing certain capabilities including aircraft carriers and nuclear ballistic submarines. China's navy, furthermore, is still in its infancy in terms of operations in theatres away from China's coastal waters, and possesses little real warfare experience. While noting the impressive equipment developments and the pace of shipbuilding which are both indicative of China's determination to augment its power at sea, the PLAN is a relatively untested navy still requiring decades of training,

experience and technological advancements truly to become a competent maritime force.

### ***Revisionism at Home?***

The privileging of certain technology development and current operations reveal that China is constructing a maritime force with different orientations and objectives in East Asia than in the larger global commons.

Within East Asia, China appears focused on developing what American strategists refer to as anti-access and area-denial capabilities – weapon systems and tactics which challenge American military power from entering into and operating within China's adjacent seas where there are a number of ongoing, and in most cases intensifying, maritime boundary disputes. These

endeavours are largely focused on threatening US aircraft carrier battle groups at long range to deter their involvement in any hypothetical conflict along China's coastal periphery. The expansion and improvements in land- and sea-based cruise and ballistic missiles in particular is a major concern to Washington and regional allies as they specifically threaten American sea control in the region. Much of China's naval developments, as well, appear primarily (but not exclusively) focused on sea-denial capacities eroding American sea power preponderance, but not necessarily replacing it with Chinese sea control.

This is most evident within the East China and South China Seas where a number of ongoing maritime quarrels pit China against most of its neighbours, which include a number of US allies. These issues have not entirely been instigated by Beijing as commonly assumed. In the South China Sea, for example, it was rival claimants who initiated a number of destabilizing activities including land reclamations and naval patrols in disputed regions. China, however, has undertaken similar actions to a degree and level of intensity which inflames these matters, specifically the pace of extensive land reclamations (which dwarfs those of all other rival claimants combined) on a number of islets which are in part being built for military applications including runways and radar installations.

Within these contested areas, it is the Chinese Coast Guard (CCG) which is the lead enforcement agency in promoting and defending China's maritime rights and claims. The CCG, like the PLAN, is undergoing a massive modernization and fleet capacity is expected to expand by 25% over the next decade with the emphasis on large vessels with heavy calibre weaponry and helicopters.

This project will build the CCG, already quantitatively the biggest in Asia, to be larger than all its neighbours' coast guards combined. Within these matters, the PLAN is operating in an over-watch position – not directly involved in the tensions but patrolling and exercising within the contested waters, visible for all to see, and on call to assist the CCG if required.<sup>5</sup>

With the balance of power at sea slowly but decisively turning to Beijing's favour, the United States, the traditional power balancer in the region, is struggling to determine how to react to this evolution. There is some concern China may be trying to create an internal waterway of the South China Sea (through its Nine-Dash line maritime claim), thereby blocking foreign naval and aircraft from operating in this area – something that is unacceptable to Washington and causing concern in Northeast Asian states which are heavily reliant on imported natural resources via the South China Sea. At the same time, as Washington's allies and partners in the region continue expanding their own maritime naval and constabulary power and intra-defence networks to respond to Chinese developments, Washington risks being dragged into such disputes (despite the insistence that it remains neutral in these matters) via defence treaty obligations. This could especially be true because allies want to resolve these matters now while the power incongruence between Washington and Beijing remains large. Currently discussed US options to maintain presence in the region and demonstrate resolve against Beijing's actions include overflights over Chinese reclamation projects and increasing freedom of navigation patrols – both of which are not necessarily legally sound as Beijing has the right under international law to have at the very minimum a 500-metre safety zone around these structures, and threaten to exacerbate the situation with China and turn it into a zero-sum game.<sup>6</sup>

China is not attempting to create a conflict but rather to neutralize American security guarantees to its Asian allies. This would allow Beijing to use its economic and political powers to strong arm its neighbours into resolutions which are favourable to its liking. This approach is illustrated by Beijing's preference for bilateral accords with rival claimants, thereby sidelining international mechanisms and legal regimes to meet Chinese 'core interests.' As well, as evident in the case of Taiwan, Beijing does not necessarily position itself towards an immediate rectification of these matters but rather operates to ensure that long-term trajectories are moving in its favour. China's navy, therefore, while focused on sea-denial strategies against American power projection capabilities, is not building an overly confrontational and military-centric strategy to resolve these disputes by force.



PLAN Type 920 hospital ship, *Peace Ark* (866), on a goodwill mission.

### **Status Quo Abroad?**

Outside East Asia, the operations and intent of China's navy are more benign and offer portals of cooperation and assistance with other global players on a number of mutual interests. Beijing is focused on building competencies in other bodies of waters – specifically the western Pacific and Indian Ocean – via piecemeal approaches of gradually learning how to operate in these regions before sending larger task groups to operate there.<sup>7</sup> These areas are critical sea lanes for Beijing, specifically in the transportation of oil from the Middle East and thus China wants to develop a presence and marginalize threats which jeopardize the free flow of commercial traffic. China's continuous deployments of warships to the Gulf of Aden since 2008 in support of international efforts to eliminate piracy off the coast of Somalia is the most evident case in point.

Furthermore, as China's economic and social footprint continues to expand, Beijing wants the ability to influence global security dynamics and provide assistance to its citizens when and where needed. These motivations explain the recent involvement of three PLAN warships in the evacuation of Chinese and other foreign nationals from Yemen. Other actions such as escorting vessels carrying Syrian chemical weapons for destruction and the Hospital Ship *Peace Ark*'s goodwill visits to South America and the Caribbean are in support of Beijing's portrayal that it is accepting a larger portion of global security responsibilities.

Some international naval activity on the part of Beijing is a concern to the West, including the Sino-Russian joint naval exercises in the Mediterranean in spring 2015. We should be careful, however, not to give too much significance to these exercises. We should not conflate the current common ground between Moscow and Beijing in promoting an international system governed less by Western hegemony to a formal alliance aggressively promoting an alternative geopolitical arrangement.<sup>8</sup>

Washington and Beijing have many opportunities for cooperation in the maritime domain including joint





Credit: Mass Communication Specialist 2nd Class Kevin V. Cunningham, USN

Commander Harry L. Marsh, Commanding Officer of the forward-deployed **Arleigh Burke**-class guided missile destroyer USS **Stethem** (DDG 63) waves farewell to the PLAN **Jiangkai II**-class guided-missile frigate **Xuzhou** (FFG 530) after participating in a Code for Unplanned Encounters at Sea (CUES) and a search-and-rescue exercise, 20 November 2015.

operations against challenges such as piracy and terrorism as well as humanitarian assistance and search and rescue training. How these two states will balance growing tensions in East Asia alongside the opportunities of global cooperation is uncertain. It should be kept in mind that China's naval development patterns and governing policy, while impressive, are not (at least at this stage) dedicated towards constructing a naval force structure similar to the United States, specifically the building of a global force posture to establish a permanent presence in other regions at the expense of other great powers. China is, however, moving towards becoming more of a stakeholder in global security dynamics to protect its growing interests rather than simply participating in international operations for status and soft power purposes.

China is quickly becoming the second most powerful military in the world, especially as the European Union remains divided on defence and foreign affairs and Russia, while currently still a formidable force, faces an uncertain fiscal foundation in the long term.<sup>9</sup> Such a reality will be most evident at sea over the next few decades as China continues to invest significant resources to becoming a maritime power. As a result, the United States and China will have to find processes to engage with one another, and balance the ongoing issues of contestation and cooperation defining their maritime relationship.

China appears focused on altering the military balance in East Asia to ensure that its economic, political and military clout make it the dominant player, largely at the expense of the United States. Internationally, though, China is contributing to current security regimes and mandates, seeking greater influence in these processes

but not threatening or challenging current US global leadership and/or force posture. The tension between these two competing realities will not only strain Sino-US relations but within the PLAN itself it will create friction over spending and resource allocations to achieve these objectives. It remains uncertain and highly controversial what end state Beijing has in mind with respect to its growing maritime power, but China has committed to the seas. This means that Chinese warships will increasingly populate the global sphere. The West needs to accept and prepare for this eventuality. 🇺🇸

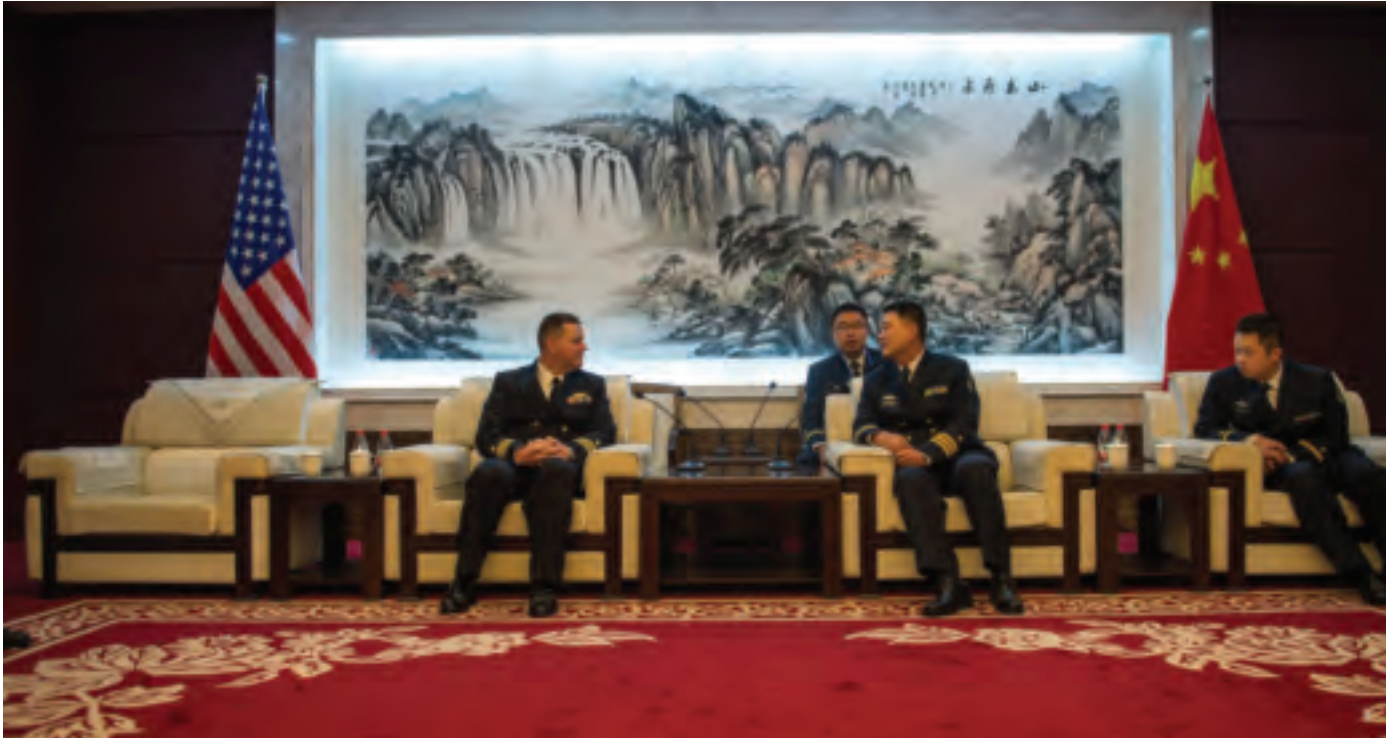
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# Implications for the Indian Ocean Region of the US 'Rebalance' to the Pacific\*

David R. Jones



Credit: Mass Communication Specialist 2nd Class Kevin V. Cunningham, USN

Commander Harry L. Marsh, Commanding Officer of the forward-deployed *Arleigh Burke*-class guided missile destroyer USS *Stethem* (DDG 63) meets with Colonel Lu Xiang, a Deputy Chief of Staff for a district of the PLAN's East China Sea Fleet, 20 November 2015. *Stethem* visited Shanghai to build relationships with the PLAN and demonstrate the US Navy's commitment to the Indo-Asia-Pacific.

Despite China's increasingly bold stance in the South China Sea since 2007, President Barack Obama continued to adopt a 'proactive hedging policy' towards Beijing that domestic critics condemned as arousing unease among American partners in Asia. Signs of change came only in July 2009 with Secretary of State Hillary Clinton's admission that US policy in East Asia needed a make-over. In November 2009, President Obama indicated that a change in focus was coming. Over the next two years the outlines emerged of Obama's 'rebalance' that took final form in the "Strategic Guidance" issued in January 2012.

What are the implications in the Indian Ocean region (IOR) of this American move? Before speculating, I must stress that despite a tendency of social scientists and strategists to seek clear-cut conclusions, our ability to predict future developments remains questionable at best. Reality is much more complex and unpredictable than we are prepared to admit. Rather than provide inevitably flawed prescriptions for action, what follows will therefore suggest factors that policy-makers might consider in their calculations.

To begin with, we must be aware of our assumptions. Despite the seeming dominance of the West's theories in international relations, older alternative and indigenous concepts of foreign relations may still exert influence on policy-makers outside the West. For example, China may pursue policies that logically accord with its own long tradition of dealing with 'barbarians' beyond its borders, but which are not immediately apparent to analysts elsewhere. My point is that we must beware of assuming that just because a state's actions seemingly resemble or parallel our own, its objectives and motives must do likewise.

Here the IOR offers an instructive history. Take the 'Great Game' and its myth of Russia's (and later Germany's) search for a warm water port from which to challenge Britain's (today US) regional naval supremacy. Whatever the reality of a 'Russian threat' to the British Raj, and this was always highly questionable, fears that the Imperial Russian/Soviet or German Navies would establish a base on the Gulf were always simply the delusional musings of armchair strategists or professional alarmists motivated by various domestic and international political agendas.



The same, incidentally, seems true of China's 'String of Pearls,' that series of possible bases supposedly aimed at ensuring Beijing's future hegemony within the IOR. Apart from the costs of converting commercial facilities such as Gwadar in Pakistan into active naval bases, the cost of defending, let alone providing secure logistical support to such 'pearls' would be horrendous, and they would be low-hanging fruit in any future hostilities. While the United States is fully capable of maintaining its base at Diego Garcia, China is decades away from acquiring this ability – even assuming it desires to do so.

For the foreseeable future, China's naval aspirations seem certain to focus on its interests east of Malacca, in the East and South China Seas. This brings us to another lesson to be learned from the history of the IOR – that of mirror-imaging the aims and motives of possible future opponents. After London resolved to withdraw its assets East of Suez in the 1960s, a furor erupted when elements the USSR's *Voenno-Morskoi Flot* (VMF) appeared in the Indian Ocean. Alarmists in the 1970s-1980s coupled this to Moscow's initiatives in the Middle East, support of East African 'liberation movements' and growing friendship with India, and warned that the VMF intended to challenge the US Navy (USN) for control of the IOR. Yet the lead-times required for the actual planning and construction of these vessels meant that the decision to acquire them dated from the early 1960s. It thus appeared that they were intended to counter the deployment of American Polaris nuclear submarines in the IOR and not to challenge the USN's overall dominance in the region. Indeed, Soviet leaders rejected any thought of such a naval race because it was prohibitively costly.

Here, then, is an instructive lesson for those warning of Chinese naval ambitions west of Malacca. Ignoring the

very real technical and fiscal constraints on the growth of the Chinese Navy (PLAN), they base their conclusions on facile comparisons of numbers of warship classes and numbers, and such like. Worse still, they usually assume that PLAN's planners are driven by the same doctrinal imperatives as their Western and Indian counterparts – i.e., Alfred T. Mahan's demand for command of the sea or the global commons, along with his supposed reference to the Indian Ocean's central significance, or (more likely) Julian Corbett's lessons on the vital significance of sea control, or sea denial. But if these doctrinal precepts are accepted by most Western (and by Indian) naval thinkers, their significance for China's planners is more questionable. And China, in fact, has its own traditions of maritime commerce and naval diplomacy that date from at least the early 1400s and the voyages of Admiral Zheng He. While naval presence and trade protection were primary goals, permanent dominance was not – a position mirrored by the PLAN's participation in the counter-piracy operations conducted off Somalia since 2008. Consequently, I suspect that, the South China Sea aside, China seeks a stable maritime environment for its diverse commercial and economic projects rather than pursuing some long-range plan to become the naval hegemon of the IOR. The point is, however, that we don't know – and we can't just assume that Chinese naval strategies mirror our own.

The same cannot be said about the region's other emerging naval power. This, of course, is India. Thanks to the historian K.K. Panikkar, the often-lauded founder of India's naval doctrine, that doctrine is largely shaped by the precepts of Mahan and Corbett as inherited from Britain's Royal Navy (RN). Writing on the eve of independence in 1945, Panikkar foresaw the infant Indian Navy (IN) joining with the RN jointly to dominate the IOR commons. Although any such hopes of cooperation were crushed by Britain's withdrawal from the region in the late 1960s, Panikkar's doctrinal teachings on regional dominance remained intact. Yet since New Delhi's defence policies focused on the northern land frontiers with Pakistan and China, they were formed by the soldiers who dominated the Defence Ministry, and the defence budgets were allocated accordingly.

Furthermore, India's somewhat ambivalent relationship with the United States hindered any close cooperation with the USN, the RN's successor as watchdog on the region's maritime commons. Resentment of the construction of a USN base at Diego Garcia in the 1970s remains strong in Indian naval circles, as do memories of Henry Kissinger's deployment of the USS *Enterprise* carrier group into the Bay of Bengal during the Indo-Pakistan War of 1971, and indeed, the so-called 'Enterprise Syndrome' is still



China's 'String of Pearls.'



Credit: Mass Communication Specialist 1st Class Shannon Renfro USN

China's *Jiangkai II*-class Type 054A frigate, *Yueyang* (575) during Rim of the Pacific (RIMPAC) Exercise 2014.

occasionally mentioned in naval writings. This is despite the superficial camaraderie demonstrated during the joint US-India Malabar naval exercises held periodically since the mid-1990s. Some Indian strategists still regarded the American presence as a troubling factor in the 1980s, and considered the USN to be an interloper in the region. This attitude only began changing when the ghost of Zheng He appeared west of Malacca in the mid-1980s, and the USSR – India's major arms supplier – collapsed in the early 1990s. Indian strategists then began reassessing the value of some limited partnership with the United States. Even so, their hopes of eventually achieving regional maritime dominance remained and over the last decade they have increasingly defined their IOR as comprising all waters from the Cape of Good Hope in the west to the coasts of Japan in the east, referring to it as the *Indo-Pacific* (not *Asia-Pacific*) region. This IN attitude is summed up in the story of a captain who, when called upon by a NATO official to explain his vessel's presence in the Arabian Gulf, reportedly replied "I'm an *Indian* warship sailing in the *Indian* Ocean. But what are *you* doing here?"

Attitudes in Washington also were changing. Despite the growing presence of the Soviet VMF after 1970, the US Navy's regional dominance seemed secure. India, however, remained suspect thanks to its ties with the USSR, but also due to its support of the Non-Aligned Movement and because of a proposed Indian Ocean Zone of Peace that would be closed to non-regional fleets. Then

matters changed drastically in 1979 when the Iranian Revolution deprived Washington of a trusted regional ally and the Soviet invasion of Afghanistan raised new concerns over Communist expansion into the IOR. Under the administration of President Ronald Reagan, the Diego Garcia base expanded and in 1983 a new regional command (CENTCOM) was set up with its headquarters at Bahrain, to which a US Fifth Fleet was added in 1995.

With the Shah deposed in Iran, Washington began seeking a new partner with whom to police the region. Until August 1990 and the invasion of Kuwait, Saddam Hussein's Iraq seemed the most likely candidate, but thereafter the search began anew. So by the early 1990s India, now deprived of Moscow's support and alarmed by a perceived Chinese threat, looked increasingly attractive. In 1991, therefore, the United States opened negotiations with India that led to a range of technical transfers and regular joint exercises. Although disrupted by the Indian government's nuclear tests of 1998, the relationship resumed and continues to this day. Even so, India has remained coy throughout what has become an ongoing courtship in which Washington has played the role of an increasingly ardent suitor.

New issues emerged to plague this process after 9/11 when President George W. Bush began the 'war on terror.' By that date Washington was already concerned by al Qaeda's strikes against US targets in Africa and the Gulf, and India was concerned by the growing piracy in the

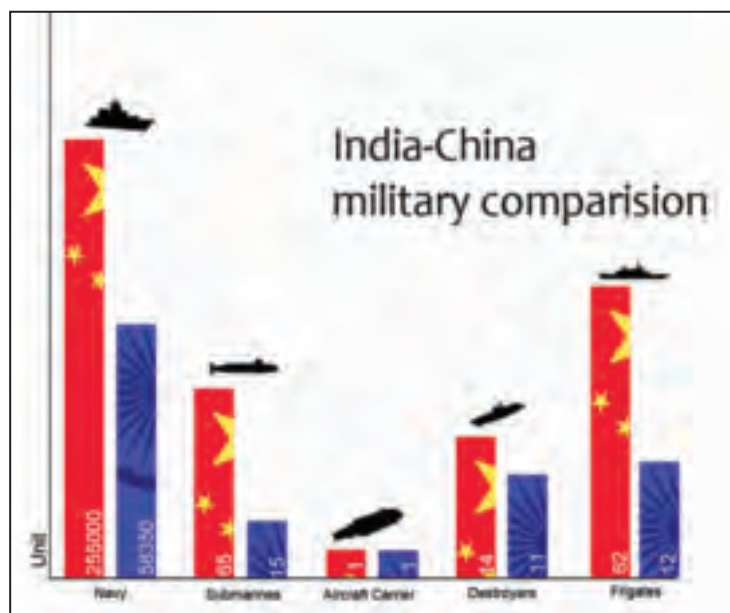


Strait of Malacca. Initially, New Delhi offered the United States support for its Afghanistan campaign in 2001, and agreed to escort American merchantmen through the strait in 2002. But in 2003 India remained aloof from *Operation Iraqi Freedom* as well as from the subsequent anti-terrorist and anti-proliferation patrols mounted off the Iraqi and later Somali coasts.

Meanwhile, Indian arms purchases continued from a range of countries, the United States included, as did the IN's exercises, which extended to the Sea of Japan in the east and to the French Atlantic coast in the west. So despite negotiations with Washington that resulted in regular strategic dialogues, the Defence Framework Agreement of 2005 and steps towards finalizing a deal on peaceful nuclear technology, New Delhi clearly was chary of entering too closely into the American embrace. In part this multi-track policy undoubtedly reflected Indian irritation over the role being assigned to Pakistan in the 'war on terror' and the activities of Combined Task Force 150 (CTF-150). Moreover, this flexibility also may have resulted from irritation with Washington's own dual-track policy towards Beijing. For while the Bush and early Obama administrations did seem willing to contain, or perhaps more correctly *constrain*, China's perceived ambitions, Washington clearly did not share India's more alarmist fears of Beijing's intentions west of Malacca. Indeed, American policy declarations consistently reaffirmed Washington's hopes of finding acceptable 'rules of the road' for the Asia-Pacific maritime commons as an essential step for the future development of all regional and extra-regional stakeholders.

Despite New Delhi's hesitation over joining the ongoing operations in the western IOR, by 2004 officers of the IN – both retired and active – were seeking to raise public consciousness about the need for a stronger fleet. To this end, they worked out the appropriate doctrinal justifications and, partly by citing China's ongoing naval expansion, obtained budgetary funds to build their own blue-water fleet. Nonetheless, they clearly were champing at the bit when a series of UN Security Council Resolutions opened the way for a range of naval actors (NATO, the European Union, China, Russia, Iran and others) to join the Combined Task Forces (CTF-150, CTF-151) to stem the rising tide of Somali piracy. In 2008 the northwestern corner of *their* ocean was becoming definitely crowded and the IN, arguing that India's seafarers deserved protection, finally won the Defence Ministry's permission to dispatch two vessels for this purpose.

Naval propaganda aside, a few weeks later another event was far more important for raising domestic awareness and support for the IN. This was the terrorist attack on



India-China Naval Comparison as of April 2013.

Mumbai of 26 November 2008. This resulted in the navy being charged with creating a greatly strengthened system of coastal security. If the resulting diversion of funds weakened the planned building program, Indian naval leaders emerged with enhanced clout within the defence establishment. In addition, they adopted the USN's practice of linking piracy to terrorism so as to justify more aggressive efforts at naval diplomacy by forging bilateral links with other navies around the IOR, and by playing a more active role in a range of regional fora. Significantly, however, the IN retained its independence and while it cooperated with American counterparts it resolutely refused to join the anti-piracy coalition organized and managed by CENTCOM and the US Fifth Fleet, known as the Shared Awareness and Deconfliction System (SHADE). It thus did not accept the degree of interoperability (the CENTRIXS communications network) that this entailed, and so left this aspect of the 2005 Defence Framework Agreement unfulfilled. Washington's courtship continued.

At this time the US Navy was revising its doctrine as well. In 2007 it published "A Cooperative Strategy for 21<sup>st</sup> Century Seapower." Although its authors foresaw the need for a "1000-ship navy," they understood that the American economy alone could not build or sustain such a fleet. But drawing on the recent successes of the CTFs and SHADE, they hoped to achieve this through a Global Maritime Partnership. In this context, Washington's efforts to secure the full cooperation of the IN, the strongest of the regional forces, naturally assumed considerable significance. And yet the Obama administration's apparent readiness to deal with China continued to create unease in India and other states in the Asia-Pacific region.

Since the Obama rebalance largely focused on the region east of Malacca, in some ways its significance for the

IOR proper can be seen as negative. Thus the region was expected to be a theatre of secondary concern in which both the Fifth Fleet and Diego Garcia base would remain active, but overall policing of the vast IOR commons could safely be handed over to India and other regional fleet units. Pentagon planners of course assumed that the USN would remain the senior partner. But this scenario of a prosperous future guaranteed by an American naval hegemon was based on the assumption that Washington would wind down its commitments in Afghanistan and Iraq so as to concentrate on the so-called Asia-Pacific region. Unfortunately, this has proved more difficult than expected thanks to the rise of the Islamic State of Iraq and the Levant (ISIL), the spread of similar extremist groups in northern and eastern Africa, the resurgence of the Taliban in Afghanistan, and the conflicts in Syria, Yemen and Libya. It may thus prove impossible (and undesirable) for Obama's successors to maintain the force structures envisaged by his 'pivot.'

Other wild cards that will affect the US-India relationship in the IOR are the possible future contours of Indian foreign policy under Prime Minister Narendra Modi and his nationalist Bharatiya Janata Party (BJP), and its possible adventurism regarding Pakistan, the northern China-India frontier zone and defensive agreements with Vietnam, Japan and other players in the unfolding drama of the South China Sea. To my mind, Modi's policies in these regions often seem somewhat idiosyncratic and motivated more by domestic concerns than by some overall strategic vision. This is equally true of the much-



*Indian Prime Minister Narendra Modi and US President Barack Obama concluded a new 10-year Defence Framework Agreement in New Delhi, 25 January 2015.*

trumpeted Indo-American strategic partnership, supposedly sealed during Obama's visit of late January 2015. As in the past, Washington's desire to overcome Indian coyness has led to industrial, technological and arms gifts that are much valued by the prospective bride, as well as another marriage contract in the form of a new 10-year Defence Framework Agreement. But until the nuptials are consummated by the introduction of real interoperability between the partners' armed services, the reality of the union remains doubtful.

Another issue also threatens Indo-American martial bliss. As noted, both navies are driven by Mahanian-inspired doctrines that seek to exert command over the maritime commons. But Chinese naval planners appear to have the more modest goals of asserting sea control and sea denial in waters adjacent to the homeland. Consequently, while the South China Sea remains a flashpoint, Beijing seems highly unlikely to challenge either India or the United States west of Malacca on the trade routes passing through



*INS Kochi, the second ship of the indigenously designed and constructed Project 15A (Kolkata-class) guided missile destroyers, was commissioned on 30 September 2015 by Defence Minister Manohar Parrikar.*





An Islamic Republic of Iran *Moudge*-class frigate, *Jamaran* (76), with an AB 212 anti-submarine warfare helicopter, in the Persian Gulf, 21 February 2010.

the IOR. Furthermore, proposals for new 'silk roads' on land and sea, along with the development of economic corridors like that intended to link Pakistan's Gwadar with western China, are in part intended to bypass the Malacca choke-point by providing alternative routes for Gulf oil and other commodities. I might note as well that during the anti-piracy operations the PLAN seemed more willing to cooperate with SHADE than did the IN. While the latter is willing to cooperate with the USN in policing the IOR's sea lanes, it clearly has no intention of remaining a junior partner.

Indeed, through their quiet program of diplomacy, India's naval leaders have built up their own influence among many coastal and island states within the IOR. So barring a spillover of conflict from the South China Sea, in the long run Indo-American maritime friction is perhaps more likely than a Sino-American rupture. Yet while friction may develop, for the moment Indian navalists can only grit their teeth and accept American naval superiority. However, given memories of the 1971 *Enterprise* incident, resentment over the base at Diego Garcia, the experience of sanctions imposed on weapons technologies after the nuclear tests of 1998, resentment over Washington's insistence on providing aid to Pakistan, and doubts about US dual-track policies toward China, Indian strategic and naval planners seem likely to strive to retain their independence. They therefore will seek to avoid being dragged into any Sino-American confrontation unless it accords with their own immediate and long-term interests.

A final wild card that may affect the naval balance in the IOR is the role of the Iranian Navy. Unlike its Saudi rivals, Iran has not been able to depend on the US Fifth Fleet for its maritime security. Rather, on occasion the Americans and Iranians (usually the Republican Guards) came close to actual combat. As for the Iranian Navy proper, it has quietly been building up its power. Apart from its participation in the anti-piracy campaign, in late 2014/early 2015 it held a series of exercises in the Gulf and publicly announced that a Iranian flotilla would cruise off the North American coast in 2015. Although this last plan was cancelled, today's Iranian fleet in some ways resembles that of India a decade ago and Iran clearly has ambitions for its future development. Consequently,

an expansion of conventional Iranian naval power may well be one result of the recent nuclear agreement. This would not only complicate matters for the Saudis and the Americans, but it also might present New Delhi with an unexpected regional obstacle to its quest for domination of the waters of the IOR.

In conclusion, then, the future of the Indian Ocean region is as complicated and unpredictable as ever. We should not forget that Obama's 'pivot' is only the most recent of a series of such rebalances made since the US Navy assumed responsibility for protecting Western interests east of Suez in the early 1970s. Perhaps more significant is the fact that it represents a shift in focus further eastward from the Indian Ocean proper to the South China Sea, and so signals Washington's growing concern with Chinese ambitions there rather than in the Bay of Bengal or Western Indian Ocean. This should gladden the hearts of New Delhi's strategists, although they too have negotiated their own defence and basing agreements with Japan, Vietnam and other Southeast Asian states.

It is uncertain, of course, whether or not the Indian Navy would join its American counterpart in some future confrontation over China's territorial claims and 'island-building' in the South China Sea, or sit cheering its ally on from the sidelines. Whatever the case, Indian naval planners cannot forget that even if the US Navy is no longer fixated on the IOR and Gulf, it remains the area's dominant maritime power, and Diego Garcia is capable of supporting a surge of naval force should that be made necessary by future developments in the region. This, and the possible rise of an Iranian rival, means that while a time may come when India's navalists can realize their dream of asserting command over regional waters, it is not yet. 🇮🇳

#### Notes

- \* An earlier version of this paper was originally read before the "International Conference on Major Powers' Interests in the Indian Ocean: Challenges and Options for Pakistan," held by the Islamabad Policy Research Institute, 18 November 2014.

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# A Systems Approach to Naval Crewing Analysis: Coping with Complexity

**Renee Chow, Commander Ramona Burke,  
Lieutenant-Commander Dennis Witzke\***

As the Royal Canadian Navy (RCN) transitions to the Arctic Offshore Patrol Ship (AOPS), the Joint Support Ship (JSS) and the Canadian Surface Combatant, any decisions on crew size and composition will have significant impact on both total ownership costs and operational capabilities. In 2000 the US Naval Research Advisory Committee determined that 70% of total ownership cost is due to operations and support and 51% of the operations and support cost is tied to personnel, which suggests that reducing crew size can result in significant cost savings.<sup>1</sup> However, the US Navy's (USN) recent experience with the Littoral Combat Ships (LCS) suggests that these ships, which were designed to have very small crews, may present significant risks for manning and logistics (i.e., high workload and inadequate sleep for the crew,

and inadequate shore support), and maintenance.<sup>2</sup> The US General Accountability Office (GAO) now estimates that "the annual per ship costs for LCS are nearing or may exceed those of other surface ships, including those with greater size and larger crews, such as frigates."<sup>3</sup>

The challenge, therefore, is to design ships with the right-sized crew, especially because decisions made in the design phase are estimated to lock in 80-90% of the procurement and operating and support costs.<sup>4</sup> If the crew size is over-estimated in the design phase, then design and build costs may be inflated by the need for additional crew accommodation. If the crew size is under-estimated, then the platform may fall short in operational capability or readiness, and there may be limited feasibility, significant



Credit: Mass Communication Specialist 1<sup>st</sup> Class James R. Evans USN

*The Littoral Combat Ship USS Freedom (LCS 1) during sea trials, 22 February 2013. The ships were planned to have a 3:2:1 manning concept – i.e., three ship crews and two hulls for each ship on station at any time. The other ship and other two crews not on deployment would be either preparing for deployment or in rotation in or out of theatre. It was hoped that the net result would be a 50% reduction in ships and a 25% reduction in crews than traditional deployment practices.*



costs, or delayed schedules associated with subsequent design changes.

Determining the right-sized crew early on in ship design has several key challenges:

- technology decisions may not have been made (e.g., availability of automated storing capability would affect the number of crew required to support replenishment at sea);
- policies and procedures are evolving (e.g., will Naval Boarding Parties be an integral capability built into each ship's crew, or will they be brought on as required as part of a mission fit?); and
- military occupational structure is evolving (e.g., who will operate unmanned air or underwater vehicles from a naval platform? Will there be common operators across all warfare areas?).

In the past four years, Defence Research and Development Canada (DRDC) has worked closely with the RCN to develop a systems approach and a decision support tool to conduct crewing analysis for naval platforms. The tool, called Simulation for Crew Optimization for Risk Evaluation (SCORE), supports what-if analysis on whole ship crewing by:

- identifying and exposing factors that are relevant to crew size and composition;
- supporting the RCN in explicitly defining and combining the current assumptions on the relevant factors;
- supporting the RCN in systematically evaluating and comparing the impact of these assumptions; and
- enabling the RCN to modify these assumptions as new information becomes available, and to modify the crew estimate as required.<sup>5</sup>

The purpose of this systems approach is to support an informed crew estimate at any point in the design process, even when there are information gaps and uncertainty. This approach recognizes that a crew estimate is essential to decision-making and planning, that every estimate should be based on clear and documented assumptions, and that assumptions are subject to change and the estimate must be modified accordingly.

Platform design decisions determine what roles are required within the crew. A supply ship with four Replenishment at Sea (RAS) stations, for example, may require a minimum of four RAS teams, whereas a ship with only two RAS stations may need fewer RAS teams. Similarly, the location of ship compartments may affect crew requirements. Where combat systems that require the same expertise are located in close proximity, for example, fewer repair teams may be needed to provide adequate coverage for all systems. Once a platform design is assumed, the number and types of special teams can be defined, followed by the number of roles within each team and the qualifications (i.e., occupation, level of training) required for these roles.

The decision to invest in certain technologies also determines which roles are required within the crew. For example, the type and degree of automation available to support RAS may dictate the number of line handlers or winch operators required to conduct RAS. The availability and reliability of remote sensors, remote actuators and remote monitoring for the combat systems or for the engineering plant will influence the human tasks and will, in turn, influence the number of crew and the required qualifications. Once specific technologies are assumed, a specific number of roles can be defined for the crew to operate and/or maintain these technologies, and the qualifications can be defined for each role.

Although warships remain exempt from civilian maritime regulations, the regulations enacted by the International Maritime Organization (IMO), such as the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), and Transport Canada's marine personnel regulations must be considered when designing crew sizes and composition. There are also RCN directives that define the size and composition of special parties, such as Section Base Teams, Emergency Repair Teams and Casualty Clearing Teams, during emergency situations. As technologies, such as the Integrated Platform Management Systems, and practices, such as damage control procedures, evolve in domestic and international maritime operations, policies and procedures will also be revised. Roles for watchkeeping or for special parties need to be defined by assuming the

Credit: DND



Artist rendering of the definition design for the RCN's Joint Support Ships showing two Replenishment at Sea (RAS) stations.

practices described in current publications, but these roles and their qualifications may need to be redefined when new publications are drafted.

As the RCN adapts to challenges in recruiting, retention and force generation, options that will optimize the use of personnel, such as the amalgamation of trades and the reassignment of duties and training must be considered. To propose crew sizes and composition for future platforms, some assumptions must be made on the required qualifications (e.g., any trade required, a specific occupation, or one of several occupations) for each role that is defined for watchkeeping, maintenance, special parties, or departmental work, based on the current or planned military occupational structure. These objective assumptions can be used to propose a crew but there are other factors that must be considered in, or that may be affected by, crew composition. Perhaps most critical is force generation. In the AOPS instance, the RCN determined that, while a smaller crew of ‘seasoned’ sailors could effectively operate the ship, a small crew of experienced sailors afforded no opportunity to develop the next generation of sailors.

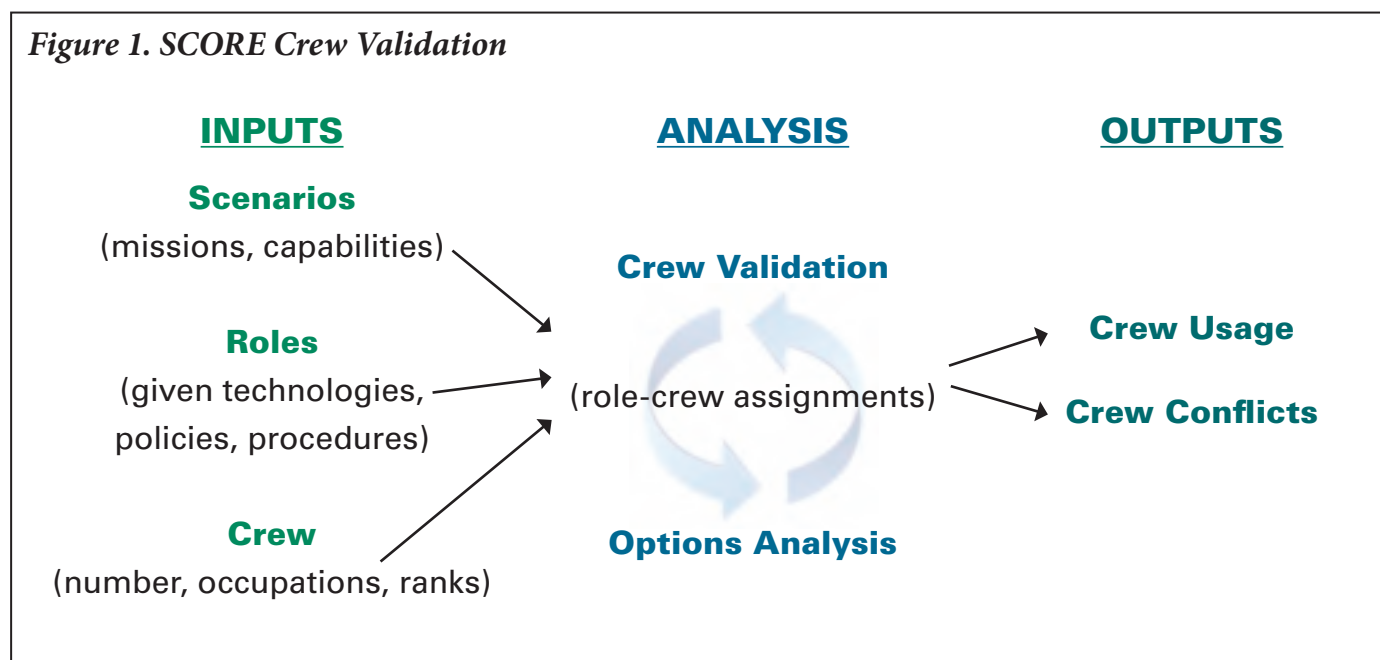
Similarly, crew composition must align with, or cause to change, the occupation structure of the RCN and its existing allocation of skills and tasks. This can, at times, result in an arbitrary requirement for a specific occupation and, thus, drive crew composition. It is critical that proposed crew compositions are based on an objective assessment of requirements because this provides a basis on which the RCN can make informed crewing decisions.

## SCORE Crew Validation and Generation

Figure 1 depicts how a proposed crew size and composition (i.e., a ‘crew manifest’) is validated using SCORE, and how different proposals are compared. SCORE enables RCN stakeholders to make explicit and documented assumptions about platform design, technology, policies and procedures, or personnel, by defining specific roles that must be filled by the crew, and specific qualifications for each role. For example, two different sets of roles (each called a ‘configuration’) can be defined. One configuration may assume existing automation, and another configuration may assume advanced automation, which may have fewer but different roles for the crew. A new configuration (i.e., a set of roles associated with a set of activities) can also be created to combine assumptions (e.g., advanced automation with current damage control procedures versus advanced automation with revised damage control procedures). The user can provide one or more scenarios (i.e., schedule(s) of activities) based on assumptions of different operational requirements (e.g., for a high readiness ship versus a standard readiness ship).

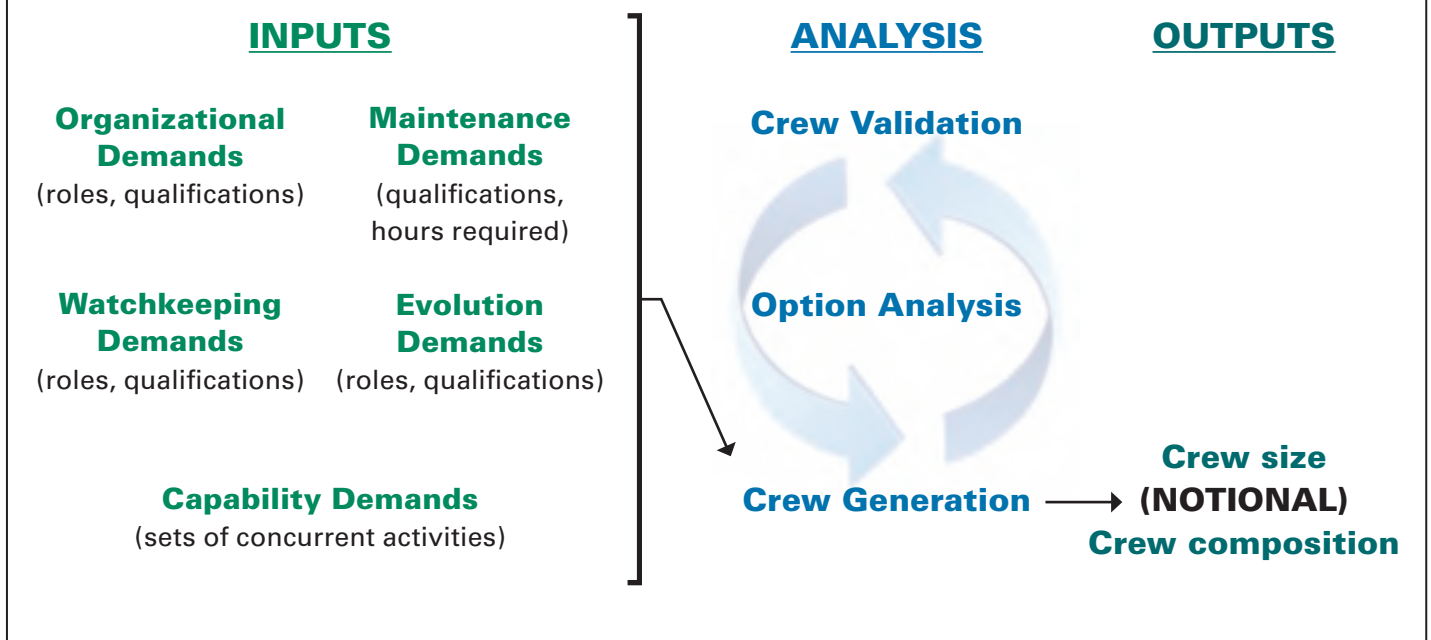
The user can then assign specific members of the proposed crew to specific roles in the selected configuration. SCORE provides feedback on the crew in terms of conflicts (i.e., whether the same crew member needs to perform two or more concurrent but incompatible duties in the scenario), and utilization (i.e., how much time each crew member needs to perform duties in the scenario). Critical crew conflicts, and very high or very low utilization would indicate problems with the proposed crew. A change to the crew size, crew composition and/or role assignments

**Figure 1. SCORE Crew Validation**





**Figure 2. SCORE Crew Generation**



may be required, or the existing assumptions may need to be revisited.

Figure 2 depicts how a notional crew is generated using SCORE. Like in crew validation, users would define required roles and qualifications based on assumptions about platform design, technology, policies and procedures, and/or personnel. These roles would reflect organizational demands (e.g., Commanding Officer, Coxswain, firefighters, cooks), watchkeeping demands for each ship department, maintenance demands, which may include preventive and/or corrective maintenance and/or first-line and/or second-line maintenance, as well as demands associated with single evolutions and concurrent evolutions (e.g., the capability to perform a fueling RAS at the same time as a solid cargo RAS, or the capability to enter harbour at the same time as conducting force protection). The user can also choose to consider only a subset of the demands (e.g., exclude maintenance in a given phase of analysis).

Similarly, the user can select different combinations of assumptions to generate different notional crews for comparison. For example, a notional crew can be generated based on a watchkeeping demand where every department would stand a 1-in-2 watch, versus a watchkeeping demand where some departments will stand a 1-in-3 watch. The result will be different notional crews of different sizes and different compositions, based on the combination of demands that are selected. One or more of these crews

can be selected for further examination and refinement, and can, eventually, be subjected to a validation analysis based on one or more scenarios, therefore completing a full-cycle crewing analysis that includes crew generation, crew validation of either a single crewing solution or comparison of multiple possible crewing solutions.

As decisions are made during the ship design process, it is possible to replace assumptions with known inputs (e.g., the new RAS equipment will need six people to operate) or to trial different combinations of known inputs and remaining assumptions (e.g., the size of RAS team is known but the size of Section Base teams is still subject to change and two options are being considered). As well, it is possible to examine the effects, if any, in terms of crew conflicts and crew utilization (e.g., a smaller RAS team can mean a smaller overall crew size because the primary and secondary duties of the original RAS team members can all be reassigned to other members of the crew, or perhaps not).

One of the key considerations when determining crew sizes for future platforms is whether the future crew, which is likely to be somewhat reduced in size given enhanced technologies, can maintain and sustain high levels of performance. For example, will a smaller crew mean that the same crew members have to take on many more primary and secondary duties, such that they experience fatigue and reduced cognitive effectiveness? There are ongoing efforts by DRDC to integrate a predictive



*The Honourable Harjit S. Sajjan, Minister of National Defence, addresses the ship's company of HMCS Winnipeg on the flight deck during his visit to the ship on 23 December 2015 during Operation Reassurance.*

model of crew performance into SCORE, and a proof-of-concept prototype has been produced and demonstrated to the RCN.<sup>6</sup>

Essentially, based on the scenario and the crew assignments, SCORE currently produces a predicted work schedule for each crew member for the modeled scenario. The new crew performance model translates the predicted crew work schedule into a predicted crew sleep schedule, then predicts crew cognitive effectiveness based on the predicted crew sleep schedule. The algorithm for sleep to cognitive effectiveness prediction has been validated against the state-of-the-art and commercially available Fatigue Avoidance Scheduling Tool (FAST)<sup>7</sup> that is widely used in the aviation and transportation industries, and was used to evaluate watch schedules for RCN submarines and frigates.<sup>8</sup> The current research at DRDC focuses

on the validation of the work to sleep prediction through data collection on a RCN platform.<sup>9</sup> It is expected that the ability to consider crew fatigue and performance in crewing analysis will be available by 2016 and will provide an additional layer of analysis in determining crew size and composition.

### ***Alternatives to SCORE***

The United States and the United Kingdom have also developed software tools to facilitate crewing analysis. The US IMproved Performance Research Integration Tool (IMPRINT) Pro is a “dynamic, stochastic, discrete event network modeling tool”<sup>10</sup> that has been used to analyse different crews for the LCS. The IMPRINT Pro Forces module allows the user to define complex characteristics and relationships for activities and different schedules for crew members and, through modeling,



reports on activities that have failed during the analysed period.<sup>11</sup> IMPRINT Pro seems to be more able to deal with complexity than SCORE when validating crew size and composition but, because it is probabilistic, it may be difficult to anticipate and track how an assumption made in one part of the model will interact with other parts of the model to affect the outcomes. The United Kingdom's Complement Generation Tool (CGT) is similar to SCORE in that it generates a crew from particular watch states, which include requirements for equipment manning, watchkeeping, evolutions and maintenance.<sup>12</sup> Unlike SCORE, though, CGT does not seem to support crew validation.

DRDC Toronto developed SCORE to allow the RCN to model and validate crew constructs and, although the software is still being refined, the Directorate of Naval Personnel and Training (D Nav P&T) has used SCORE as a crew modeling tool since 2012. Three projects, in particular, are illustrative. First, in 2013, D Nav P&T used the crew validation module of SCORE to analyse proposed changes to the *Halifax*-class frigate crew. In this study, the existing crew of 200 was compared to a crew of 217 by modeling each of the ship's departments (excepting the Air Department) against a 10-day Phase III work-ups scenario. Interestingly, while the usage rates of sailors was not significantly different, the model illuminated roles that were not being filled in the smaller crew.

Second, D Nav P&T used the crew validation module to assist in determining the appropriate crew size for the *Harry DeWolf*-class AOPS.<sup>13</sup> In this instance, analysts were able to use SCORE to prove quantitatively that original crew estimates were too small to cover the range of capabilities the new platform was meant to provide, thereby justifying a more realistic crew size and composition that would more appropriately balance capability and cost. Finally, the RCN is using the crew generation algorithm to develop a crewing proposal for the JSS. Fundamentally, the crew generation module, with its enforced methodology of inputting organizational demands, watchkeeping demands, maintenance demands and then evolution demands, matches qualifications to requirement. This forces the consideration of non-traditional role assignments and facilitates optimizing of personnel.

## Conclusion

The RCN has adopted an iterative, consultative, whole-ship and multi-faceted approach to crewing analysis for naval platforms. In the face of many sources of uncertainty related to platform, technology, policies and procedures, and personnel, it may not be possible to determine, at the design phase, an optimal crew size for a future ship. However, by relying on explicitly documented yet modifi-

able assumptions, and a systematic approach to conduct both crew generation and crew validation and the systematic comparison of possible crewing options, it is possible to develop crewing proposals that provide rational and defensible foundations on which to base decisions that consider all personnel factors. 🍷

## Notes

- \* We wish to acknowledge the contribution of the whole SCORE design and development team, including Wenbi Wang and Matthew Lamb (DRDC), and Curtis Coates, Michael Perlin and Paul McKay (Esterline/CMC Electronics, Inc.). We would also like to thank the many subject matter experts and stakeholders from the RCN and DND who participated in the SCORE working group series, especially the organizers CPO1 Ghislain Charest and CPO1 Daniel Labbé. Their inputs have been invaluable to the ongoing improvements to the SCORE tool and the SCORE modeling process.
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# British Tradition as Canadian History in the Early Twentieth Century

Joe DeSapio

In early August 1914, merely a week after the declaration of war between Britain and the Central Powers, Canada received one of its earliest calls to action. In the Pacific, two British sloops were returning to Esquimalt, British Columbia, to avoid a pair of German cruisers thought to be patrolling the area. As the only Royal Canadian Navy (RCN) ship in the area, it fell to HMCS *Rainbow*, under Commander Walter Hose, to find and escort the sloops, or to engage the German ships. Yet *Rainbow* was in a poor state: not only was she much slower than the German ships, her main armament was woefully obsolete against a modern warship, being too short-ranged and of too small a calibre to do more than harass the cruisers. *Rainbow*'s mission appeared to be suicidal, yet it was born out of a belief in the absolute invincibility of the imperial navy since 1815. As Hose prepared to depart, his official orders instructed him to "remember Nelson and the British Navy. All Canada is watching." British naval tenacity from explorers like Francis Drake to Admirals Richard Howe and Horatio Nelson were the legacies bequeathed to Hose and the RCN, regardless of the state of *Rainbow* herself: battles had been won on greater odds. True to form, and no matter her state, *Rainbow* went on her mission. She scoured the western approaches to North America, but found no trace of the German ships.<sup>1</sup>

The *Rainbow* episode neatly encapsulates several major themes facing early 20<sup>th</sup> century Canada: the appeal to Nelson reveals the tension between Canadian realities and British imperial legacies; the dilapidated state of



Rear-Admiral Walter D. Hose.

*Rainbow* illustrates the compromise nature of Canadian politics; and *Rainbow*'s very existence illustrates an incipient nationalism quite apart from that of a generation earlier. This nationalism reflected a departure from one of subjects to independent citizens who believed that there was no 'colony' or 'colonial people' here – Canada had chosen an independent path. As he prepared to face battle, Commander Hose may have considered these same possibilities. Was he serving Canada or imperial Britain,



HMCS *Rainbow* at North Vancouver, 1910.

Credit: From the collection of Major James Skitt Matthews (1878-1970)



or both, and in whose name was he to do battle? This was a question that had been debated extensively in Canada in 1910-1911, and which had no simple answer.

### ***Should Canada Have a Navy?***

Three years prior to Hose's patrol, Canada was still reliant upon the Royal Navy for its security. The 'naval question,' as it was called, grew out of events which occurred in the last two decades of the 19<sup>th</sup> century. The rise of Germany as a major power in Europe was originally seen to pose no great challenge to the British philosophy of 'splendid isolation' from continental entanglements. Besides, as the belief went, Germany would provide a counterweight to Britain's long-time enemy, France.

Yet beginning in the 1880s, Germany's naval and colonial challenges to British dominance in the North Sea, Africa, the western Pacific and China sparked British fears of naval decline. The naval race which had been ongoing since 1889 intensified in 1906 with the commissioning of HMS *Dreadnought*. While the effects of the race and subsequent 'naval scares' are well known and examined elsewhere, these events polarized Canadian opinions on their role within the Empire. At both the 1902 and 1907 Imperial Conferences, Canada had declined to make any real contributions to British security arrangements. In the words of a contemporary journalist present at the conference, "the objection of the Canadian Ministers [to financing local defence schemes] seemed rather to be directed against any policy which might appear to commit the Dominion in advance to sending any force out of the country, even though the assent of the Colonial Parliament were a condition precedent of such action."<sup>2</sup>

What had changed between 1907 and 1910? There had been a late 19<sup>th</sup> century resurgence of popular imperialism which viewed imperial symbols, attitudes and adventures as an essential component of English-Canadian colonial nationalism. The Imperial Federation League of Ontario (1887), the Navy League of Canada (1895) and the Imperial Order Daughters of the Empire (1900) all promoted the historical and cultural ties which bound Britain to Canada. They stressed the threat that German naval expansion posed not only to Britain but to the Empire itself. Such attitudes continued unabated into the first decade of the 20<sup>th</sup> century. In 1900, the Toronto Navy League, for instance, trumpeted the need for Canadian involvement in funding and manning the Royal Navy, noting: "No Navy, No Empire: that is the A B C of Imperial Defence in its simplest form."<sup>3</sup> Ultimately, the naval question came down to one of Canada's perceptions of its responsibility, either as a sovereign state or as a British dominion. Wilfrid Laurier, Prime Minister for almost the



*British battleship, HMS Dreadnought underway, circa 1906-07.*

Credit: U.S. Naval Historical Center

entire period under discussion here, was firmly within the orbit of the autonomists. He felt that every event, from 1867 onwards, had led the country on an inexorable path away from British affairs.

To Laurier, any new Canadian navy was merely a physical symbol of this path. It could not be otherwise: the lengthy Canadian coastline and thousands of square miles of ocean to patrol meant that any naval effort of substance – say, a fast cruiser squadron, or a cluster of dreadnoughts – was too expensive for Canada's budget. Nevertheless, Laurier felt that "if that duty is to be undertaken ... our answer is that Canada must do it."<sup>4</sup> Britain could provide knowledge and instructive contexts, but there would be no question which path the young country was going to take. Even at the 1911 Imperial Conference, Laurier proposed the motion that the dominions should be free to create and ratify their own treaties, and to exit treaties signed by Britain and a third power on Canada's behalf.<sup>5</sup>

This explains Laurier's manoeuvring: the navy was never planned to be large or to field capital units like *Dreadnought*,<sup>6</sup> rather, it was the image of the thing which dictated the reality, and the image of Canada possessing its own navy, regardless of its military utility or expense, sent a strong message to both domestic and international audiences. Canada was a sovereign state in a way it could not be if it relied solely upon the armed yachts and outdated cutters of the Fisheries Protection Service. Possession of a navy was a key element of deterrence, sovereignty projection and enforcement of international agreements. According to a reporter for *The Times*, the dominions were under "no pretension that national sovereignty could be divorced from national responsibility."<sup>7</sup> For Canada, reliance upon the Royal Navy alone was "incompatible with the autonomy of Canada."<sup>8</sup> Both Liberals and Conservatives believed that Canada must assume the responsibility for its own defence, though they disagreed on what form this would take. Yet it was



*Sir Wilfrid Laurier advanced the Naval Service Bill of 1910.*



*The Honourable Sir Robert Borden preferred cash transfer payments to the British Admiralty.*

the political debates surrounding this naval policy which would reveal that popular views of Britain, imperialism and the Canadian future had begun to change from their traditional mindsets.

### ***The Role of Britain in Canadian Self-Identity***

In 1910, the ideal of Britain as a 'mother country' was not shared across Canada's landscape, nor was 'Britishness' or even 'Canadianness' easily defined amongst the population. English Canada had, after all, no founding myths, no national image separate from European colonization, and no great overarching purpose in the same way that the United States, or even Britain itself, possessed. The subsequent reliance on, and appropriation of, British imagery and tradition provided some consolation, but only to those immigrants from the British Isles themselves.

For non-English-Canadians, a simple appeal to remain in lockstep with Britain was neither effective nor particularly representative of their feelings. Founded on settler immigration, Canada was a diverse, and at times divided, society, as each new group carved out an identity for itself. Complicating matters, even anti-imperial sentiment was not a homogenous force: it took on geographical and ethnic dimensions in the Canadian political environment. French-Canadians, for instance, while grateful to Britain for enshrining their religious and cultural rights in law, nevertheless viewed British affairs with suspicion. Having long ago shed their ties to France, most Quebecois felt Canada should be moving forward on its own merits.<sup>9</sup> This made the political discussion of any naval effort a difficult topic for Laurier – he could not be seen to be supporting closer imperial integration as a Liberal, yet to downplay the British relationship would sour his English-Canadian support.

For most of his career, Laurier had sought compromise solutions to all of his political problems,<sup>10</sup> and the 'Naval Debates' were no different. In order to appease his English-

Canadian supporters, he had to be seen to support Britain; conversely, acutely aware of how this would appear in French Quebec, he could not tie Canada too closely to European affairs. The naval question was no different: Laurier's solution – a navy for Canada, but not necessarily a Canadian navy – was testament to his political skill in balancing these tensions. Nevertheless, Laurier and the Liberals experienced a resounding defeat in the 1911 election, as Robert Borden's Conservatives thundered against such apparent desertion of the mother country.

While the debates themselves were important for their attempts to increase Canadian autonomy, they are also interesting for their repeated appeals to British historical traditions and imperial legacies. Depending on what side of the imperial divide one identified with, British and Canadian histories were cited, twisted, romanticized, or scorned. The one thing all agreed on, however, was that it was Britain which had made Canada what it was, and that it was now up to Canada to determine its future path. The degree to which Canada would choose closer imperial integration, or perhaps a more autonomous role within the Empire, was a question neatly encapsulated by the Naval Debates. In short, was Canada the final product of a larger British tradition, or were the two separate entities linked only by current constitutional arrangements?

For instance, when clarifying the French-Canadian resistance to the idea of a Canadian navy, Laurier drew upon an analogous incident from Britain's history:

If I may, without presumption, compare my historical self to historical personages, I could find many precedents for such a thing as is occurring in the province of Quebec. If there was one man who did more than another for Irishmen, that man was Daniel O'Connell. He it was who led in the successful effort to remove the shackles which the penal laws had imposed upon his fellow Irishmen. The day came, however, when he was attacked by some young enthusiasts who thought his policy too moderate. His policy was to ask for the repeal of the Union and for the re-establishment of an Irish parliament upon College Green. But there were certain enthusiasts – the young Irish party they called themselves – who thought this policy too moderate and preached complete separation from Great Britain. However, this party did not go very far. The inanity of their policy was soon found out. And many of them, I am glad to say, lived to recant their former opinions. And the policy followed to-day by these young men in the province of Quebec will not go far either.<sup>11</sup>





HMCS *Niobe* some time between 1910 and 1915.

On the other side of the aisle, Robert Borden – who, during his tenure as Prime Minister would almost succeed in demolishing Canada’s incipient navy in favour of cash transfer payments to the Admiralty – also framed his argument by appealing to British imagery and a shared heritage. In 1912, for instance, he argued that “the young and mighty dominions must join with the mother land to make secure the common safety and common heritage of all.”<sup>12</sup> After all, Borden continued, as the senior dominion Canada was charged with a special mission: “we to whose care this vast heritage has been committed must never forget that we are the trustees of its security.”<sup>13</sup>

Such sentiments were typical of Canadian feeling at the time. This reflected the belief that Canada would surpass Britain as the future leader of the British Empire. A contemporary of Borden’s, Will Pennington forged an overlap of Canadian, British and imperial identities when he wrote “[t]he loyalty of Canadians is largely due to the fact that the Empire was after all Canada’s Empire as well as Great Britain’s.”<sup>14</sup> Another contemporary, the Reverend Canon Norman Tucker, expressed a similar conviction when he stated that the relationship between Canada and Britain allowed ordinary Canadians “to share in the traditions of the motherland; to say that Shakespeare is our poet and that the great men of England are our brethren, and that the great deeds of England, the battles of Trafalgar and Waterloo, were our battles.”<sup>15</sup> The confluence of Empire, Canada and Britain in Pennington’s statement is an indication of status: far from being a local identity,

Pennington saw Canadians as equal (or nearly so) with the British – as co-creators of the imperial destiny. Belief in this conjoined identity was shared by C.C. Taylor, who witnessed the Royal Navy’s fleet review in April 1856: “Never, at any period of *our* history, could *we* boast of a fleet as powerful in numbers and metal as that which floated at Spithead [my italics].”<sup>16</sup> The Royal Navy was seen by Taylor as Canada’s navy – to be Canadian was to be British. Thirty years later Taylor’s view remained one of equality between Britain and Canada, and he noted:

The representation of the great Dominion of Canada, the brightest jewel in the Imperial Crown, is already assured in a manner worthy of her greatness.... Who can predict the result of this union of the great British family, brought together in this way for the first time? ... Then will soon arrive the time when those vast regions ... will be peopled by untold millions of happy and contented settlers, all true in their allegiance to the great Empire of which Canadians are now amongst the most loyal subjects.<sup>17</sup>

Left essentially to their own devices, the English-Canadian majority was satisfied with an imperial identity that, although couched in British rhetoric, in fact endorsed a distinctly Canadian perspective of world affairs.

Within a Canadian context, loyalty to the Empire was historical, not modern. It is true that English-Canadians identified themselves as being loyal to Britain; it is also

true that there was much sentimentality on the part of Canadians for the Empire, expressed with parades or military service. A closer reading of the sources, however, reveals that the imperial connection was valued more for its historical connotations rather than contemporary opportunities. The connection with Britain and the Empire was a method of enriching and explaining Canada's past accomplishments, providing a national mythos for a nation that had none, and in gratitude for the granting of self-rule.

It is no coincidence that in 1891, John Hampden Burnham published *Canadians in the Imperial Naval and Military Service Abroad*. Here, Burnham provided short biographies of Canadians commissioned into the navy or army, and a brief depiction of their exploits. It was his intention, Burnham noted, to highlight the fact that it was "England's colonists [who] have shown that they have not lost the ancient spirit – that their inheritance is not wasted in their hands, and that their rough-hewn destiny is shaping a successful future."<sup>18</sup> Burnham's praise was not only for Britain, but an attempt at igniting a view of Canadian self-consciousness which saw Canadians as providing vital inputs in sustaining the Empire. At its most basic level, Burnham's book contested the belief that the Empire was solely a British creation. Certainly, Canadian naval records seem to agree with this: the majority of Canadian naval service within the Royal Navy occurs between 1877 and 1900, with a major surge between 1895 and 1900.

For our naval discussion, such historical connections ensured that when Canada did provide itself with a navy, it looked to Britain for its example. Almost the entirety of the early Canadian Naval Service was essentially a small clone of the Royal Navy, including the Royal Naval College of Canada (1911-22). For Admiralty observers, it did not go far enough, but for Laurier (and later, Borden and the Conservatives), the RCN was an easily offered olive branch to English-Canadian pro-imperialists, while retaining a small-scale littoral force to assuage French-Canadian fears of British entanglements. Commander Hose, aboard *Rainbow*, was thus at the endpoint of a lengthy and multifaceted battle involving three major interested parties, and their associated historical baggage. The *Rainbow* patrol showed how such sentiments lingered on, and the prevalence of British tradition even in situations that were uniquely Canadian. Being reminded of Nelson and Trafalgar is simply an extension of the ideas expressed with the Naval Debates themselves.

## Conclusion

The Naval Debates of 1910-11 have been largely forgotten by most Canadians but they remain a highly signifi-

cant milestone on the path of Canadian independence. Although overshadowed by the First World War and its harsh lessons for the young dominion, the Naval Debates nevertheless are important because they reflect the time when Canada intensely and consciously questioned its own heritage, and its future development. The tiny navy formed by the Laurier government, though ostensibly to provide maritime security for the country, was more useful as a symbol of Canada's maturing view of self-identity. It remained sentimentally British, nominally a member of the Empire, but in the future Canada would be charting its own course. 🇨🇦

## Notes

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# The Suez Canal and the Egyptian Navy

Ramez Ebeid

The Egyptian government officially opened a new channel of the Suez Canal in the summer of 2015. This will facilitate the increased flow of travel through this important waterway. However, as the Middle East experiences increased terrorist activity, there is greater threat to this vital canal than ever before. Given its importance for global trade, the canal will be a tempting target for terrorists in the region. The Egyptian Navy and Coast Guard will have the heavy responsibility of protecting the Suez Canal.

It is possible that external naval forces will play an increased role in the Mediterranean and in the approaches to the Suez Canal in the future. Royal Canadian Navy ships have a long history of operations in the region for various reasons. For example, they were deployed to the region in the 1991 Gulf War and have made many trips through the Suez Canal. As well, Canadian naval ships continue to be involved in patrols and exercises in the Mediterranean and have taken part in counter-piracy operations around Somalia in the Horn of Africa. The Canadian Navy has experience in dealing with such issues but it has not (yet) dealt with militants occupying the Sinai region.

The Egyptian Navy too has learning to do. It is certainly not as large as some navies in the world, but it is a significant force in the region, and it has a heavy responsibility to ensure that traffic is not stopped by actions of terrorists or militants in the region. In this article, I want to examine



Satellite photographs of new Suez Canal lane (right).

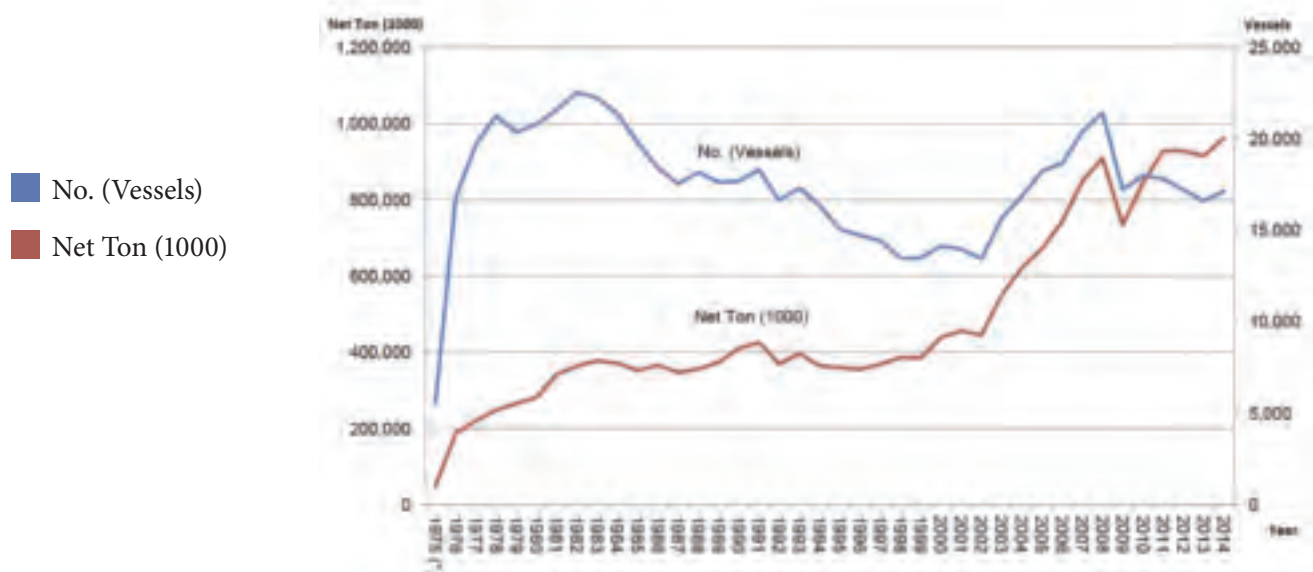
Credit: Landsat-8

both the Suez Canal and the Egyptian Navy's role in protecting it.

## Suez Canal

The history of the Suez Canal dates back to the times of the Egyptian Pharaohs as an important route for trade and travel. However, in modern times, Ferdinand de Lesseps, a French diplomat who provided much of the impetus behind the canal, obtained a permit from Sa'id Pasha, who was the ruler of Egypt and Sudan at the time, to start the Suez Canal Company and begin the construction process.

### Vessel Traffic/Net Tonnage Through Suez Canal, 1975-2014



Credit: Suez Canal Authority





*The US company Swiftships has received a contract to build six 35-metre long patrol boats like the one pictured here for the Egyptian Navy.*

The initial part of the Suez Canal was finished in November 1869 after a construction period of about 10 years. The purpose of this canal was to connect the Red Sea with the Mediterranean Sea. This was tremendously important because it meant that ships could travel between Europe and South Asia without having to travel around the African continent. This would reduce the distance by almost 7,000 kilometres.

In the past decade or so, the number of vessels passing through the canal has increased gradually and this puts pressure on port officials to insure the safety of every passing ship. In 2014 17,148 vessels passed through the Suez Canal. Of this number 4,053 were tankers, 614 were liquefied natural gas carriers, 3,051 were bulk carriers and 6,129 were container ships.<sup>1</sup> In addition to the number of ships, the net tonnage also keeps climbing. In the decade 2004-2014, the amount increased from 621.23 million tons to 962.75 million tons.<sup>2</sup>

The Suez Canal is located near states that produce a significant amount of the world's oil. In 2012, 7% of all oil transported internationally passed through the canal. A large amount of that oil makes its way to Europe and North America. As well, 13% of the world's natural gas transits through the Suez Canal in every given year. This displays how important the canal is to international trade and the global economy as a whole.<sup>3</sup>

The traffic through the canal has been limited by the size of the canal, and the size of the ships. So, Egypt decided to build a secondary canal to ease traffic and accommodate larger ships. Construction on the 'new Suez Canal' as it was dubbed in major news headlines around the world

started on 5 August 2014. It was completed by 16 July 2015 – a remarkably quick build – and was first used on 6 August. The opening ceremony was attended by a number of high-profile individuals and heads of states, including Francois Hollande, the President of France, Russian Prime Minister Dmitry Medvedev and King Abdullah of Jordan.

One of the aims of the expansion was to allow for two-way traffic along more of the canal which will ease passage of large ships and shorten the transit time. Another aim was to increase the size of ships that can be handled by the canal. With the expansion, the canal can now handle the biggest oil tankers. In addition to increasing the capacity of the initial Suez Canal, the plan is to transform it into an international commercial and industrial area that would benefit Egypt on the international stage.

It is a positive aspect that the whole project was domestically financed and therefore diminished the risk to a government that is already in debt. The population of Egypt was in part responsible for the majority of the nine billion dollars raised for funding the project. Investment certificates were traded for 12% interest on each purchase. By 2023 there is an estimate that the revenue generated by the canal will increase from \$5.3 billion to \$13.2 billion and that the canal will now be able to accommodate 97 ships a day, up from 49.<sup>4</sup> Benefits may be slow to appear but in the long term, the Egyptian government hopes to enhance the use of the canal, and turn the whole region into a ship servicing and manufacturing station that would enhance the profits made in the long run.

The statement made by the opening of the 'new canal' is one of a return to business as usual, and a sign that

the Arab Spring is behind it and a new Egypt is ready to emerge. Some skeptics do not believe that the canal will benefit Egyptians economically but rather that it is more of a political and strategic gain to the government of President Abdul Fattah Al Sisi. However I believe that the new expansion of the canal will generate more income – assuming that the global economy rallies and shipping returns to its former high levels – and at the same time raise the profile of the country and will therefore better place Egypt politically as well as economically. But I also believe that the new expansion could possibly damage the environment and further increase the presence of invasive species from the Red Sea in the Mediterranean Sea. And perhaps the biggest factor in ensuring that the canal is a success for Egypt is to ensure security – shipping will not increase if the canal is not made secure from threats.

### ***Threats to the Canal and Surrounding Area***

The Suez Canal is not new to conflict and threat. For example, there was the Suez Crisis in 1956, referred to in Egypt as ‘the tripartite aggression’ by France and the United Kingdom joining Israel in the invasion of the Sinai Peninsula. The Canadian Secretary of State for External Affairs at the time, Lester B. Pearson was the person who came up with a solution to de-escalate the crisis by proposing a United Nations peacekeeping force to monitor the canal and ensure it was accessible to all international ships and to monitor the full withdrawal of Israeli troops from the Sinai Peninsula. The solution earned him a Nobel Peace Prize.

The threats to the canal these days are not from states but from non-state actors – and the region around the canal has experienced terrorist activity for the past few years.

As the revolution in Cairo died down, there has been an increase in insurgents in the Sinai region which borders the canal. This increase of Islamist militants has put pressure on the Egyptian Navy and armed forces.

The Russian passenger jet that was taken down by a bomb on 31 October 2015 left from Sharm el-Sheikh, on the Sinai Peninsula, and illustrated that terrorists are becoming increasingly bold and capable. Since the Arab Spring uprisings in 2011, and the subsequent removal of the Muslim Brotherhood government, tourism has taken a considerable hit – and the downing of the Russian plane will certainly have a negative affect on tourism. Therefore the Suez Canal and the new expansion has to become a major source of income for the Egyptian government.

There have been calls by terrorists to attack the Suez Canal itself and the vessels that sail through it. The canal has been hit before in the past but with small strikes that have not significantly affected its operation. For example, on 29 July and 31 August 2013 Al Qaeda-affiliated terrorists attacked two ships in the Suez Canal with rocket-propelled grenades but caused minimal damage. There was fear that the terrorists would strike the ceremony marking the opening of the new Suez Canal because of the number of high-profile heads of state attending from around the world and before the opening the Egyptian Navy set up a number of check points to intercept and search vessels for weapons. The opening ceremony occurred without problem but under a very heavy security presence. With expansion comes a wider range of targets that requires more security and protection. The ships that pass through the canal are moving slowly and must represent attractive targets for groups that wish to harm the Egyptian state. The canal is not that wide – less than half a kilometre – and thus is within range of attack from shore.

There have long been concerns that if a vessel sinks, it could block the route in the original Suez Canal. It would only take one large ship to be hit to block the passage, and in addition to disrupting traffic, this could cause environmental damage if the ship is carrying oil or natural gas. The new extension for the Suez Canal provides two-way traffic and a wider passage for large container ships, and that relieves the concern about the canal being blocked. However, it is not necessary to sink a vessel for terrorist groups to pose a threat to the maritime industry. The perception of a lack of security could cause vessels to choose the longer distance by traveling around Africa – even if this means facing threats from piracy in some of those waters.

As well as calling for attacks on vessels that use the canal, terrorist organizations have called for attacks on all



*The Egyptian Navy ship ENS Touthka (FFG 906), an Oliver Hazard Perry-class frigate, during an exercise, 20 May 2013.*



Credit: France Marine Nationale

The French-built *Aquitaine*-class FREMM frigate is now ENS *Tahya Misr* (D650), 2 January 2012.

military bases or equipment. The Suez Canal is not only a passage for commercial cargo vessels but is also used by military ships and aircraft carriers. Protecting these ships is essential to prevent a diplomatic or political crisis from arising.

### ***The Egyptian Navy and Coast Guard***

As an important international route for global trade, it is necessary for the Egyptian Navy to protect this transportation shortcut. There have been growing risks for the safety of ships and the Egyptian Navy has made it an objective to increase maritime security at all ports and random check points. The importance of the Egyptian Navy will increase as a result of the expansion of the canal. More presence will be required in the canal to monitor ship passages and deter terrorists or regional aggression from neighbouring states. On 6 July 2015, a month before the opening ceremony, the Egyptian police and armed forces arrested 13 members of the Muslim Brotherhood on charges of plotting to bomb sites on the Suez Canal and therefore affecting the flow of international cargo ships.

The Egyptian Navy is the largest in the area, and indeed among the top 10 largest navies in the world. The Egyptian Navy has over 30,000 members, split almost evenly between active and reserve personnel. Egypt's maritime security forces consist of four submarines, eight frigates, two corvettes, 127 missile and non-missile patrol craft and a mine warfare fleet numbered at 14. Most of Egypt's naval capabilities originate from the United States. Six of the eight frigates are *Perry* and *Knox*-class vessels. There

are seven US coastal mine ships and minesweepers. Four aircrafts used for surveillance are the US Beechcraft 1900Cs and 10 helicopters used against submarines are US SH-2Gs. There are four surveillance aircrafts, 29 anti-submarine warfare helicopters, five multi-role helicopters and two unmanned aerial vehicles (UAVs) used for intelligence, surveillance and reconnaissance (ISR).<sup>5</sup>

In the past few years, the Egyptian Navy has increased its capability and this has made it more able to handle a variety of naval situations. In winter of 2015, Egypt ordered a European multi-purpose frigate (FREMM) for the navy to help bolster security in the Suez Canal. In June 2015, a ship previously in the French Navy became *Tahya Misr* (Long Live Egypt) in the Egyptian Navy, and DCNS the French company which built the ship has been conducting training for Egypt.

As well, in November 2015, Egypt acquired two French-built *Mistral*-class ships. The ships were intended for the Russian Navy but as a result of the Ukrainian crisis and the annexation of Crimea by President Vladimir Putin, France was forced under pressure from NATO members to scrap the deal and find an alternative buyer. These massive ships provide a huge boost to the Egyptian Navy, although it may take some time before the navy is able to utilize them fully as personnel need to be trained.

The navy is not the only maritime force that is responsible for the waters off the country. Egypt also has a Coast Guard that is responsible for patrolling the coasts and protecting coastal facilities. In an illustration of increased terrorist





An Egyptian patrol boat ablaze off the coast of the northern Sinai Peninsula 16 July 2015. A militant group and the military gave conflicting accounts of the attack.

activity in the region, in July 2015 a 25-metre Coast Guard fast patrol boat was attacked while it was close to shore near the Sinai Peninsula. No one was killed, but the patrol boat suffered serious damage. Terrorists who had pledged allegiance to the Islamic State/ISIS and go by the name of Wilayat Sinai claimed responsibility for the attack. Members of the banned Muslim Brotherhood have also become active in the area after the Muslim Brotherhood government was removed by the military in 2013.

## Conclusions

It is in the best interest of everyone to develop a new international agreement to protect the Suez Canal from outside actors. There has to be a replacement for the Convention of Constantinople, a treaty regarding the Suez Canal signed in October 1888 by Britain, Germany, Austro-Hungary, Spain, France, Italy, the Netherlands, Russian Empire and the Ottoman Empire (but not Egypt). Today's threats differ from past events and past players on the international stage. Confidence is a vital issue in keeping the Suez Canal a route for international vessels. Ships will not use the canal if it is not secure.

Since its opening in August 2015, many ships from around the world have passed through the new extension with a heavy security envoy both at sea and in the air. In this new age of warfare and terrorism, the Egyptian Navy has to be on its highest alert to protect the canal from disruption. The new expansion increases this difficulty because it

increases the number of vessels that are potential targets. In September 2015, over 1,500 ships passed through the canal.<sup>6</sup>

Although there are some people who doubt that the new canal will be a success, this is not true of the Egyptian government and media which certainly believe that it will be a global success. However, one thing remains certain and that is that the role of the Egyptian Navy will continue to increase as long as the threat of Islamist militants remains in the Sinai Peninsula. As the Suez Canal is such a vital structure for global trade and economic development it is of utmost importance for all countries around the world, including Canada, to help in protecting it from militant aggression. 🇪🇬

## Notes

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# Making Waves

## *China's Historic Use of Naval Power and What It Means for Today*

Joe Varner

China's naval commander, Admiral Wu Shengli, recently told his US counterpart that a minor incident could spark war in the South China Sea if the United States did not stop its 'provocative acts' in the region. The two countries held bilateral talks after a US warship sailed within 12 nautical miles of one of Beijing's man-made islands in the Spratly archipelago and a B-52 bomber over flew the region. Many are starting to caution that Chinese rhetoric may soon be backed up by acts that could lead to war. In this regard the April 2001 EP-3 surveillance aircraft incident, in which one Chinese pilot was killed and an American flight crew was endangered, comes quickly to mind. Additionally there is the March 2009 'Impeccable incident,' in which an American hydrographic vessel was surrounded and harassed by five Chinese vessels. Both incidents occurred in the international waters off Hainan Island in the northern part of the South China Sea.



Admiral John Richardson (left) and Admiral Wu Shengli talked via video call after USS *Lassen* sailed within 12 nautical miles of Mischief and Subi Reefs in the Spratly archipelago, an action decried as 'provocative' by China, October 2015.

A recent report has warned that China has plans to increase the People's Liberation Army (Navy) (PLAN) to 351 ships by 2020 as it develops the military's ability to project naval power on a global scale.<sup>1</sup> China has increased its defence spending by 500% since 1995, and now ranks second behind the United States. The new White Paper released in 2015 stresses naval power in the form of anti-surface warfare and states that the PLAN will be on par with the US Navy by 2050. A recent report suggested that the PLAN suffers from deficiencies in naval air defence and anti-submarine warfare which China is striving to mitigate.<sup>2</sup>

Without question, China has a strategic requirement to protect its maritime supply lines into the Indian Ocean

through which most of its oil supplies must travel. Approximately, 40% of its oil imports come through the Strait of Hormuz and over 80% through the Malacca Strait.<sup>3</sup> The Indian Ocean, South China Sea and East China Sea are vital maritime commerce transit routes for both China and the world economy. Therefore, it is no surprise that Chinese leaders have long realized the value of naval power. They also realize that naval power requires development of expertise in amphibious warfare, seaborne logistics and maritime airpower. Today, almost all of China's major sovereignty concerns are in the maritime domain, including Taiwan, disputes with Japan in the East China Sea, disputes with Vietnam, the Philippines, Brunei, Indonesia and Malaysia in the South China Sea, and piracy in the Indian Ocean and the Gulf of Aden. China's economic growth depends on maritime trade and energy coming out of the Arabian Gulf. China realizes how vulnerable its energy supply is to outside forces without a navy to protect it. You can have second-rate forces on land and still win. You cannot have second-rate sea and air forces and survive.

### **Naval Modernization**

Since 2012, the PLAN has had its own aircraft carrier in the former Soviet-era *Varyag*, now called *Liaoning*. *Liaoning* with its air wing of J-15 fighters and helicopters is mainly for research and training purposes but the Chinese government has announced plans to build a dozen more.<sup>4</sup> *Liaoning* is probably not yet capable of all-weather, round-the-clock air operations, but it can establish an area of operations in a location such as the South China Sea, where other states' air assets would not be able to operate with impunity. The PLAN has conducted operations with the aircraft carrier and screening surface ships to demonstrate an ability to produce a rudimentary carrier battle group.

Around *Liaoning* is a force of modern surface combatants including eight phased array radar equipped Type 052 class destroyers which will add formidable anti-air capability. China is now expected to add six Luyang-II/Type 052C and a dozen *Luyang III*/Type 052D destroyers.<sup>5</sup> These are backed up by several older former Russian *Soveremenny*-class destroyers with their SS-N-22 anti-ship cruise missiles, and the domestically produced *Luhai*-class. As well, the PLAN has 10 Type 053-class and 23 Type 054A-class frigates, *Jiangkai II*-class and 13 Type 053-class *Jianghu*-class frigates. Additionally, 23 Type 056-class corvettes have entered service or are in building to replace older escort vessels. Lastly, on the anti-surface front, there are the Houbei/Type 022 missile-armed fast attack craft armed with eight C-802/C-803 anti-ship cruise missiles which, when coupled with their low-radar





Credit: Wikimedia Commons

Chinese Type 052D *Luyang III* Guided Missile Destroyer *Kunming* (172) commissioned in 2014.

signature, pose a threat to any ships entering China's coastal waters.<sup>6</sup>

The strongest arm of the PLAN remains its conventionally powered hunter submarine fleet with 13 *Song*-class submarines, 15 of the more advanced *Yuan*-class, 17 *Ming*-class, along with 15 Advanced *Kilo*-class conventional submarines. China fields three older *Han*-class, and five advanced Type 093-class nuclear-powered attack submarines to back up its nuclear-powered ballistic missile submarine force. The Chinese naval deterrent is built around one *Xia*-class and four Type 094-class ballistic missile submarines.

Chinese naval aviation is also steadily modernizing with airframes that can mount smaller, sea-skimming supersonic anti-ship cruise missiles, such as the YJ-82. These new aircraft are backed up by older H-6 and more than 100 JH-7 Flying Leopard strike aircraft capable of carrying up to four anti-ship missiles. Additionally, the maritime fighter fleet includes fourth-generation and 4.5-generation fighters, such as the J-10, J-11 and Su-30.<sup>7</sup>

In a potential game changer that places the US surface fleet at risk, Beijing has developed an anti-ship ballistic missile called the Dong Feng-21 (CSS-5) that could deliver catastrophic damage to any warship. By all indications

China has moved them close to the coast increasing their range and coverage to include the South China Sea and the approaches to Taiwan.

In summary, the PLAN has improved quantitatively and qualitatively and at a very quick pace. The question is how ready China is to use force in the maritime domain. The answer is that it is ready indeed. What history shows us about China is that it is almost always prepared to use force at sea. Chinese governments throughout history have employed naval force in pursuit of national security goals along its borders, the Taiwan Strait and the South China Sea. China has never backed away from a fight when confronted and it has acted even when it was out-gunned.<sup>8</sup> The once coastal defence force is now in the later stages of developing into a fully-fledged blue-water navy capable of projecting power around the globe. No longer is the Pacific an 'American lake' and the Indian Ocean an 'Indian Sea' that can be taken for granted.

What does the history of China's use of maritime force mean in an ever tense maritime environment today? The history of China's use of force at sea is a long and mixed one. The pinnacle of naval developments in Imperial China occurred during the Song Dynasty (960-1279AD), when China had the most technologically advanced naval force in the world for more than 500 years with some



13,500 warships at its height.<sup>9</sup> The Song regime was the first in China to establish a permanent, national navy as an independent administered service from the Imperial Army. The Song Dynasty used naval warfare to invade Vietnam, Java and Japan. The 1274 attempt to seize Japan was unsuccessful but reportedly involved 900 ships and 250,000 soldiers; that of 1281 included 4,400 ships.<sup>10</sup>



A Chinese PLA J-15 fighter completes a heavy-load takeoff from *Liaoning* aircraft carrier.

During the Ming Dynasty (1368-1644) China's greatest long-range naval deployments occurred with the voyages of Zheng He to the Middle East and Africa, but naval supremacy waned. The Ming Dynasty struggled in a series of naval battles on the lakes of the Yangtze River Valley and it ended in disaster. It was not until the Qing (Manchu) Dynasty (1644-1911) that after several failed attempts Chinese naval forces conquered Taiwan in 1683. Then in August 1884, in a fight over the colonization of Vietnam, the Chinese navy was out-gunned and virtually destroyed by the French fleet that attacked Fujian Fleet in Fuzhou Harbor and sank every ship. Then the Beiyang Fleet lost a sea battle to the more powerful Imperial Japanese Navy in September 1894 and it withdrew to Weihaiwei. In January 1895 the Japanese landed troops who seized the land-based Chinese batteries guarding the harbour and turned their guns on the Chinese fleet leading to its ignoble end.

During the Republican period (1911-1949), the Chinese government used naval forces on rivers, especially the Yangtze and the waterways of the Canton delta. There were two exceptions, one when there was a naval skirmish at the upper Yangtze River city of Wanhhsien in September 1926 between a local warlord and the British gunboat,

HMS *Cockchafer*, and the second when there was an October 1929 naval and land engagement on the Amur River between Chinese and Soviet forces.

During the Maoist period (1949-1976), the Communist regime used naval forces in 1950, 1954-55 and 1958 in the Taiwan Strait. Communist forces achieved a major victory in April 1950 when naval forces occupied Hainan, after Taiwan the largest island held by the Nationalists. PLAN operations in the mid-1950s focused on Kuomintang (KMT) attacks against the mainland and on capturing islands still held by Taiwan. The 1954-55 Taiwan Strait crisis included the PLAN's capture of the Dachen Islands and by the end of the decade China had seized all but Quemoy (Kinmen), Matsu (Mazu), the Pescadores (Penghus) and of course Taiwan. In the 1980s the PLAN was a counter to the Soviet Navy, securing offshore territorial claims, in particular Taiwan, and seizing the Paracel Islands from Vietnamese naval forces in 1974.

The dispute over control of the Spratly Islands in the South China Sea has served as a flashpoint in the area. States staking claims to various islands include Brunei, Malaysia, the Philippines, Taiwan, Vietnam and People's Republic of China. All except Brunei occupy some of the islands in dispute. The People's Republic of China has conducted naval and air patrols and established a series of bases in the area. Let me mention some of the incidents that have occurred there. On 14 March 1988, Chinese and Vietnamese naval forces clashed over Johnson South Reef in the Spratly Islands, which involved three PLAN frigates. In February 2011, the Chinese frigate *Dongguan* fired three shots at Philippine fishing boats in the vicinity of Jackson atoll. In May 2011, Chinese patrol boats attacked and cut the cable of Vietnamese oil exploration ships near the Spratly Islands. In the spring, incidents reportedly occurred between Chinese patrol vessels and survey ships from both the Philippines and Vietnam. In the latter instance, Vietnamese survey equipment sustained damage. On 22 July 2011, following a Vietnam port call, the Indian amphibious assault vessel *Airavat* was reportedly warned that it was in Chinese waters. On 11 July 2012, the Chinese frigate *Dongguan* ran aground on Hasa Hasa Shoal located within the Philippines' 200 nautical mile Exclusive Economic Zone. A PLAN amphibious warship allegedly rammed two Vietnamese fishing vessels operating near the disputed Spratly Islands in July 2015. Other similar incidents with other fishing vessels and from numerous countries have been reported.

As well, there have been incidents in the East China Sea between China and Japan over control of the Senkaku (Diaoyu) Islands. Military escalation began in 2013. In



Credit: REUTERS/CSIS Asia  
Maritime Transparency  
Initiative/DigitalGlobe/  
Handout via Reuters

Mischief Reef, located in the disputed Spratly Islands in the South China Sea, is shown in this satellite image from the Center for Strategic and International Studies, Asia Maritime Transparency Initiative. Image taken 8 September 2015 and released to Reuters 27 October 2015.

January 2013, a Chinese frigate locked weapons-targeting radar onto a Japanese destroyer and helicopter on two occasions. A Chinese *Jiangwei II*-class frigate and a Japanese destroyer were three kilometres apart when the Chinese warship went to battle stations. A number of incidents have occurred since then.

Over the past decade, PLAN long-range operations have become more frequent. As well as maintaining a permanent counter-piracy flotilla in the Arabian Gulf and Indian Ocean, China has conducted naval exercises in the western Pacific. In 2008, Chinese authorities deployed PLAN vessels to escort Chinese shipping in the Gulf of Aden. As the situation worsened in Libya in 2011, *Xuzhou* was deployed from anti-piracy operations in the Gulf of Aden to help evacuate Chinese nationals from Libya. As of January 2015, a significant portion of the PLAN including 16,000 sailors, 1,300 marines, 42 helicopters and 30 PLAN surface combatants have participated in long-range operations.<sup>11</sup> As well, recently, five Chinese naval warships passed close to the Aleutian Islands after a joint naval exercise with Russia.

## Conclusion

Chinese rhetoric, strategic motivation and naval modernization should not be dismissed. China's history of the use of force in the maritime domain is well documented. China has used force even when it stands little chance of success and is not cowed by being out-gunned if it views its national interests at stake. The problem for the West and its allies is that China's interests now stretch from the Pacific to the Northwest Passage to the Indian Ocean, Arabian Gulf and even the Red Sea. At the very least China is not afraid to use naval power to evacuate citizens. At the very most it has threatened war over Taiwan and other areas in the South and East China Seas and is prepared to use the PLAN to attain national objectives. China has also increasingly used sabre rattling to make its points with neighbouring states.

The only way to keep a determined non-status quo actor in check is with the use of robust force for deterrence and war. The United States and like-minded countries need to advance the cutting of steel on warships without delay. The Chinese naval program is showing no indication of slowing and China now talks about cruiser-sized warships to escort and defend the dozen future aircraft carriers. Those who do not learn the lessons of history are unfortunately bound to repeat them. 🇺🇸

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# A View from the West: The Houseboat of Saud

Scott Bryce Aubrey

The Kingdom of Saudi Arabia's economic prosperity – and thus its legitimacy – depends on oil shipping. However, post-Arab Spring crises have threatened the stability on which that shipping depends, causing Riyadh to turn away from its traditional inward-facing policy and towards regional engagement. Lacking the capability to respond to emerging challenges unilaterally, the Kingdom is seeking regional alliances within which it can assume a leadership role.

An opportunity for Saudi Arabia to lead rather than follow in regional military and diplomatic initiatives has been provided by American policies aimed at reducing local dependency on its presence. The resulting apprehension among Arab states about an American withdrawal has provided space for leadership.

Saudi Arabia and its neighbours have significant shared interests in the maritime movement of goods, and this makes the naval sphere a key step on the Saudi path to regional leadership. By capitalizing on its naval advantages and shared interests with the Gulf Cooperation Council (GCC), Egypt and other regional states, Saudi Arabia is securing a preeminent role in the Arab world.

To lead in maritime security, Saudi Arabia needs to be a regionally credible naval power. It has prioritized fleet modernization despite serious economic problems caused by declining oil prices and shrinking currency reserves. The Saudi procurement program is geared towards the threat of shipping disruption at maritime chokepoints by its rival, Iran, over and above other threats like piracy, smuggling and terrorism.

Riyadh's current Saudi Naval Expansion Program II (SNEP II) builds on a predecessor program to revitalize the Eastern Fleet that emphasized hardware that could counter large-scale shipping disruption. Vessels like its *Al-Riyadh* F3000S stealth frigates have substantial anti-air/missile and anti-submarine warfare (ASW) capabilities.<sup>1</sup> These capabilities are enhanced by the Eastern Fleet's mine countermeasures (MCM) and ASW capabilities in the *Addriyah* minesweeper and *Al-Madinah* frigates.

SNEP II has been allocated an estimated USD \$20 billion to update the ageing Gulf Fleet. Iranian anti-access/area-denial capabilities potentially threaten Gulf shipping with fighter and missile fleets, swarm tactics, naval mines and submarines. SNEP II attempts to address these challenges through the purchase of Lockheed Martin's Littoral Combat Ships (LCS), modified for increased surface-to-



Saudi Arabia's stealth frigate, *Al-Riyadh* F3000S KSA *Sawari II*.

surface, anti-air and anti-missile capabilities.<sup>2</sup> Gaps that the LCS leaves in ASW and MCM are to be addressed with new helicopters, submarines and MCM and patrol vessels like the Mk. V Special Operations Craft.<sup>3</sup> These capabilities make the Kingdom a valuable ally to smaller regional states, placing it in a natural leadership position.

## **Saudi-led Naval Cooperation**

While fear of American withdrawal has also pushed other Gulf states to expand their navies, these expansions have remained modest as most Gulf monarchies lack the populations or strategic incentives to develop more than small navies. Instead, these states employ defence doctrines that rely on allied support.

Most Gulf navies, and their procurement programs, focus on protecting local oil platforms and islands, as well as close-in interdiction of coastal threats. Kuwait's new amphibious capabilities, Bahrain's expanding patrol fleet, and Qatar's pursuit of fast attack craft and helicopters are all designed for local operations. Even the better equipped fleets of Oman and the United Arab Emirates (UAE) suffer from capability gaps in anti-air/missile, ASW and MCM. Saudi Arabia's relative strength in these areas induces a reliance among GCC states on the Saudi navy for their maritime security.

The Saudis have leveraged the GCC's shared national interests in shipping security into a more unified GCC. Despite its failure to make the GCC into a full union – a proposal shot down by Oman in December 2013 – Saudi Arabia has made concrete advances in Gulf naval cooperation. Riyadh proposed a joint naval force akin to Peninsula Shield, the GCC's land force, at the December 2014 GCC



summit.<sup>4</sup> The move was approved unanimously and joint exercises and logistical cooperation are well underway. Continued threats to shipping will likely pave the way for expanded GCC cooperation under Saudi leadership.

Egypt, while not part of the GCC, is a key regional actor and an important partner for Saudi Arabia. The Arab Spring and the protests that removed both President Hosni Mubarak and his replacement have created significant instability in Egypt. This has made the country unable to project influence to the degree it could during the Cold War. Instead, Egypt has been focusing inward rather than pursuing Arab leadership, taking on a secondary role, and cooperating with Saudi Arabia on initiatives that advance Egyptian national interests. Saudi coalition-building is indirectly strengthened by Egypt's goodwill as a former leader of the Arab world. To this end, Riyadh pursues cooperation like the July 2015 Cairo Declaration that included agreements to define Red Sea maritime boundaries and cooperation on threats to shipping.

Saudi Arabia has poured aid across the Red Sea to fund the growth of Egypt's navy, funding the purchase of two *Mistral*-class Landing Helicopter Docks (LHD). These LHDs, should Egypt surmount the technical challenges to make them effective, will markedly improve its amphibious capabilities. Saudi aid also partially funds other Egyptian naval capabilities, like the acquisition of its Gowind corvettes, FREMM frigate and plans for new submarines.

The other central focus of Saudi interests is Yemen. Its long coastlines on both the Red Sea and the Arabian Sea make Yemen a key locus for ensuring the freedom of the sea lanes vital for Middle Eastern oil shipping. Consequently, control of large parts of the country by Iran-backed Houthi rebels that ousted a transitional administration in January 2015 sparked consternation in Saudi Arabia. Riyadh fears a Houthi victory could threaten the Bab al Mandeb Strait – through which 4.7 million barrels of oil transited per day in 2014<sup>5</sup> – in the same manner that Iran looms over the Strait of Hormuz.

Many local states share concerns about what a Houthi-dominated Yemen could mean for the free movement of shipping. On 25 March 2015, Saudi Arabia leveraged this mutual interest to build a coalition to intervene in Yemen, even drawing on states outside of Saudi Arabia's traditional sphere of influence, like Morocco and Sudan.

Naval operations have been essential to the coalition's campaign, and have included even hesitant states like Oman and Pakistan in various capacities. The coalition established a blockade on 30 March to prevent foreign support of the Houthis, diverting and detaining suspicious vessels, including two Iranian ships carrying weapons

in September 2015. This blockade enables further naval activity, including Saudi-Egyptian naval bombardment during the May-July siege of the port city of Aden and the coalition's seizure of the strategic Perim Island in the Bab al Mandeb, and Hanish Islands in the Red Sea in fall 2015.<sup>6</sup>

Yemen's strategic location vis-à-vis maritime trade and the coalition's naval response have underscored the regional importance of Saudi naval power that underpinned coalition-building. Saudi Arabia's versatile navy has provided credibility and authority for its diplomatic initiatives.

### ***On the Road to Arab Leadership***

Saudi Arabia's procurement and diplomatic efforts place it in an influential role, facilitating its regional exercise of power. Whether or not the American withdrawal feared by Gulf states is occurring, the Kingdom's expanding navy, its push towards cooperative maritime security with the GCC and Egypt, and its coalition-building in Yemen indicate a more activist Saudi foreign policy.

So where does Saudi leadership move next? The clearest answer is continued pursuit of GCC union and relationship building with important regional allies. The Yemeni campaign includes many states outside the traditional Saudi sphere of influence, indicating the development of a wider regional network to call on for future threats, bolstering the legitimacy and capabilities of any Saudi response.

Still lacking the naval capabilities to act unilaterally, Saudi Arabia needs structures in place to build coalitions. Its procurement and diplomatic initiatives in the GCC, with Egypt and against insurgency in Yemen, shows it is rapidly moving to set in place those structures that will enable it to take the preeminent position in the Arab world. 🇸🇦

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# *Dollars and Sense:* Fixing the Procurement Process

**Dave Perry**

There has been a significant degree of justifiable pessimism about the state of defence procurement in Canada in recent years. This was re-emphasized during the federal election campaign where both the Liberal Party of Canada and New Democratic Party attacked the record of the Stephen Harper government on this front.

While there have been numerous efforts launched in recent years, most notably the Defence Procurement Strategy (DPS) in 2014, there has to date been little public evidence of change. Nonetheless, although the impact is not yet apparent publicly, there has been significant progress to improve the state of affairs and this has finally created some room for optimism. Much of this is attributable to improvements within the Department of National Defence (DND) as it has prioritized its procurement portfolio and made progress streamlining its procurement process. A comparable process is underway across the government.

Amongst the biggest problems recently have been costings of projects, establishing and communicating military requirements, a lack of public trust in DND, and a mismatch between the procurement workload and the capacity in the system to manage it. All of this has been exacerbated by an inadequate defence budget relative to procurement plans.<sup>1</sup>

Over the last couple of years, DND has made efforts to increase its capacity to conduct project costings, expanding the unit responsible for doing so. At the same time, the Treasury Board Secretariat has developed what has been referred to as 'a costing centre of excellence.' Both of these changes will hopefully make a difference in ensuring that projects have accurate cost assessments.

In summer 2015, as part of the DPS changes, the Independent Review Panel for Defence Acquisitions was created to provide an independent challenge function for the military's requirements. Starting in July, it has been reviewing procurement requirements and their supporting documentation in an effort to ensure that they are appropriately stated, which will hopefully ensure the projects are approved. While the loss of trust throughout the procurement system has been a lingering problem, this improved significantly with the recent change in government. DND had lost the trust of the previous government but now has an opportunity to establish a better relationship with that of Prime Minister Justin Trudeau.



*Vice-Admiral Mark Norman confirmed reports that the costs of new Canadian warships could rise significantly above original estimates.*

In addition to these changes, efforts to address the workload and capacity fit as well as the overall affordability of the defence procurement program are finally on the cusp of producing results. The big change has been to create a list of priority projects that are affordable within the funding envelope, and then pick from that a manageable number that the department can realistically move through the procurement system on an annual basis.

Understanding the potential impact of these improvements requires setting them against the system that proceeded them. Before these recent changes, DND had a huge swath of collectively unprioritized projects that were not coherently assessed for their importance and matched to the available supply of funding. DND had hundreds of projects, many of them unfunded, because there was insufficient funding to cover all of them. Further, only a small fraction could conceivably get through the formal approvals process in a given year, but staff were assigned to three times that number in an effort to move them through the system. As a result, far more DND projects than could ever get funded or reasonably secure departmental approvals were active in some fashion or another at any one time. Yet scarce departmental resources were stretched across all of them reducing the likelihood that any one of them would be successful.

Some projects would move forward but these decisions were taken on a case-by-case basis. This happened without much chance to assess what the implications of approving a particular project were on the overall program from an



Will Canada be able to afford to replace its current warships? Pictured here, HMCS Athabaskan on evening patrol during **Operation Caribbe**, 19 April 2015.

affordability standpoint, or from the ability to move it through the system on schedule. Because the system was so jammed, projects could only proceed smoothly if the original schedule and costing had been done perfectly, which was rather unrealistic.

In 2014, after its most recent Investment Plan – the long-term list of investments that all departments must compile – was approved, DND moved away from a project-by-project procurement approach to one focused on selecting a portfolio of priority projects upon which it intends to concentrate resources. This was intended to help rationalize the competing project demand against the available financial room in the Investment Plan in a way that provided the overall maximum benefit. This was initiated with the Capability Investment Program Plan Review, a “comprehensive analysis process for assessing projects proposed for inclusion in the Investment Plan.”<sup>2</sup> This used a project’s costs and a prioritized ranking of its importance based on government policy and priority, amongst other factors, to maximize the use of available fiscal room in the Investment Plan.<sup>3</sup>

Whereas the historical project-by-project approach precluded much consideration of the holistic impact to the defence program of decisions on individual projects, this analysis allowed a much greater discussion about the opportunity costs of advancing on some projects and not others. Further, the total cost of the projects selected falls short of the available funding. This means there is room for costs to increase as the projects become more mature, as often happens, without crowding out the funding available to the other projects.

At the same time, DND has finally made headway on its Project Approval Process Renewal. The objective is to change the internal steps taken within DND for projects that can be approved by the Minister to allow them to move through the internal approval system without time-consuming formal re-approvals at the senior official level,

so long as the changes to projects as they move through their life cycle remain within reasonable bounds. This would replace an existing system that requires time and intensive formal re-approvals for even relatively minor changes because it is a one-size-fits-all approval system applied uniformly to both low risk and highly complex projects. In conjunction with this, each year the department will select from the portfolio another shorter list of projects to work on, calibrated to its realistic ability to secure government approvals.

These changes, which require the new government’s approval, have created a more rational program focused on what is actually achievable. While DND still has hundreds of projects on which it wants to make progress, it will now focus on a priority list of projects it can actually afford. Then from that portfolio of affordable projects, it will create another smaller list annually of projects with a realistic chance of securing approval.

If these changes are complemented by real progress in streamlining the procurement process across the government of Canada, this will make the process even more rational. Lamentably, this effort only started in spring 2015 despite being pledged in February 2014, but it is at last underway. If the new government accepts and supports these initiatives, we may finally be on the cusp of real improvements to defence procurement in Canada. 🇨🇦

#### Notes

1. David Perry, “Putting the ‘Armed’ back into the Canadian Armed Forces,” Ottawa, CDA Institute, 2015.
2. Department of National Defence and the Canadian Armed Forces, *Departmental Performance Report 2013/2014* (Ottawa: 2014), p. 42.
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# Warship Developments: Underway Support and Project Resolve

Doug Thomas

As many readers will know, replacing major ships for the RCN is a long, painful process, even worse than replacing fighter-aircraft based on the past few decades. To this observer, it seems that government decision-makers continue to re-learn the lesson that naval vessels don't last forever. This is the case with the *Iroquois*-class destroyers – the last operational unit is in its 43<sup>rd</sup> year of service – and the Auxiliary Oiler Replenishment (AOR) vessels, *Protecteur* and *Preserver*, which were decommissioned in 2015 after 46 and 45 years of service respectively. Plans for replacing the RCN's underway replenishment capability have been in the works for about 25 years.

These vessels have been terrific force-multipliers for the Canadian fleet, permitting a task group of frigates and destroyers to remain at sea doing their job six times longer than if there was no AOR in company. They provided fuel for destroyers, frigates and for their embarked helicopters. They also provided maintenance workshops, food, ammunition, medical and dental support and had the capacity to embark people and materiel for disaster relief when necessary. It is essential that a navy such as Canada's is a balanced force in order to make the best use of its small but very capable navy. This is impossible in a country of Canada's size, with its international interests and responsibilities, without AORs.

It has been obvious for at least the last decade that the AORs needed to be replaced as the time required for refits lengthened and operational commitments were missed. For example, *Preserver* was unable to deploy to Nicaragua in 1998 or to Louisiana in 2005 for hurricane relief operations due to defects. Finally an incident occurred that was noticed by the media, when *Protecteur* had a serious engine room fire in 2014 off Hawaii. It was due only to the professionalism of her ship's company that tragedy did not result. *Protecteur* had to be towed to Pearl Harbor and later back to Esquimalt.

There is a plan to build two Improved *Berlin*-class AORs, to be called the *Queenston*-class, in Vancouver's Seaspan yard, with an expected in-service date of 2021-2022. The question is what will Canada do in the meantime to provide an underway refueling capability for the navy? Part of the interim solution is to lease underway support services from two allied navies: from Chile to support Pacific fleet operations; and from Spain for the Atlantic fleet. These arrangements provided a limited number of sea-days to support training and major exercises. There will be a relatively minor out-of-pocket expense to the Department of National Defence (DND) for these services to reimburse Chile and Spain for the costs to sail their AORs to, and in, Canadian waters. It will also be a valuable training experience for their crews to deploy to Canada and operate with the RCN. In addition, a number of Canadian sailors will be embarked in these vessels to maintain needed skills in refueling at sea. This really is a win-win situation in many ways – but it is a stop-gap arrangement and would not work if there was a major crisis, and these countries had to withdraw their support due to national priorities. Canada needs its own ships if it wishes to be truly independent and make decisions in its own national interests.

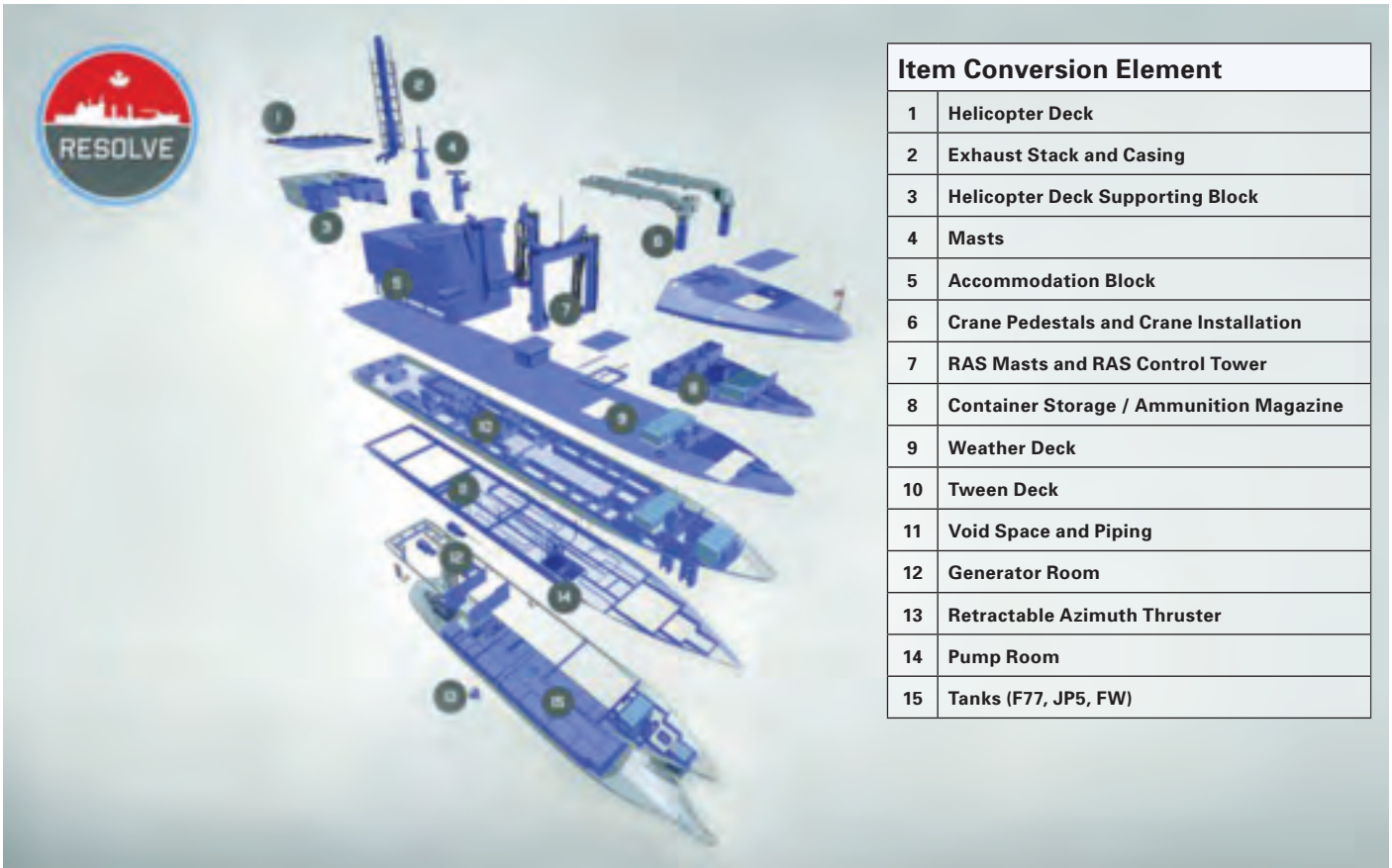
An appealing solution is Project Resolve which was announced in June 2015. Davie Shipyard in Lauzon, Quebec, purchased a modern container ship, the former motor vessel (MV) *Asterix*, for \$20 million. Davie will convert this modern, diesel-powered ship into an interim AOR for about \$350 million and DND will lease it for a five-year term commencing in 2017.

The conversion will include modifying the hull and ballast systems to be capable of carrying fuel to replenish naval vessels underway at sea. A flight deck will be added, large enough to launch and recover CH-1471 Chinooks and house and operate two CH-148 Cyclones. There will



Artist's conception of MV *Asterix* in her converted configuration.

Credit: Project Resolve website



The planned elements of the MV Asterix conversion.

be accommodations for up to 350 personnel, including a large medical facility (mobile hospital) and a command centre. It is understood that the Replenishment at Sea (RAS) equipment will be taken from *Protecteur* and/or *Preserver*, refurbished and installed in the leased vessel. This is a wise decision as this equipment would take a long time to order otherwise, and would entail significant expense if purchased new.

The vessel will be operated by a civilian crew and Davie will be responsible for maintenance as part of the contract. Additionally, the RCN will likely need to provide a small contingent to man communications with the fleet, support flight deck operations, and other naval tasks. This arrangement is not without precedent – the Royal Navy places naval parties in its civilian-manned Royal Fleet Auxiliaries in order to fly and maintain helicopters, man weapons in conflict areas, etc.

In my opening paragraph, I stated that buying major ships is a long and painful process, and this has been illustrated with Project Resolve. Irving Shipbuilding protested the sole-sourcing of this project to Davie, as it had proposed, in concert with Maersk Shipping Lines, a more rapid and less expensive option to provide a converted container ship for refuel duties. The Irving proposal was for a more basic capability – a tanker rather than an AOR – with an option to add enhanced capabilities in the future. The new Liberal government delayed signing a contract until it could look into it in more detail, but confirmed the deal with Davie on 30 November 2015.

### Conclusions

In my view, if the interim AOR is successful in service, it should be purchased for the RCN at the end of its lease, or at least an extension to the lease should be negotiated. During much of the Cold War, Canada had three AORs – currently it has none. The original plan for the Afloat Logistic and Sealift Concept and later the Joint Support Ship was to build three or four multi-purpose vessels. I believe it would make sense to retain control of the interim AOR beyond the acceptance into service of the two *Queenston*-class ships. The new ships with their modern engineering plants should be available for many more sea-days per year than their steam-powered predecessors, but there will be occasions in the coming decades when Canada would be well-served if it had a third large hull available. This third hull could be available for disaster relief or UN service, embarking and transporting refugees from abroad, filling in for an unserviceable AOR (even new ships sometimes can't meet operational commitments due to mechanical or other deficiency) on either coast, and many other unforeseen situations.

Additionally, this vessel would be very useful for re-supply of fuel to Arctic communities, to the new naval facility at Nanisivik and for supporting summer deployments of the Arctic Offshore Patrol Vessels. If it is decided to obtain this vessel at the end of her lease, and retain her in a reserve minimum-manned status until needed, it would provide a very cost-effective national resource – a 'Seamanlike Precaution,' as we used to say. 🍷

# Book Reviews

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*At War in Distant Waters: British Colonial Defense in the Great War*, by Phillip G. Pattee, Annapolis, Maryland: Naval Institute Press, 2013, 273 pages, maps, ISBN 978-1-61251-194-8 (hard cover)

Reviewed by Brian K. Wentzell

Phillip Pattee has revisited the issue of the naval strategy of Great Britain and Germany leading up to and including World War One. In preparing this work, the author has conducted extensive research as is evidenced by the extensive endnotes and bibliography found in the book. The resulting text is a detailed explanation of British naval strategy that was centred on the protection of trade routes connecting the homeland, colonies and trading partners. The strategy recognized the risk of Britain's dependency on the overseas sourcing of raw materials and food to sustain its population and industry.

The Germans understood the importance of overseas trade to the British and set about to disrupt the flow by creating a fleet of battleships and cruisers, supplemented by armed merchant cruisers taken up from trade. The submarine was also recognized as a crucial weapon, however, U-boat commanders were not very discrete when it came to picking targets, and frequently neutral ships, their cargos and citizens were subject to attack. As the United States was a neutral state until late in the war, the German Navy's indiscriminate attacks risked provoking American entry into the war. And, indeed, unrestricted submarine warfare eventually brought the United States into the conflict.

Pattee points out that despite the attempts to cut trade lines, there were officers in the Royal Navy and the German Navy that still thought the North Sea was the main battle ground for their naval fleets. For each navy there was the concern that the other would attack their homeland through coastal bombardment, mining, raiding and even invasion. Although there was no invasion there was bombardment, the setting of minefields and some raiding. However, the consummate meeting of the respective battle fleets at Jutland in 1916 did not create the massive knockout desired by either protagonist. The real war was the trade war in the Atlantic, Pacific and Indian Oceans.

Australia, New Zealand and India played significant roles in neutralizing the German Pacific and East African colonies. Their actions, under British guidance, destroyed the logistics and communications systems upon which

German commerce raiders relied. Aggressive Royal Navy actions against German colliers and errant neutral countries that turned blind eyes to German refueling and repair work further hobbled the commerce raiders.

By 1917 the only dangerous German commerce raiders were U-boats. However, the resumption of submarine warfare was too late to turn the tide of battle in favour of Germany. Furthermore, the number of new cargo ships built finally outpaced the number of allied ships lost and the entry of the United States Navy increased the available anti-submarine forces substantially.

The result was that the flow of raw materials, war supplies and other goods was sufficient to sustain the British population and war effort. At the same time, the flow of German-bound cargo through neutral countries was reduced. The allied armies were better supplied and thus enabled to turn the land war against the invader.

This book will provide a good base for further investigation by those interested in reconsidering maritime strategy and the role of navies in peace and war. In today's interconnected global economy, the protection of trade routes is as important as it was in earlier times. The right of free passage in international waters is crucial and navies are an important instrument to guarantee that right.

In conclusion, I recommend this book as a useful reference for inquiry into the strategy and role of navies in past, current and future times. 🍷

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*The Accidental Admiral: A Sailor Takes Command at NATO*, by Admiral James Stavridis, US Navy (Retired), Annapolis, Maryland: Naval Institute Press, 2014, 244 pages, \$USD 32.95 (soft cover), ISBN 978-1-61251-704-9

Reviewed by Colonel P.J. Williams

To this day, the author of this book remains the only naval officer to hold the appointment of NATO's Supreme Allied Commander (SACEUR), a post which since General Dwight Eisenhower first held it in 1951, has been reserved for a US officer. The fact that Admiral Stavridis broke that mold is not the 'accident' referred to in the title: indeed it really refers to his entire naval career, as his original intent had been to serve only a short time in the navy before leaving to start law school. He later changed his mind and thus in this work we are treated to an account of his time as SACEUR from July 2009 to May 2013, a period encompassing conflicts in Libya, Afghanistan and numerous other crises.



The person who serves as SACEUR is in fact 'double-hatted' and also serves as Commander US European Command, reporting to the US Secretary of Defense. Thus the position of SACEUR comes with inherent challenges as the incumbent has to juggle both his NATO and his US responsibilities. This means that it is necessary to fend off the views from some quarters within the alliance that he's too deferential to his homeland while also dealing with possible concerns within the US government that he's effectively 'gone native' and is leaning too far toward the NATO camp. In any case, Stavridis appears to have navigated such challenges rather well, serving for almost four years in post, much longer than most.

He came to this senior NATO post after having served as Commander US Southern Command and after a distinguished career as a naval officer and an author of some renown in his own right, having frequently published articles for the *US Naval Institute Proceedings*, as well as an account of his time as a warship's commanding officer.<sup>1</sup>

The author's aim in writing this highly readable account, and one which is highly appropriate for someone who led a coalition of almost 30 states, is to demonstrate that multilateralism rather than unilateralism is the best guarantor of success in tackling the crises of today's diverse world. Certainly he was faced with a myriad of challenges on taking over as SACEUR, as evidenced by what he saw as his three key priorities:

- in Afghanistan, gain momentum against the insurgency while also transition security responsibility to the Afghans;
- reduce NATO's footprint in Kosovo from 15,000 to under a third of that number; and
- combat piracy, particularly in the Indian Ocean, against Somali opponents.

The book is divided into two thematic lines. In the first part, the author covers key parts of his area of responsibility geographically, and so there are individual chapters devoted to Afghanistan, Libya, Syria, Russia, Israel (which unlike the majority of the Middle East is not within the US Central Command area) and the Balkans.

The second part of the book consists of a series of chapters which provide a sort of after-action review of key aspects of military leadership and command which Admiral Stavridis had learned over the course of his career, as well as offering his thoughts on the future of NATO. The book also has five appendices, including one which is a reading list of works on strategy, leadership, history and other subjects which runs to some 21 pages. Interestingly, the list includes the novel *Dr Zhivago* by Boris Pasternak as

well as *The Castle* by Franz Kafka.

Admiral Stavridis writes in a very easygoing, almost folksy style that will no doubt appeal to the lay reader. Nevertheless, Stavridis is candid and revealing in his assessments, at the time of writing his book, of several issues which he had to deal with while serving as SACEUR. He notes, for example:

- it is too early to assess whether the campaign in Afghanistan was worth it, though he assesses the likelihood of success as 66%;
- the NATO intervention in Libya was an overall success, but not an unqualified one as almost half the alliance members did not participate in combat operations there;
- there is a 50-50 chance that Israel will launch a pre-emptive strike on Iranian nuclear capability; and
- in terms of dealing with Russia, Stavridis believes, *inter alia*, that it should be ejected from the G8, subject to further targeted sanctions, and that NATO should share intelligence with Ukraine and the United States should pause its military drawdown in Europe.

Readers hoping to see many laudatory references to our home and native land will be somewhat disappointed as references to Canada are but two: one is to acknowledge that we contributed fighters to the campaign in Libya, while the other describes a former Chief of the Defence Staff (CDS) (whose name is misspelled as Naytncky) as being, "a hearty guy built like an NFL fullback."<sup>2</sup>

Coalition warfare, whether based on established alliances such as NATO, or so-called coalitions of the willing like that against the Islamic State (ISIS) group, continue to be the order of the day and appear to be Canada's preferred method for sending forces off to what we rightly or wrongly call 'war' these days. This highly engaging account of one man's approach to this type of generalship (or more accurately the art of the admiral) is both timely and a very worthwhile read. 🍷

#### Notes

1. James Stavridis, *Destroyer Captain: Lessons of a First Command* (Annapolis: Naval Institute Press, 2008).
2. James Stavridis, *The Accidental Admiral: A Sailor Takes Command at NATO* (Annapolis, Maryland: Naval Institute Press, 2014), p. 29.

*A Two-Edged Sword: The Navy as an Instrument of Canadian Foreign Policy*, by Nicholas Tracy, Montréal: McGill-Queen's University Press, 2012, 476 pages, 35 black and white photos, bibliography, index, ISBN 978-0-77354-051-4

Reviewed by John Orr

A knowledgeable author with an extensive academic (and practical) knowledge of things maritime, Dr. Nicholas Tracy, Adjunct Professor of History at University of New Brunswick, has written a notable survey of the use of the Royal Canadian Navy (RCN) by the Canadian government “to manage its relationship with its powerful friends, Britain and the United States, and participate in naval actions that supported Canada, her allies, and the international community.” Well researched and thoroughly referenced, the book won the 2012 John Lyman Book Award for Canadian Naval and Maritime History.

In the Introduction, Tracy lays out the taxonomy regarding the use of naval forces (including maritime forces such as the Canadian Coast Guard and maritime aviation) in the pursuit of national policy objectives. This goes well beyond the classic works of American naval theorist Alfred Thayer Mahan and British naval historian Sir Julian Corbett or even the more recent works of Ken Booth (the Booth Triangle). Tracy eventually elects to use the terms proposed by Sir James Cable in his study of gunboat diplomacy – especially the concept of ‘purposeful force’ which is defined as a military action that persuades a foreign government to change its policy.

Tracy does note, however, that such labels can be limiting, especially so in the Canadian context. He stresses that it is difficult to place too much reliance on strategic concepts rather than on concrete actions. To illustrate the point, he quotes Dr. R.J. Sutherland, Chief of Operational Research and who chaired the committee that wrote the 1963 Canadian Defence Budget Report, who stated in 1963 that “[i]t would be highly advantageous to discover a strategic rationale which would impart to Canada’s defence programs a wholly Canadian character.

Unfortunately, such a rationale does not exist and one cannot be invented.”

Taking a quick spin through the First and Second World Wars, Tracy examines in some detail the dynamic that led to the rapid expansion of the RCN in the post-Korean War era that became the first ‘Golden Age’ of the RCN. Interestingly, in assessing the navy’s role in the Cuban Missile Crisis which ends this period, Tracy concludes that due to the complexity of the professional and social linkages established by the various interlocking NATO and Canada-US agreements, the government of Canada came perilously close to losing civilian control of the navy.

The period following the fall of the Berlin Wall in 1989 and the RCN’s participation in a number of operations in the Gulf and Indian Ocean loosely focused on the enforcement of sanctions against Iraq forms a significant portion of the book. Tracy’s discussion of sanctions and their effectiveness benefits from his extensive study of the subject although, in this reviewer’s opinion, this detracts somewhat from the overall discussion of the foreign policy aspects of the employment of the navy.

Tracy claims that in the ‘coalitions of the willing,’ the demands of network-centric warfare as practiced by the US Navy place increasing strain on Canada’s ability to act independently as a sovereign power. As in the case of the Cuban Missile Crisis, Tracy surmises that this leads to a situation where once again civilian control is threatened although this time it was not interlocking command relationships but the demands of network-centric warfare that pose a challenge.

This book is recommended for the expert reader, although the preliminary chapters, concluding material and bibliography may be of interest to a more general audience. It should specifically be read by those in key positions in government who may be required to present options regarding the application of force and in particular the imposition of sanctions. As Tracy notes with some regret, it is doubtful that there are many in the various Canadian ministries who are knowledgeable in these matters. 🍷



HMCS *Fredericton* crosses the North Atlantic Ocean to participate in *Operation Reassurance*, 9 January 2016.

Credit: Corporal Anthony Chand,  
Formation Imaging Services



# 2016 Canadian Naval Memorial Trust Essay Competition

*Canadian Naval Review* will be holding its annual essay competition again in 2016. There will be a prize of \$1,000 for the best essay, provided by the **Canadian Naval Memorial Trust**. The winning essay will be published in *CNR*. (Other non-winning essays will also be considered for publication, subject to editorial review.)

Essays submitted to the contest should relate to the following topics:

- Canadian maritime security
- Canadian naval policy
- Canadian naval issues
- Canadian naval operations
- History/historical operations of the Canadian Navy
- Global maritime issues (such as piracy, smuggling, fishing, environment)
- Canadian oceans policy and issues
- Arctic maritime issues
- Maritime transport and shipping

If you have any questions about a particular topic, contact [naval.review@dal.ca](mailto:naval.review@dal.ca).

## *Contest Guidelines and Judging*

- Submissions for the 2016 *CNR* essay competition must be received at [naval.review@dal.ca](mailto:naval.review@dal.ca) by Monday, **10 June 2016**.
- Submissions are not to exceed 3,000 words. Longer submissions will be penalized in the adjudication process.
- Submissions cannot have been published elsewhere.
- All submissions must be in electronic format and any accompanying photographs, images, or other graphics and tables must also be included as a separate file.

The essays will be assessed by a panel of judges on the basis of a number of criteria including readability, breadth, importance, accessibility and relevance. The decision of the judges is final. All authors will be notified of the judges' decision within two months of the submission deadline.





The PLAN Jiangkai II-class guided missile frigate *Xuzhou* (FFG 530) participated with the forward-deployed *Arleigh Burke*-class guided missile destroyer *USS Stethem* (DDG 63) in a Code for Unplanned Encounters at Sea (CUES) and a search-and-rescue (SAR) exercise, 20 November 2015.

*Credit: Petty Officer 2nd Class Kevin Cunningham USN*