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Voyage of *Xue Long* in the Northwest Passage 2017

Bolstering Community-Based Marine Capabilities in the Canadian Arctic

> China's Mahanian Arctic Ambitions: Second Thoughts

A Surface Presence for the US Navy in the Arctic?

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# ANADIAN Aval review

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Email: info@navalreview.ca Website: www.navalreview.ca Twitter: @CdnNavalReview

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Canadian Ranger Jimmy Evalik scans his surroundings while on maritime patrol in Lancaster Sound, August 2019. The Rangers play an extensive role in Canada's Arctic, both on land and at sea. See the article by Peter Kikkert and P. Whitney Lackenbauer for insights into their vital work.

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# *Editorial* A Perspective on Canada's Three Shipyard Decision

In August 2019 the Canadian government announced the start of a competitive process to build six new medium and heavy Canadian Coast Guard icebreakers, thereby officially opening up Canada's National Shipbuilding Strategy (NSS) to a third naval shipyard. Under that strategy, launched in 2010, the government ran a competition to establish a strategic partnership with two shipyards in Canada to build up to 28 large coast guard and navy vessels over the coming decades.<sup>1</sup> The goal was not just to build the ships, but to replace the historically cyclical nature of shipbuilding in Canada with a sustainable federal shipbuilding program.

Affordable, timely ships depended on shipyards being able to invest for the long term, rather than engaging in a costly process of rebuilding facilities and a skilled workforce with every new shipbuilding contract. In 2011 Irving Shipbuilding in Halifax won the competition for combat vessels, while Seaspan Shipyards in Vancouver won for non-combat vessels. With this new competition, a third shipyard will be chosen to establish a strategic partnership with the government, an arrangement that sets out the rules and terms of negotiation under which bids can be made.

Given the government's NSS goal, is the decision to add a third shipyard a wise move? The jury is out. But a brief examination of Canada's naval and coast guard shipbuilding past can give us, if not answers, at least a perspective on the bigger picture.

It was growing tension between Britain and Germany in the years leading up to World War One that sparked Canada's modern naval shipbuilding industry. The government developed facilities throughout Canada and rapidly expanded them during the war to meet Britain's steel steamship requirements. By the end of 1916 there were naval shipbuilding yards in eight Canadian cities, and two more added shortly after the war. But in the 1920s and during the Great Depression naval shipbuilding work declined dramatically. Those yards that survived did so based on repair work. World War Two then elevated the Canadian naval shipbuilding industry to new heights with no less than 21 yards producing close to 400 warships in the space of six years.<sup>2</sup> The shipbuilding industry contracted again after the war, with a low point in employment reached in 1950.

Growing East-West tensions, the creation of the North Atlantic Treaty Organization (NATO) in 1949, and Canada's anti-submarine warfare (ASW) role in the North Atlantic sparked a government decision to design and build ASW ships in Canada. Subsequent contracts included a total of 20 St. Laurent, Restigouche, Mackenzie and Annapolisclass destroyers built between 1950 and 1963 at shipyards in Halifax (Irving), Sorel (Marine Industries Limited, now closed), Montreal (Canadian Vickers, now closed), Vancouver (Burrard Dry Dock, now closed) and Victoria (Victoria Machinery Limited, now closed). The Providerclass auxiliary oil replenishment (AOR) vessel was built at Lauzon (Davie) in the early 1960s, two Protecteur-class AORs were built by Saint John Shipbuilding (Irving) in the late 1960s, and four Iroquois-class destroyers were built at Sorel and Lauzon in the early 1970s.

Icebreakers were also on the books, including: the medium icebreaker *D'Iberville* (Davie, built early 1950s); light icebreaker *Labrador* (Marine Industries Limited, built early 1950s); light icebreaker *Alexander Henry* (Port Arthur Shipbuilding, now closed, built late 1950s); and heavy icebreaker *John A. Macdonald* (Davie, built late 1950s). These were transferred to the newly created Canadian Coast Guard in 1962, to which was later added the heavy icebreaker *Louis St. Laurent* (Canadian Vickers, built mid-1960s).

Credit: Timothy Cho.



Seaspan Vancouver Shipyards is one of the two original National Shipbuilding Strategy shipyards. Seaspan's yard is made up of multiple separate buildings. Visible at right in this December 2018 photo is the second Offshore Fisheries Science Vessel being assembled for the Canadian Coast Guard.



Built at Halifax Shipyards, the Restigouche-class destroyer escort HMCS Chaudière sails in Burrard Inlet, Vancouver, July 1970.

After two decades of relatively continuous builds, navy and coast guard shipbuilding stopped for the better part of a decade. When it was ready to revisit major shipbuilding, the government turned first to coast guard requirements. The Pierre Radisson-class of four medium icebreakers were built in Vancouver (Burrard Dry Dock, later Versatile Pacific Shipyards and then Vancouver Drydock Company, bought by Seaspan in 1991) and St. Catharine's (Port Weller Dry Dock, now closed) between 1977 and 1985. The Martha L. Black-class of six light icebreakers was built at Vancouver (Versatile Pacific Shipyards), Collingwood (Canadian Shipbuilding, now closed), Tracy, Quebec (Marine Industries Limited, now closed) and Halifax between 1985 and 1987. In the mid-1980s the government realized there still remained over-capacity in the shipbuilding industry and paid owners to close shipyards across Canada.<sup>3</sup> The government then turned to navy vessels, including 12 Halifax-class frigates, built between 1987 and 1996 at Saint John and Lauzon, and 12 Kingstonclass Maritime Coastal Defence Vessels built at Halifax between 1994 and 1998.4

What followed was a 'bust' in Canadian shipbuilding unseen since the interwar period. Whereas six years separated the launch of the last *Iroquois*-class destroyer in 1971 and the start of the first *Pierre Radisson*-class medium icebreaker in 1977, there were no major navy or coast guard ships built in Canada between the last *Kingston*-class vessel in 1998 and the government's decision to proceed with a shipbuilding strategy more than a decade later. When in



The **Halifax**-class frigate HMCS **Ville de Québec** is prepared for launching at Davie Shipbuilding in Lauzon, Quebec, 16 May 1991.

2015 construction started on the Offshore Fisheries Research Vessel *Sir John Franklin* at Seaspan, and the Arctic Offshore Patrol Ship *Harry DeWolf* at Irving, this marked the end of a 17-year drought in naval shipbuilding, and an almost 30-year drought in major coast guard builds. Since then, to the original 2010 strategy of 21 combat vessels and seven non-combat vessels, the Liberal government has added about 20 coast guard vessels.<sup>5</sup>

What does this cursory history tell us about the threeshipyard decision? During boom times of the past, naval contracts sustained more than three shipyards. At no time were there only three yards, much less two. The many yards marked 'now closed' indicate the degree to which the industry has accommodated a necessary reduction in the number of shipbuilding facilities. And Canadian navy and coast guard shipbuilding, or lack thereof, has reached so critical a threshold that the planned number of builds in the 2020s/30s promises to exceed those of the 1950s/60s and 1980s/90s.

Thus, the addition of a third shipyard would seem to be a sensible one. But it is not without risk. If, over time, it dilutes the workload of the other non-combatant yard to the point that neither can sustain modern facilities and highly skilled personnel, then the familiar boom-and-bust issues will have returned. For this reason, the government needs to begin now to think about the next build. This should centre on Canada's submarines, which are of growing importance in this era of increasing great power tensions and a melting Arctic, and will come to the end of their operational life in the 2030s. It is time for the Canadian government to start incorporating a future submarine capability into its evolving National Shipbuilding Strategy.

#### Elinor Sloan

#### Notes

- This would consist of 15 Canadian Surface Combatants; six Arctic Offshore Patrol Vessels; four Coast Guard fisheries vessels; two Joint Support Ships; and one polar-class icebreaker.
- Garth Wilson, A History of Shipbuilding and Naval Architecture in Canada (Ottawa: National Museum of Science, 1994), p. 53.
- 3. Steve Durrell, "Shipbuilding Centres of Excellence: The Road Map to a Sustainable Industry," in Douglas L. Bland (ed.), *National Approaches to Shipbuilding and Ship Procurement* (Kingston, ON: Queen's University School of Policy Studies, 2010), p. 107.
- 4. I do not include the *Orca*-class patrol vessels built for the navy in the mid-2000s in this narrative because although these are important ships, they are small compared to the others discussed and are not commissioned. The focus here is on major ships.
- 5. This number consists of 16 Coast Guard multi-purpose vessels; two 'civilianized' Arctic Offshore Patrol Vessels; and six medium and heavy icebreakers (breakdown unknown).

# Voyage of *Xue Long* in the Northwest Passage 2017

# **Nigel Greenwood**



The crew and passengers of the Chinese research icebreaker Xue Long are treated to a long Arctic sunset in Peel Sound, 3 September 2017.

It is 3 September 2017 and I am on the bridge of an icebreaker proceeding south in Larsen Sound. This, for navigators, is the proverbial Val d'Enfer; ahead just a few nautical miles is the area where Sir John Franklin's ships HMS *Erebus* and *Terror* were abandoned in 1848, setting the scene for the greatest Arctic rescue operation (and mystery) to date.

I am not here by accident. Following my most recent transit from Vancouver, BC, to Nuuk, Greenland, onboard the Finnish icebreaker *Nordica*, Captain Duke Snider, the principal of Martech Polar Consulting Ltd, had called me with an offer he said I could not refuse. He was coy about the details but promised I would be rewarded if I could get myself back to Nuuk within a week.

By the time I was taking off for Reykjavik, Iceland, and Nuuk, the desire for initial secrecy was revealed: I was to join the People's Republic of China (PRC) government icebreaking research ship *Xue Long* (*Snow Dragon*) to help her complete a circumpolar voyage.

My initial interest in the voyage, given the origin of the vessel, was tinged with a little surprise at not receiving any pre-briefing from interested government agencies. I was curious, but not deterred. But that must have been nothing compared to the surprised curiosity of the other party who, having requested some technical assistance, found themselves playing host to a retired Rear-Admiral of the Royal Canadian Navy (RCN)!

So let me tell you how it went.

## **Background to Arctic Navigation**

Canada's Arctic territorial sovereignty has long been established and, apart from the trivial exception of Hans Island, is unchallenged. The same cannot be said of the sea areas between the islands, which are subject to the evolving customary law of the sea, clarified and elaborated by the UN Convention on Law of the Sea (UNCLOS III, 1985). Historical arguments and UNCLOS III form the basis of Canada's claim over Arctic waters, but these are not recognized by our closest neighbour, among others. For reasons of geostrategic mobility, the United States defines the Northwest Passage (NWP) as an international strait and asserts its right of unfettered 'transit passage.' Until recently, Canada and the United States have 'agreed to disagree' on this matter and, through the mechanism of the 1988 Arctic Cooperation Agreement (ACA), we have managed occasional transits of US Coast Guard ships 'without prejudice' to our respective positions. Routinely, such voyages are also managed under the mechanism of Marine Science Research requests (MSR) through the Department of Fisheries and Oceans (DFO).

A few things have happened recently to disturb this delicate balance. First, the verifiable diminution of summer Arctic sea-ice cover has renewed expectations of ice-free (or at least open water) sailings of the NWP and Russian Northern Sea Route (NSR) some time in this century. Interest in this accelerating trend has drawn more countries to launch scientific expeditions to examine this 'canary in the coal mine' of global climate change. Second, both Russia and China are building their militaries by developing capabilities and dispositions that generate fears that the Arctic will be militarized. This is most clearly the case with Russia, which arguably has the most coastline and existing Arctic trade to defend, and therefore the most justification for enhanced capability in this area. But China is quickly gaining capability and defines itself as a 'near Arctic' power. As well, China's aggressive manoeuvres in the South China Sea (SCS) in the last few years have generated fears that similarly excessive claims or obstructive behaviour might follow a greater Chinese involvement in Arctic affairs.

By the time I landed in Nuuk, I was aware that the Chinese had applied for permission to conduct research along *Xue Long*'s passage and had arranged to take three Canadian government representatives onboard. These were two hydrographers from the Canadian Hydrographic Service (CHS) and the DFO National Manager responsible for overseeing foreign MSR requests, so at least this voyage had an overt scientific object.

# **Underway** Again

I landed in Nuuk at dinner time on 26 August, happy for the bright evening sun to dispel the gloom of my 10-hour layover in drizzly Reykjavik. At this point my embarkation details were not yet fixed. I had not been engaged early enough to join the CHS/DFO representatives who did a boat transfer from a Canadian Coast Guard (CCG) ship in international waters off the coast of Greenland a couple days earlier. Nor was it likely that the Chinese would pay for an expensive charter helicopter flight to the ship offshore. So I had a couple days to spare while the ship's Greenland agent worked out the details of diplomatic clearance and pilotage. This gave me time to review what I knew of the ship.

*Xue Long* was built by the Kherson Shipyard in the Ukraine in 2013, for service on the NSR. Later she was acquired by the Chinese for resupply of their Antarctic



Nigel Greenwood and Ice Forecaster Li Chunhuan (left) brief Captain Quan Shen (right), in charge of China's icebreaker program, on ice conditions along the route. 31 August 2017.

science bases, a job she is well suited for by virtue of her cargo-carrying capacity. She carries a crew of 34 but can accommodate up to 128 with scientific staff onboard. *Xue Long* is a relatively large ship (15,353 GT; 21,025 tonnes displacement), 167 metres long, 22.6 metre breadth and drawing up to 9 metres of water. She is propelled by a single diesel-driven screw, allowing open water speeds up to 18 knots. Her assigned Chinese ice-class is CCS B1\*, which gives her capability to break through 1.1 metres of ice at 1.5 knots. This translated to Canadian Type A on the Certificate of Compliance with the *Arctic Waters Pollution Prevention Act*. The correspondence between foreign and Canadian ice-classes is not always exact, and in this case the assigned class was probably low; that is, on the safe side.

By 29 August the diplomatic clearance was obtained and I was embarked by boat in the sound just off the Nuuk waterfront, where Xue Long arrived under the close watch of a Knud Rasmussen-class Danish patrol boat. As we got underway from Nuuk, I quickly made the acquaintance of my Canadian colleagues. The DFO representative, Jennifer Vollrath, was particularly pleased to see me - she related her surprise that the ship's officers had indicated an intention to go through Parry Channel, the main westward axis of the NWP comprising Lancaster Sound, Barrow Strait, Melville Sound and M'Clure Strait. The western reaches of this route are most often heavily encumbered by hard multi-year ice throughout the navigation season and would certainly exceed Xue Long's iceclass. Accordingly, after discussion with the Captain, I recommended a series of tracks through 'Route 3' which is the most common route from Lancaster Sound down Peel Sound to Franklin and Victoria Straits and then west under Victoria Island to Amundsen Gulf and the Beaufort Sea. I passed a set of waypoints to the Second Mate, and later verified that they had been faithfully entered into the

electronic navigation system and also plotted on paper charts as the ship's planned track.

The Ice Navigator's role onboard is generally not to conduct the navigation or even to advise on purely navigational matters in the manner of a coastal pilot. Rather, he (or she) is embarked to advise on ice conditions, assist in identifying different types of ice, and to advise the Captain with respect to ice avoidance and, if necessary, safe manoeuvring within the ice. It was clear that the Captain did not fully appreciate the distinction between Pilot and Ice Navigator, as I was asked on several occasions to verify the safety of our route, particularly in the ice-free waters of Cache Point Channel, the narrowest part of our passage. It should be understood that there is no coastal pilotage established for Canada's Arctic waters and I am not a qualified pilot, although a naval navigation specialist by training. But I did have previous experience on this route so I was able to put the Captain's mind at rest.



On 2 September 2017 members of the crew of **Xue Long** have their photos taken in Lancaster Sound with Devon Island to their backs.

The initial part of the ship's voyage through the NWP took us across Baffin Bay and past the community of Clyde River to a position off the northeast coast of Baffin Island. In this vicinity for a day we ran a number of parallel survey lines in deep water outside of the ice edge. This was a cooperative endeavour between the ship's scientific staff and the two embarked CHS hydrographers to gather multi-beam sonar data to supplement CHS's bathymetric database. Occasionally the ship would stop to calibrate its equipment with a Sound Velocity Profile (SVP) cast, but otherwise the passage was 'continuous and expeditious.' Some suggestion has been made that the ship passed inexplicably close to the site of Canada's experimental Northern Watch surveillance site at Gascoigne Inlet, but there is no merit in that suspicion: the ship followed my tracks westbound, biasing the starboard side of Lancaster Sound and occasionally adjusting for ice avoidance, but otherwise executing the passage without diversion. Likewise, the suggestion of *Xue Long* charting potential submarine routes is without foundation: the route we took was too shallow at one point for any submerged transits, and this much would have been amply evident from the most cursory examination of open-source navigational charts.

My daily routine generally involved a morning discussion of the route and anticipated ice conditions with the Captain and the representative of the Chinese National Marine Environmental Forecasting Centre. Actually there appeared to be two Captains onboard: the ship's current Master (Captain Zhu Bing) and a senior Captain (Vice Chief Engineer Captain Quan Shen) in charge of the new icebreaker building program. It was with the latter that I had several discussions regarding the requirements for passage through the NWP, reporting to NORDREG, and the functions of the Arctic Ice Regime Shipping System (AIRSS) which governs access to Canada's northern waterways.

Surprisingly, the senior officers seemed completely incurious about my background and former rank. I was not probed about Canada's armed forces or surveillance of the North. Indeed, in some ways they did not have to, for it was evident: nearly every day we were hailed by some government vessel or aircraft. It started with radio calls from a CP-140 Aurora aircraft in Baffin Bay, followed by hails from HMCS *Kingston* in Lancaster Sound, HMCS *Edmonton* off Cambridge Bay, and over-flights of miscellaneous patrol aircraft of both the Royal Canadian Air Force (RCAF) and Environment Canada in Larsen Sound, Victoria Strait, Dolphin and Union Strait, and the Beaufort Sea. In addition we spoke to two Canadian Coast Guard icebreakers and several other ships en route to exchange ice conditions. Given the limited English of the bridge



The author poses with **Xue Long**'s Captain Zhu Bing on the ship's bridge.

watch-keepers, I generally managed these communications if it appeared that language difficulties would impair understanding. It was clear from Transport Canada's occasional prompts to update track and AIRSS intentions that they also were following our progress carefully.

While the senior officers of the ship were friendly and professionally focused, the junior members evinced more blatant curiosity. It started with gentle, naïve questions that were easy to answer: yes, I had been a naval officer; yes, I had been a Captain; yes, I had fired weapons. Then came the skill-testing questions: could I demonstrate the use of the sextant? How did I plot a fix on the chart? The mate most active in these questions was somewhat of a naval aficionado: he wore an olive-green flight jacket festooned with patches of various cruises. But his quizzing was politely constrained and stopped once he had satisfied himself that I really was a navigator!

Most of my discussions on the bridge were with the two Captains and the Ice Forecaster. I lent the latter my copy of the National Research Council book Identifying Old Ice *in Summer*, and talked her through the key indicators. For all of them I explained the functioning of the AIRSS riskassessment guide to navigating in ice, emphasizing that complying with this guidance was a condition of passage through the NWP other than conforming to the older, more restrictive Zone-Date system of limited navigational windows for ships of different ice-classes. It quickly became apparent that the two Captains had a view of the ship's ice capability that exceeded the limits of a Type A. Captain Zhu Bing related that the ship had maintained eight knots through two metres of ice across the Russian North and had at one time experienced up to four metres of ice. It took several sessions of explaining AIRSS to get them to accept this as a formal risk-assessment guide to be

used for their benefit in providing freedom of movement in the NWP, and that my advice would be shaped by the constraints of their assigned ice-class.

Throughout the voyage I was constantly impressed by the ship's connectivity to the internet. This was not only evident by my own ease in accessing the Canadian Ice Service's products through the ship's wifi, but was manifest in the evening migration of crew members to the bridge in order to call home to Shanghai on their cellphones. This gave me the opportunity, as in the mess hall, to size-up the crew. The total onboard for this voyage was 97, with about two-thirds of those being scientific staff. Many of the crew were young (20s, early 30s) and about 30% of them were female. Strangely, the scientific staff seemed more regularly and consistently attired in the grey-blue uniform and red jackets of the CHINARE<sup>1</sup> than the crew. Only occasionally did I see the ship's officers in uniform, events usually associated with photo opportunities. The Captain himself was normally in very casual civilian clothes and once when he was more splendidly uniformed in whites, he explained ruefully that he had to appear on a video-linked media interview.

The senior officers and bridge watch-keepers had a tentative working grasp of English, but otherwise communication was rather limited. This did not stop the crew from engaging me to their full capacity on the bridge or in the mess. When having more technical and detailed discussions with the Captains, and in addressing the 'Arctic University' (an all-hands brief on Arctic history, operations and sovereignty that I gave in the ship's lecture room to a crowd of about 60), a translator rendered my words into Mandarin. The ship's doctor, doing a locum from his day job as a trauma surgeon in Shanghai, was particularly proud to share with me his few words of French. This officer was also my guide to the unrecognizable pleasures of the mess hall. Food was served buffet-style in a large mess seating almost the whole crew at once. It consisted of a bewildering and plentiful array of very traditional cuisine, ranging from perfectly bland steamed rolls to exciting Schezuan curries. I was able to stomach the curried pigs' intestines, but at the point that the doctor was unable to identify a dish and declined it, I followed his lead.

On 3 September *Xue Long* experienced the heaviest ice of her transit of the NWP, just south of Bellot Strait. Earlier in the day we had passed two yachts and a tug in a bay in the vicinity of Cape Eyre, and at 0800 we sighted south of the Tasmania Islands the CCGS *Sir Wilfrid Laurier* (out of Victoria), which later passed within a couple miles of us. By 1000 we had slowed to five knots to enter a regime of 5-6/10ths of Old and Thick First Year ice.<sup>2</sup> Momentarily there was great excitement on the bridge as two polar



Xue Long encounters heavy ice in Victoria Strait. 3 September 2017.

bears were sighted on the ice about a mile to starboard – no knowledge of Mandarin was required to understand the sentiments of the crew members who flooded the bridge to get a fleeting glimpse!

From this point on we navigated carefully down the east side of Larsen Sound, Franklin Strait and Victoria Strait, endeavouring to stay in ice regimes of less than 5/10ths concentration. CCGS Des Groseilliers was spotted by radar and Automatic Identification System (AIS), escorting MV Rosaire des Gagnes, one of the ships out of Montreal that is tasked with resupply of northern communities. As the day worn on, the visibility diminished periodically in fog and mist and, with the equinox approaching, night descended so that navigation by searchlights was necessary. Eventually a full moon rose to the south, reflecting off the dead calm sea to illuminate the ice ahead of us. By 1900, we had exited to open water with only occasional ice in small remnants. Skirting some more ice to starboard and detouring east of Jenny Lind Island to avoid ice in Icebreaker Channel (naturally!), this was the last ice with which we had to contend until we reached the Beaufort Sea on 6 September.

### Scientific Cooperation Suspended

On the morning of 4 September we were overflown by an Environment Canada surveillance aircraft and shortly afterwards we were hailed by HMCS *Edmonton*, requesting us to heave-to and be ready to disembark our Canadian scientists. This came as a complete surprise to my colleagues who had anticipated staying to disembark at Sachs Harbour on Banks Island just as we exited the NWP. A few hasty satellite phone calls to Ottawa by the DFO representative confirmed that this was indeed the order, much as it seemed to conflict with the objective of partnering with the Chinese scientists throughout Canadian waters. So, with some misgivings, my Canadian colleagues quickly collected their things and departed. This episode caused some consternation among our hosts, and then some amusement: the authoritative voice that had announced itself as 'warship Edmonton' came chugging out of Cambridge Bay an hour later in the form of a diminutive patrol ship totally devoid of any visibly threatening armament. The Captain of *Xue Long* interrupted his intelligence collection long enough to turn to me, with some mirth, to query: 'this is a warship?!' For once, the missing 40mm Bofors might have been more effective than a 50-calibre gun.

Once the awesome Arctic presence of the RCN had departed, we resumed our voyage with me now the sole Canadian onboard (but not acting as a representative of the Canadian government). Early on 5 September we passed through Cache Point Channel, the narrowest part of our passage. Recalling the senior Captain's concern, I made a point of being on the bridge to verify the navigation. The mate on watch was able to show me the parallel index function on the ship's (American) Sperry radar, but it was not clear that he was either experienced in its use or inclined to employ it. I did this for him and proved the accuracy of the GPS in this singularly critical part of the navigation.

Safely past this challenge, we continued in ice-free waters until encountering the Beaufort ice-pack west of Banks Island late on 6 September. We had our last communication with our shadow at this point, with Canadian Patrol Aircraft 111 calling at 1030 to wish *Xue Long* 'best wishes for your return voyage to home port.' After about five hours of transiting loosely scattered second- and first-year ice, we regained open water and headed northwest for a series of CTD drops (a water-sampling process for oceanographic analysis), having exited the NORDREG area in the early hours of 7 September.



"All hands to dumpling stations" in the Dolphin and Union Strait.

## Arctic Basin and Alaska

Over the next few days we worked our way steadily west to a position about 76 N 170 W, in which general area we ran parallel survey lines for the succeeding seven days. During this time the days got progressively darker with the approach of the equinox, aided by the disorienting daily retarding of clocks to achieve Beijing time well ahead of the anticipated return to home waters. From 9-19 September the ice edge as reported by the Alaska Sea Ice Program (ASIP) continued to migrate north to its seasonal minimum extent. It was clear that the season was about to turn, however, as we had several days of high winds, with negative temperatures and blowing snow.

During this period one of the scientists fell down a ladder and broke his arm, necessitating some discussion with the US Coast Guard (USCG) regarding possible options for disembarking. As this request was managed through the ship's agent in Nome, there was some misinterpretation of requirements, resulting in a preliminary plan to stage a helicopter medevac off Kotzebue. The urgency of the matter did not require such efforts so we were again directed to our initial destination of Nome, Alaska, where the USCG would meet us with a boat transfer. En route to this rendezvous we were hailed by both USCGC *Alex Haley* with a detailed query, and also by the Russian Border Services. As we had taken care to remain on the US side of the demarcation line in the Bering Strait, we ignored the latter.

Finally we arrived at Nome, where we were made to anchor 15 nm off the port, a seemingly excessive measure of security for the announced landing of three persons. During this procedure *Xue Long* was subject to intense scrutiny by USCG boat, ship and helicopter assets, which were in turn just as closely observed from the Chinese side.

## Silence and Arctic Rumblings

In the two years since I finished the *Xue Long* voyage I have often wondered what it meant, either to the Chinese or to the Canadian government (which had spent some effort to track the ship). Had Canada been satisfied that this was a benign voyage, free of a hidden Chinese agenda for the North?

Perhaps the situation would be different now. Many countries have responded to projections of an ice-free Arctic with renewed efforts in polar research, and eco-tourism expeditions have also continued to add to the traffic in the North. Canada, China and the United States have either launched or announced plans for new icebreaking vessels, while the export of liquified natural gas from the Russian Yamal gas fields in very strongly ice-capable tankers has set a new bar for independent cargo-carrying operations on the NSR. And the increasing military capability and focus of several Arctic states (and 'near Arctic' states) has been conflated with incipient competition and conflict. The last, particularly, has been given credence by the increasingly aggressive postures of China and Russia, both in diplomatic behaviour and in practical operations in their own areas of interest. Is any of this a threat to Canada's sovereignty in the NWP?

Strangely, it is Canada's southern neighbour which seems most intent on upsetting the status quo in this respect. The words of the US Secretary of State at the Arctic Council of early May 2019 seemed to repudiate publicly the accommodation arrived at with Canada in the 1988 Arctic Cooperation Agreement. He starkly characterized the Canadian claim on the NWP as 'illegitimate' and, while avoiding the term 'climate change,' he suggested the steady retreat of sea ice would enable Arctic trade routes to rival the Suez and Panama Canals. Previously on several occasions the Secretary of the Navy has spoken of freedom of navigation patrols (FONOPS) in the NWP, and shortly before the Arctic Council meeting had reiterated this intent in terms that made clear he had not just misspoken.



On 22 August 2017 HMCS **Edmonton**'s crew secure lines as the ship departs Nome, Alaska. In around two weeks' time, they rendezvous with **Xue Long**.



Xue Long lies at anchor off Nome, Alaska, on 23 September 2017 at the conclusion of its westbound voyage through the Northwest Passage.

Canada has appreciated for some time that the US agenda for global engagement through strategic maritime mobility requires it to challenge the limiting claims of some coastal states. While not signatory to the UN Convention on Law of the Sea, the United States relies on navigational demonstrations to establish and defend rights of transit through customary maritime law. The NWP is thus seen in some ways as a test case for the access that the US Navy seeks to guarantee elsewhere. But it is hard to see merit in the newly aggressive US stance regarding the NWP. Is this a matter of 'killing a chicken to scare the monkeys,' to use a Chinese proverb? As Winston Churchill might have said: some chicken ... some monkey! The Russians and Chinese might be amused to see the United States dominate its closest ally and trade partner, but they know that such exercise of US geopolitical realism does not represent the higher stakes at play in their own part of the world.

So will we see a FONOP in the NWP shortly and, if so, conducted by whom? For many reasons, this is fraught with great practical and diplomatic risk. The possibility of failure to pass through and the likelihood of incurring damage to a thin-skinned warship could be seriously embarrassing, and more so if (Canadian) icebreaker services are called upon to extricate the ship from a difficult situation.

But let us say that the FONOP is conducted and Canada does not successfully oppose this, either practically or diplomatically. What will be gained? Will China and Russia rejoice in further damage to the spirit of cooperation among Western states, or quietly and gratefully accept that the United States has just delivered a *laisser-passer* for their own nuclear submarines to transit the NWP? Either way, they are unlikely to modify behaviour with respect to their own core interests on the basis of this marginally relevant demonstration. And the United States will have impaired North American collective defence for no clear gain. Once again, Barbara Tuchmann could be adding examples to her thesis in *March of Folly*, in which she documents various states' pursuit of policies contrary to their own interests.

As the 2019 northern navigational season starts, I reflect upon this voyage of Xue Long and what has happened since. The record-breaking voyage of Crystal Serenity in 2016 encountered very little ice, while setting a new bar for numbers of luxury cruise passengers transiting the NWP. The subsequent voyage in 2017, just before Xue Long's, encountered much more ice but if the ship had attempted this the year after it might have been disappointed in a different way: 2018 was the 11th heaviest ice coverage in Victoria Strait in 50 years and very few NWP transits were completed that year. So the consequences of global climate change, although undeniable (by most people!) and verifiably dramatic in the Arctic, are by no means reliably progressive on a year-by-year basis. This means that Arctic navigation will continue to be challenged by uncertainty, serious risks and danger for those unprepared for the variable, harsh and austere environment.

#### Notes

- 1. This is the abbreviated expedition name used by Chinese Arctic and Antarctic Administration for both the Arctic and Antarctic.
- 2. Ice 'regimes' are characterized by concentration (in 10ths of surface coverage) and type. Thick 'First Year' ice is full-season growth up to about 1.7 metre thickness. Ice that survives one summer becomes 'Second Year' and after another summer 'Multi-Year' ice. Second Year and Multi-Year ice (both 'Old') is not only thicker but becomes less saline, and thus harder and more dangerous. 6/10ths SY/TFY ice is about the limit of *Xue Long*'s Type A assigned ice-class.

Nigel Greenwood is a retired naval officer who previously served as Deputy Commander of the RCN and until 2012 as Commander Maritime Forces Pacific. He is a licensed Master Mariner who, apart from ice navigation, consults in operational risk assessment under the banner of Greenwood Maritime Solutions Ltd.

# Bolstering Community-Based Marine Capabilities in the Canadian Arctic

Peter Kikkert and P. Whitney Lackenbauer



Although Canadian Rangers are often visualized as being on foot and on snowmobiles, they also employ a variety of small watercraft in the summer months. Here, Rangers patrol waters near Clyde River in August 2018.

The June 2019 Special Senate Committee report on the Arctic, *Northern Lights: A Wake-Up Call for the Future of Canada*, recommends that "the Government of Canada enhance maritime and aerial situational awareness of the Canadian Arctic, including improving the icebreaking capacity of the Canadian Coast Guard, and equipping the Canadian Rangers with marine capabilities."<sup>1</sup> This recommendation flows from the committee's emphasis on the effective enforcement of Canadian regulations in the Arctic. The insistence on equipping the Rangers with new marine capabilities, however, is rather peculiar given that the organization garners only one other mention in the 138-page report.

Over the past decade, various commentators and federal committees have recommended tasking the Rangers with a wide range of marine roles, ranging from search and rescue, to oil spill response, to marine law enforcement.<sup>2</sup> In April 2009, for example, the Standing Senate Committee on Fisheries and Oceans recommended that the military should make the Rangers "an integral part of the Canadian reserves" and provide them with a "marine capability."<sup>3</sup> Colonel (Retired) Pierre Leblanc, Commander of Canadian Forces Northern Area (now Joint Task Force

North) from 1995-2000, has been the most adamant in insisting on the need to "provide the Canadian Rangers with a maritime role." In February 2018 he advised the committee (which was investigating maritime search and rescue (SAR)) that the Rangers could "increase our SAR capabilities but also act as first responders to report illegal fishing, initiate action on marine spills and provide a sovereignty presence throughout the Arctic." He advised that giving the Rangers a marine role should be one of the top priorities of the Canadian government to increase SAR capabilities in the region.<sup>4</sup> On several occasions he has suggested that "we could quickly, and at little cost, train and equip Ranger patrols along the Northwest Passage with a respectable sea-capable vessel like the Rosborough boats that are being used by the Department of Fisheries and Oceans."5 Senator Dennis Patterson, who chairs the Special Senate Committee on the Arctic, has echoed Leblanc's appeals for an expanded maritime role for the Canadian Rangers, suggesting that they could perform the roles mentioned above, as well as serve in national parks, marine protected areas, assist with the collection of scientific samples, and act as "first responders" in support of whatever else federal departments might require in the marine domain.6

The argument that the government should give the Rangers a maritime role in the Arctic overlooks an obvious and important fact: the Rangers already operate in the maritime domain, by boat in summer and by snowmachine in winter. Furthermore, recommendations to expand the Ranger maritime role tend to miss and even undermine the attempts by the Canadian Coast Guard, the Nunavut Inuit Monitoring Program and the Guardians initiative to bolster community-based marine capabilities and local maritime domain awareness.

## The Ranger Maritime Role

Currently, the Canadian Rangers perform several roles in the maritime domain as part of their broader mission as the "eyes, ears, and voice" of the Canadian Armed Forces (CAF) in northern coastal communities.<sup>7</sup> The official Ranger tasking list includes coastal and inland water surveillance, and during training exercises Ranger patrols often use boats to travel between destinations. While on the water, the Rangers report unidentified vessels, any unusual activities or sightings, and collect local data for the CAF. If the conception of the maritime domain is expanded to include the months that the Arctic waters are covered in ice, Ranger activity in a marine operating environment becomes even more impressive.

Kugluktuk Ranger Sergeant Roger Hitkolok would be shocked to hear that the Rangers do not have a maritime role, given his patrol's regular activities on the waters of the Canadian Arctic. Last summer, he led his Rangers on



Canadian Rangers Corporal Tom Epakohak and Sergeant Jimmy Evalik guide Fisheries and Oceans researchers on a research trip near Cambridge Bay on 18 February 2017. The Rangers also assist the scientists in gathering oceanographic data.

a boat patrol from Kugluktuk to Victoria Island to track vessels moving through the Northwest Passage. In August and September, 1st Canadian Ranger Patrol Group deployed over 50 other Rangers from patrols across Nunavut and the Northwest Territories (NWT) to monitor the passage.<sup>8</sup> Hitkolok and the Kugluktuk Rangers also use their personal watercraft to perform annual checks on the North Warning System (NWS) station situated on southwestern Victoria Island near Lady Franklin Point. As part of the Canadian Ranger Ocean Watch Program (established in 2011), the Kugluktuk patrol has acted as guides and collected samples for Fisheries and Oceans Canada researchers carrying out oceanographic research in the region – an example of the kind of scientific monitoring that Ranger patrols often undertake on the waters and ice of Canada's Arctic.9 Several Rangers from the Kugluktuk patrol have also participated in oil spill and environmental response training over the last decade which they have received during Operation Nanook or through the annual training patrols conducted in the communities.

Rangers employ their own vessels for open-water patrolling during the summer and fall for which they receive cash reimbursement according to an established equipment usage rate. In employing their own watercraft, they are fulfilling the Canadian Rangers' primary mandate, which is to "provide lightly equipped, self-sufficient, mobile forces in support of the CF's [Canadian Forces] sovereignty and domestic operation tasks in Canada."10 Furthermore, by encouraging individuals to invest in their own equipment (rather than government-owned assets), this allows Rangers to procure appropriate vessels and vehicles to operate in their home environments while representing a material contribution to local capacity-building. Providing Rangers with Canadian Armed Forces-owned boats would not only add a tremendous (and unnecessary) logistical burden on the military, it would also undermine the guiding philosophy that Rangers are best suited to make their own decisions about what they need to operate comfortably and effectively across diverse northern environments.

In short, although the Rangers are primarily a land-based organization, they have long played an active role in the maritime domain. With unique terms of service that allow them to strike a balance between military and community contributions, they are relevant members of the defence team. They have extensive experience operating in austere conditions and are willing to share their local and traditional knowledge about lands and waters, whilst providing practical support for activities in what many southerners consider to be 'extreme environments.' As members of their local communities, the Rangers also represent an important source of shared awareness and liaison with community partners and, by virtue of their capabilities and location, regularly support other government agencies in responding to the broad spectrum of security and safety issues facing isolated communities.<sup>11</sup> Despite calls for the Rangers to take on more law enforcement and regulatory-type duties, the Canadian Armed Forces have been clear that they have "no intention to assign any tasks to the Canadian Rangers that have a tactical military connotation or that require tactical military training, such as naval boarding."12 Other CAF elements are better trained to perform support to law enforcement functions (where they fall within the National Defence Act), which Rangers have indicated that they did not sign up to undertake,<sup>13</sup> and may be better performed by other organizations.

# The Canadian Coast Guard Auxiliary and Marine Search and Rescue Societies

General proposals insisting on the need to expand the Ranger maritime role typically fail to recognize the Canadian Coast Guard's efforts to build up community-based Auxiliary (CCGA) units and bolster marine SAR societies in the Canadian Arctic. Marine SAR units have existed in the North for decades, comprised of emergency management personnel, the RCMP and other community volunteers.<sup>14</sup> The first CCGA units – which are made up of local volunteers who use their own vessels or a community vessel to respond to emergencies – were established in Yellowknife and Hay River in the late 1980s. Under the leadership of Jack Kruger, a former RCMP officer who had served in NWT and Nunavut, the Auxiliary expanded to Inuvik, Aklavik and Tuktoyaktuk in the 2000s, and has started making inroads in the eastern Arctic.<sup>15</sup>

In late 2001, the government of Nunavut's Department of Community Government and Transportation secured \$645,000 in funding to establish 30 CCGA units across Nunavut over three years, each with two or three local vessels and five or six trained members per vessel.<sup>16</sup> While this goal proved overly ambitious, the program successfully established units in Cambridge Bay, Rankin Inlet, Pangnirtung and Kugluktuk. Members of the Auxiliary receive insurance coverage and reimbursement of certain operational costs, but must fundraise to purchase the required equipment (e.g., personal flotation devices, GPS and radios), although the CCG has transferred surplus assets to several Arctic units (e.g., in 2014 it transferred a 17-foot Boston Whaler and 90 horsepower outboard motor to the Cambridge Bay Auxiliary).<sup>17</sup> While some units have struggled with membership, finding suitable vessels and funding safety equipment, they have provided invaluable SAR services to their communities.

Pursuant to the Oceans Protection Plan's emphasis on improving marine safety, the CCG has been actively expanding the auxiliary in the Arctic and bolstering the capabilities of marine SAR societies since 2016. Currently, there are 15 community-based CCGA units active in the North, with over 200 auxiliary members and 25 vessels, with plans to create new units in additional communities in 2019.<sup>18</sup> Based on the understanding that communities often struggle to identify and equip a vessel suitable for SAR missions, the Oceans Protection Plan has also established a four-year Indigenous Community Boat Volunteer Pilot Program to provide vessels and equipment to Auxiliary units. To date, boats have been constructed for Cambridge Bay (\$270,311), Gjoa Haven (\$222,187), Rankin Inlet (\$221,572) and Ulukhaktok (\$274,217) which will be delivered in summer 2019, and others have been ordered for Kugluktuk and Tuktoyaktuk. Additional funding has also been provided to other communities for equipment and vessel improvement.19

The CCGA's primary role is maritime search and rescue. The vast majority of SAR incidents in the North occur while people are either hunting or fishing, or travelling between communities, which is reflected in the missions with which auxiliary units have been tasked to date.<sup>20</sup> Units are also preparing to respond to growing marine activity throughout the Canadian Arctic - from pleasure craft, to fishing boats, to cruise ships.<sup>21</sup> Furthermore, Auxiliaries upload all of their vessel, equipment and membership information through the CCGA's SAR Management System, an automated database that collects unit data and tracks all official activities. Consequently, when Joint Rescue Coordination Centres require the services of an auxiliary, they can quickly identify with whom they are dealing and the capabilities a unit possesses, thus streamlining and improving the organizational and coordination requirements to conduct a successful SAR mission.<sup>22</sup>

Beyond search and rescue, CCGA members also assume various roles that bolster marine safety and enhance community resilience more generally. For example, they have supported governmental efforts to expand the number of aids to navigation and establish VHF repeater systems in the region, often deploying the physical infrastructure.<sup>23</sup> Auxiliary units have participated in military or wholeof-government operations such as *Nunakput* and *Nanook Tatigiit.*<sup>24</sup> On their familiarization and training patrols, some Auxiliary units also inspect the water around transiting ships to check for signs of leaks or waste, and strive to improve maritime domain awareness more generally.<sup>25</sup> In 2004, for example, Auxiliary members from the NWT and members of the RCMP travelled from Inuvik to Herschel Island and across the Beaufort Sea into Alaska, on



Canadian Rangers operate on the ocean near Clyde River in August 2018 amidst icy waters. The photos were taken and provided by P. Whitney Lackenbauer, one of this article's authors.

what they labelled the "first operational patrol in this part of the world since the *St. Roch*" (an RCMP schooner that transited the Northwest Passage during the Second World War).<sup>26</sup> Finally, CCGA members seek to educate their communities about safe practices, potential marine hazards and, because of the Coast Guard's 'train-thetrainer' program, some are able to mentor and train new Auxiliary members. These activities enhance the capacity of northerners to respond to maritime incidents in their waters.<sup>27</sup>

# Nunavut Inuit Marine Monitoring Program and the Guardians

Calls for an expanded Ranger maritime role should also be cognizant of efforts by Indigenous organizations to bolster local marine capabilities in the Arctic, including the Inuit Marine Monitoring Program (IMMP) and the Guardians program. Through these programs, Inuit are taking the lead on monitoring and protecting their waters, while adding additional layers of capability to respond to potential emergencies and SAR incidents.

Under the direction of Nunavut Tunngavik Incorporated and with support from the government of Canada, the Nunavut IMMP is an Inuit-led initiative that aims to collect information on shipping activities in the region that is relevant and useful to communities. The project is working to establish a terrestrial Automatic Identification System (AIS) network in Canada's Arctic, similar to that utilized by the Alaskan Marine Exchange, which represents a new way to track and monitor vessels. The IMMP also employs Inuit Marine Monitors during the shipping season to observe vessel activity and report on environmental conditions and wildlife. The information that the IMMP collects will be "shared with Nunavummiut to inform residents about shipping activities and develop policies that include more Inuit involvement in shipping management."<sup>28</sup>

The Indigenous Guardians program in Nunavut, which is based on an Australian model, "supports Indigenous land management and oversight in their territories based on a cultural responsibility for the land."<sup>29</sup> In 2016, Inuit community members on the Franklin Interim Advisory Committee suggested the creation of an Inuit Guardians program for the Wrecks of HMS *Erebus* and HMS *Terror* National Historic Site. From the end of July to freeze-up, Guardians camp near the sites to monitor and protect the ships and the environment, and notify vessels that get too close to the protected waters. While on-site, the Guardians also facilitate research, conservation and tourism activities, and offer an emergency response capability to any accidents or SAR activities that occur in the surrounding area.<sup>30</sup>





In the eastern Arctic, the Qikiqtani Inuit Association (QIA), with the support of Parks Canada and the government of Nunavut, has established a Guardians program to monitor and manage the Tallurutiup Imanga National Marine Conservation Area (Lancaster Sound) – the Arctic Bay Nauttiqsuqtiit.<sup>31</sup> Called 'the eyes and ears of Tallurutiup Imanga,' the six Nauttiqsuqtiit now monitor sea ice and ship traffic near Arctic Bay, report on environmental conditions, act as cultural liaisons and interpreters, gather Inuit Qaujimajatuqangit (traditional knowledge), harvest food for their community and provide SAR assistance. After a successful first season, the QIA is now trying to establish chapters in Grise Fiord, Resolute Bay, Pond Inlet and Clyde River – the other communities bordering the 109,000 square kilometre conservation area.<sup>32</sup>

# Strengthening Community-Based Capabilities

Commentators and committees urging the federal government to expand the maritime role of the Canadian Rangers must be aware of the roles that Rangers already perform in the marine domain and of the mandates and missions of complementary community-based organizations operating in the North. There is scope within the Rangers' existing orders and directives to extend the frequency or scale of sovereignty and surveillance patrols that they conduct. Rangers should also continue to train for various roles that they might play in a mass rescue operation or mass casualty event in the Arctic maritime domain. These areas of emphasis do not require a 'new' maritime role, and should not be used as the basis to change the established practice of having the Rangers use their own boats and snowmachines to operate in the maritime domain – a practice that enables Rangers to invest in their own equipment and tools, appropriate to their local environment, which they can then use in their everyday lives without having to ask the government for permission. Government initiatives must also be cognizant of the multiple hats individuals often wear in northern communities (many serve as Rangers, in the CCGA, with ground search and rescue, etc), and avoid actions that unnecessarily add to their burden by duplicating or expanding roles, responsibilities and training requirements.

In its brief to the Special Senate Committee on the Arctic in March 2019, the Inuit Circumpolar Council asserted that "Inuit are always the first to respond to an emergency, and in doing so with limited training and resources they risk their own safety and security." Accordingly, the council urged the federal government "to enhance search and rescue and emergency protection infrastructure and training in Inuit communities."<sup>33</sup> Rather than focusing on expanding the Rangers' mission so that they can act as



Corporal Qaraq Ookookoo, a Ranger from Pond Inlet, travels to base camp located on Little Cornwallis Island, Nunavut during **Operation Nunalivut** on 7 April 2016.

a cure-all to the perceived gaps in Canada's maritime capabilities in the Arctic, government officials should focus their efforts on ensuring that the myriad groups already active in the maritime domain improve their interoperability so that they can work together during emergencies.

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Peter Kikkert is the Irving Shipbuilding Chair in Arctic Policy at St. Francis Xavier University.

P. Whitney Lackenbauer is the Tier 1 Canada Research Chair in the Study of the Canadian North at Trent University and Honorary Lieutenant-Colonel of 1<sup>st</sup> Canadian Ranger Patrol Group.

# China's Mahanian Arctic Ambitions: Second Thoughts

# Adam Lajeunesse



MS **Statendam** as seen from MS **Oosterdam** in Glacier Bay, 13 June 2011. The majority of maritime traffic increases in Canada's North will be destinational like these cruise ships, rather than transit voyages by cargo ships.

In recent years dramatic physical changes in the Arctic, combined with growing great power tensions around the world, have led to a reassessment of the Arctic's value and role as a strategically competitive space. That was the overarching message of the US Coast Guard's recently released *Arctic Strategic Outlook* and the US Secretary of State's remarks to the Arctic Council in May 2019.<sup>1</sup> Part of this newfound concern stems from the emergence of an increasingly capable China as an actor in the region.<sup>2</sup> Defining China's Arctic interests is to see through a looking glass darkly, parsing meaning from limited sources and guessing at intent by predicting future capability.

One of the most recent appraisals of China's polar maritime ambitions comes from political scientist Rob Huebert in the Winter 2019 edition of *Canadian Naval Review* (Vol. 14, No. 3). In it, Huebert calls upon the enduring principles of Mahanian seapower to assess the philosophical underpinnings of what he describes as China's inevitable expansion into the Arctic seas. This article is in part a response to Huebert but also an attempt to go further in clarifying Western thinking on what China could realistically hope to gain by Arctic operations, where Mahanian logic fits, and where it runs aground in the ice. The influence of the nineteenth century American strategist Alfred Thayer Mahan on naval thinking is beyond dispute. US Secretary of War Henry L. Stimson once grumbled that, for the US Navy, "Neptune was god, Mahan his prophet."<sup>3</sup> Mahan's holistic theories on seapower have spread globally and the Chinese Navy has enthusiastically embraced the basic principles underpinning this maritime worldview.<sup>4</sup> At its heart, Mahan's theories on seapower revolve around the basic assertion that national



US Secretary of State Mike Pompeo speaks at the Lappi Arena in Rovaniemi, Finland, 6 May 2019, at the Arctic Council Ministerial Meeting.

wealth and power are indelibly tied to the sea. It is over the world's oceans that trade flows, global communications are maintained and armies are moved. Any state denied access to these lanes of trade and communication invariably weakens and decays.<sup>5</sup>

Control of the world's oceans is therefore essential and, for a rising power like China, challenging American (and more broadly 'Western') control naturally fits Mahanian logic. This point underlies Huebert's assertion that the Chinese People's Liberation Army Navy (PLAN) will inevitably gravitate towards the Arctic. Failing to do so, he notes, would mean ceding these areas to foreign states and surrendering "the maritime advantage to their competitors."<sup>6</sup>

Huebert's warning was prescient, anticipating similar US Departments of State and Defense concerns.<sup>7</sup> In May 2019 the Pentagon warned Congress of potential PLAN ballistic missile submarine operations in the Arctic Ocean.<sup>8</sup> That same month, Secretary of State Mike Pompeo delivered an aggressive address to the Arctic Council, in which he warned of Chinese (and Russian) military threats, telling the council that "China's pattern of aggressive behavior elsewhere should inform what we do and how it [China] might treat the Arctic." Rhetorically, he asked "do we want the Arctic Ocean to transform into a new South China Sea, fraught with militarization and competing territorial claims?"<sup>9</sup>

There is no doubt that China's interest in the Arctic has grown considerably. In 2018 it released an official Arctic policy identifying itself as a "Near Arctic State."<sup>10</sup> In 2019 Beijing announced plans for a nuclear-powered icebreaker, second in strength only to those operated by Russia. In predicting China's Arctic interests, analysts and politicians often use its aggressive behaviour in places like the South China Sea as a guide. This is how China behaves there, why not farther north? Huebert's Mahanian framework seems to fit this pattern, assuming China's need for sea control will be global in nature. It is a tidy analysis and even gives a certain inevitability to events. I believe it is too simple an assessment. The Arctic is very different from the South China Sea and those areas over which China clearly aspires to exercise sea denial or even sea control. By ignoring some of these unique elements, Huebert may have over-estimated both the region's strategic value and the potential impact of a Chinese presence - at least as it concerns the West.

The Arctic Ocean is unique amongst the world's oceans today in its isolation. Neither the Northwest Passage nor the transpolar route have become useful avenues for global commerce. For Mahan, trade was the lifeblood of states



The **Seawolf**-class nuclear-powered submarine USS **Connecticut** participates in ICEX 2018, 21 March 2018.

and its safety or restriction through command of the seas the principal objective of seapower.<sup>11</sup> For North American and European states, Arctic trade is of negligible importance. In 2018, for instance, there were only two small vessel transits through the Northwest Passage. The year before was far busier but still limited to three commercial voyages (in addition to leisure and research vessels).<sup>12</sup> Destinational traffic is far heavier but mostly involves community and mine site activity, nothing that would be of strategic importance in a great power conflict.

In the years to come, climate change will continue to open the region and these routes may become far busier. Despite this, the geography of the Arctic makes it a poor candidate for Chinese sea control or denial. As a sea route, the Arctic offers the advantages of time and distance to ships moving between Europe or the US eastern seaboard to Asia. Even in a world of heavy transpolar trade, this commerce would be to or from China – or its neighbours. In times of conflict, trade between the West and China would almost certainly be closed or limited regardless of whether China maintained a presence in the Arctic. Meanwhile, the commerce of China's democratic neighbours could more easily be harassed closer to home if need be.

The strategic importance of the region can also be overstated. As the world's highways, the oceans allow maritime states to deploy warships and soldiers and project power around the globe.<sup>13</sup> The geography of the Arctic minimizes its utility in this regard. Western powers would never use the Arctic as a route to project power against an opponent in Asia. Huebert is also likely mistaken in his assertion that the US Navy has used the Arctic as a haven for its strategic missile submarines.<sup>14</sup> While details on this subject are largely classified, the available evidence suggests that the United States has never felt the need to deploy its ballistic missile submarines (SSBNs) under the ice.<sup>15</sup> Far from a 'safe zone' from which the US Navy might launch ballistic missiles at the Chinese homeland, the Arctic is an area into which Western navies rarely venture.

Naturally, the region's strategic value may increase. That was certainly the message annunciated by Secretary of State Pompeo in his speech to the Arctic Council. Still, it should not be exaggerated. By comparison, even at the height of the Cold War, when the Arctic Ocean separated the competing superpowers and American naval strategy explicitly called for attacks on the Soviet Union from the north, US submarine deployments into the Arctic Ocean never exceeded five per year.<sup>16</sup>

As a region in which to attack Western interests, the Arctic leaves much to be desired – and that is unlikely to change as the Arctic melts and opens. As an area for deploying Chinese strategic assets, the Arctic's value is, likewise, suspect. While the US Department of Defense may have noted the possibility of China sending its own SSBNs into the Arctic Ocean it is hard to see how this makes strategic sense. The Pacific Ocean is vast and Chinese JL-3 submarine-launched ballistic missiles (SLBMs) can hit the eastern seaboard of the United States from almost anywhere east of Hawaii. How successful the US Navy would be in tracking these vessels is uncertain, however the PLAN does not lack for easy firing positions in the safer areas of the open ocean.

Deploying SSBNs into the Arctic carries obvious perils. The presence of ice creates serious problems for navigation



The nuclear-powered aircraft carrier USS Theodore Roosevelt conducts flight operations off the southern Alaskan coast, 25 May 2019.



The Russian ice-strengthened cargo ship Kapitan Danilkin is seen here outside Sabetta, Russia, in April 2015. For Russia, Arctic maritime access is vital to the economy.

and surfacing and requires special instruments and construction. While ice cover would hide SSBNs from surface vessels and aircraft, the US Navy has been training since the 1960s to hunt and kill enemy boats in the region. Entry into the Arctic would also heighten the risks of detection. The PLAN could only access the region through the shallow Bering Strait, a passage which would take a submarine within 20 kilometres of either American or Russian territory. In the middle of the strait sits St. Lawrence Island, from which the United States has operated submarine detection systems dating back to the early Cold War.

This is not to say that an Arctic presence would have no value in a Chinese conflict with the United States or any Western coalition, merely that it is hard to see such activity as an efficient use of resources. China's fleet of advanced nuclear submarines is growing but likely to remain relatively small for the foreseeable future. Deploying even one such boat into the Arctic would deprive the PLAN of an asset for harassing shipping in the busy Pacific sea lanes or engaging American vessels in the waters closer to what Chinese strategists call the first island chain.<sup>17</sup>

This dispersion of effort into the Arctic flies in the face of basic Mahanian principles. Mahan assumed that sea control is gained not by spreading forces across the world's oceans but through the concentration of one's fleet for the decisive engagement against an enemy.<sup>18</sup> Once the enemy fleet has been defeated, sea control is the inevitable result. To break off vital nuclear-powered attack submarines (SSNs) or surface craft for raids in the circumpolar seas would weaken the PLAN in the waters where the decisive battle would take place.

The idea of such a deployment recalls a historical analogy from half a world away. During the First World War, the Allies deployed an expeditionary force of 10 divisions into northern Greece which was ultimately penned up in a pocket around the town of Salonica. There they sat, largely immobilized and suffering devastating attrition from disease and squalid conditions. The Germans sardonically called the deployment their largest prisoner of war camp.<sup>19</sup> There is a simple parallel in Chinese Arctic deployments. It is not that any Western state necessarily wants to see Chinese vessels in the region, but the PLAN has a limited number of ships and if one were to try and pinpoint where they could be deployed to the least effect, the Arctic would be a strong contender.

Huebert's Mahanian analysis fails in the Arctic Ocean and the North American Arctic. The trade routes and strategic sea lines of communication that Mahan held to be the lifeblood of a great power's strength are not there. The geography of the area and the likelihood that any future Arctic routes will lead to China itself also mitigate against the region gaining such standing in the foreseeable future.

This dismissal of Huebert's predictions comes with a significant caveat. While there is little to suggest that the Arctic would be a suitable place to fight for sea control (or even to undertake a *guerre de course* campaign of sea denial) against a Western opponent, against Russia an Arctic presence could be so valuable to China that Huebert's determinist framework starts to look very appropriate. While the West does not rely on the Arctic for trade, strategic resources, or as a safe haven for its ballistic missile submarines, Russia certainly does. How useful China will find Arctic deployments probably depends on which power it is preparing to fight.

Huebert emphasizes China's future Arctic presence as a threat to the West; he does not focus on the prospect of Arctic deployments geared towards Russia. Indeed, for Russia the Arctic is not the peripheral strategic theatre it is for the West. Moscow deploys the majority of its SS-BNs in the Barents Sea near its Kola Peninsula bases and being able to threaten these forces would allow China to put at peril Russia's strategic deterrent. Unlike the United States, Russia also uses its Arctic waters as a highway for the deployment of naval forces. The Northern Sea Route has been used in this manner since the 1960s and, given the steady reduction in sea ice, it would certainly be the route used to transfer elements of Russia's Northern Fleet to the Pacific in a crisis. Interdicting Russian warships along this route would be easier than locating them after they slipped into the Pacific shipping lanes leading to China's busy ports.

Mahan's emphasis on seapower as a means of protecting or denying commerce clearly applies to the Russian Arctic in a way it does not for the West. Traffic along the Northern Sea Route surpassed 20 million tonnes in 2018 and expansion plans aim to increase this to 80 million tonnes by 2025.<sup>20</sup> Much of this shipping is vital to the Russian economy and, as new oil and gas projects come online, the importance of this activity will only increase. Even the threat posed by a single Chinese SSN in the Barents Sea could shut down Russian liquified natural gas (LNG) shipping from its Arctic gas fields, landlocking the 70 million tons of annual LNG exports expected to be online in 2030.<sup>21</sup>

Onshore oil and gas facilities and pipelines in the Timan-Pechora and West Siberian Basin could also be put out of action with relative ease by cruise missiles fired from the Barents or Kara Sea. In wartime, such capabilities might cripple a large segment of the Russian economy and force the deployment of a disproportionately large force of Russian anti-submarine warfare platforms, leading to the kind of dispersion of Russian seapower against which Mahan warned. In peacetime a Chinese Arctic presence would also provide Beijing with a certain degree of leverage. As Moscow's principal source of hard currency, Russia's hydrocarbon exports represent a vital preoccupation and a Chinese ability to threaten them would add considerable cost to any potential conflict. Even a small PLAN operational capability in the Russian Arctic would therefore offer strategic value far out of proportion to its cost.

Whether the PLAN will seek an Arctic capability remains to be seen. There is no evidence from China that it aspires to this and it remains difficult for outside observers to gain any insight beyond what China's closed government



US Chief of Naval Operations Admiral Jonathan Greenert boards a People's Liberation Army Navy (PLAN) Type 39B diesel-electric submarine for a pier-side tour on Lushun Naval Base, July 2014. Although China has been modernizing its large fleet of diesel-electric submarines, Arctic access will require nuclear power.



Russian President Vladimir Putin presented the Order of St Andrew the Apostle to Chinese President Xi Jinping in this July 2017 ceremony held in the Grand Kremlin Palace. Such cordial gestures may not extend to matters of Arctic geopolitics.

and controlled media sources provide. Before sustained Arctic operations are considered, China's fleet of *Shang*-class SSNs would have to expand. In 2019 the PLAN has only six such boats in service, and the kind of guided-missile submarines most useful for anti-shipping warfare are unlikely to arrive before the mid-2020s.<sup>22</sup>

Predicting future conflicts, let alone the nature of an adversary's deployments, is far from an exact science and experts have a notoriously bad record in this regard. As Huebert notes, however, we can look at current realities to extrapolate future strategic interests. That being said, fitting Chinese actions into Mahanian theory without regard for the specific geographic, economic and political realities of the circumpolar Arctic would be a mistake. Mahan convincingly showed that sea control must be the objective of any maritime power, but that control was not an end in and of itself; it was premised on the understanding that losing command of the vital sea lines of communication imperiled trade and a maritime power's strategic mobility. With this in mind, it is difficult to foresee a future where a Chinese Arctic presence seriously affects Western trade or movement. If anything, PLAN Arctic deployments may be a net gain to Western navies, as high-end SSNs are dispersed to a theatre of tertiary importance.

Sino-Russian relations have improved markedly since the end of the Cold War, a trend accelerated by Western sanctions on Russia. Still, that relationship is based more on a shared interest in upsetting the unipolar American world order rather than on any deep or lasting friendship. China now has tens of billions of dollars invested in Russian resource projects and a vested interest in the Russian Far North. The 'Polar Silk Road' runs through the Northern Sea Route and Beijing has done what it can to take advantage of Russia's economic weakness to maximize its position in Siberian oil and gas projects. That relationship seems fragile and China must know it. Are Chinese submarines destined to operate in the Arctic? Huebert might be right but it is probably not the West that needs to worry about it.

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Dr. Adam Lajeunesse is the Irving Shipbuilding Chair in Canadian Arctic Marine Security with the Brian Mulroney Institute of Government at St. Francis Xavier University.

# A Surface Presence for the US Navy in the Arctic?

# Troy J. Bouffard and Cameron D. Carlson

Alfred Thayer Mahan's work *The Influence of Sea Power Upon History: 1660-1783*, published in 1890, was considered seminal for the time period in which he wrote. In many ways, however, it has become timeless for the view it provides of history and the relevance of naval power. Its utility can be seen clearly today as we look to the future and the continued opening of the Arctic. His words from the late 19<sup>th</sup> century serve as both a historical backdrop and a future foretold as he stated,

The history of sea power is largely, though by no means solely, a narrative of contests between nations, of mutual rivalries, of violence frequently culminating in war. The profound influence of sea commerce upon the wealth and strength of countries was clearly seen long before the true principles which governed its growth and prosperity were detected.<sup>1</sup>

Fast forward more than a century and a growing body of literature and authoritative reports offer data regarding estimated oil and gas reserves as well as sea-ice decline in the Arctic. This information drives a broad spectrum of misconceptions concerning resource access and production. Yet, in the past decade, little action has occurred beyond the excitement regarding the vast potential of the Arctic. Much of the enthusiasm has developed from expected increases in surface access throughout the Arctic maritime environment and growing access of the Arctic Ocean as a viable sea route.

As the realization of potential resource and transit activity set in over the years, stakeholders looked for answers from various public and private sector organizations. Years of dialogue about a variety of surface-associated maritime issues occurred, yet there has been a consistent absence of discussion about the US Navy (USN) with regard to its expected role. The conventional wisdom, and lack of specified requirements, is that USN sub-surface and aerospace military capabilities are sufficient to meet national defence requirements (with the exception of cruise missile threats). This can be interpreted from the US Navy response relating to the 2018 National Defense Authorization Act (NDAA) and subsequent Government Accounting Office (GAO) report. However, critics believe that the USN is 'dragging anchor' concerning the North. The lack of a surface capability and presence, beyond the statutory purview of the US Coast Guard, might equal a gap in both homeland defence and security that could be exploited by



A portrait of Alfred Thayer Mahan by H. Petersen, based on the original painting by Alexander James.

adversaries and/or threatened by disaster incidents.

What is less discussed are the reasons for a careful and measured approach to defining and developing the role of the US Navy in the surface waters of the Arctic Ocean. To that end, this article will explore several factors which influence USN capabilities and presence within the Arctic. These factors include: (1) the global maritime mission within the context of the Arctic; (2) the absence of a naval general-officer/flag-officer (GO/FO) command structure for the Arctic, as well as existing bifurcated combatant command boundaries; (3) the lack of infrastructure support; (4) the issue of funding for a defined Arctic mission; and (5) the overall distaste for building polar-class vessels with inherently decreased operational capabilities compared to the rest of the fleet.

# The Context of the Global Maritime Mission

Mahan understood that the maritime domain often represented the most powerful access and influence point in international relations, and this still holds true today. In recent centuries and around the world, the term 'command of the commons' helped define sea power, and continues to do so. The 'commons' involves space (cyber), aerospace and the seas. Command over these commons represents the extent to which forces can access and engage militarily within each domain. However, whereas command over cyber and aerospace are largely realized only during conflict, the maritime commons are in constant use. The oceans are where the world economy moves, with more than 90 per cent of the world's trade flowing across global waterways. Commercial fleets and maritime activity depend upon the overarching stability provided by naval power, developed from centuries-old norms. The global enterprise of maritime security is so ubiquitous that NORAD - the organization formed in defence of North America - maintains a maritime warning mission over the entire planet. At any given time, nearly 200,000 vessels transmitting via Automatic Identification Systems (AIS) (an International Maritime Organization (IMO) requirement) are in operation, the largest percentage of which are container, tanker and fishing ships. While that approximate number of vessels is tracked at sea, there are also many vessels which are not transmitting AIS. This may be because they operate under different requirements (state vessels), they are unaware of malfunctions, or they are wish to avoid detection.

The vast majority of these vessels are traveling through mid-latitudinal sea lanes. An extremely low percentage of this activity occurs in Arctic waters. It could be argued, therefore, that the US Navy simply does not need to have a surface presence in an ocean with such a relatively low amount of shipping activity. At best, naval activity in the North should focus, as it does, on the development of operational capabilities and efforts to define emerging needs as ice-free water becomes the norm.

## Arctic Naval Command Structure

Another challenge of US Arctic defence interests involves multi-combatant and sub-command authority overlaps. Elsewhere in the world, Geographic Combatant Commands (GCCs) generally exercise full-spectrum authority over defence-related issues as defined by the Joint Strategic Capabilities Plan (JSCP). The GCCs are operationally resourced with an array of functional service components meant to provide for unity of effort within a defined boundary. Aside from the North, jurisdiction and authority conflicts have been identified and resolved through policy. Problems with the newness of the Arctic as a post-Cold War operating environment have materialized



A snapshot of all ships with their Automatic Identification Systems transmitting over 24 hours, 24 June 2019.



This shows the US Department of Defense's Geographic Combatant Commands and their respective areas of responsibility as of 2016. USPACOM has since been renamed USINDOPACOM.

because of converging lines of longitude as well as existing command architecture and delineations. One command may have tasking authority, a different command may have command and control (C2) authority, and another actually owns the assets to mobilize and deploy. Moreover, not all GCCs have standing functional components. Such circumstances, relatively unproblematic until recently, affect how the USN might develop an effective northern surface presence.

Additionally, the northern Pacific and Atlantic fleet forces have different Arctic goals and requirements. As an example, in the Atlantic, the Greenland-Iceland-United Kingdom (GIUK) gap has been re-established as a strategic priority as a result of Russian naval activity - both surface and sub-surface. And it should be noted that the premier military component of Russia, for decades, has been the Northern Fleet. This, in turn, has prompted the re-activation of the US Navy 2<sup>nd</sup> Fleet in response to increased activity and emerging security needs. Moreover, the North Atlantic benefits from the presence and support of a longstanding alliance, the North Atlantic Treaty Organization (NATO). NATO-associated forces have regularly conducted exercises and operations in northern waters over the years, leading to polar experience and training as well as interoperability and cooperation. For example, the US Navy participated in NATO-led exercise Trident Juncture 2018, where surface vessels experienced very difficult conditions in Norwegian seas during the exercise. For now, threats on the Atlantic side remain relatively well understood and manageable from a strategic perspective.

This is not the case in the Pacific region where the Department of Defense continues to sort through a variety of ever-developing challenges. As outlined in the most recent US National Defense Strategy, threats are continuously being identified and assessed. In addition to the multiple lines of study focused on non-Arctic regions, defence officials also look to the numerous issues invariably connected to the Arctic maritime surface. Thus, although China has increasingly shown interest in the Arctic, the region had traditionally been less relevant to the Pacific – a situation that is discernibly changing.

In the Circumpolar North, multiple boundaries of the Unified Command Plan (UCP) operationally overlap, including those of USEUCOM, USINDOPACOM and US-NORTHCOM. With regard to the US Navy, Global Force Management (GFM) provides the normal rotational deployment process through the Global Forces Management Allocation Plan (GFMAP). Neither accounts for sustained surface presence in the Arctic and, should requirements develop, the USN would reasonably prefer that a navy flag officer-led command would provide command and control authority over such lines of effort. Fleets are generally under the operational command authority of the GCCs. Currently, the 3<sup>rd</sup> Fleet (US Pacific Fleet) and 2<sup>nd</sup> Fleet (US Atlantic Fleet) share operating areas of responsibility in the Arctic, but lines of (operational) demarcation have yet to be established which might help manage Arctic maritime expectations and evolving requirements. Moreover, the 3rd Fleet operates in both the USINDOPACOM and USNORTHCOM areas of responsibility, while the 2<sup>nd</sup>



NATO warships sail in formation for a photo during Exercise Trident Juncture 2018 in the Norwegian Sea, 7 November 2018.

Fleet operates in both the USEUCOM and USNORTH-COM areas of responsibility.

Aside from command issues, the US Navy has simply not been in a position to divert critical global resources to emerging regional concerns. Nor has there been a demand for this. While sub-surface operational management benefits from decades of experience and refinement, the concept of a contemporary command formed to oversee the Arctic surface is relatively novel. To date, potential solutions seem to lean toward establishing a Joint Interagency Task Force – Arctic (JIATF-A) or Joint Force Maritime Component Commander – Arctic (JFMCC-A) commanded by a maritime force flag officer.

#### Lack of Infrastructure Support

Currently, the US Arctic suffers from a lack of maritime defence-related infrastructure. These shortcomings are identified by the USNORTHCOM Commander as being significant in the inability to provide effective support to evolving mission requirements, as well as sustained operations. This is true for all components in the Arctic, but especially the US Navy. Initial efforts for the last several years have focused on defining defence requirements, which Commander USNORTHCOM leads as the nationally designated Arctic Capabilities Advocate.

In particular, the central USN need has focused on a deep-water port for fueling requirements and other dockside activities. Currently, the Port of Alaska in Anchorage has limited capacity in providing for these requirements on the Pacific side. But the port fails to meet geographic needs as ships must sail several hundred nautical miles off course to get there when traveling to or operating in the Arctic. As a result, the US Senate approved the 2020 NDAA published at the end of June 2019, which requires several agencies to identify one or more sites that could serve as potential strategic ports in the Arctic. Ninety days after this, the Secretary of Defense will be required to designate one or more sites. Preliminary efforts have helped get decisions to this point as several locations have been studied already. According to basing and other studies, Nome, Alaska, so far seems to represent a lead option,

and serves as a good discussion point for this article.

Despite points in its favour, Nome is not a deep-draft port and is not connected to the road/rail system of the state. It is not ideally situated to be connected to the rail-belt. For one, a railroad from the closest point in the interior (Fairbanks) to Nome would be cost-prohibitive to build as a result of extensive discontinuous permafrost. An improved gravel road is far more feasible but this solution is not ideal as other basic industry investment incentives would suffer with this solution compared to rail. Other concerns affecting multi-role basing include community and indigenous considerations regarding the negative impacts on both culture and traditions associated with the opening of these areas.

Likewise, the large-scale investment required to develop a deep-water port has as yet failed to materialize. The state of Alaska is not new to this as previous 'Roads to Resources' political initiatives failed to reach consensus. The arguments to justify the investment, by private industry, the public sector or Department of Defense, have to date not reached the point needed to attract a unified approach to solving this challenge. However, if the Department of Defense were to invest unilaterally, the deep-draft port part of the project would likely attract other opportunities.

#### **Defining the Mission**

Military authorities have stated that if they had plenty of funding for Arctic defence, they would not know on what to spend it. The problem, in essence, is not the lack of fiscal support but the lack of defined mission (i.e., a requirement to provide a surface presence) to justify the allocation of resources to the Arctic. Currently no US Department of Defense element has a defined Arctic mission. Although the US Navy continues to publish Arctic strategies, as do the other services, most of the core national defence requirements assigned to the navy continue to be met with sub-surface assets. If the Arctic maritime surface becomes part of the critical global mission set, then additional defence funding would follow.

To date, the US Congress has told the USN through public committee meetings to adjust its current budget in order

to meet the additional operational requirements – i.e., to make the current budget work by revising its allocation. Not surprisingly, the USN has had little interest in doing so and will likely, and reasonably, wait until the legislative branch allocates funding or other circumstances force reprioritization of expenditures. This problem can be partially understood from politically driven economic interests. Of the 538 voting members of the US Congress, three represent Alaska. This means that approximately 99 per cent of the total US constituency likely has other economic interests for their legislative representation, further complicating the authorization and appropriations process. Moreover, representatives often work to protect their economic sectors, even over procurement objections of defence officials.

## Ship Design and Building Concerns

Before Congress considers fiscal line items for the *Na*tional Defense Authorization Act – the annual US Department of Defense budget vehicle – it begins a process to determine needs in order to provide resources for them. Step one involves a capability assessment. Capability in general equals resources multiplied by the skills required to meet a mission, and capabilities are based on defence and security requirements. Although the basic formula seems simple, it is anything but. Developing and assessing the capabilities of the USN to meet the National Defense Strategy requirements in the Arctic is the beginning of a thorough process to determine what is required to meet surface capabilities, among the other Arctic defence requirements.

The Joint Capabilities Integration and Development System (JCIDS) guides the full-spectrum process for the Department of Defense, from capability assessments to production and deployment, to include gap identification. With regard to USN polar-class vessels, initial capability requirements are yet to be fully developed and validated. What has been confirmed by the Joint Requirements Oversight Committee (JROC) are three capability gaps, including the ability to: (1) exercise and deploy; (2) position; and (3) conduct deterrence/decisive operations in the Arctic. It is likely that ships will need to be built or modified to meet future requirements. Although the term 'icehardening' is not part of the US Navy lexicon, it is understood as part of a retrofitting or manufacturing process. In either approach, ships need special Arctic designs for hulls (shape and strength), sensors (de-icing), weapons, rudders, propellers, intake and discharge (ice-formation prevention), and heating and cooling, for example. Currently, only Ticonderoga-class cruisers possess somewhat stronger hulls for polar operations. But these cruisers continue to be phased out of service. As well, individually or



A graphic of the Aegis guided-missile cruiser USS **Ticonderoga** sailing in icefilled waters is on the cover of the US Navy's 1988 guide for ships operating in Arctic conditions.

in combination, such modifications will negatively affect ship speed, range and manoeuvrability – all things fundamentally abhorrent to the navy.

## Filling Gaps in the Arctic

It is clear that there are gaps in the USN capability in the Arctic. But is this significant? For the moment, there is no requirement for a US Navy presence in the surface waters of the Arctic. Why? There is no requirement because of the current overall geopolitical stability of the Arctic and the low magnitude of maritime activity. The majority of authoritative US and circumpolar strategies, policies, assessments, perspectives, studies, reports, etc., consistently support this perspective. Thus, the US Navy's official position is that it can currently meet Department of Defense and component requirements in the Arctic as is.

However, defence stakeholders understand that maritime surface defence requirements are evolving as the environment and activity change. There is much to learn or re-learn. Most attention focused on the surface in the Arctic Ocean disappeared with the Soviet Union in 1991, as illustrated by the most recent USN Arctic surface ship manual which was published in 1988.

In the interim, US Arctic capability will be developed for the US Coast Guard (USCG) with six new (three heavy/ three medium) Polar Security Cutters. The decision was made after years of debate on how to replace the remaining, functional icebreakers – both built in the mid-1970s. During several congressional committee meetings, USN officials voiced support for procurement for the USCG. Both services testified together regarding emerging Arctic security missions, and committee members often agreed, yet the committee members suggested that the services internally adjust their existing budgets, as mentioned previously. Meanwhile, the USN supported procurement of vessels for its sister maritime force knowing that the near-term US Arctic maritime security capabilities would be better met by the primary polar operators, the USCG, while the USN focuses on the global mission and defining Arctic capability needs. Such an approach is possible because, unlike Canada, the USCG has a national security statutory mission involving law enforcement (i.e., constabulary) and security under Title 14 of the US Code which established and defines the USCG and its purpose. The challenge for the US Navy will be developing requirements in tandem or not covered by USCG capabilities, and yet meet homeland defence missions. Such an undertaking is no small endeavour.

## **Conclusion**

The historical lessons of global sea power will continue to be useful going into the future. Mahan's work provides the foundation from which to help set course into the Arctic. His work, as well as decades of globalization, should help competing actors and interests realize that the Arctic is not a great unknown of potential maritime activity, but rather the next evolution of well-established operating principles and norms. While trade 'wars' may be prominent of late, and illustrate the extent to which leaders may utilize shipping-related influence, it has long been a global taboo to target commercial shipping operations. Violations tend to invoke severe responses. Russia understands this, which



Construction work on the northern section of the new all-weather road between Tuktoyaktuk and Inuvik in the Northwest Territories, 16 March 2015.



The port of Nome, Alaska, undated.

largely explains why it has defined the importance of the Arctic for domestic and defence purposes, and explains why the Northern Sea Route/Northeast Passage remains a consistent national economic and security priority.

Assessing real and potential threats in the Arctic remains convoluted at best. Questions such as when, how, where and why (or even if) the US Navy should develop a sustainable surface presence continue to be considered and debated at the highest levels. For now, the USN does not have a defined mission in the Arctic. It is prudent to bear in mind, however, that capabilities and know-how are not built overnight. The Arctic is, and will continue to be for many years, a difficult operating environment. In an evolving environment, new and innovative operational capabilities, infrastructure and capacity will take time to (re)build. For both the United States and Canada, it is not enough to depend upon the continuing stability in the Arctic as a pretext to focus on other areas. Greater emphasis should be placed on the evolving Arctic and the fundamental security confidence provided by naval presence.

#### Notes 1.

Alfred Thayer Mahan, The Influence of Sea Power Upon History, 1660-1783, originally published Boston: Little Brown and Co., 1890.

*Troy J. Bouffard is at the University of Alaska. He retired from the* US military and continues service as a Defense Contractor with USNORTHCOM and the Alaskan Command. He is a Research Fellow at the Centre for Defence and Security Studies with the University of Manitoba and has contributed to various research projects.

Dr. Cameron D. Carlson is the Director for the Center for the Study of Security, Cyber, Hazards and Preparedness (C-SSCHRP) and the Homeland Security and Emergency Management Program at the University of Alaska. He retired in 2006 from the US military after 24 years on active duty and is the Principal Investigator for DoD academic services and research contracts with Alaskan Command.

# Making Waves

## *Putting Some Navy Back in the Royal Military College* Jim Carruthers

This is an exciting time for the 23 naval cadets who have just graduated from the Royal Military College of Canada (RMC) and have been commissioned as officers in the Royal Canadian Navy (RCN). Yes, I said 23 – that includes all classifications, Logistics (LOG), Naval Technical Officers (NTO) and Naval Warfare Officers (NWO). Yet it is possible that some of these young men and women will never have seen an ocean or spent any time in one of Her Majesty's Canadian Ships in their already more than four years of service. Without a doubt these young officers will not have taken any naval-oriented academic subjects. RMC dropped its last naval-oriented course a number of years ago. Historically Canada educated its naval officers through naval institutions but those days are gone.

While naval colleges in different forms ran sporadically for the RCN's first 40 years,<sup>1</sup> the tri-service Canadian Service College (CSC) successor has endured for over 70 years. Through those 70-plus years CSC has lost naval attributes it once might have had and is now for all intents and purposes a college with an army history and a very small naval component. The non-naval character is not just a case of numbers but permeates the ethos of the institution and processes from basic training through to graduation.

The naval influence and characteristics did not just abruptly disappear but rather atrophied over decades. The CSCs over the decades have changed shape, morphing from three colleges each staffed by a single service, and therefore having navy, army or air force characteristics, to a single college of the army persuasion, and now back to two campuses with language or perhaps civil culture being the differentiator. The erosion of naval culture can be connected to three inflection points – the demise of the Royal Naval College of Canada (RNCC) in the 1920s, the change to make CSCs degree-granting institutions, and integration of the Canadian Armed Forces.

From establishment of the CSCs until the early 1960s the approach of the RCN differed from the other two services. Whereas army and air force cadets entered the CSCs with the objective of graduating after four years – and in many cases went to a civilian university to obtain a degree – RCN cadets often left after two academic years to continue naval-specific training at Royal Navy (RN) establishments. In addition, the approach at each of the colleges



Cadets line up on the parade grounds of the Royal Military College of Canada in Kingston, Ontario, during the annual Commissioning Parade on 18 May 2019.

was different. In the case of Royal Roads, the service college with a focus on the navy, the college had many 'naval college-like' characteristics, including:

- Cadets were recruited by service specific standards and were navy from the first day.
- Royal Roads was staffed by the RCN. The character of the college was navy.
- The terminology was navy, the focus was oceanic, a naval ethos permeated the establishment.
- Time on ships during the academic year, weekend sailing in the sail training ship HMCS *Oriole* and taking auxiliary craft along the coast allowed cadets to develop naval skills and experience real responsibility.

Perhaps the next inflection point took place when RMC was given the ability in the late 1950s to begin granting degrees. Naval cadets no longer had the option to go to the RN to complete their training, and everyone spent the final two years at the army school – RMC. They may have had some naval exposure if they attended Royal Roads, but they graduated from a general military college.

Royal Roads provided a naval environment for the first two years with all the attributes enumerated in the section above. On completion of the academic year, naval cadets remained at Royal Roads, joined by their colleagues from RMC and CMR St. Jean, with the curriculum changing



Cadets and crew set sails aboard HMCS **Oriole** during the ship's Great Lakes deployment, 13 August 2019.

to shore-based training in navigation and naval subjects before moving to ships for a few weeks of pilotage training in the Gulf Islands, then down the coast to California and over to Hawaii. 'Roads types' were in many ways immersed in a naval culture for the entire first two years. Those from the other two colleges were still recruited by the RCN and spent the summers on ships but they spent their college years immersed in a mainly army environment.

With integration and unification of the Canadian Forces in the late 1960s, the decline of things naval accelerated. It did not happen all at once or in a single location. Royal Roads stopped being a military college in the 1990s, and change spread throughout the system from the time naval cadets were recruited – not by the navy but the Canadian Forces – until they graduated with minimal naval influence. Although things have changed a bit as second year cadets get a long weekend trip to Halifax, the environment is non-navy and perhaps even anti-navy. As mentioned, some naval cadets had never seen the ocean, never mind a ship during their entire time at RMC!

### The Future

The tri-service basis of Canada's current defence academies is a strong positive step and of great benefit particularly to those officers who go on to senior positions and work in a multi-service environment. However, it seems clear that it has resulted in a diminishment of naval culture and ethos critical to an effective navy. The CSCs are failing to provide naval officers in the numbers needed and the cultural leanings desired.

While some postulate a separate naval college as a solution, that is unrealistic. Canada will not see distinct service academies in the future. While we will never turn the CAF/CSC ship around, perhaps we can nudge this vessel so that there is a course alteration that would benefit naval needs. I believe there are actions that can be taken during basic training, while the naval cadets are at RMC/CMR and over the summers.

With naval cadets being immersed 24/7 in a military environment, every opportunity must be taken to provide some naval context. Naval staff at RMC must work harder than their other service contemporaries to provide whenever possible an ongoing persistent naval connection.

In an attempt to make some difference while the naval cadets are at RMC, in 2011 I established, through an RMC Foundation endowment, a series of naval-oriented undertakings. They include: presentation of naval swords to the top NTO and NWO naval cadets of the graduating class; presentation of the 10 volumes of Salty Dips - the RCN's 'unofficial history'<sup>2</sup> – to each graduate; support of 40-50 naval cadets at the Naval Association of Canada (NAC) Battle of Atlantic Gala Dinners in Ottawa; support of 40 or so naval cadets at NAC conferences held in Ottawa and two or three naval cadets if the conference involves air travel elsewhere; and attendance at the Halifax Battle of the Atlantic Dinner for second year cadets during their ship visit. The 'tag line' I use to describe this use of my endowment is an attempt to 'Put Some Navy in Naval Cadets.'

Some other changes that should be considered include attention to: initial naval recruiting; naval cadets 'bleeding away' during basic training and their time at RMC; each naval cadet receiving a personal message from the Commander of the Navy welcoming them to the RCN; naval cadets attending naval social and professional events within driving distance of RMC for the entire group and smaller numbers for events requiring air travel; expanding the annual naval mess dinner as much as space permits instead of limiting it to the graduating class; ensuring key, inspirational senior officers attend the RMC naval mess dinner; some sort of naval 'symposium' at RMC with



# Royal Roads Military College

An old album cover shows cadets in front of the Royal Roads Military College. It has since become the wholly civilian Royal Roads University and no longer trains cadets.

exciting speakers; and a frigate visit to Kingston during the academic year with day sail opportunities.

It seems that summer – which formerly was the time when naval cadets at CSC could begin to be inculcated with naval knowledge – has in part been given over to RMC and the army. It appears that a good number of naval cadets spend their summers at RMC or go to St. Jean rather than undergoing naval training. Even if the naval cadet is working on language training, summers need to be spent on the coast and preferably on a ship. Summers, which are formative with these young people, must be used to begin to put some navy in naval cadets.

It may seem unwise to propose adding courses when RMC is in the process of examining how it can reduce the cost per cadet possibly by eliminating courses, but that is what we need to do. What courses would add professional value and make naval cadets feel they are future naval officers? Some changes to re-establishing a naval academic presence at RMC could include credit courses such as:

- Naval history and naval strategy. Every naval cadet should leave RMC with a basic understanding of these subjects, and officer cadets in other classifications could also benefit.
- Oceanography to provide a basic understanding

of the oceans upon and under which the navy operates.

- Ship acquisition, i.e., the process of requirements definition, sketch design, trade offs, roles of other departments, shipyard processes, etc. Every naval cadet would benefit from some grounding in how Canada builds a navy, especially in light of the National Shipbuilding Strategy.
- Overview of naval architecture and marine systems that every naval officer would find valuable in understanding RCN ships.
- Overview tying together electrical, mechanical and computer system disciplines taught at RMC into a systems look at a ship.



The **Orca**-class patrol craft **Wolf** (PCT 59) conducts hoisting exercises with a CH-148 Cyclone helicopter off the British Columbia coast on 25 April 2019. The **Orca**-class is used primarily for training.

### Conclusion

Canada is a three-ocean country. The world's states continue to devote a large portion of their defence budgets to navies. Trade overwhelmingly moves by sea, and the largest source of protein for the world's increasing population is the ocean. Since establishing a navy as a young Dominion, Canada has recognized the wisdom of educating aspiring naval officers in naval strategy and affairs.

Yet as the importance of maritime affairs has grown, naval content in Canada's service academy programs has atrophied. There is little naval content in the current CSC/ RMC program. While it is impossible to imagine the creation of a separate naval college in Canada or even major changes to the present military college program, there are small non-disruptive changes that can be made to the

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education of naval cadets that would fill some of the gaps. These should include:

- During the academic year putting more navy in naval cadets.
- Summer training, whatever the content, conducted on a coast in a naval environment.
- Course offerings to include, at a minimum, naval content such as naval history and naval strategy.

None of these need be a disruption to the present program; any or all of them would be of immense value to ensuring better graduating officer corps for the Royal Canadian Navy.

#### Notes

- For an account of this, see for example, G.N. Tucker, *The Naval Service of Canada: Its Official History, Vol II: Activities On Shore During the Second World War* (Ottawa: King's Printer, 1952), pp. 247-251; and Vice-Admiral (Ret'd) Nigel D. Brodeur, "The Importance of Naval Education for Flag Officer Development," *Canadian Naval Review*, Vol. 14, No. 1 (2018).
- 2. For more information on *Salty Dips*, see the Naval Association of Canada Ottawa Branch, available at https://nac-o.wildapricot.org/Salty-Dips.

# *"Jam Yesterday and Jam Tomorrow, But Never Jam Today"*

### Vice-Admiral (Ret'd) Sir Jeremy Blackham

Lewis Carroll was making a pun on a Latin grammar rule when he gave these words to the Red Queen in *Alice in Wonderland*, but I want to suggest that they are apposite in today's international diplomatic and strategic wonderland.

Some time ago I published two articles in *Canadian Naval Review*. The first examined the impact on the credibility of the nuclear deterrent of a significant rundown in the underpinning conventional forces and showed that a lack of conventional capability directly undermines the credibility of the nuclear deterrent.<sup>1</sup> The second commented on the growing habit of Western states to measure their military strength by the theoretical ability of platforms without regard to their capacity in terms of manpower, training, spares and ammunition supplies, support and

repair facilities, industrial resources and fighting readiness to deploy the full capability.<sup>2</sup> It concluded that we were at serious risk of over-estimating our effective military strength and ability.

I want now to suggest that in much of the Western world, and certainly in the United Kingdom, we are deluding ourselves. We have a political generation that was born in an era of either peace or generally 'easy' wars with few casualties against militarily much less capable opponents. This generation has little or no understanding of defence, and regards conflict as something we undertake to alter things to our advantage with little risk and no chance of serious loss. It has tended to assume that we can start, control and, most importantly, end military intervention entirely on our own terms. The greater risks of world instability, the possible consequences of that, and the need for strategic thought and preparation are lost on politicians who often only find themselves holding government departmental portfolios as a political reward, and not because they have any knowledge or understanding of the subject. The risk of basing operational judgements and decisions on a false appreciation of military strength is too obvious to require elucidation.

The grave dangers and possible consequences of such an approach have frequently and publicly been drawn to the attention of governments by those who are in a position to do so – most notably by retired senior military officers who have retained a keen interest in, and knowledge of, current military matters. Needless to say, their remarks have been dismissed by politicians who accuse them of bias and misunderstanding, and sometimes their remarks have also been dismissed by the current management of the services who may have a difficult path to tread between speaking truth to power and maintaining some degree of morale in their own services.

For the UK, the current crisis with Iran over seized tankers exemplifies all this.<sup>3</sup> To explain, in July 2019 the UK seized an Iranian tanker that was alleged to be breaking European Union sanctions against supplying oil to Syria.



The Type 23 frigate HMS Montrose escorts Stena Important through the Persian Gulf on 25 July 2019.

Before they did this, did the UK authorities consider and fully prepare for the possible consequences? Iran, which is not a party to these sanctions, threatened to retaliate. The UK sent a single frigate into the Gulf, which obviously couldn't be in more than one place at a time. In due course a Swedish-owned, Indian-crewed but for some reason UK-flagged tanker was seized by the Iranian Republican Guard in the Strait of Hormuz.

Presumably this tanker was operating its Automatic Identification System (AIS) and was therefore trackable by anyone. Was it being tracked? Was the Swedish-owned/ UK-flagged ship identified to the Royal Navy (RN) frigate as a vulnerable target? If so, why was the frigate not present at the most vulnerable position? How much detailed planning had been carried out on potential Iranian responses? There are plenty of questions to answer here but that is not my main line of argument.



Jeremy Hunt, then Secretary of State for Health, addresses military personnel on 16 September 2015. Hunt served as Secretary of State for Foreign and Commonweath Affairs July 2018 to July 2019. He turned down an appointment to lead the Defence Ministry claiming it was a demotion.

More interesting was the reaction of then Foreign Secretary, Jeremy Hunt, who publicly admitted that the RN, and its manpower training and support arrangements, had been run down since 2010 too far to provide for the protection of British shipping in the Gulf and that it urgently needed more ships. Yet he was a member of a Cabinet which decreased dramatically the strength of the RN and dismissed the suggestions that defence was being reduced too far.<sup>4</sup> It will take at least 10 years to restore the strength of the RN and other aspects of defence to its 2010 strength, if indeed it can be done at all with current industrial and training capacity.

It is a fact of military life that operations are conducted and conflicts are fought with the existing force structure, not with those forces we may aspire to have one day in the future. We owe our current capability and assets to the foresight of our predecessors and we have an absolute duty to provide our successors – our children and grandchildren – with suitable force structures for their day. It takes a long time to expand or alter a force structure. It is not simply a matter of ordering new platforms, although that certainly takes an extraordinarily long time, but also of providing the wide range of supporting facilities that military capabilities demand. Any reduction made now, or investment not made, condemns the service to a significant capability gap now and in the immediate future. It provides, in other words, an opportunity for potential adversaries to exploit a weakness.

But of course it is not just more and newer ships that are required. As the Royal Navy is currently discovering, new ships without adequate crews and other enablers are of little use. It is even unclear that the RN will be able to man and equip the ships it has on order, let alone any increase that may be promised. In part this is because the Treasury refuses to allow an increase in a manpower headcount which was set without reference to the actual requirement.<sup>5</sup> Worse still, there seems to be a lack of awareness that the acquisition cost of a ship is only about 25% of the through-life cost. Indeed one can see here the genesis of the manning problem, a consequence perhaps of the impact on retention of a constantly declining and withering overall defence scene, in which British forces are too often



Sailors line the deck of the Type 45 destroyer HMS **Defender** as they pass HMS **Warrior** in Portsmouth after returning from the Persian Gulf, 12 December 2014. Having adequate crews and support personnel cannot be forgotten as part of a navy's recapitalization.

sent semi-naked into the fray. As defence review after defence review has shown, it is quick and easy to make immediate savings by running things down. It is much more difficult and costly to recreate what we have thrown away; in some instances it may be impossible.

But there is another important factor. There is an extraordinary level of naivety about defence in the political arena, and a feeling even that senior service officers are somehow more interested in their own narrow advantage than they are in the overall national interest. I am inclined to think that this tells us more about the politicians and their culture than it does about the service culture. There is a feeling too that problems are solved by policy announcements, and not by the physical delivery of the policy on the ground. Policies seem to be assumed to have been implemented and their benefits delivered simply by announcing them. Political career advancement is more sought after than actual improvements on the ground. Words are more important than deeds. As an example you have only to look at the statement that the British naval forces 'lead the world' because we have two aircraft carriers, the 'world beating' T45 anti-aircraft warfare destroyer, the T26 and T31 frigates and the Astute-class submarines. In fact the carriers will not achieve their full operational capability until 2023 (and without their full complement of aircraft), the T45 is struggling to maintain its capability, the first T26 (and only three have been ordered so far) will not be operational until possibly the mid-2020s, the T31 has not yet been ordered, and the Astute-class will not be complete until the mid-2020s by which time seven submarines will have taken over 20 years to build and the first will already be well into its useful life. Similar examples can be found in the army and air force.



HMS **Astute**, seen here during its naming ceremony at Barrow in Furness 8 June 2007, will have been in service for nearly half its expected life by the time the last vessel in the class is completed in the mid-2020s.

The units these ships are one day to replace are in many cases well beyond their planned life and so are difficult to maintain and repair, or have already gone. The potential operational risks of this are apparently unknown to our political masters. In this last respect, the frequent churn in holders of ministerial office does little to alleviate this knowledge gap. The risks of starting an imprudent adventure on a false operational premise are only too obvious.

It may be that the UK illustrates a worst-case scenario, and that Canada has not taken as many steps along the same path. Canada is in a process of building ships in the National Shipbuilding Strategy, does not suffer the same personnel shortages as the UK, and is not distracted by self-inflicted disruption to its major trading patterns. There may still be hope for the Royal Canadian Navy – but beware of promises of jam that never seems to arrive on your toast!

#### Notes

- Vice-Admiral (Ret'd) Sir Jeremy Blackham, "Deterrence is Not Only about Nuclear Weapons," *Canadian Naval Review*, Vol. 13, No. 1 (2017), pp. 10-15.
- 2. Vice-Admiral (Ret'd) Sir Jeremy Blackham, "Capability and Capacity: All that Glitters is Not Gold," *Canadian Naval Review*, Vol. 12, No. 4 (2017), pp. 32-34.
- 3. This was written in August 2019.
- 4. It is perhaps of interest that when offered the Defence portfolio by the incoming Prime Minister in July 2019, Jeremy Hunt declined it. Apparently despite having stated that it was something that needed very urgent attention, the portfolio was a 'demotion.' So much for defence being the government's first priority as politicians are fond of saying.
- 5. This reminds me that when I was at the Royal College of Defence Studies in 1986, a senior Treasury official said in a lecture to us "[y]ou must remember that, in Treasury terms, victory or defeat are irrelevant." Was this the attitude taken by Ministers during the two World Wars I wonder.

# Arctic Amphibious Capabilities for Canada? Colonel (Ret'd) Brian K. Wentzell

As we approach the end of the second decade of the 21<sup>st</sup> century, it is timely to look to the next decade and the security implications and environmental changes in the Canadian North. With the continued melting of the Arctic Ocean icecap and the quest for mineral, fishing and energy resources in the region, the importance of shipping activities through the Canadian Arctic increases. This has major implications for Canada, its sovereignty and jurisdiction over northern lands, water and airspace.

Changes in the climate have caused significant shrinkage in the polar icecap and ignited interest in the use of the Northwest Passage for shipping through the Arctic Ocean, the exploitation of fish stocks and exploration of mineral deposits and petroleum reserves. As well, there is opportunity for expanded tourist traffic with the use of large and small cruise ships. Surface ship transits of the Northwest Passage from 1903 through 2018 totaled 290 trips, of which 219 voyages occurred since the beginning



Royal Canadian Navy and RCMP members prepare to patrol along the Mackenzie River as part of **Operation Nunakput 2017** on 4 July 2017.

of the 2000 Arctic shipping season.<sup>1</sup> Voyages by submarines are not included in this number. The greater use of the Northwest Passage and Arctic waters in recent years has included scientific research as governments, industry and other groups explore this little known part of the world.

Notwithstanding the matter of jurisdiction and application of national laws that affect rights of transit and resource exploitation in the water column of the Northwest and Northeast Passages, there are practical security and safety issues for which the adjacent states must prepare. Canada and Russia, with the largest Arctic real estate, must maintain national capacities to deal with marine navigation, safety, pollution control and disaster recovery, as well as access to adjacent lands for addressing such matters. The establishment of regulatory regimes for protection of the environment and health, the use and regulation of airspace, the nature and conduct of scientific research, the exploitation of migratory marine species, among other activities, fall within the jurisdiction of the abutting country.

With the likely increase in ship traffic through the region in the coming years, the question arises as to how Canada will deal with shipping and accidents in the water column or on the surrounding lands. The Northwest Territories and Nunavut are sparsely inhabited and minimally equipped with rescue and medical services. Marine and air navigation systems may be sufficient for existing purposes but not for navigation by significant numbers of large ships carrying cargo or large number of passengers. Canada will be required to improve its navigation systems and provide additional policing, border services, rescue and disaster recovery services. The federal government will have to recover the costs of such services through the levy of fees upon the users of the passage.

Canada must protect its territory, be it land or sea. The presence of foreign ships, crews, cargoes and passengers in the Northwest Passage constitutes a potential threat to the fragile northern environment as well as to Canadian citizens and sovereignty. Thus, Canada must provide capable and credible means to monitor all activities in or upon its territory and have the ability to undertake appropriate actions to counter violations of its laws and territorial integrity.

How will it do this? Violations of Canadian laws will be dealt with by the government of Canada through the Royal Canadian Mounted Police, Canada Border Services or other federal government departments and agencies as appropriate. Violations of Canadian sovereignty will be dealt with by the Department of Foreign Affairs and Department of National Defence.



A crew member from HMCS **Moncton** transports members of the Royal 22e Régiment back to Rankin Inlet, Nunavut on 27 August 2016 during **Operation Nanook**.

In addition to maritime surveillance capabilities, the Canadian Armed Forces maintain the North Warning System of air defence radars, and space- and surface-based electronic and communications monitoring systems. These systems are the primary means to alert the protectors of sovereignty and providers of assistance to the civil authorities in cases of natural or man-made disasters.

The Canadian Forces are equipped to undertake limited military and aid-to-civil power operations in the Arctic, and all three military services operate in the North. Canada is making an effort to train and equip soldiers, sailors and air personnel to operate in the Arctic. New capabilities are being developed and acquired. However, operations are difficult to mount and sustain due to distance, geography and climate.

The Canadian Rangers are part-time soldiers who reside throughout the Northwest Territories, Nunavut and Labrador. In coastal areas they report the presence of foreign ships and people. However, the regular Canadian Forces may, through technical and visual means, be the first to provide details of a foreign presence. In the event of a foreign incursion into northern Canada or a humanitarian disaster, a full military response would require naval and army formations and units.

Military operations involving army, navy and air elements require favourable conditions. As the area is vast, airborne operations provide the quickest response. However, deploying and sustaining army and air force units require the movement of significant numbers of people,



Canadian light armoured vehicles cross a river on a German floating bridge in Tancos, Portugal, during JOINTEX 15 as part of Exercise Trident Juncture 15 on 2 November 2015.

equipment, supplies and the establishment of ground bases. Naval ships require logistic and repair facilities which can be either ship- or land-based. While this provides some flexibility, the presence of ice and inclement weather restricts the ability of even ice-reinforced ships to perform operations in the North during the navigation season from June to October.

Canada has initiated two key programs that will provide a naval capability in Arctic waters. The first is construction of the Harry DeWolf-class of Arctic Offshore Patrol Vessels (AOPVs), designed to operate in up to one metre thick ice. The second is construction of the Protecteurclass of Joint Support Ships (JSS). While the JSS will not be ice-capable, they are designed so that they can operate in colder waters in summertime. Both classes of ships will be equipped, in varying degrees, to carry armed troops, equipment and multi-purpose helicopters, albeit in relatively small numbers. The troops may include special forces equipped with a small number of wheeled vehicles, over-snow machines and field equipment. Each class of ship will have one landing craft capable of transporting small vehicles and personnel, and one or more rigid-hull inflatable boats. By 2024, the Royal Canadian Navy (RCN) will have four AOPVs and one JSS based at Halifax, Nova Scotia, and two AOPVs and one JSS at Esquimalt, British Columbia. In addition, in May 2019 the Canadian government announced a new construction program for the Canadian Coast Guard that includes two AOPVs and 16 multi-purpose vessels to replace much of its increasingly obsolete fleet, and in July 2019 it announced that more icebreakers would be constructed.

Neither the AOPVs or JSS have extensive weapons or command facilities. The *Halifax*-class frigates, however, have command, air defence, anti-submarine and surfaceto-surface weapons. While not ice-capable, they are able to sail in northern waters in summertime. The Cyclone maritime helicopter, which is capable of troop transport and surveillance, can be carried on all three classes of ships. Thus, the Canadian Forces have the ability to command, protect, deliver and support a combined military task force to deal with a security incident or a humanitarian operation in the North, particularly during the summer navigation season.

The Canadian Army has extensive experience in the conduct of humanitarian operations in Canada and overseas. It has also made considerable effort in recent years to develop capabilities for winter operations in Canada and year-round operations in the far North. The greatest challenge is the timely movement of personnel, equipment and supplies to mount and sustain an operation even during the summer period.

While Canada does not have a dedicated amphibious force, the Canadian Army does have soldiers and sub-units that have water-crossing and beach-landing capabilities. The 3<sup>rd</sup> Battalion of the Royal 22<sup>nd</sup> Regiment has a company trained for amphibious operations. In addition there are two naval diving units with qualified personnel to do beach reconnaissance and clearance operations. There are army combat engineers who are trained and equipped to do river crossings. The challenge is to bring this talent together to create an organization that could plan, command and execute a successful landing in an unopposed, lightly opposed, or disaster assistance scenario.

The army force must be able to land from the sea using landing craft, small boats and/or helicopters. It must be able to reconnoiter the landing area, deploy personnel and equipment, secure the area, establish a rudimentary base, and commence the operation. The landing force must also deal with its own logistic requirements and communications. While special forces may be involved in some aspects, the main force will come from the regular force and, when available, Arctic-capable reserve units. The challenge is to create a readily deployable unit that has the command, communications, reconnaissance, infantry, engineer and logistic elements.

Although their circumstances are different, the Australian Defence Forces have created a landing force complete with amphibious ships, landing craft and a dedicated army Amphibious Ready Group (ARG). The ARG is comprised of a reorganized infantry battalion, the 2<sup>nd</sup> Battalion, Royal Australian Regiment. Drawing from the US Marine Corps and Royal Marines, the ARG provides the skills required to reconnoiter and secure a landing zone for a follow-on force built upon a high-readiness infantry battalion group. The ARG is comprised of about 340 officers and other ranks.

While Canada is not located in a volatile neighbourhood like Australia, it could generate similar skill sets for a lightly opposed or humanitarian assistance amphibious operation. Canada could adapt the Australian ARG concept. The core unit could be the 3rd Battalion, Royal 22<sup>nd</sup> Regiment. Depending upon the need, it could be organized to include a headquarters, a reconnaissance platoon, one light infantry company, an engineer troop, a logistics company and a medical platoon. It could include specialist landing skills similar to the Australian ARG.

There are challenges to be met. The Canadian Army is relatively small but that need not be a problem. The



A rendering of the Arctic Offshore Patrol Vessel in Canadian Coast Guard (CCG) colours. The Trudeau government announced in May 2019 that two Harry DeWolf-class ships will be procured for the CCG in addition to six being built for the Royal Canadian Navy. The CCG variants will be used for offshore fisheries patrols.

greater challenge is the limitation of naval transport. Assuming three AOPVs are available, each accommodating 50-60 soldiers, with one JSS accommodating 150 soldiers, the entire landing force, including afloat headquarters, would consist of approximately 300-330 personnel. Unlike Australia, Canada does not have the ability to land a large number of vehicles, however, the JSS will be able to handle and land wheeled vehicles and each AOPV will be able to carry a mix of pickup-size trucks and several all-terrain or over-snow vehicles. This would be sufficient for light armed and disaster assistance operations. The landing force would require light weapons to deal with opposition or threats. Each AOPV can carry one Cyclone or Griffon helicopter and the JSS will be able to carry up to four helicopters.

Climate change is affecting the Canadian Arctic. The change affects the lives of those who live there as well as those who traverse the lands and waters in the North. Canada must prepare for the impact of increased international interest and activities in its northern lands and waters. Canada can meet the inevitable challenges, but it is time to prepare for the national security tasks that will come with the opening of northern sea routes.

Notes

<sup>&</sup>quot;Transits of the Northwest Passage to end of the 2018 Navigation Season, Atlantic Ocean-Arctic Ocean-Pacific Ocean," Revised 1 December 2018, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge, United Kingdom.

# A View from the West: Strengthening the Indo-Japanese Partnership to Counter the Belt and Road Initiative

# **Bavneet Mand**

After the city of Hambantota was devastated by a tsunami in 2004, then-President Mahinda Rajapaksa wanted to recreate the city by building a convention centre, a cricket stadium, a government complex, and a new commercial port. While Hambantota is located near one of the world's busiest shipping lanes, numerous studies have suggested the port would not be an economically viable project and countries like India, which has provided financial assistance to Sri Lanka in the past, declined to participate in the project. However, a Chinese consortium agreed to finance it, and in 2007 President Rajapaksa signed a USD\$1 billion agreement to create a deep-water port at Hambantota. In 2010 the construction of the port was finished.<sup>1</sup>

Because many ships bypassed Hambantota for the nearby port at Colombo, and because the Sri Lankan government was unable to repay the loans that it had received from China's EXIM Bank, Sri Lanka was forced to sell to China an 85% share of the port for USD \$292 million. As well it signed a 99-year lease and surrendered 15,000 acres of land surrounding the port to state-run China Merchants Port Holdings Co. in 2017.<sup>2</sup>

The Hambantota port project is one of the many initiatives in which the Chinese government has been involved under its ambitious Belt and Road Initiative (BRI). After Sri Lanka was forced to sell the port, it has been alleged that China intentionally loans large sums of money through the BRI knowing that countries will be unable to repay the loans – referred to as 'debt-trap diplomacy.'

Indian officials have grown concerned by China's involvement in financially assisting countries to develop ports in the Indian Ocean. This allows China access to these ports and raises concern that China is strengthening relationships with the countries in the Indian Ocean that India has relied upon for maritime awareness. This in turn has led to concern about the possibility of India becoming isolated in its own traditional sphere of influence.

Japanese officials have also watched with unease. Japan holds significant economic interests in the Indian Ocean and the ocean is an integral maritime route that Japanese commercial ships and tankers utilize. Japan is concerned about Chinese influence in the region, making the timing ripe for a stronger Indo-Japanese partnership. Japan and India have realized that in order to mitigate Chinese influence in the Indian Ocean, they must strengthen their economic and military ties with each other. One of the first steps to strengthen their military relationship was taken in 2014 when the Japanese Navy participated in the Malabar exercise alongside the US and Indian Navies. This happened following a gap of seven years, and in 2015 Japan became a permanent member. In terms of economic ties, Japan and India partnered with Sri Lanka in March 2019 to develop and operate the Eastern Container Terminal (ECT) at the port in Colombo. Sri Lanka will control 51% of the project while the remaining 49% will be jointly controlled by Japan and India.<sup>3</sup> The ECT is relatively close to the port in Hambantota allowing Japan and India to counter Chinese influence in the area. As well, they will have more access to the port and receive



A map showing Sri Lanka's major ports. Colombo and Hambantota are on the west and south costs, respectively.

revenues because Colombo is a busy port – in contrast to Hambantota port which is unlikely to become economically viable in the near future due to its location.

In addition to the ECT in Sri Lanka, Japan and India have created the Asia-Africa Growth Corridor (AAGC) which aims to promote growth and development in both Asia and Africa. While the AAGC looks similar to the BRI, there are significant differences. The AAGC claims it will develop quality infrastructure by effectively mobilizing financial resources. As well, the infrastructure must, among other criteria, meet international standards, be economically efficient, safe and disaster-resilient, and contribute to the local economy.<sup>4</sup> By focusing on the local economy, the AAGC claims it will develop successful projects and hire locals, in contrast to BRI projects which often import labour from China rather than create jobs for locals.<sup>5</sup>

The plan is that AAGC will be financed by the private sector, the Japanese and Indian governments and the African Development Bank. The diverse funding sources allow different actors to be consulted in the project development. This contrasts with the funding sources under the BRI, which are limited to Chinese banks, the Chinese government, or Chinese-controlled sources, and allow China to have a large say in how projects are developed in comparison to the other actors involved.

While the exact interest rates that would be applied to projects financed under AAGC have not been revealed, the Japanese provided a 40-year loan with a 0.1% interest rate with a 10-year grace period for jointly developing the ECT project with India, and Japan claims that "sound debt management" is important when investing in projects.6 This suggests that the AAGC will finance plans for lower interest rates than the Chinese government charges. This may attract many countries in Africa which are in need of financial assistance but are wary of accepting it through the BRI due to the high interest rates. The weighted average interest of loans given for BRI was between 3.5% and 5% and rates have risen to 6% for some countries.<sup>8</sup> According to a recent report, eight countries that have been recipients of BRI loans are now at a high risk of debt distress.7

While no specific projects have been initiated under the AAGC as yet, Japan and India plan on developing infrastructure projects such as ports, airports, industrial parks, etc., that increase connectivity between Asia and Africa. Under the AAGC, new sea corridors will be created by connecting the port in Jamnagar, Gujarat, India with the port in Djibouti in the Gulf of Aden, the ports of Mombasa (Kenya) and Zanzibar (Tanzania) will be linked with the port near Madurai (India), and the port of Kolkata in



*This photo shows the container ship Ital Universo docked in Colombo Harbour on 9 August 2013 with the harbour control tower in the foreground.* 

India will be connected to the Sittwe port in Myanmar. The Sagarmala project launched by India, which promotes port connectivity in order to create easier access to developing regions, serves as an example for the AAGC.

Japan and India's partnership to provide assistance to develop infrastructure may help to mitigate Chinese influence in the Indian Ocean. However, these endeavours can only be effective if the relationship between Japan and India is strong, and this is not yet the case. In 2017-2018 bilateral trade between India and China was USD \$84.44 billion, while bilateral trade between India and Japan was USD \$15.71 billion.<sup>9</sup> If India were to take an assertive position, China could use bilateral trade as leverage to hurt India economically, and it has not shied away from using such tactics. Another reason for India's reluctance in forming a partnership with Japan is that India's foreign policy since the Cold War era has always been non-alignment.

In order for the Indo-Japanese partnership to grow economically as well as militarily, both countries must be willing to face the possible negative reaction from China. They must also be willing to interact and coordinate their actions. Only then will they be more effective in countering Chinese influence in the Indo-Pacific region.

#### Notes

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Bavneet Mand is a fourth year political science student at the University of Victoria, and was a research assistant at Maritimes Forces Pacific during her co-op term.

# Dollars and Sense: Stepping up in the Arctic Dave Perry

As August 2019 drew to a close, Russia announced that it had conducted two missile launches from its submarine fleet. Coinciding with the G-7 meeting in France, the Russian Navy fired two intercontinental ballistic missiles (ICBMs) from submarines deployed within the Arctic Circle. If further evidence was required that the Russians are serious about their military modernization in the Arctic, and are inclined to use that new capability in a strategic way, the twin launches provided just that. The launches follow renewed Russian flights of fighter jets, bombers and intelligence aircraft towards North American and Scandinavian airspace, as well as naval patrols – both surface and sub-surface – at a pace not seen since the Cold War.

For Canada, this Russian Arctic military activity provides evidence that it needs to up its game in the Arctic. That is so whether or not Canadians think there are sound reasons to maintain better awareness of what is occurring in the Arctic and a commensurate ability to provide a military response of some type. The increased American focus on the region, and the push to modernize the defence arrangements for North America, NORAD included, are forcing these issues on to Canada's defence agenda. With the Americans moving to enhance their Arctic capabilities and the US Department of Defense (DOD) advocate for Arctic capabilities serving as the Commander of US Northern Command (dual-hatted as Commander, NORAD), Canada needs to view its own Arctic, and enhanced defence presence there, with its eye on the modernization of North American defence.

There are good reasons for Canada to want to improve its Arctic capability for purely national interests. Regional traffic, both commercial and military, is increasing and Canada should have a better understanding of what is happening and the means to respond as needed. Foreign powers, China especially, are increasing their presence with uncertain intentions. President Donald Trump's much-mocked offer to buy Greenland was certainly hamfisted, but may have originated from real American strategic concerns about Chinese investments in Greenland. But the key factor requiring enhanced Canadian Arctic capability is Russia. With modernized forces, many based in the Arctic, Russia has enhanced its ability to threaten Canada through the Arctic with air and naval missiles that can strike accurately from long distances. And as the submarine launches show, the Russians are pushing the envelope with their newly developed capabilities.

Setting these national concerns aside, the Americans are worried about the Arctic through the lens of North

American homeland defence, and they are Canada's continental defence partner. The recently released US DOD Arctic strategy itemizes three American national security concerns in the Arctic: homeland defence of the American Arctic; management of the shared Arctic region; and the Arctic as a corridor for strategic competition. Accordingly, the new strategy sets out the objectives of building Arctic awareness, enhancing Arctic operations and strengthening the rules-based order in the Arctic.<sup>1</sup> It presents a sensible set of propositions. So even if Canada dismisses the national reasons, it should enhance Arctic capabilities. Canada needs to treat the Arctic seriously because the United States does, and while Canada and the United States defend the continent together, Canada is the junior partner in a relationship from which it has benefitted enormously. And the US threefold approach serves as a useful framework for Canada to follow. Strengthening the rules-based approach to the Arctic fits Canada's existing orientation towards the region. Despite Russia's actions, Canada likely faces little in the way of a homeland defence imperative in the Arctic, but it should be careful that it does not become a liability for US homeland defence considerations with respect to Alaska. In that sense, the same American considerations about the Arctic as a corridor for strategic competition apply. The military threat to Canada specifically is probably low, but the threat of Canadian Arctic territory being the avenue of approach to other targets in North America is higher. The real defence consideration for Canada is to defend Canada and North America through the Arctic, which requires greater military capacity in the Arctic.

The current Canadian defence policy, *Strong*, *Secure*, *Engaged*, contains modest discussion of the need to enhance



A landing ship from the Russian Northern Fleet participates in amphibious assault training on the Arctic coast of the Taymyr Peninsula, 17 August 2019.



HMCS **Ville de Québec** tests a connection with the new refuelling apparatus at the Nanisivik Naval Facility, 15 August 2019. Nanisivik is expected to enter full service in summer 2020, the same time as **Harry DeWolf**, the first Arctic Offshore Patrol Vessel.

Canada's Arctic capability, as well as the modernization of North American defence. The policy made several commitments to enhance Canada's ability to operate in the Arctic. The realignment of the Canadian Air Defence Identification Zone has already occurred, although there has been no increase in Canada's ability to enforce this expanded interdiction area. Still to come are enhancements to the Canadian Ranger program and to the "mobility, reach and footprint" of the Canadian military in the North to support operations and exercises, and project force into the region.<sup>2</sup> Finally, the policy committed to work with the United States to develop new technologies to improve Arctic surveillance and control, and renew the North Warning System (NWS).

These initiatives imply greater capability to project forces into the region, and support them once there, as well as enhanced intelligence, surveillance, reconnaissance, communications and command and control assets. Achieving this will require building more infrastructure (in addition to successfully executing new equipment procurements). This will likely include improving the Forward Operating Locations for the air force fighter jets, which will need modernization to accommodate the winner of the Future Fighter Capability Project, and adding additional sites further north, closer to Russian air space. The existing operating locations were situated based on the threat dynamics that existed in the late 1980s. With Russia's new cruise missiles, Canada needs to push its footprint further north to engage incoming Russian aircraft before they are able to strike Canadian targets. The NWS needs replacement by sensors that can provide what its ground-based radars no longer can - effective early warning of incoming threats at a distance allowing meaningful response. While some of this capability will likely be space-based or airborne, some will be ground-based. All of this suggests that there will be some significant demand for new Arctic construction with the attendant difficulties of making this happen.

The glacial pace at which the Nanisivik Naval Facility has taken shape provides an indicator of just how slowly such enhancements are realized, even with significant political will. The facility began life as a 2005 campaign pledge of the Conservative Party of Canada to create an Arctic deepwater port and was pursued under a government whose Prime Minister was so interested in Canada's Arctic military capacity that he personally travelled to observe Canada's northern military exercises. And yet only in August 2019 was initial testing of the refueling station conducted. Full operations are now promised in 2020. Given the current strategic context, Canada's future Arctic construction cycle will need to be shortened considerably.

Unquestionably, the bill for these enhancements will be steep. Although many of these projects received money through *Strong, Secure, Engaged*, which was touted as fully funded, additional funding pressures will be significant. Given the dynamics of how the policy was put together (by a small team precluded from internal consultations due to fear of leaks) and the immaturity of several of these initiatives when the policy was written, many of the 'fully funded' projects already face budget shortfalls. Further, the NWS replacement was not funded as part of the policy. While that project is still being defined, it will likely require a budget north of \$10 billion.

In the past, such North American defence projects received joint Canadian and American funding, with the Americans usually writing the bigger cheque. But one wonders whether such an arrangement is likely from a President aiming to ensure US allies stop stiffing American taxpayers with their defence bills. Canada may have an opportunity to reframe its burden-sharing discussion with the United States by emphasizing Canada's contributions to North American defence specifically, rather than NATO-wide measures such as the 2% of GDP target for defence spending.<sup>3</sup> Given President Trump's penchant for real estate deal-making and interest in Arctic property, Canada may even have an opening to use access to improved Arctic infrastructure as an offset for some other expensive continental defence measures. **\$** 

#### Notes

- 1. Office of the Under Secretary of Defense for Policy, Report to Congress, "Department of Defense Arctic Strategy," June 2019.
- 2. Department of National Defence, *Strong, Secure, Engaged*, Ottawa, 2017, p. 80.
- 3. See Eugene Lang, Searching for a Middle-Power Role in a New World Order (Calgary: Canadian Global Affairs Institute, 2019).

Dave Perry is Vice President of the Canadian Global Affairs Institute and host of its Defence Deconstructed podcast.

# **Book Reviews**

Stranded: Alaska's Worst Maritime Disaster Nearly Happened Twice, by Aaron Saunders, Toronto: Dundurn, 2015, 114 pages, \$19.99 (paperback), ISBN 978-1-45973-154-7

## Reviewed by Steven Bright

The premise of this short book by Aaron Saunders is compelling. Two passenger ships, separated by 76 years, almost fell into the same fate in the same stretch of Alaskan water. In October 1918, *Princess Sophia*, a Canadian Pacific passenger ship, rammed into a reef during a frightful fall storm. Rescue efforts by other ships were ineffectual, and 343 people (all those on board) perished as the ship eventually sank under the raging waves. Decades later, *Star Princess*, a ship of the Princess Cruises line, ran into its own reef problems in the same stretch of the Lynn Canal and narrowly escaped a similar watery fate.

Saunders' description of the rescue and recovery of *Princess Sophia* – and the inevitable recriminations – make for well-paced and interesting reading. You sense that you're on that stranded ship yourself in reading his description of the pressures under which officers were forced to make urgent and often uninformed decisions. Indeed, you can almost feel the growing fatigue of wireless operators, gaining your own appreciation for how creeping exhaustion affects judgement. Hundreds of lives hung in the balance. These parts of the book make for stimulating and crisp reading.

That main premise, however, does not live up to its promise. Like the reefs that damaged the two ships, danger lurks below the surface of this book.

In my view, Saunders beaches his narrative on a combination of several factors. First he relies on forced foreshadowing (for example, "in seconds, fate would come to call on the *Princess Sophia*") (p. 60). And second, he succumbs to a repetitious tendency to tell readers some variation of his main theme – i.e., that the "real tragedy of the *Princess Sophia* may very well be her obscurity" (p. 124) – despite also telling readers that there are "many books" (p. 10) on the same topic. The book could also use another round of editing and several mistakes mar the book. For example, a full sentence on page 61 is repeated word for word only five pages later.

But perhaps more distressingly, asymmetries between the two accidents and their respective coverage in Saunders' book render the overall comparison somewhat unconvincing. The drama and tragedy of the *Princess Sophia* incident is clear. The ship went down after more than 48 hours of on and off terror and left 343 people dead and countless others psychologically scarred for life. By stark contrast, *Star Princess* in 1995 took a few wrong turns, scraped a reef and the ship's officers spent two days safely disembarking 1,568 passengers, albeit in a different harbour than the itinerary had planned.

This asymmetry is baked into the book's structure – thus 77% of the pages are dedicated to the focus on *Princess Sophia*, the remainder on *Star Princess*. Given the variant circumstances, paying more attention on the actual tragedy is understandable. But what is frustrating is Saunders' ongoing need to compare stories that are in many ways only connected by geography. The *Princess Sophia* story is terrifying while the *Star Princess* story is somewhat tepid. Linking them is a stretch, and one that runs thin rather quickly.

Saunders also, and curiously, says the problems of Star Princess in 1995 were insufficiently covered by the media because "in the age before commercial news networks like CNN careened from one media spectacle to the next, a ship that ran around in Alaska without causing a single fatality quickly found itself removed from the headlines" (p. 125). CNN, for a start was founded in 1980, and CBC Newsworld launched in 1989. Moreover, his argument about lack of coverage is hoisted on its own petard, as it were, by the very fact that the Star Princess incident while no doubt challenging for those actually involved had limited news appeal for a broad audience. Saunders does his best to suggest otherwise. But having worked in newsrooms myself, I'm not so sure. The coincidence of geography is not enough to warrant a comparison sold with a Hollywood-like title and breathless writing.

*Stranded* would certainly be an interesting read while passing time at one of the bars in Juneau, Alaska, such as the Triangle Club Bar, that Saunders describes in his book. But readers seeking a deeper understanding of the perils and lessons of Alaskan maritime navigation across the years may want to go elsewhere.

*The US Naval Institute on Marine Corps Aviation*, edited by Thomas J. Cutler, Annapolis: Naval Institute Press, 2016, 165 pages, \$USD 18.85 (softcover), ISBN 978-1-68247-040-4

## Reviewed by Colonel (Ret'd) P.J. Williams

When one thinks of the history of the US Marine Corps (USMC), flying machines do not readily come to mind, do they? Indeed, it was only on 21 November 1942, that the then Commandant, General Thomas Holcomb, approved

a change in the words of the fourth line, first verse of the Marine Corps Hymn from 'On the land as on the sea' to 'In the air, on land, and sea' to reflect the addition of aviation to the Marine Corps' arsenal.<sup>1</sup> Fun fact: by this time the marines had already been flying combat missions in support of their comrades on the ground for some 15 years.

This book tells the story of Marine Corps aviation, an era which began with the deployment of a marine aviation element, as an integral part of the 4<sup>th</sup> Marine Regiment, to China in the late 1920s during that country's civil war. I'd always been taught that 'aviation' referred specifically to rotary-wing aircraft, but the USMC has chosen to use this term to encompass all manner of aerial vehicles.

This volume is part of a US Naval Institute series which focuses on the relevance of history by exploring various US military themes, whether specific people, battles or organizations. Thomas Cutler, who has edited many books in the series, has long been associated with US naval scholarship and has received many awards for his work both as a writer and as a teacher.

The book consists of nine articles, all taken from US Naval Institute *Proceedings*, written between 1949 and 1992. Articles are arranged somewhat chronologically, covering conflicts from marine aviation's early days in China and in Nicaragua, through the Pacific theatre in the Second World War, Korea, Vietnam and NATO's northern flank during the Cold War.<sup>2</sup> The 1990 Gulf War gets brief mention and there is an article about command and control of marine aviation, rhetorically titled "Who Really Needs Marine Tac Air?" The authors are a mix of professional historians and (at the time) serving officers, including two at four-star rank.

For this reviewer, two key themes emerged as I read this book. The first was the sheer pioneering spirit exhibited by marine aviators in the first two decades of USMC's use of aviation, as they sought, successfully, as it turns out, to make themselves an integral part of the Marine Air-Ground Task Force (MAGTF). And so we read stories of early marine aviators in China warming their fuel over fires at night (yikes!) to enable their water-cooled engines to start in the morning. Marine aviators also excelled in the aerial resupply business, on occasion supplying their brethren not only with combat supplies but also ice and copies of *The New York Times*! During the Vietnam War, marines developed the concept of the short airfield for tactical support (SATs), which envisaged 2,000-foot runways carved out of the jungle within days.

The other theme deals with the command and control of marine aviation. The USMC's coin of the realm in this

regard is that "the aviation element of a MAGTF ... is immediately responsive to the needs of the Marine ground combat element commander."<sup>3</sup> Indeed, in a number of articles mention is made that the US Air Force wasn't interested in the close air support mission in Korea and that Vietnam was not a fighter pilot's war for USMC aviators. There were no marine 'aces' in Vietnam. And for the marines, it did not seem to matter.

While Cutler has done a good job in this book of chronicling the history of USMC aviation since its inception, I felt that the lack of reference to more recent events in Iraq and Afghanistan, left a gap that could have been filled for a more complete record. Further, the lack of maps, particularly for lesser known conflicts such as those in late 1920s China and Nicaragua, made it hard for this reviewer to follow the accompanying historical narrative.

At a time when many armed forces are moving away from a focus on counter-insurgency toward more high-end, peer-to-peer conflict, there is a danger that many of the lessons learned in the employment of Marine Corps aviation along other parts of the spectrum of conflict, may be forgotten because they are seen as irrelevant. To do so would be most unfortunate and would ignore the inherent flexibility of air power, which this account has ably demonstrated. Recommended.

#### Notes

1. To learn more about the USMC hymn, go to https://www.hqmc.marines. mil/hrom/New-Employees/About-the-Marine-Corps/Hymn/.

2. Canada receives a mention here, the author noting that in times of crisis, Canadian squadrons, along with other NATO allies, would deploy to this region.

3. This quotation comes from an article by Major John E. Valliere, USAF, "Stop Quibbling and Win the War," p. 145.

*Jutland: The Unfinished Battle*, by Nicholas Jellicoe, Barnsley, South Yorkshire: Seaforth Publishing, 2016, 424 pages, \$11.62 (softcover), ISBN 978-1-5267-3728-1

#### Reviewed by Colonel (Ret'd) P.J. Williams

The author of *Jutland: The Unfinished Battle* is the grandson of Admiral of the Fleet, John Jellicoe, 1<sup>st</sup> Earl Jellicoe, commander of the Royal Navy's Grand Fleet during the battle of Jutland. He provides a very comprehensive account of the world's last great dreadnought engagement in the North Sea in 1916.

The author's aim in writing this book is to examine questions not only of who won the battle, but also, what actually happened and what made its outcome so important. The book is organized into three main sections: the context which covers the growth of the Royal Navy and the German Navy pre-war and the course of the naval war prior to the May 1916 battle; the battle which encompasses one-third of the book; and the aftermath which includes not only a chronology of conduct of the naval war until the German High Seas Fleet was scuttled at Scapa Flow in 1919, but also the controversy which broke out immediately after the battle.

There is also a lengthy bibliographical appendix which compares and contrasts the characters of the main Admirals on both sides: Jellicoe and David Beatty (Commander of the Battle Cruiser Force); and Admiral Reinhard Scheer and Admiral Franz von Hipper, respectively, Commanders of the German High Seas Fleet and the Scouting Forces. Indeed, this book is as much a study in military culture as it is the story of a major fleet action.<sup>1</sup>

Although not a professional historian himself, the author has clearly done his homework in conducting his research. The notes are extensive and the bibliography runs to nine pages and includes primary and secondary sources in both German and English. One of the latter, a personal account by Admiral Jellicoe written within days of the battle, was only made available for the first time in 2015. The book includes several maps depicting the course of the battle and there are many vignette panels sprinkled throughout the text. These cover subjects ranging from Signaling at Jutland to Protecting the (Ammunition) Magazines to British Gunnery Performance at Jutland. But there's more! For those who would wish to research this battle in more detail, the author has created a series of online appendices, which can be accessed at www.Jutland1916.com. These include a video titled "The Battle of the Jutland Animation" which those unfamiliar with this battle can consult before reading of the battle itself. Readers may be interested to know that the battleship HMS Canada participated in the battle.

It is not this reviewer's intent to recount the battle but rather to highlight some of the key themes and revelations within this book which made it so engaging. Jellicoe, the author, is quite critical of the Royal Navy in which his grandfather served, stating that it "was still trained not to think, but only to do what it was told to do" (p. 139). He also compares the approaches taken by the opposing forces, noting that the Grand Fleet fought as two fleets, the Germans as one. The account of the battle is also replete with the failures of intelligence services ashore to provide Jellicoe with timely and accurate information. Beatty for his part could have done much more to keep his superior, Jellicoe, informed of the situation at sea. And to be fair, the author criticizes his grandfather for not instilling in his commanders the necessity of passing information and intelligence higher. Further, Jellicoe's fear that RN wireless signals might be intercepted by the enemy led to an

over-reliance on flag and light signals, which certainly hampered communications given the literal 'fog of war' which existed during the battle.

The author also debunks some 'fake news' which arose in the aftermath of the battle. Through statistics which the author analysed, he determined that the Grand Fleet fired more rounds and scored more hits than Beatty's Battle Cruiser Force which is counter to the conventional wisdom of the day.

These days, we define military victory, if we define it at all, differently than in the past. Reference is made to 'exit strategies,' troop reductions and announcements regarding when there will no longer be boots on the ground are made very quietly. The sailors of the RN were pilloried by their own press and the public for not achieving a second Trafalgar. While the debate as to who won at Jutland will continue, this account goes a long way to setting the record straight. Very highly recommended.

Notes

1. For readers wishing to read more about the culture of the Royal Navy, see Andrew Gordon, *Rules of the Game: Jutland and British Naval Command* (London: John Murray, 1996).



The Maritime Coastal Defence Vessel HMCS **Moncton** arrives in Halifax harbour on 14 September 2019 after being repainted into a 'dazzle' camouflage pattern as part of the Royal Canadian Navy's commemoration of the 75<sup>th</sup> anniversary of the end of the Battle of the Atlantic.



Sailors line the deck of the Royal Navy aircraft carrier HMS **Queen Elizabeth** as the ship enters Halifax harbour for the first time on 12 September 2019 during the WESTLANT19 deployment.

Credit: LPhot Kyle Heller, UK Ministry of Defence



HMCS Ville de Québec pulls up to the Nanisivik Naval Faciliy on 16 August 2019 as part of the facility's dry trials in preparation for next year's commissioning.

Credit: Dave Mazur, Commander CFB Halifax