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THE TIME FOR CHANGE IS NOW: AN RCN LITTORAL WARFARE UNIT

AIM

1. The Royal Canadian Navy (RCN) should be prepared to confront new security threats that arise from emerging technologies. As warfare evolves and threats become increasingly sophisticated, the RCN should consider modifying its force structure to effectively safeguard Canada's maritime interests. Addressing these challenges demands a more agile, flexible, and capable naval force. Dynamic shifts in modern naval warfare will test the RCN's traditional concept of "contribution warfare" and its dependence on the United States Navy's Carrier Strike Group (CSG). To adapt to the shifting maritime security landscape, the RCN can look to new models of sea-control/sea-denial, such as the United States Marine Corps (USMC) Force Design 2030, for inspiration. As always, the ability to project force remains critical. To this end, the RCN should consider reconstituting its Fleet Diving Units (FDU) and the Naval Tactical Operations Group (NTOG), into a Littoral Warfare Unit (LWU).

INTRODUCTION

2. The Royal Canadian Navy (RCN) faces significant challenges as it tries to adapt to the current and future operating environment. The growing strategic competition in the Indo-Pacific region, characterized by the Chinese Communist Party's (CCP) assertiveness, poses a critical concern. To address these challenges, early investment by the RCN in disruptive technologies, and units capable of delivering their outsized effects, is required to establish a credible defense of the Rules Based Order (RBO). To achieve this, the RCN should take bold steps and reimagine the roles of its FDUs and NTOG. These units, like many others, are fully aware of the rapidly deteriorating security situation and the power of disruptive technologies. Taking inspiration from the USMC's Force Design 2030, the RCN should consider exploring new models of force design. By adopting a new structure, the RCN can enhance its capacity to operate in complex littoral environments. This service paper explores 7 key themes: 1) the vulnerability of the CSG model; 2) the changing nature of warfare; 3) the importance of the Indo-Pacific; 4) the USMC's Force Design 2030; 5) the RCN's challenges and potential course corrections; 6) how other key security partners have evolved to the threat; and 7) the case for change. The paper closes with concluding remarks and recommendations.

DISCUSSION

3. The CSG is considered the most powerful conventional asset in modern naval warfare. It comprises an aircraft carrier, its accompanying air wing, and a group of escorts that safeguard and support the carrier's operations. The CSG is built to project naval power and facilitate a broad spectrum of missions both at sea and power-projection ashore. For more than seventy years, the CSG has been an adaptable and versatile naval force that can be deployed in diverse mission scenarios and safeguarding national interests worldwide.

4. As warfare evolves, the effectiveness and relevance of the CSG is now in question.¹ Emerging technologies offer comparable capabilities to those of crewed aircraft carriers, but without the same vulnerabilities. Anti-Ship Ballistic Missiles (ASBMs) combined with advanced space-based surveillance render the use of large and high-signature CSGs less practical. Moreover, CSGs are costly to construct and maintain, requiring thousands to operate efficiently. Given the pressure on defense budgets, there are concerns that the expense of a CSG may become unsustainable, especially if more cost-effective alternatives exist. The era of sophisticated and customized capabilities is threatened by low-cost massed options. While the CSG remains an essential aspect of modern naval warfare, its future may be at risk due to technological advancements, shifting warfare paradigms, and budgetary considerations. As the threat landscape evolves, new methods of naval power projection are likely to emerge, with or without the CSG. Consequently, the RCN's contribution to such a force design as a picket or ASW platform is becoming increasingly obsolete, making it crucial to explore and invest in viable alternatives.

5. As the operating environment becomes increasingly contested, it is crucial for the RCN to leverage new technologies and adapt to the shift from benign sea control to a domain of sea denial.² The future of warfare is expected to be marked by asymmetric and autonomous littoral operations using Anti-Access/Area-Denial (A2/AD) tactics, which could prove more disruptive than the formation of CSGs during World War II that rendered battleships irrelevant.³ For decades, the RCN has contributed to CSGs, enabling largely unrestrained power projection across the globe. However, it is no longer safe to assume sea control against the sophisticated use of A2/AD doctrine. New technologies are reasserting the influence of sea denial, preventing the freedom of movement of CSGs, and thus the ability to assert national interests.

6. The global economic hub of trade and finance has shifted to the Indo-Pacific region, marking a significant transformation in the international landscape.⁴ This change has brought to light a new set of challenges, particularly with regards to the CCP's attempts to reshape the RBO. Near-peer rivals like the CCP are rapidly advancing A2/AD doctrine and capabilities. Critical infrastructure, including ports, airfields, forward operating bases, and other facilities, once considered safe, are now vulnerable to attack. Even in the vast expanse of the Indo-Pacific region, the rear-echelon is not immune to these emerging threats.⁵

¹ Elliot Ackerman, "A Whole Way of War Sank with the Moskva." *The Atlantic*, May 22, 2022. https://www.theatlantic.com/ideas/archive/2022/05/ukraine-russia-moskva-military-marine-corps/629930/?utm_source=feed.

² Ching Chang, "The Nature of Sea Control and Sea Denial," Center for International Maritime Security, September 12, 2018, <https://cimsec.org/the-nature-of-sea-control-and-sea-denial/>.

³ Sebastien Roblin, "A2/AD: The Phrase That Terrifies the U.S. Military (And China and Russia Love It)," *National Interest*, April 9, 2019. A2/AD: The Phrase That Terrifies the U.S. Military (And China and Russia Love It) | The National Interest

⁴ Allianz, "The World is Moving East Fast," *Allianz Trade & Economic Insights*, January 18, 2021. https://www.allianz-trade.com/en_global/news-insights/economic-insights/the-world-is-moving-east-fast.html.

⁵ Andrew Jeong, "New U.S. Base on Guam Is Aimed at Deterring China," *The Wall Street Journal*, November 18, 2021, <https://www.wsj.com/articles/new-u-s-base-on-guam-is-aimed-at-deterring-china-11674731857>.

7. Amidst ongoing discussions among defense experts and services about the impact of disruptive technologies on modern warfare, the US Marine Corps (USMC) stands out as a force that is taking decisive action to adapt to the changing landscape. In his recent forward planning guidance, titled "The Case for Change Meeting the principal challenges facing the Corps," the Commandant of the USMC, General Berger, upends decades of conventional thinking and provides a sobering perspective on the future operating environment:

The United States Marine Corps I lead in 2020 finds itself, like the rest of the U.S. defense establishment, at a crossroads. The passing of our Nation's 'unipolar moment' and the emergence of revisionist great power competitors in China and Russia, coinciding with a sea change in the character of warfare driven by social and technological change, demands that we move rapidly to adapt to the circumstances of a new era...In light of the unrelenting increases in the reach, effectiveness, and lethality of modern weapons, the rise of revisionist powers with the technical acumen and economic heft to integrate those weapons and other technologies for direct or indirect confrontation with the United States, and the persistence of rogue regimes possessing enough of those attributes to threaten U.S. interests, I am convinced that the defining attributes of our current force are no longer what the Nation requires of the Marine Corps.⁶

8. The USMC has undergone a rapid force modernization with its Force Design 2030 plan, which centers around implementing a Littoral Warfare Strategy (LWS). This plan aims to create a more agile, lethal, and flexible force by reducing the Marine Corps' size and reorganizing it to focus on expeditionary and littoral warfare. The strategy's primary objective is to enhance the Marine Corps' capacity to operate in complex littoral environments, especially in contested areas, and to be better equipped for potential conflicts with near-peer adversaries. Key elements of the plan include the ability to:

- Fight at sea, from the sea, and from the land to the sea;
- Operate and persist within range of adversary long-range fires;
- Maneuver across the seaward and landward portions of complex littorals;
- Sense, shoot, and sustain while combining the physical and information domains to achieve desired outcomes;
- Achieve mass without the vulnerabilities of concentration, thanks to mobile and low-signature sensors and weapons;
- Operate in smaller units from Expeditionary Advanced Base Operations (EABOs) and work as an Integrated Naval Force (INF) with the USN;
- Operate from smaller ships, distributed over vast distances, but linked by command and control systems and doctrines that allow such radically dispersed forces to achieve relevant, lethal effects in deterrence and in war.⁷

⁶ Gen David H. Berger, "The Case for Change: Meeting the principal challenges facing the Corps," *The Marine Corps Gazette*, June 2020. [The-Case-for-Change.pdf](#) (mca-marines.org)

⁷ Gen David H. Berger, "Force Design 2030," United States Marine Corps, May 2022. [Force_Design_2030_Annual_Update_May_2022.pdf](#) (marines.mil)

9. The RCN is not just at a crossroads, but facing a dead-end. Institutions in general, but particularly the military, often resist change. But failing to adapt to change carries significant risk. Force projection is critical for Canada as a G7 nation. Japan's recent doubling of its defense spending underscores the mounting pressure on Canada to not only do more but be credible.⁸ The formation of AUKUS is another clear wake-up call.⁹ While the ideal scenario would allow the RCN to maintain a conventional blue-water fleet and hedge with minimal investments in asymmetric capabilities, the reality is that the RCN's aging frigates, lack of destroyer area air defense, and limited replenishment ships make it difficult to project power abroad, leaving the RCN relegated to coastal defense and arctic patrols. The current fleet of Coastal Defense Vessels and Arctic Offshore Patrol Ships are not credible in the current threat environment. The RCN should therefore embrace the implications of Moore's Law and hedge for a disruptive future.¹⁰

10. The RCN, as the smallest of the CAF's three services, will be required to play a critical role in the Indo-Pacific. As the smallest services, its size could be an advantage in moving rapidly to adapt to change and generate outsized effects. The Army, which is the largest element in the CAF, is focused on land operations in eastern Europe, and has never been oriented to sea. The RCAF is heavily platform-focused and poorly structured to operate in the Indo-Pacific. Although CANSOF could potentially operate in this environment, they have historically been land-oriented and often overburdened as the CAF's force of choice. While some view littoral operations and A2AD responses as amphibious operations, this ignores the disruptive effects of recent technologies and the nature of Multi-Domain Operations. Moreover, it brushes over the recent history of the Standing Contingency Task Force (SCTF) and the Maritime Amphibious Unit (MAU).¹¹

11. Although the RCN aspires to have a large blue-water fleet, this is unlikely even in a best-case scenario, as the Canadian Surface Combatant (CSC) program is decades from completion. In this context, two of its smaller units, FDU and NTOG, are well-positioned to adapt to the changing threat environment. To meet the challenges ahead, it is necessary to restructure and invest in these units. FDUs are responsible for carrying out a range of specialized tasks such as Mine-Counter Measures, Explosive Ordnance & Improvised Explosive Device Disposal, and Battle Damage Repair; all on both land and at sea. These capabilities will remain in high demand due to the rise of non-traditional attacks by adversaries. For example, recent attacks on critical underwater infrastructure in Norway, Taiwan, and Nordstream-2 have underscored the need for a robust capability to not only repair, but to conduct forensic inspections and determine

⁸ Michael Mazza, "Japan's Bigger Defense Budget: Getting to Effective Deterrence," *Foreign Policy Research Institute*, November 29, 2021, Japan's Bigger Defense Budget: Getting to Effective Deterrence - Foreign Policy Research Institute (fpri.org)

⁹ Amanda Connolly, "Armed Forces concerned over Canada's absence from 'AUKUS' security pact," *Global News*, October 4, 2021, Armed Forces concerned over Canada's absence from 'AUKUS' security pact - National | Globalnews.ca

¹⁰ Posited in 1965, Gordon Moore proposed that the number of transistors on a chip would double roughly every two years, with a minimal rise in cost¹. This prediction became known as Moore's Law; Dr. Ann Kelleher, "Moore's Law: Now and in the Future," *Intel Newsroom*, June 16, 2022, Moore's Law – Now and in the Future (intel.com)

¹¹ Scott Knight, "Reviving the Princes – Some Thoughts on a Canadian Standing Contingency Task Force," *Canadian Military Journal*, 21, no. 4 (2021), Reviving the Princes – Some Thoughts on a Canadian Standing Contingency Task Force - Canadian Military Journal (forces.gc.ca)

attribution.¹² Additionally, the FDUs provide the only credible response to sea mining of critical sea lines of communication and geostrategic chokepoints, which pose extreme risks to global trade and security. While autonomous systems will create efficiencies for Clearance Divers (CL DVRs) in the future, they are not a panacea; the high probability of operating in GPS-denied environments, in addition to mass mining operations that could overwhelm autonomous response inventories, necessitates highly skilled operators capable of manual intervention. The analogue option, despite its challenges, remains crucial. NTOG was originally established to handle constabulary boarding tasks, but its current remit does not lend itself to leveraging disruptive technology to deliver effects against emerging threats. Despite the requirement for both FDU and NTOG to maintain a credible capability for their traditional tasks, they could be leveraged to broaden their utility for the RCN with proper funding and direction. Thus, reconstituting FDU and NTOG into a fully-enabled LWU could provide the RCN with a credible effect, and serve as an unconventional hedge to a disruptive future.

12. Beyond the USMC, other key security partners in the Five-Eyes (FVEYs) community have already reformed their force structures to respond to the challenge presented. The Royal Navy's Fleet Diving Squadron has evolved, and is now the Diving and Threat Exploitation Group (DTXG), with a significantly broadened mandate and capability set.¹³ Moreover, in conjunction with the United States Navy (USN), they have been proactive in addressing new threat vectors by establishing a multinational team, titled Expeditionary Exploitation Unit One (EXU-1).¹⁴ Other key partners in the Indo-Pacific, namely the Royal Australian Navy (RAN) and Royal New Zealand Navy (RNZN) have reformed as LWUs, with significant investment in training and capabilities.¹⁵ The RCN has yet to catch up with its allies in implementing crucial doctrinal reform, training, and funding measures that were recognized and embraced years ago.

12. Throughout naval history, its leaders have recognized the significance of emergent technologies and the challenging decisions they require. Admiral Jackie Fisher modernized the RN before the First World War, while Admiral William "Bull" Halsey prioritized the carrier over the battleship. These leaders demonstrate the ability to anticipate future threats and drive necessary change. While the RCN may not require a Fisher or Halsey, it must adapt to the

¹² Michael Peck, "A Severed Cable Almost Brought Down the British Empire," *The National Interest*, February 20, 2022, A Severed Cable Almost Brought Down the British Empire | The National Interest; Elisabeth Braw, "China's Next Move Against Taiwan Could Happen Under the Ocean," *Foreign Policy*, February 21, 2023, China Is Practicing How to Sever Taiwan's Internet (foreignpolicy.com); and Timothy Heritage, "Nord Stream gas 'sabotage': who's being blamed and why?" *Reuters*, September 17, 2021, Nord Stream gas 'sabotage': who's being blamed and why? | Reuters

¹³ Ministry of Defence, "Royal Navy divers transform to create new elite mission teams." *UK MOD*: 1 March 2022, RN rebrigades Fleet Diving Squadron as DTXG (janes.com); Royal Navy divers transform to create new elite mission teams (mod.uk)

¹⁴ Marc Tranchemontagne and Chris Price, "Enhance the Maritime Capability to Exploit Foreign Threat Systems," *Proceedings*, May 2022 Vol. 148/5, US Naval Institute. Enhance the Maritime Capability to Exploit Foreign Threat Systems | Proceedings - May 2022 Vol. 148/5/1,431 (usni.org) ; Naval Surface Warfare Indian Head, "Britt Assumes Command of Expeditionary Exploitation Unit One," *The Baynet*: July 13, 2020. Britt Assumes Command of Expeditionary Exploitation Unit One - The BayNet

¹⁵ Naval Today, "New Zealand's littoral warfare unit hosts US Third Fleet Commander during RIMPAC," *Naval Today*: July 14, 2016. New Zealand's littoral warfare unit hosts US Third Fleet Commander during RIMPAC - Naval Today

evolving threat environment and deliver credible effects. This requires taking risks, decentralizing authorities, empowering operational-level commanders to address the threat, and streamlining training and procurement. As the saying goes, "a ship in port is safe, but that is not what ships are built for." A reconstituted FDU and NTOG into a Littoral Warfare Unit (LWU) could provide the RCN with a rapid and effective solution to its capability gap.

CONCLUSION:

13. The RCN faces significant challenges in adapting to emerging security threats. The growing strategic competition in the Indo-Pacific, marked by China's growing assertiveness, requires the RCN to adapt in order to remain effective in protecting Canada's maritime interests, if not attempt to reassert itself as a credible partner. The traditional concept of "contribution warfare" and reliance on CSGs is at risk, and new models of sea-control/sea-denial offer potential roadmaps for the RCN to adapt to the changing maritime security landscape. The ability to project force matters, and by embracing new technologies, enhancing training and readiness, and increasing cooperation with allied forces, the RCN can further Canada's interests in the maritime domain. Reconstituting the FDU and NTOG could enhance the RCN's ability to operate in complex littoral environments and deliver disruptive effects. Ultimately, the RCN must take bold action and invest to remain relevant and credible.

RECOMMENDATIONS

14. The RCN should reconstitute the FDU and NTOG into an LWU that is well-suited to respond to the future operating environment. This unit should be task-tailored to deliver credible effects in the Indo-Pacific and beyond, and be constructed on the premise of operating in a contested and non-permissive environment. To accomplish this, the RCN should take the following steps:

- Reform the FDU and NTOG into a Littoral Warfare Unit (LWU);
- Establish a Littoral Warfare Study Cell to develop a better understanding of the operating environment and the threats facing the RCN;
- Create exchange billets with the USMC to promote interoperability and shared learning;
- Formulate doctrine, cost estimates, command and control structures, training programs, and selection requirements for an effective and efficient LWU;
- Fund the procurement of commercial off-the-shelf (COTS) solutions for blue water transport to enable the unit to move quickly and seamlessly between operational areas;
- Procure a robust complement of advanced weapons systems such as Stinger, Javelin, Switchblade, Autonomous Aerial Vehicles (AAVs), Autonomous Underwater Vehicles (AUVs), and sea mines to provide the LWU with the necessary capabilities to disrupt enemy operations.

By implementing these recommendations, the RCN can position itself as a leader in littoral warfare and maintain a credible capability to respond to emerging threats.

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