

# The Case for Canadian Naval Ballistic Missile Defence

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The cornerstone of the National Shipbuilding Strategy (NSS) – the multi-billion-dollar program to recapitalize major aspects of Canada’s navy and coast guard – is the development of the Canadian Surface Combatant (CSC). The CSC will become the principal surface warship of the Royal Canadian Navy (RCN), which as outlined in the navy’s strategic planning document (*Leadmark 2050*) must be comprised of multi-role, multi-purpose and globally deployable assets able to operate in high-end combat environments.<sup>1</sup> In determining the suite of capabilities and capacities to achieve such requirements, serious consideration should be given to including ballistic missile defence (BMD) functions or acquiring a platform which could easily be modified to incorporate these in the future.

Naval BMD would serve three interconnected defence interests: accessibility; adaptability; and alliance maintenance. Accessibility refers to preserving the ability and confidence of the RCN to sail and operate in areas of the world which are increasingly contested militarily and defined by the proliferation of ballistic and cruise missiles meant to intimidate access to and manoeuvring within these areas, specifically at sea. Naval BMD, furthermore, would contribute to the adaptability of the CSC to conduct multi-role missions and operate within increasingly complex, multi-threat environments. Finally, naval BMD would strengthen interoperability with allies procuring such systems, and could offer a portal of entry into the US North American BMD system.

## *The Emerging Military Environment*

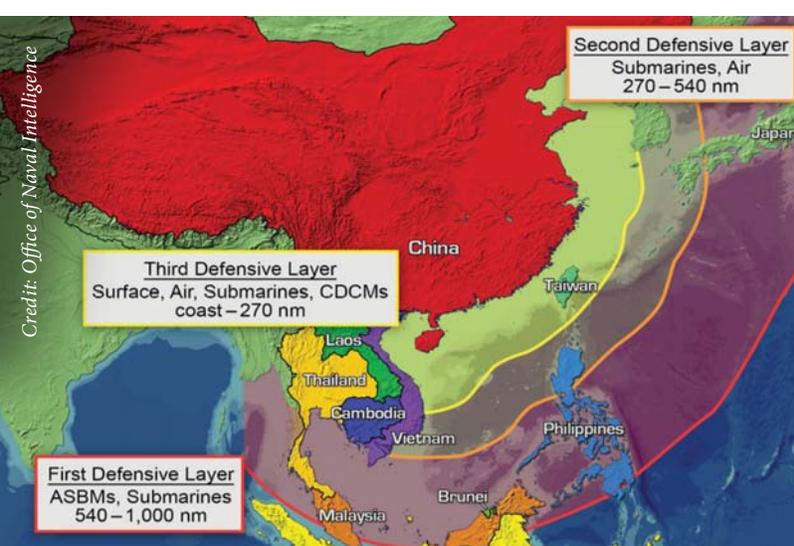
Western military primacy, specifically sea and air superiority, is eroding as a number of states augment their military power in large part to target Western regional bases and forces. This changing military balance has not yet resulted in the expulsion of Western, specifically American, forces from these regions, the erosion of alliance partnerships, or the assumption of complete sea and air dominance by another power. The era, however, of Western military primacy defined by in-theatre assets and forces coming into and operating in these spaces without concern about being vulnerable to the forces of other states is coming to an end.

In particular, several adversarial and peer-competitor states are employing a myriad of weapons and strategies to target American and allied forces at greater distances



Credit: Missile Defense Agency

The *Arleigh Burke*-class guided-missile destroyer USS *Hopper* (DDG 70) fires a Standard Missile-3 (SM-3) Block IB Threat Upgrade guided missile on 25 May 2016, off the coast of Hawaii. SM-3 missiles are designed to destroy short-to-intermediate-range ballistic missiles prior to their re-entry into the atmosphere.



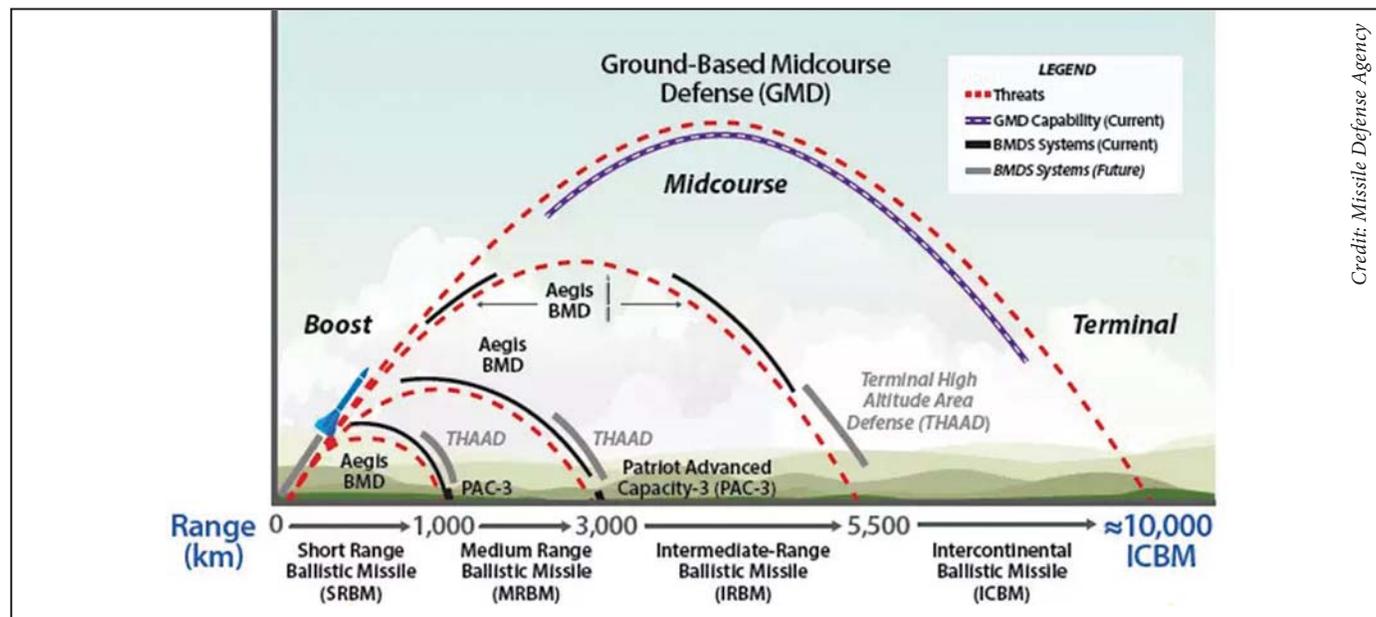
China's DF-21D anti-ship ballistic missiles form the outer layer of its military defence.

to induce caution in their deployments and operations. These tactics, known as anti-access/area denial (A2/AD), are meant to challenge access to and manoeuvrability within a region by holding opposing forces at risk of attack at increasingly further distances, denying them sea and air supremacy but not necessarily establishing control over these spaces. One of the most important weapons of such an arsenal is missiles, both cruise and increasingly ballistic variants. In the last two decades there has been a horizontal (number of states possessing them) and vertical (size and diversity of arsenal held by each state) proliferation of ballistic missiles, specifically in East Asia and the Middle East between antagonistic dyads of states competing over disputed territorial claims, historical grievances and/or spheres of influence. Examples include Iran-Saudi Arabia, Pakistan-India, North Korea-South Korea, China-Taiwan and China-Japan. Given that many of these pairs include American allies or close defence partners, limiting US power projection and eroding American willingness to defend these states is a key

objective for competitor/adversarial states. Cruise and ballistic missiles are also desirable weapons because they are relatively cheap, have the potential to penetrate defensive systems and are symbols of national power.<sup>2</sup>

Iran around the Straits of Hormuz, Russia in Eastern Europe and North Korea in Northeast Asia are areas of Western concern with respect to A2/AD. By far, however, the most important in terms of comprehensively jeopardizing Western power is East Asia due to the increasing military power of China. China is quickly becoming the new centre of global economic power in East Asia but the region is also home to several ongoing and outstanding territorial disputes and historical grievances, many involving China directly. Beijing is attempting to gain greater control over the trajectory of East Asia by using a mixture of economic, political and military instruments of power to shape the region to its benefit. One of the key aspects of China's approach is using military power to break US dominance and invulnerability throughout the Three Island Chains surrounding China with an ever-expanding arsenal of missiles (including deploying the world's first anti-ship ballistic missile) from the Chinese mainland, an expanding naval fleet and several new bases in the South China Sea.<sup>3</sup> China's military is being prepared to fight in combat if needed, but Beijing prefers a gradual and non-violent change to the region's balance of power shifting to its advantage thereby diminishing American power and resolve to uphold existing security commitments.

Where does Canada fit into this picture? Canada is active throughout East Asia on several fronts, including a growth in defence and security relations and activities



Each ballistic missile defence technology is tailored towards specific target types and stage of ascent/descent.

which have historically been absent from previous trade-centric approaches to the region. Current and future deployment cycles of the RCN signal a growing interest in the region militarily, including a near continuous naval presence scheduled there for the next few years.<sup>4</sup> The RCN's approach in Asia is largely defined by maritime diplomacy, visiting and operating with a number of regional militaries, including China's, to build Canada's status in the region as a committed security partner.<sup>5</sup> In view of its desire to build relations, the government has largely been silent on several outstanding maritime and territorial disputes and non-committal about its specific views towards and policies pertaining to freedom of navigation (FON) patrols.

China's increasing presence and capabilities in these waters, however, is a military development to which the RCN must adjust in planning deployments and operations there. The plan to develop good relations has been tinged with concern about Chinese actions, including being shadowed by Chinese forces.<sup>6</sup> Being familiar with such tactics by Russia in the Black and Mediterranean Seas, Canada has experience in and thus is well-suited to prepare for and act accordingly. It should be noted that there are as yet no explicit indications that China will become increasingly aggressive in attempting to evict foreign naval forces from its claimed waters.

With RCN ships expected increasingly to sail through such disputed waters – the vastness of the area which is disputed makes it difficult to avoid – and increasing FON patrols by the United States and others including Japan and some European states, whether Canada can remain completely ambiguous on this matter is questionable.<sup>7</sup> Nevertheless, the RCN should be equipped with the capabilities required to operate confidently in disputed spaces,

operate with allies and partners, and further the Canadian maritime diplomatic approach of being a trusted and present security partner in the region. Such an approach is not an attempt to re-assert American primacy or contain China<sup>8</sup> but rather to ensure global maritime spaces in all regions, including those closer to home such as in the Arctic, remain free and open to naval and commercial vessels. As well, it would support local allies and partners facing conventional and nuclear ballistic missile threats.

### *Embrace of Naval BMD by Allies*

Over the last decade European states and close defence partners in Asia have begun to incorporate a BMD capability into their navies, in most cases working with the United States which has the largest and most advanced naval BMD system in the world: AEGIS BMD, which was developed in the 1980s to defend naval forces against aircraft and cruise missile threats. In the early 2000s the US Navy (USN) began equipping its warships with the ability to track and shoot down enemy ballistic missiles by expanding the AEGIS Combat System with the addition of new radars and interceptor missiles to engage ballistic missiles during their mid-course phase of flight outside the atmosphere. Currently the USN has 38 AEGIS BMD-capable ships with plans to increase this force by 50% by 2023.<sup>9</sup> As well, the United States is developing AEGIS Ashore sites in several allied states with the same capabilities as its naval version but in a fixed, on land site.

In 2010 NATO agreed to develop a BMD system to protect its European member states and this has resulted in a number of system deployments throughout the continent. These include: AEGIS Ashore stations in Romania and Poland; permanently stationed AEGIS BMD ships in Spain; a continental BMD command quarters in Germany; and national BMD projects pursued by several NATO states



Credit: Kees Torn, Flickr

Dutch frigate HNLMS *Tromp*, pictured here near Rotterdam 4 September 2017, used its SMART-L radar (the large, black rotating array on the aft superstructure) to track a ballistic missile target in 2006. *Tromp* and the rest of the *De Zeven Provinciën*-class frigates are having their SMART-L radars upgraded to support BMD capabilities.



The AEGIS Ashore Missile Defense Test Complex on Kauai, Hawaii, successfully fired a SM-3 Block IIA missile to intercept an intermediate-range ballistic missile target on 10 December 2018. Additional AEGIS Ashore complexes are or will be located in Poland, Romania and Japan.

such as an indigenous BMD-ashore system in the UK and tracking (but not intercepting) ballistic missiles capabilities in the Danish and Dutch navies. Taken together these form a patchwork, interim BMD system that NATO is committed to continue to develop and fully integrate. In Asia, Japan is working extensively with the United States in research and development and the deployment of AEGIS BMD systems. This includes the ongoing conversion of its *Kongo*-class AEGIS ships to be BMD capable and the announcement of plans to build two AEGIS Ashore systems.<sup>10</sup> Australia, where there is currently ongoing debate about whether the country requires BMD, has thus far opted out of joining or building such a system but its newest air warfare destroyer, the *Hobart*-class, will include the AEGIS Combat System which will facilitate easy upgrading to do so in the future if decided by Canberra.<sup>11</sup>

Naval BMD participation, therefore, offers an ideal avenue for Canada to enhance alliance relations by ensuring interoperability in this emerging capability. It would also strongly signal support for allies' defence priorities (Ottawa is a signatory of NATO's 2010 Strategic Concept identifying BMD as a key focus), and provide naval assets which can perform a number of functions in support of allied operations including protecting naval task forces against attack or contributing to their territorial security. Any decision by Canada to acquire AEGIS BMD, which was recommended in a recent Senate Report,<sup>12</sup> for its navy would allow seamless integration into such missions, including

relieving over-extended USN BMD patrols around allied states like Japan.<sup>13</sup> While not capable of intercepting intercontinental ballistic missiles, the ability to relay tracking information by AEGIS BMD to other systems would also provide Canada a possible entry point into the American Ground-Based Midcourse Defence (GMD) system.

### ***Alternative to Ground-Based Midcourse Defence***

Historically, discussion of Canadian BMD participation has been with respect to the US Ground-based Midcourse Defence (GMD) system, deployed in 2004, comprised of a series of radars and interceptor missiles based in Alaska and California. This system is designed to provide coverage to the continental United States against a small-scale, rudimentary intercontinental ballistic missile attack from a rogue state like North Korea. In 2005 then Prime Minister Paul Martin, after months of divisive public debate, decided Canada would not join GMD. Amidst the increasing nuclear and missile capabilities of and vitriolic threats made by North Korea against the United States in 2017, a steady stream of security experts and former government officials (including some involved in the original decision) and retired military officers have advocated for Canada's immediate participation in GMD.<sup>14</sup> Despite such advocacy, and Ottawa's acknowledgement of the growing number of actors able to target Canada and its overseas deployed units with ballistic missiles, the current government has decided to maintain the policy of non-participation.<sup>15</sup> Maintaining the status quo with respect to GMD



*A ground-based interceptor is launched from Vandenberg Air Force Base, California, which intercepted a ballistic missile target launched from the US Army's test site on Kwajalein Atoll. Vandenberg and Fort Greely, Alaska, are the two bases for the Ground-based Midcourse Defense system, designed to defend the United States against intercontinental ballistic missiles. Canada has been invited to participate in the GMD program, but remains uncommitted.*

is a justifiable position given that many of the doomsday scenarios voiced in the early 2000s have not come to fruition, for example destabilizing nuclear rivalry with Russia and China, nuclear blackmail by rogue regimes, the militarization of space, or the collapse of NORAD. The reduction, furthermore, of GMD participation to North Korean threat assessments has neglected other important considerations including costs, expected contributions and the purpose of the system in American grand strategy.

Even with the determination that Canada does not face an immediate and grave threat necessitating GMD participation, however, the blanket ban on participation in BMD

is ill-advised. While it may remain politically unpalatable to join GMD – especially given public concerns about the foreign policy of President Donald Trump which parallels similar unease and unpopularity of the George W. Bush administration which publicly lobbied for Ottawa's participation – naval BMD would allow a portal into GMD as the two systems become increasingly linked in terms of information relaying and creating a common operating picture.<sup>16</sup> BMD is a reality and an American priority which affects Canada, thus Ottawa should be interested in maintaining access to American thinking, strategies and policies with respect to continental BMD. Naval BMD would not lead to Canada having a 'seat at the table' in terms of decision-making authority, but it could enable Ottawa to have an ear in the conversation, specifically to maintain situational awareness on American GMD developments such as interceptor strategies which could have an impact on Canada and thus influence any future decision to participate or build its own system.

Concerns that the various American BMD-deployed systems, and their interlinkages, across the globe will jeopardize strategic relations with Russia and China may also caution against any Canadian BMD participation. This concern would be a mistake, however, as China, Russia and others are developing their own ballistic missile and BMD forces, thus contributing to the growing missile versus BMD nexus of which Canada needs to be aware. Canada could take prudent measures to ensure naval BMD assets are selectively deployed to avoid any unnecessary antagonism and tension. For example, a subset of the CSC class could be BMD capable and thus moved into areas during crises, but not deployed in other areas where A2/AD threats are minimal/non-existent such as the Arctic region. Naval BMD, therefore, allows for involvement in this military area with the United States and allies without re-hashing divisive public debates about GMD participation directly.

### **Available Options**

There were three bids competing for the CSC contract.<sup>17</sup> It is highly doubtful, given Canada's continuing stance about non-participation, that a BMD component has been included in the government's requirements for the CSC. Including the possibility to incorporate such a capability in the future, however, should be a consideration, and all three bids provide avenues to do so. The Type 26 developed for the UK, which ultimately was chosen as the winning design in Canada, has a Vertical Launch System that can accommodate BMD interceptors. The Dutch have incorporated a ballistic missile tracking and information relaying capacity to allied AEGIS assets in their *De Zeven Provinciën*-class warships and are investigating plans



The *Ticonderoga*-class guided-missile cruiser USS *Shiloh* (CG 67) launches a SM-3 missile in the Pacific Ocean on 22 June 2006, successfully intercepting a target in this seventh of eight Aegis BMD flight tests. Multiple iterations of the SM-3 missile since these early years have brought improved target discrimination capabilities and accuracy.

possibly to arm them with interceptor missiles. Finally, the Spanish F-105 frigate option is serving as the model for the Australian *Hobart*-class air warfare destroyers, which while not being equipped with BMD will have the AEGIS Combat System allowing for easy upgrading. The CSC will be the predominant surface warfare platform of the RCN well into the latter half of this century – a century which undoubtedly will be defined by increasing uncertainty in the global military and strategic landscape – and thus the ship design must include a command management system that is flexible and adaptable to integrating new capacities such as BMD to operate in more complex and contentious areas.

Canada is the only country of the major and middle powers without its own or part of a multilateral BMD system. To be clear, Canada/the RCN does not face an imminent risk from ballistic missiles (defined as a state possessing both the capability and intent to use them). However, as competitors and possible adversaries continue to develop these assets, and allies build systems to defend against them, a new nexus in military competition – missiles versus missile defence systems – is emerging as a major feature of an increasingly complicated and contested global environment. Canada should remain apprised of these developments and adapt to them as necessary.<sup>18</sup> Naval BMD provides pragmatic, operational benefit to the RCN in operating in theatres of growing contestation while also offering a portal of entry into the wider global BMD developments. 🍷

#### Notes

1. Department of National Defence, *Leadmark 2050: Canada in a New Maritime World*, 21 June 2016, pp. v-vi.
2. “Ballistic and Cruise Missile Threats,” The National Air and Space Intelligence Centre, 2017.
3. US Department of Defense, “Military and Security Developments Involving the People’s Republic of China 2018,” specifically “Chapter 3: Force Modernization Goals and Trends.”

4. David Pugliese, “Canadian Navy Plans Persistent Presence in the Asia-Pacific,” *Seapower*, April 2018, pp. 28-29.
5. Canadian military assets are doing other operations in East Asia as well, such as air and naval surveillance to monitor sanction violations at sea with respect to North Korea. In general, however, unlike the RCN’s ongoing contribution to NATO task forces which is in large measure an overt balancing mission against Russia, in East Asia Canadian naval ships are not part of an explicit coalition of allies operating to balance China or any other state.
6. Mathew Fisher, “Canadian Warships Shadowed by Chinese Navy in South China Sea,” *The National Post*, 14 July 2017.
7. Adam P. MacDonald, “Why Canada Needs to Lay the Ground Work for Freedom of Navigation Patrols in East Asia,” Macdonald-Laurier Institute, 29 August 2017.
8. An example of such a strategy would be providing A2/AD weaponry to Asian states to counteract China’s growing regional military power. See Timothy Bonds, et al., “What Role can Land-Based, Multi-Domain Anti-Access/Area Denial Forces Play in Deterring or Defeating Aggression?” The RAND Corporation, 2017.
9. “US Navy Looks to Grow BMD Ship Force,” *Jane’s Navy International*, 3 May 2018.
10. North Atlantic Treaty Organization (NATO), “NATO Ballistic Missile Defence Fact Sheet,” NATO, July 2016; Congressional Research Service, “Navy Aegis Ballistic Missile Defense (BMD) Program: Background and Issues for Congress,” 5 July 2018, pp. 8-9.
11. John Baxland, “Ballistic Missile Defence: New Options for Australia,” *The Interpreter*, 4 October 2017.
12. The report recommends that the RCN acquire the AEGIS Combat System, not specifically AEGIS BMD, but lists BMD functions as one of its capabilities. See Standing Senate Committee on National Security and Defence, *Reinvesting in the Canadian Armed Forces: A Plan for the Future*, Report of the Standing Senate Committee on National Security and Defence, May 2017.
13. “The US Navy is Fed Up With Ballistic Missile Defense Patrols,” *Defense News*, 16 June 2018.
14. Jeffrey F. Collins, “Should Canada Participate in Ballistic Missile Defence: A Survey of the Experts,” The Macdonald-Laurier Institute, July 2018.
15. Department of National Defence, *Strong, Secure, Engaged: Canada’s Defence Policy*, 7 July 2017, p. 54.
16. “Aegis Ballistic Missile Defense,” Missile Defense Agency, 2018, available at [www.mda.mil/system/aegis\\_bmd.html](http://www.mda.mil/system/aegis_bmd.html).
17. David Pugliese, “It’s Make or Break Time for Canadian Surface Combatant Bidders,” *Ottawa Citizen*, 15 June 2018.
18. Dan Gouré, “The Next Great Arms Race is Here: Missiles vs. Missile Defence,” *The National Interest*, 8 September 2016.

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