

# NORAD's Maritime Warning Role: Origins and Future

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Credit: MC2 Kaleb Sarten, US Navy

*US Air Force General Glen VanHerck, commander of North American Aerospace Defense Command and US Northern Command, visits the sonar control room aboard the Arleigh Burke-class guided-missile destroyer USS Mitscher (DDG 57) in the Atlantic Ocean on 6 February 2021.*

In 2006, the binational North American Aerospace Defense Command (NORAD), a then exclusively aerospace domain command, acquired a new mission in a new domain – maritime warning. The new mission had little, if anything, to do with traditional military threats to North America. With the Cold War long over, a globally dominant United States, and the absence of any existential military threat to North America, the new mission was simply part of the fallout from 9/11, and one response to the American-led ‘war on terror.’

Roughly a decade later, however, the transformed geopolitical and geostrategic environment placed traditional military threats back on the defence agenda. This did not mean that the terrorist threat to North America had simply disappeared. On the contrary, the two combined in some ways to merge homeland defence and security together, especially within the maritime domain. The nexus of this merger of threat environments was largely the function of a common technology, which cut across

the traditional state and non-state divide. For example, an otherwise peaceful merchant ship becomes a platform from which to carry or launch weapons of mass destruction. In keeping with new thinking about homeland defence, focus turned from the ‘arrows’ (the weapons) to the ‘archers’ (the launch platforms).

New, long-range submarine-launched cruise missile (SLCM) capabilities, Russia’s in particular, raised doubts that naval forces could intercept the archers before they reached their launch points. In other words, the maritime threat environment could morph into an air-breathing one<sup>1</sup> if missiles, drones or other air-breathing threats are launched from a ship or submarine. The problem is that while NORAD may warn of a maritime threat, it cannot defeat it if it is not an air-breathing threat. The same functional logic that called for NORAD to have an aerospace warning *and* air defence role should also apply in the maritime domain. This, in turn, suggests that a binational solution in a different or ‘new’ maritime threat environment



*CF-18 Hornet and Russian Su-27 fighters practice procedures to transfer a simulated hijacked airplane from Russian to American airspace during the North American Aerospace Defense Command Exercise Vigilant Eagle on 28 August 2013.*

would be logical; one that goes beyond the longstanding bilateral nature of naval cooperation between Canada and the United States (CANUS). In practice, however, there is great political resistance on both sides of the border to integrating new missions into the NORAD agreement. For now, attention should be on maximizing the potential of this warning mission.

In order to understand this new maritime environment and NORAD's potential future role, it is useful to examine the origins and evolution of the maritime warning mission. This examination exposes the obstacles faced by NORAD in engaging the existing North American maritime organizations. This naturally leads to a review of the defence challenges confronting North America and CAN-US defence cooperation.

Beyond its experience in the aerospace domain, NORAD's maritime warning mission was based upon significant developments that quickly occurred both at the national and bilateral level after 9/11.<sup>2</sup> The first pressing requirement was to encourage intelligence sharing to counter the 'stove-piped,' multiple actor maritime world. Both countries took steps to promote intelligence sharing across their respective maritime communities. For example, Canada established three Marine Security Operations Centres (MSOCs) in 2004 located on the East Coast (also responsible for the Arctic), West Coast and the Great Lakes. The former two are led by the Department of National Defence (DND)/Royal Canadian Navy (RCN) and the latter by the RCMP. In addition to the RCN and the RCMP, the Canadian Coast Guard (CCG), Transport Canada, the Canadian Border Services Agency (CBSA)

and Fisheries and Oceans are present. The MSOCs enable partner government departments to work together and share intelligence, surveillance and reconnaissance information (within the legal mandate of the agencies/departments) about vessels of interest.

The United States created the National Maritime Intelligence-Integration Office (NMIO) to facilitate and coordinate maritime intelligence sharing, but not until January 2009. NMIO is led by a Rear Admiral and partners with 17 US military and civilian agencies. NMIO's focus is global as opposed to the national focus of the MSOCs. NMIO tracks three persistent challenges: bad actors; polar issues; and managing the overwhelming amount of data. It also has three foci: threats to maritime critical infrastructure; advanced technologies; and threats to sea lines of communication.<sup>3</sup>

NORAD, however, is not formally engaged with these actors in their processes. Instead, NORAD resides at the end of the maritime intelligence 'food chain.' In particular, the navies are responsible for generating a national maritime common operational picture (COP), which includes intelligence from the military and civilian sectors. The integrated North American maritime COP is generated by US Naval Forces Northern Command (USNAVNORTH to the USNORTHCOM Commander<sup>4</sup>) located in Norfolk, Virginia, which receives the Canadian COP from the RCN's operational support and intelligence centre (TRINITY) in Halifax (which will include information from the MSOCs).<sup>5</sup> NAVNORTH will also incorporate information from allies and from NMIO.



The subsequent North American maritime COP is transmitted, in various forms, after filters have been applied to scrub out nationally sensitive information. NORAD became one of the recipients of this maritime COP. NORAD's maritime personnel, who receive the maritime COP, provide no input into the process, and have no direct involvement in its creation. If necessary, the NORAD/USNORTHCOM Command Center (N2C2) maritime desk can reach out directly to CANUS security and defence offices for clarification, but NORAD's main function is as an intelligence fuser. At the end of the chain, NORAD sees much of what others have seen and assessed. NORAD provides a final set of assessment eyes on the maritime COP and may choose to issue a maritime advisory (to warn of an emerging threat) or warning (a confirmed threat) through formal mechanisms to the respective maritime communities and actors, and the respective National Command Authorities (NCAs).

Not surprisingly, NORAD's entrance into the maritime defence and security domain was not an easy one, and the maritime community was not welcoming of the perceived usurpation of a navy-only activity. While some, such as US Admiral Vern Clark, the Chief of Naval Operations in 2002, recognized the need to track inbound vessels, the idea was to have a separate "maritime NORAD" and not for NORAD to have a maritime role.<sup>6</sup> Besides the fact that the decision to assign a maritime warning mission to NORAD was top-down, with apparently little, if any, input from the maritime security community, what role was there for maritime actors in an aerospace-dominant NORAD? The lack of a strategic communication plan to communicate with the multi-faceted maritime community, and especially with the respective navies, was also not helpful.

The aerospace and maritime domains were distinctly different. For example, speed is vital in the process from threat identification to response in the aerospace domain, but it is not in the maritime domain, simply because ships move more slowly – or so was the common refrain heard amongst critics of the new role for NORAD. NORAD assessors, critics continued, would simply see what others in the community had also seen and assessed, and thus NORAD appeared as not only redundant, but also as a veiled critique or attack on the analytical work of the maritime community. Finally, NORAD's entrance into the maritime world raised fears that a new maritime warning mission was the first step to NORAD assuming maritime control from the navies, highlighting environmental jealousies.

These critiques and fears, however, were misplaced. First of all, the NORAD of the past had significantly transformed. It was no longer an exclusively aerospace military organization, reflecting the blending of the heretofore separate defence and security domains. After 9/11 US Federal Aviation Administration (FAA) personnel were brought into the command, and the establishment of the Binational Planning Cell and Binational Planning Group brought naval personnel and US Coast Guard personnel into the fold. Second, the creation of USNORTHCOM was instrumental in getting military and civilian personnel in many domains in contact with each other and, by extension, with NORAD personnel. USNORTHCOM's co-location with NORAD headquarters, with a dual-hatted common commander, an integrated N2C2 and its maritime control mandate that extended over the coastline and out to 500 miles in the Atlantic, all helped to transform the NORAD environment and mindset.<sup>7</sup> USNORTHCOM, with its responsibility in the maritime and land domains, brought



Credit: MCpl. Angela Abbey

HMCS *Whitehorse* (shown here) assists HMCS *Winnipeg* in escorting MV *Sun Sea* to a port on Vancouver Island, 12 August 2010.

US Navy, US Coast Guard and other civilian security personnel into the headquarters. Personnel from roughly 60 other US government departments were represented in USNORTHCOM, and thus accessible to NORAD.<sup>8</sup>

The first test for NORAD's maritime warning role, however, didn't come until three years after the mission was acquired. This happened when MV *Ocean Lady*, a derelict freighter that left from Pangkal Pinang, a port city on Indonesia's east coast, popped up off the coast of British Columbia in June 2009. This voyage exposed the lack of intelligence/information sharing among all of the organizations involved (among other issues), creating lessons learned for future, improved cooperation.<sup>9</sup> The arrival in August 2010 of MV *Sun Sea* carrying 492 Sri Lankans to British Columbia demonstrated improved information sharing and NORAD's value added, such that all of the relevant security and defence actors were aware of the threat. Most importantly, NORAD issued its first maritime notice with the *Sun Sea* arrival. Issuing a warning, however, did not quite fit the circumstance and so NORAD created a new category of 'advisories.'

But while NORAD was now issuing these notices, there was no feedback loop to NORAD as to what national actions had been taken vis-à-vis the notices. This meant that it was difficult for NORAD to gauge the relevance, timeliness and usefulness of its products. This lack of feedback, however, was somewhat hidden given that national representatives within NORAD could access this information informally and 'everyone knew everyone' in the maritime community, especially on the Canadian side. This informality was widely accepted, but it meant that the few key naval personnel within NORAD became vital as the go-to-source for information. On the one hand, this made for quick answers when needed because the key source phoned his/her key source for the relevant information. On the other hand, this meant that there was no redundancy in the system and the potential for single points of failure when *the go-to-person* changed positions.

The number of warnings and advisories to date has been few as shown in Table 1. We have no way of knowing (other than the fact that there has been no attack on North America that has emanated from the maritime approaches) if these few advisories and the one warning are a true reflection of the dataset of possible events. In theory, the RCN and USN will have responded to all possible threats in advance of NORAD needing to issue advisories or warnings. Given, however, that all-domain awareness (especially in the form of data, information dominance and 'decision superiority') is the new focus of NORAD,<sup>10</sup> more data and information should be made available for future analyses.

**Table 1: Number of Warnings and Advisories issued by NORAD Since its First in 2010.**

YEAR	#	YEAR	#
2010	1	2016	11
2011	0	2017	6
2012	4*	2018	5
2013	9	2019	14
2014	14	2020	7
2015	3		

\* The only warning (a confirmed threat) was in 2012. The rest have all been advisories (to warn of a possible/emerging threat).

Particulars of the advisories and warning are classified. It would be fascinating to know why there was a spike in 2014 and 2019 and quite a dramatic drop in 2015 and 2020. Was it a function of more or fewer vessels? Or new processes including filters at NAVNORTH? Or even new personnel, the pandemic or perhaps a change within a civilian organization? For example, are the advisories in 2014 associated with Russian activities in the Black Sea? And perhaps the reconstitution of the USN 2<sup>nd</sup> Fleet in 2018 might have resulted in more advisories in 2019? Or are the numbers a function of where the maritime analysts 'sit' in NORAD? They were once in the J-32 (the operations intelligence cell) but now are incorporated in the N2C2, the command centre. Which is optimal for the intelligence fusion function? These questions suggest that a dedicated review of NORAD's maritime warning mission is overdue.

What the maritime warning role has done is forced NORAD (and hence especially Canadian and American air force personnel) to think beyond the aerospace domain. Consider, for example, the importance of a maritime warning role during a pandemic. Similar to the tracking of ships that may be suspected of carrying the Ebola virus (especially between 2014-16 during the large outbreak in West Africa), the NORAD maritime warning mission can warn of vessels that may be approaching North America with suspected cases of COVID-19 to provide advanced warning to public health officials to prepare for their arrival, especially in the future as travel begins to resume in a world of uneven vaccination rates and new variants. Closely related, there are also the various 'support' initiatives that have appeared over the last decade or so as maritime domain awareness/warning deepened and broadened. It is clear that the NORAD-initiated annual CANUS Maritime Stakeholder Conferences (which were last held in 2019),<sup>11</sup> as well as other education/joint exercise efforts, have raised NORAD's profile within the maritime defence and security community, and facilitated information sharing. An evaluation of their continued





Credit: Staff Sgt. Thomas J. Doscher, US Air Force

Master Corporal John Bowden, an Airborne Electronic Sensor Operator from 407 Long Range Patrol Squadron, demonstrates a CP-140 Aurora's electro-optical infrared sensor to Major Brian Martin from NORAD Public Affairs on 18 January 2013. The Aurora and its crew were at Peterson Air Force Base, Colorado, as part of pilot upgrade training and to learn about their role in NORAD maritime warning.

utility and relevance may prove a useful exercise today.

Now that the focus of the US and Canadian militaries is to achieve all-domain awareness<sup>12</sup> – i.e., connect sensors from all of the military services so that there is simultaneous awareness of the sub-maritime, maritime, land, air, space and the cyber domains – NORAD's maritime warning role looks less out of place. It is still, however, not used to its full advantage. Black swan (an unknown unknown), gray swan (anticipated but highly unlikely) and pink flamingo (predictable but ignored) events need to be considered and at the end of an intelligence fusion cycle seems an opportune time.<sup>13</sup> What is more, given NORAD's global area of operations, the warning role is a force multiplier for both countries. While we hold out hope for an eventual binational North American Defence Command that encompasses warning and control missions for all domains, understanding and making full use of NORAD's maritime warning role, far from threatening the USN and RCN, will strengthen continental defence.

The political resistance to opening the binational agreement, not least of all because one never knows what could be added or deleted, is longstanding. Given that NORAD modernization is the key issue for CANUS defence and Canada is viewed as the resource allocation laggard, it is not the time to open the agreement. More attention, however, is needed on the bilateral maritime control side of the relationship. The USN, for example, since 2015 must report to the Commander of USNORTHCOM when action is taken with respect to a NORAD warning or advisory but there is no requirement on the Canadian side. Now with the re-institution of the US 2<sup>nd</sup> Fleet and NATO's new Joint Force Command Norfolk (the new Supreme Allied Commander Atlantic (SACLANT) 'replacement') – both in Norfolk, Virginia, and both with similar areas of responsibility, including areas within the RCN's area of responsibility – more coordination and information sharing is recommended. NORAD's maritime warning could

be a boon for the newly operational fleet/forces as well as for all-domain awareness but only if information from NORAD, a key command protecting North America, is valued. ⚓

#### Notes

1. Air-breathing threats include any vehicle that has an engine requiring the intake of air for combustion of its fuel. This contrasts with a rocket missile which carries its own oxidizer and can operate beyond the atmosphere.
2. For full details of the intelligence-sharing process, see Andrea Charron, James Fergusson and Nicolas Allarie, *Left of Bang: NORAD's Maritime Warning Mission and North American Domain Awareness* (Winnipeg: Centre for Defence and Security Studies, 2015).
3. National Maritime Intelligence-Integration Office (NMIO), "Our Strategies, Priorities and Alignment."
4. The Commander of NAVNORTH is also the Commander of US Fleet Forces Command.
5. For a detailed analysis, see Charron, Fergusson and Allarie, *Left of Bang*, pp. 23-24.
6. Guy Thomas, "A Maritime Traffic-Tracking System Cornerstone of Maritime Homeland Defense," *Naval War College Review*, Vol. LVI, No. 4 (2003), p. 138.
7. The N2C2 is fully integrated, except for J-3 (Operations). There is N/J3 = NORAD Joint Operations Directorate and NC/J3 = USNORTHCOM Operations Directorate.
8. Canada, however, did not follow suit, except in the provision of RCN personnel. There are no NAVCANADA personnel present at NORAD Headquarters. As CANUS cooperation in the maritime and land domains, notwithstanding MW, is strictly bilateral in nature, the image of other Canadian government department representation as liaisons to USNORTHCOM remains politically problematic.
9. Individual agencies and departments were aware of the ship but they were not able to share the information effectively. Note, all intelligence is information but not all information is intelligence. Intelligence is information that informs (government) policy. See Mark M. Lowenthal, *Intelligence: From Secrets to Policy* (6<sup>th</sup> ed.; Washington: CQ Press, 2014), p. 2.
10. NORAD and USNORTHCOM, "Strategy: Executive Summary," March 2021, p. 7.
11. NORAD no longer serves as a tri-chair principal in the CANUS Maritime Domain Awareness Partnership with Transport Canada and NMIO.
12. All-domain awareness is US parlance; in Canada, it is referred to as pandomain awareness.
13. See Frank Hoffman, "Black Swans and Pink Flamingos: Five Principles for Force Design," *War on the Rocks*, 19 August 2015.

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