



## Marine Security Operations Centres (MSOCs)

For a maritime nation like Canada, boasting the world's longest coastline, it is critical for national safety, security, and defence to establish and maintain maritime domain awareness. Developing such an awareness – and thus being conscious of all the vessel, cargo, human, and related activities occurring on, in, under, or adjacent to the nation's oceans, seas, and navigable waterways – is vital to ensuring Canada's knowledge of and capacity to contend with any security and safety threats emerging from or in its maritime spaces. Today, Canada's Marine Security Operations Centres (MSOCs) are responsible for providing much of the nation's maritime domain awareness. Originating in the 2004 National Security Policy, which mandated their creation, the MSOCs are hubs that amass, analyze, and disseminate information regarding the maritime activity occurring off the nation's coasts. They do so through a suite of advanced technologies, including military-grade information fusion and tracking technology, as well as a Long-Range Identification and Tracking system. This system grants the Centres the ability to gather and store information from vessels operating on the high seas, by identifying and overseeing around 1,000 vessels daily from a distance of more than 2,000 nautical miles.

The MSOCs achieved full operational capability in early 2015, following the completion of key hardware and software upgrades and the signing of the MSOC Full Operational Capability (FOC) Certificate by the core MSOC partners. By that time, the data fusion centres had already been integrating marine intelligence for over two years. In January 2016, the FOC Certificate was endorsed at the Department of National Defence (DND) Project Senior Review Board and was thereafter signed by then-Commander of the RCN Vice-Admiral Mark Norman. This effectively transferred technical and operational authority over the project to the Navy, specifically to the Directorate of Naval Operations and Plans.<sup>1</sup> There are three MSOCs now in operation, monitoring the nation's most active and bustling maritime regions. One MSOC is housed in Canadian Forces Base (CFB) Halifax along the Atlantic Coast, CFB Esquimalt on Vancouver Island hosts the Pacific Coast's MSOC, and the third MSOC is situated in the Niagara region of Ontario, standing watch over the Great Lakes and St. Lawrence Seaway.

Individually, these Centres accumulate and analyze significant amounts of data from their marine environments to assemble a real-time image of the activities underway in the adjacent maritime domain. They are thus key in the rapid identification of threats – both immediate and prospective – to the nation's marine transportation system, subsequently sharing that information with partners and informing decisions on optimal responses.

Although the Atlantic and Pacific MSOCs are under DND's administration and direction, their "whole-of-government" staffing sees the Centres also hosting representatives from Transport Canada, Fisheries and Oceans Canada, the Royal Canadian Mounted Police (RCMP), and the Canada Border Services Agency (CBSA). The Centres thus rely on the utilization of inventive web-based tools to permit collaboration among participating departments and agencies. This multi-departmental approach facilitates cooperation, ensures that each department with a stake in

Canada's maritime security and safety possesses an inclusive and real-time image of possible marine threats, and assures that the national response to those threats is effective, efficient, and avoids duplication. This collaboration also allows analysts at the Centres to select the best information from the pool of resources available to construct a thorough and complete appraisal of the maritime threat and risks in question and thereby suggest an appropriate response to the applicable chain of command, thus enhancing response effectiveness.<sup>2</sup>

On a day-to-day basis, the MSOCs monitors civilian marine activity and aids government partners with their regulatory mandates and civilian enforcement, including by tracking vessels suspected of participating in illegal migration, human smuggling, and drug trafficking. The relevance of such monitoring was aptly illustrated in October 2009, when 76 Tamil men from Sri Lanka arrived in British Columbia aboard MV *Ocean Lady*. Given the drastic measures that people take – and will continue to take – to seek better lives, as well as the drastic measures that others take to exploit such desperation for personal gain and profit, this case of illegal migration only highlighted the need for the maritime situational awareness and the interdepartmental cooperation that the MSOCs facilitate.<sup>3</sup> Such illegal border crossings, smuggling, and organized crime are the focus of the CBSA and RCMP positioned at the MSOC facility at Niagara-on-the-Lake.<sup>4</sup> There, the RCMP, the lead agency at the Centre, works in conjunction with the US Coast Guard to police and monitor the inland waters – notably, the over 3,700-kilometre waterway (connecting over 50 ports) – of the Great Lakes and St. Lawrence Seaway.<sup>5</sup>

In addition to monitoring civilian marine activity and assisting in civilian enforcement, the MSOCs monitor the commercial marine industry as a crucial component of their daily tasking. Canada is a nation that conducts a significant share of its trade by ship. Annually, the marine industry handles 456 million tonnes of cargo – amounting to \$117 billion in global trade – and itself produces \$10 billion in national economic activity. This industry is responsible for the management and movement of around 97% of Canada's international trade with nations aside from the US, employing 100,000 Canadians in the process.<sup>6</sup> Ensuring the secure and safe passage and conduct of the vessels that thus conduct a substantial proportion of the nation's trade is a vital tasking that also falls to the MSOCs, which track cargo vessels entering and departing from Canadian ports, ensure abidance by Canadian regulations, and facilitate the orderly and smooth flow of commerce.

In Canada, marine activity also encompasses the nation's vibrant ocean economies, of which the fishing industry is a cornerstone. The MSOCs play a key role in monitoring the nation's fishing grounds, looking for illegal activity among the domestic and foreign fishing vessels. Although Fisheries and Oceans Canada is responsible for enforcement of this nature, the cooperation of other government departments is an integral enabling and supporting factor. As such, Canadian warships with fisheries officers onboard often engage in fisheries patrols, with the MSOCs assisting in the coordination and facilitation of these patrols through their provision of indispensable real-time information.

Occasionally, vessels operating off Canada's coasts encounter difficulties or require assistance. In these cases, too, the MSOCs are imperative. Responsibility for maritime search and rescue (SAR) falls under the purview of the Canadian Armed Forces, although other government departments like the Canadian Coast Guard can undertake maritime SAR responses if they possess the assets required to adequately respond. Coordinating these SAR efforts falls to the MSOCs, which ensure an effective response to maritime SAR incidents by providing critical information that enables

personnel to focus less on searching and more on rescuing, even in times of poor weather or minimal light.<sup>7</sup> On the Atlantic Coast, MSOC East's close proximity to both the Regional Joint Operations Centre – which is mere steps away from the Centre's watch floor – and Joint Rescue Coordination Centre has strategically facilitated such SAR responses.

While duties related to the monitoring and policing of Canada's maritime spaces comprise the majority of the MSOCs' present functions, the Centres' ability to provide and supplement a real-time situational awareness of activity off the nation's coasts is an important military and security consideration. Indeed, in addition to developing a picture of civilian and commercial activities in the nation's waters, the MSOCs' technologies and data-sharing capabilities can also monitor the activities of more nefarious actors and share that operational picture with allies. In such a situation, the MSOCs would be critical to supporting a military response and defending both the country's maritime approaches.

Additional software improvements are planned for the watch floors of Canada's three MSOCs. These improvements will expedite the identification of anomalous behaviours – like a vessel that suddenly halts its movement, or one that deviates from a planned route – at sea. Given the MSOCs' role in monitoring and policing domestic and foreign civilian, commercial, and economic activities, as well as in facilitating maritime SAR responses and providing a key conventional security capability, such upgrades to and renewals of the MSOCs' capabilities are important developments. The significance of their role in enhancing Canada's maritime domain awareness along the Atlantic and Pacific Coasts, as well as in the Great Lakes and St. Lawrence waterway system, makes the MSOCs a vital asset in the maintenance of maritime security and safety in Canada.

---

## References

<sup>1</sup> Ryan Melanson, "Coastal MSOCs use Technology and Collaboration to Improve Maritime Picture," Royal Canadian Navy News and Operations (November 2016).

<sup>2</sup> Canada, "Marine Security Operations Centres Keep Canadian Waters Safe," *The Maple Leaf* (November 2016).

<sup>3</sup> "MSOCs – Guardians of the World's Gateways," *Canadian Naval Review*, BroadSides (May 2012).

<sup>4</sup> Canada, RCMP, "Horizontal Evaluation of the Great Lakes and St. Lawrence Seaway Marine Security Operations Centre" (April 2015).

<sup>5</sup> Ibid.

<sup>6</sup> "MSOCs – Guardians of the World's Gateways."

<sup>7</sup> Melanson, "Coastal MSOCs use Technology and Collaboration to Improve Maritime Picture."