

MASS Code Takes Effect July 1, 2026

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The International Maritime Organization (“IMO”) adopted a new International Code of Safety for Maritime Autonomous Surface Ships (“MASS Code”) (MSC 111/5/3) in May 2026, marking a major regulatory milestone for autonomous shipping. The MASS Code will take effect on July 1, 2026. While the MASS Code is only a guideline for now, it is on track to become mandatory as early as 2030, and it gives a sense of what the requirements for unmanned shipping might soon look like in operation.

The MASS Code covers four levels of autonomy, ranging from automated decision-support for on-board crew to fully autonomous vessels capable of independent decision-making. Specifically, the MASS Code applies to four degrees of automation:

Degree 1: Automated processes with seafarers on board to operate/control systems.

Degree 2: Remotely controlled ship with seafarers on board available to take control.

Degree 3: Remotely controlled ship without any seafarers on board.

Degree 4: Fully autonomous ship with an operating system that makes independent decisions.

The MASS Code provides a goal-based, technology-neutral framework to ensure remotely controlled or autonomous commercial ships operate with the same safety, security, and environmental standards as conventional crewed vessels.

Chapters of the current draft of the MASS Code include topics such as: surveys and certificates; approval process; risk assessment; operational context; system design; software principles; management of safe operations; alert management; manning, training and watchkeeping; safety of navigation; connectivity; remote operations; structure, subdivision, stability and watertight integrity; fire protection, fire detection and fire extinction; special measures to enhance maritime security; search and rescue; carriage of cargoes; anchoring, towing and mooring; and machinery and electrical installations.

The MASS Code applies to cargo ships operating under the Safety of Life at Sea (“SOLAS”) Convention.

Since February 1, 2022, Canada has issued an oversight policy for Small MASS Operations.[1] The Policy applies to small MASS of degrees autonomy three or four that are not more than 12 m in length as defined by the Small Vessel Regulations or not more than 15 Gross Tonnage. The policy applies to small MASS that do not have a crew or passenger on board.

An authorized representative of a qualifying vessel must prepare a risk assessment before operating and apply to the Marine Technical Review Board (“MTRB”) for approval before operation. The policy has two annexes. Annex 1 sets out the elements to be considered and provided when applying to the MTRB. Annex 2 sets out operational conditions. Pleasure crafts of not more than 2 meters in length and gross weight not more than 100 kg are not required to perform risk analysis nor submit a MTRB application provided they operate within the conditions stated in Annex 2 of the policy. The Canadian policy highlights how Transport Canada may approach the MASS Code if and when Canada adopts the MASS Code (or portions of it) into Canadian law.

Canada does currently have a Tier 1 Policy on the installation and operation of autonomous navigation systems on board vessels.[2] The policy provides guidance to authorized representatives of vessels on the installation and operation of autonomous navigation system requirements onboard Canadian registered vessels.

The policy provides additional information on restrictions/exemptions under the *Canada Shipping Act, 2001* for installing and operating equipment outside the scope of the regulatory regime. The guidance in Annex 1 reviews risk analysis, compliance with current regulatory regimes, manning and qualification of personnel and

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“human element” principles and goals, infrastructures for safe use of autonomous systems, and cyber risk management.

As indicated above, the IMO MASS Code applies to cargo ships and will take effect from 1 July 2026. As it is not mandatory, member states are given the opportunity to test its use while paving the way for making it mandatory under the SOLAS Convention.

The MASS Code introduces new requirements for the design, approval and operation of these ships, including in key areas such as navigation, connectivity, remote operations, fire safety, and search and rescue. It places strong emphasis on risk assessment, robust system design, cybersecurity and the integration of Remote Operations Centres (ROCs). The MASS Code establishes a situational awareness requirement that the ship's self-navigation system “continuously monitor all information necessary for safe navigation” in addition to the lookout requirement under standard Collision regulations.

Importantly, it underscores the importance of human oversight, with the master retaining overall responsibility for the ship at all times – even if not on board the ship.

The MASS Code is structured as a starting point. Over the next three years the IMO will gather operational data from vessels operating under the framework. In 2028, it will begin to draft a mandatory MASS Code with adoption targeted by July 2030 and entry into force expected on 1 January 2032. During this six-year window, autonomous vessels will operate commercially under a patchwork of national rules and flag state guidance.

One issue not dealt with is liability. Under existing maritime law, fault in collision, grounding or pollution cases involves a human decision maker. The Collision Convention is built around a vessel under the command of a master. The MASS Code establishes functional requirements but leaves the question of liability allocation to flag states, coastal states, and ultimately courts.

Existing cargo liability regimes create further complexity. The *Hague-Visby Rules* apportion responsibility by reference to the acts and omissions of the master and crew in the management and navigation of the ship. The navigational fault defence, one of most significant protections for a carrier, requires a navigational error committed by a person. When navigation is automated, it is unclear whether that defence survives, or whether the carrier is left without it.

Owners wishing to operate in this area will need to consider dealing some important issues. These include reviewing charterparty and bill of lading terms to ensure adequate protections for using MASS. Insurers will need to be brought into the picture to assess and insure the vessel. Cyber security will be paramount. Owners should also engage early with flag state authorities such as Transport Canada for early operational authority. Owners will need to implement computer systems that provide adequate logs, sensor data and decision records.

As far as Canada is concerned, it will need to decide whether it will implement a MASS strategy as some other countries have done. Will it fund MASS or take steps to encourage national industry adoption of MASS? A PDF version is available for download [here](#).

[1] Tier 1 – Policy- Oversight of small Maritime Autonomous Surface Ships (MASS); Tier I – Policy – Oversight of small Maritime Autonomous Surface Ships (MASS)

[2] Tier 1 – Policy – Installation and operation of Autonomous Navigation Systems on board vessels; Tier I - Policy - Installation and operation of Autonomous Navigation Systems on board vessels

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