Treaty Series No. 24 (2026)

Amendments

to the International Convention for the Safety of Life at Sea, 1974

For Adoption dates – see page 3

[For entry into force dates - see page 3]

Presented to Parliament
by the Secretary of State for Foreign, Commonwealth and Development Affairs
by Command of His Majesty
June 2026

CP 1599

Treaty Series No. 24 (2026)

Amendments

to the International Convention for the Safety of Life at Sea, 1974

For Adoption dates – see page 3

[For entry into force dates - see page 3]

Presented to Parliament
by the Secretary of State for Foreign, Commonwealth and Development Affairs
by Command of His Majesty
June 2026

CP 1599

This publication is available at www.gov.uk/official-documents.

Any enquiries regarding this publication should be sent to us at Treaty Unit, Foreign, Commonwealth and Development Office, King Charles Street, London, SW1A 2AH.

ISBN 978-1-5286-6575-9
E03621301 06/26

Printed on paper containing 40% recycled fibre content minimum.

Printed in the UK by HH Global on behalf of the Controller of His Majesty's Stationery Office.

AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEAS, 1974

The Resolutions were adopted on:

Resolution MEPC.395(82) adopted on 4 October 2024
Resolution MSC.560(108) adopted on 23 May 2024
Resolution MSC.559(108) adopted on 23 May 2024
Resolution MSC.555(108) adopted on 23 May 2024
Resolution MSC.554(108) adopted on 23 May 2024
Resolution MSC.553(108) adopted on 23 May 2024
Resolution MSC.552(108) adopted on 23 May 2024
Resolution MSC.551(108) adopted on 23 May 2024
Resolution MSC.550(108) adopted on 23 May 2024
Resolution MEPC.384(81) adopted on 24 March 2024
Resolution MSC.537(107) adopted on 8 June 2023
Resolution MSC.536(107) adopted on 8 June 2023
Resolution MSC.535(107) adopted on 8 June 2023
Resolution MSC.532(107) adopted on 8 June 2023
Resolution MSC.524(106) adopted on 10 November 2022
Resolution MSC.523(106) adopted on 10 November 2022
Resolution MSC.520(106) adopted on 10 November 2022

The Amendments entered into force on:

Resolution MEPC.395(82) – 1 January 2026
Resolution MSC.560(108) – 1 January 2026
Resolution MSC.559(108) – 1 January 2026
Resolution MSC.555(108) – 1 January 2026
Resolution MSC.554(108) – 1 January 2026
Resolution MSC.553(108) – 1 January 2026
Resolution MSC.552(108) – 1 January 2026
Resolution MSC.551(108) – 1 January 2026
Resolution MSC.550(108) – 1 January 2026
Resolution MEPC.384(81) – 1 January 2026
Resolution MSC.537(107) – 1 January 2026
Resolution MSC.536(107) – 1 January 2026
Resolution MSC.535(107) – 1 January 2026
Resolution MSC.532(107) – 1 January 2026
Resolution MSC.524(106) – 1 January 2026
Resolution MSC.523(106) – 1 January 2026
Resolution MSC.520(106) – 1 January 2026

ANNEX 7

RESOLUTION MEPC.395(82)
(adopted on 4 October 2024)

2024 GUIDELINES FOR THE DEVELOPMENT OF A SHIP ENERGY EFFICIENCY MANAGEMENT PLAN (SEEMP)

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

NOTING that regulation 26 of MARPOL Annex VI requires each ship to keep on board a Ship Energy Efficiency Management Plan (SEEMP), to be developed and reviewed, taking into account the guidelines adopted by the Organization,

RECALLING that, at its seventy-eighth session, it adopted, by resolution MEPC.346(78), the *2022 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)*,

RECALLING ALSO that, at its eighty-first session, it adopted, by resolution MEPC.388(81), amendments to the *2022 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)*,

HAVING CONSIDERED, at its eighty-second session, draft amendments to the *2022 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)*, as amended,

1 ADOPTS the *2024 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)*, as set out in the annex to the present resolution;

2 REQUESTS the Parties to MARPOL Annex VI and other Member Governments to bring the annexed Guidelines to the attention of masters, seafarers, shipowners, ship operators and any other interested parties;

3 REVOKES the *2022 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)* adopted by resolution MEPC.346(78).

ANNEX

2024 GUIDELINES FOR THE DEVELOPMENT OF A SHIP ENERGY EFFICIENCY MANAGEMENT PLAN (SEEMP)

CONTENTS

APPENDIX 3 – SAMPLE FORM OF SHIP OPERATIONAL CARBON INTENSITY PLAN (PART III OF THE SEEMP)

APPENDIX 4 – STANDARDIZED DATA-REPORTING FORMAT FOR THE DATA-COLLECTION SYSTEM AND OPERATIONAL CARBON INTENSITY TO THE ADMINISTRATION

APPENDIX 5 – STANDARDIZED DATA-REPORTING FORMAT FOR THE PARAMETERS TO CALCULATE THE TRIAL CARBON INTENSITY INDICATORS ON A VOLUNTARY BASIS

1 INTRODUCTION

1.1 The *Guidelines for the development of a Ship Energy Efficiency Management Plan* have been developed to assist with the preparation of the Ship Energy Efficiency Management Plan (SEEMP) required by regulation 26 of MARPOL Annex VI.

1.2 Taken together, the aims of the SEEMP should assist the international shipping sector to achieve the goal of chapter 4 of MARPOL Annex VI set out in regulation 20, which is reducing the carbon intensity of international shipping. The aims of the SEEMP are threefold:

.1 To encourage companies to incorporate actions to improve the energy efficiency and carbon intensity of their ships and ship management practices.

.2 To specify the methodology the ship should use to collect the data required by regulation 27.1 of MARPOL Annex VI and the processes that should be used to report the data to the ship's Administration or any organization duly authorized by it.

.3 To specify the methodology the ship should use to calculate the attained annual operational carbon intensity indicator (CII) as required by regulation 28.1 of MARPOL Annex VI and the processes that should be used to report the data to the ship's Administration or any organization duly authorized by it.

1.3 There are three parts to a SEEMP:

.1 Guidance for Part I of the SEEMP required by regulation 26.1 of MARPOL Annex VI, is addressed in sections 3, 4 and 5 of these Guidelines. The purpose of this part is to provide an approach to monitor ship and fleet efficiency performance over time and describe ways to improve the ship's energy efficiency performance and carbon intensity. Part I of the SEEMP applies to any ship of 400 GT and above.

.2 Guidance for part II of the SEEMP required by regulation 26.2 of MARPOL Annex VI, is addressed in sections 6, 7 and 8 of these Guidelines. The purpose of this part is to provide a description of the methodologies that should be used to collect the data required pursuant to regulation 27 of MARPOL Annex VI and the processes that the ship should use to report the data to the ship's Administration or any organization duly authorized by it. Part II of the SEEMP applies to any ship of 5,000 GT and above.

.3 Guidance for part III of the SEEMP required by regulations 26.3 and 28.8 of MARPOL Annex VI is addressed in sections 9, 10, 11, 12, 13, 14 and 15 of these Guidelines. The purpose of this part is to provide:

.1 a description of the methodology that should be used to calculate the ship's attained annual operational CII required by regulation 28 of MARPOL Annex VI;

.2 the processes that should be used to report this value to the ship's Administration or any organization duly authorized by it;

.3 the required annual operational CII for the next three years;

.4 an implementation plan documenting how the required annual operational CII should be achieved during the next three years;

.5 a procedure for self-evaluation and improvement; and

.6 for ships rated as D for three consecutive years or rated as E, a plan of corrective actions to achieve the required annual operational CII.

1.4 Part III of the SEEMP applies to any ship of 5,000 GT and above which falls into one or more of the categories in regulations 2.2.5, 2.2.7, 2.2.9, 2.2.11, 2.2.14 to 2.2.16, 2.2.22, and 2.2.26 to 2.2.29 of MARPOL Annex VI.

1.5 Sample forms of the various sections of the SEEMP are presented in appendices 1, 2 and 3 for illustrative purposes. A standardized data-reporting format for the data-collection system and operational carbon intensity is presented in appendix 4. A standardized data-reporting format for the trial carbon intensity indicators on voluntary basis is presented in appendix 5.

2 DEFINITIONS

2.1 For the purpose of these Guidelines, the definitions in MARPOL Annex VI apply.

2.2 "Ship fuel oil consumption data" means the data required to be collected on an annual basis and reported as specified in appendix IX to MARPOL Annex VI.

2.3 "Safety management system" means a structured and documented system enabling company personnel to implement effectively the company safety and environmental protection policy, as defined in paragraph 1.1 of the International Safety Management Code.

2.4 "Carbon Intensity Indicator" means a performance indicator by which it is possible to measure the carbon intensity of the ship, as defined in the guidelines developed by the Organization,[1] taking into account data listed for reporting in appendix IX to MARPOL Annex VI.

2.5 "Consumer type" means a type of engine or set of engines, boiler, fuel cell or others used for the same purpose.

PART I - SHIP MANAGEMENT PLAN TO IMPROVE ENERGY EFFICIENCY

3 GENERAL

3.1 Regulation 26.1 of MARPOL Annex VI requires each ship of 400 gross tonnage and above subject to chapter 4 to keep on board a ship-specific SEEMP.

3.2 The purpose of part I of the SEEMP is to establish a mechanism for a company and/or a ship to improve the energy efficiency and reduce the carbon intensity of a ship's operation. Preferably, this aspect of the ship-specific SEEMP is linked to a broader corporate energy management policy for the company that owns, operates or controls the ship, recognizing that no two shipping companies are the same, and that ships operate under a wide range of different conditions.

[1] Refer to the *2021 Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines, G1)* (resolution MEPC.336(76)) and the *2022 Guidelines on correction factors and voyage adjustments for CII calculations (G5)* (resolution MEPC.355(78)).

3.3 Many companies will already have an environmental management system in place under ISO 14001, which contains procedures for selecting the best measures for particular ships and then setting objectives for the measurement of relevant parameters, along with relevant control and feedback features. Monitoring of operational environmental efficiency should therefore be treated as an integral element of broader company management systems.

3.4 In addition, many companies already develop, implement and maintain a safety management system. In such case, part I of the SEEMP may form part of the ship's safety management system.

3.5 This section provides guidance for the development of part I of the SEEMP, which should be adjusted to the characteristics and needs of individual companies and ships. Part I of the SEEMP is intended to be a management tool to assist a company in managing the ongoing environmental performance of its ships and, as such, it is recommended that a company develop procedures for implementing the plan in a manner which limits any onboard administrative burden to the minimum necessary.

3.6 Part I of the SEEMP should be developed as a ship-specific plan by the company and should reflect efforts to improve the energy efficiency and reduce the carbon intensity of a ship through four steps: planning, implementation, monitoring, and self-evaluation and improvement. These components play a critical role in the continuous cycle to improve ship energy efficiency management and reduce its carbon intensity. With each iteration of the cycle, some elements of part I will necessarily change while others may remain as before.

3.7 At all times safety considerations should be paramount. The trade a ship is engaged in may determine the feasibility of the energy efficiency and carbon intensity reduction measures under consideration. For example, ships that perform services at sea (pipe laying, seismic survey, OSVs, dredgers, etc.) may choose different methods of improving energy efficiency when compared to conventional cargo carriers. The nature of operations and influence of prevailing weather conditions, tides and currents combined with the necessity of maintaining safe operations may require adjustment of general procedures to maintain the efficiency of the operation, for example ships which are dynamically positioned. The length of a voyage and the need to avoid high risk areas may also be important parameters as well as trade specific safety considerations.

4 FRAMEWORK AND STRUCTURE OF PART I OF THE SEEMP

4.1 Planning

4.1.1 Planning is the most crucial stage of part I of the SEEMP, in that it primarily determines both the current status of ship energy usage and carbon intensity and the expected improvement of ship energy efficiency and reduction of carbon intensity. Therefore, it is encouraged to devote sufficient time to planning so that the most appropriate, effective and implementable plan can be developed.

Ship-specific measures

4.1.2 Recognizing that there are a variety of options to improve energy efficiency and reduce carbon intensity (e.g. speed optimization, confirming berth availability and arrival time with port of destination, weather routeing, hull maintenance, retrofitting of energy efficiency devices, and use of alternative fuels), the best package of measures for a ship to improve energy efficiency and reduce carbon intensity depends to a great extent upon ship type, cargoes, routes and other factors, which should be identified in the first place. These measures should be listed as a package of measures to be implemented, thus providing the overview of the actions to be taken for that ship.

4.1.3 During the planning process, therefore, it is important to determine and understand the ship's current status of energy usage. Part I of the SEEMP should identify energy-saving and carbon intensity reducing measures that already have been undertaken and should determine how effective these measures are in terms of improving energy efficiency and reducing carbon intensity. Part I also should identify what measures can be adopted to further improve the energy efficiency and reduce the carbon intensity of the ship. It should be noted, however, that not all measures can be applied to all ships, or even to the same ship under different operating conditions and that some of them are mutually exclusive. Ideally, initial measures could yield energy (and cost) saving results that then can be reinvested in more difficult or expensive efficiency upgrades identified by part I.

4.1.4 Guidance on best practices for fuel-efficient operation of ships, set out in chapter 5, can be used to facilitate this part of the planning phase. Also, in the planning process, particular consideration should be given to minimize any onboard administrative burden.

Company-specific measures

4.1.5 The improvement of the energy efficiency and the reduction of the carbon intensity of ship operation does not necessarily depend on single ship management only. Rather, it may depend on many stakeholders including ship repair yards, shipowners, operators, charterers, cargo owners, fuel suppliers, ports and traffic management services. For example, "just in time" – as explained in paragraph 5.2.4 – requires good early communication among operators, ports and traffic management services. The better the coordination among such stakeholders, the more improvement can be expected. In most cases, such coordination or total management is better made by a company rather than by a ship. In this sense, it is recommended that a company also establish an energy efficiency and carbon intensity management plan to improve the performance of its fleet (should it not have one in place already) and effect the necessary coordination among stakeholders.

Human resource development

4.1.6 For effective and steady implementation of the adopted measures, raising awareness of and providing necessary training for personnel both on shore and on board are an important element. Such human resource development is encouraged and should be considered as an important component of planning as well as a critical element of implementation.

Goal setting

4.1.7 The last part of planning is goal setting.

.1 For ships also subject to regulation 28 of MARPOL Annex VI, the goal setting should be consistent with the continuous CII improvements set out by that regulation, and should include the relevant information (see paragraph 9.7). These ships are also encouraged to consider setting ship-specific goals in addition to the applicable CII requirements that strive for additional energy efficiency improvements and carbon intensity reductions.

.2 For ships or companies not subject to regulation 28, there are no requirements to define a goal and to communicate it to the public, or to be subject to external inspection, surveys, or audits with respect to the SEEMP. Nevertheless, a meaningful goal should be defined to serve as a signal of a company's commitment to improve the energy efficiency and carbon intensity of the ship. The goal can be set using different indicators, including the annual fuel consumption, Annual Efficiency Ratio (AER), cgDIST, Energy

Efficiency Operational Indicator (EEOI) or other carbon intensity indicators (CIIs).[2] In all cases, the goal should be measurable and easy to understand.

4.2 Implementation

Establishment of implementation system

4.2.1 After a ship and a company identify the energy efficiency and carbon intensity measures to be implemented, it is essential to establish a system for their implementation. This is done by developing the procedures for energy management, defining tasks associated with those procedures, and assigning those tasks to responsible personnel. The implementation system should include procedures to ensure execution of measures and specify defined levels of authority and lines of communication. Also, it should include procedures for internal audits and management review, where relevant. In sum, part I of the SEEMP should describe how each measure should be implemented and who the responsible person or persons are. The implementation period (start and end dates) of each selected measure should be indicated. The development of such an implementation system can be considered as a part of planning, and therefore may be completed at the planning stage.

Implementation and record-keeping

4.2.2 The planned measures should be carried out in accordance with the predetermined implementation system. Record-keeping for the implementation of each measure is beneficial for self-evaluation at a later stage and should be encouraged. If any identified measure cannot be implemented for any reason, the reason or reasons should be recorded for internal use. It is recommended that events and operational conditions outside the control of the ship's crew (for example, waiting for berths, extended port dwell times, operation in severe adverse weather) which may affect the ships rating be documented.

4.3 Monitoring

Monitoring tools

4.3.1 The energy efficiency of a ship should be monitored quantitatively. This should be done by an established method, preferably by an international standard. In many cases, the monitoring tool should target the goal indicator set out in paragraph 4.1.7 (e.g. AER, cgDIST, EEOI, or other CIIs as agreed by the Organization). If a quantitative goal is not defined for a ship, a quantitative performance indicator developed by the Organization (e.g. AER, EEOI, CII) or another internationally established tool should be selected. A ship subject to regulation 28 is likely to use the CII as its monitoring tool.

4.3.2 If used, these CIIs should be calculated in accordance with the guidelines developed by the Organization,[3] adjusted, as necessary, to a specific ship and trade.

---

[2] Refer to the *2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines, G1)* (resolution MEPC.352(78)) and the *2022 Interim guidelines on correction factors and voyage adjustments for CII calculations (G5)* (resolution MEPC.355(78)).

[3] Refer to the *Guidelines for voluntary use of the ship energy efficiency operational indicator (EEOI)* (MEPC.1/Circ.684) and the *2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines, G1)* (resolution MEPC.352(78)) and the *2022 Interim guidelines on correction factors and voyage adjustments for CII calculations (G5)* (resolution MEPC.355(78)).

4.3.3 Ships subject to regulation 28 may use other measurement tools in addition to the CII, if convenient and/or beneficial for a ship or a company. In the case where other monitoring tools are used, the reason for the use of the tool and the method of monitoring should be clarified at the planning stage.

4.3.4 It is highly advised to conduct monitoring at regular intervals for checking consistency of data and verification assistance. The ship's fuel oil consumption should be monitored using daily reporting, such as noon reports, or higher frequency data.

Establishment of monitoring system

4.3.5 It should be noted that whatever measurement tools are used, continuous and consistent and reliable data collection is the foundation of monitoring. To allow for meaningful and consistent monitoring, a monitoring system, including the procedures for collecting data and the assignment of responsible personnel, should be developed. The development of such a system can be considered as a part of planning, and therefore should be completed at the planning stage.

4.3.6 It should be noted that, in order to avoid unnecessary administrative burdens on ships' staff, monitoring should be carried out as much as possible by shore staff when the data can be automatically transferred, utilizing data obtained from existing required records such as the official and engineering logbooks and oil record books. Additional data could be obtained as appropriate.

Search and rescue

4.3.7 When a ship diverts from its scheduled passage to engage in search and rescue operations, and for which emissions are excluded pursuant to regulation 3, it is recommended that data obtained during such operations not be used in ship energy efficiency monitoring, and that such data be recorded separately.

4.4 Self-evaluation and improvement

4.4.1 Self-evaluation and improvement is the final phase of the management cycle. This phase should produce meaningful feedback for the coming first stage, i.e. planning stage of the next improvement cycle.

4.4.2 The purpose of self-evaluation is to:

.1 evaluate the effectiveness of the planned measures and their implementation;

.2 deepen the understanding of the overall characteristics of the ship's operation such as what types of measures can or cannot function effectively, and how and/or why;

.3 comprehend the trend of the efficiency improvement of that ship; and

.4 develop the improved management plan for the next cycle through identification of further opportunities for improving energy efficiency and reducing carbon intensity.

4.4.3 For this process, procedures for self-evaluation of the ship energy efficiency management plan should be developed. Furthermore, self-evaluation should be implemented periodically by using data collected through monitoring. In addition, it is recommended that time be invested in identifying the cause and effect of the performance during the evaluated period so lessons learned can be taken into account when revising and improving the next stage of the ship's energy efficiency management plan.

5 GUIDANCE ON BEST PRACTICES FOR FUEL-EFFICIENT OPERATION OF SHIPS

5.1 The search for energy efficiency and carbon intensity improvement across the entire transport chain takes responsibility beyond what can be delivered by the company alone. A list of all the possible stakeholders in the efficiency of a single voyage is long: obvious parties are designers, shipyards and engine manufacturers for the characteristics of the ship; and charterers, fuel suppliers, ports and vessel traffic management services, etc. for the specific voyage. All parties involved should consider the inclusion of efficiency measures in their operations both individually and collectively.

5.2 Fuel-efficient operations

Improved voyage planning

5.2.1 The optimum route and improved efficiency can be achieved through the careful planning and execution of voyages. Thorough voyage planning needs time, but a number of software tools are available to assist in voyage planning.

5.2.2 The *Guidelines for voyage planning*, adopted by resolution A.893(21), provide essential guidance for the ship's crew and voyage planners.

Weather routeing

5.2.3 Weather routeing has a high potential for efficiency savings on specific routes. It is commercially available for all types of ship and for many trade areas.

Just in time

5.2.4 Good early communication with the next port should be an aim in order to give maximum notice of berth availability and facilitate the use of optimum speed where port operational procedures support this approach.

5.2.5 Optimized port operation could involve a change in procedures involving different ship handling arrangements in ports. Port authorities should be encouraged to maximize efficiency and minimize delay.

Speed optimization

5.2.6 Speed optimization can produce significant savings. However, optimum speed means the speed at which the fuel used per tonne mile is at a minimum level for that voyage. It does not mean minimum speed; in fact, sailing at less than optimum speed will consume more fuel rather than less. Reference should be made to the engine manufacturer's power/consumption curve and the ship's propeller curve. Possible adverse consequences of slow speed operation may include increased vibration and problems with soot deposits in combustion chambers and exhaust systems. These possible consequences should be taken into account. For LNG carriers speed optimization means, quite often, a higher speed at the start of laden passages to control tanks pressure and at the end of ballast passages to use the operational LNG quantity needed for cargo tank cooling in propulsion instead of wasting in GCU or condenser steam dump. Charterers are generally aware of the improved efficiency of this speed pattern.

5.2.7 As part of the speed optimization process, due account may need to be taken of the need to coordinate arrival times with the availability of loading/discharge berths, etc. The number of ships engaged in a particular trade route may need to be taken into account when considering speed optimization.

5.2.8 A gradual increase in speed when leaving a port or estuary whilst keeping the engine load within certain limits may help to reduce fuel consumption.

5.2.9 It is recognized that under many charter parties the speed of the ships is determined by the charterer and not the operator. Efforts should be made when agreeing charter party terms to encourage the ship to operate at optimum speed in order to maximize energy efficiency.

Optimized shaft power

5.2.10 Operation at constant shaft RPM can be more efficient than continuously adjusting speed through engine power. The use of automated engine management systems to control speed rather than relying on human intervention may be beneficial.

5.2.11 When optimizing shaft power, due attention should be given to overall power system efficiency. For example, in some cases reducing load or shaft speed below the minimum necessary to operate energy recovery systems and shaft generators may increase overall emissions.

5.3 Optimized ship handling

Optimum trim

5.3.1 Most ships are designed to carry a designated amount of cargo at a certain speed for a certain fuel consumption. This implies the specification of set trim conditions. Loaded or unloaded, trim has a significant influence on the resistance of the ship through the water and optimizing trim can deliver significant fuel savings. For any given draft there is a trim condition that gives minimum resistance. In some ships, it is possible to assess optimum trim conditions for fuel efficiency continuously throughout the voyage. Design or safety factors may preclude full use of trim optimization.

Optimum ballast

5.3.2 Ballast should be adjusted taking into consideration the requirements to meet optimum trim and steering conditions and optimum ballast conditions achieved through good cargo planning.

5.3.3 When determining the optimum ballast conditions, the limits, conditions and ballast management arrangements set out in the ship's Ballast Water Management Plan are to be observed for that ship.

5.3.4 Ballast conditions have a significant impact on steering conditions and autopilot settings, and it needs to be noted that less ballast water does not necessarily mean improved energy efficiency.

Optimum propeller and propeller inflow considerations

5.3.5 Selection of the propeller is normally determined at the design and construction stage of a ship's life but new developments in propeller design have made it possible for retrofitting of later designs to deliver greater fuel economy. Whilst it is certainly for consideration, the propeller is but one part of the propulsion train and a change of propeller in isolation may have no effect on efficiency and may even increase fuel consumption.

5.3.6 Improvements to the water inflow to the propeller using arrangements such as fins and/or nozzles could increase propulsive efficiency power and hence reduce fuel consumption.

Optimum use of rudder and heading control systems (autopilots)

5.3.7 There have been large improvements in automated heading and steering control systems technology. Whilst originally developed to make the bridge team more effective, modern autopilots can achieve much more. An integrated Navigation and Command System can achieve significant fuel savings by simply reducing the distance sailed "off track". The principle is simple: better course control through less frequent and smaller corrections will minimize losses due to rudder resistance. Retrofitting of a more efficient autopilot to existing ships could be considered.

5.3.8 During approaches to ports and pilot stations the autopilot cannot always be used efficiently as the rudder has to respond quickly to given commands. Furthermore, at certain stages of the voyage it may have to be deactivated or very carefully adjusted, i.e. during heavy weather and approaches to ports.

5.3.9 Consideration may be given to the retrofitting of improved rudder blade design (e.g. "twist-flow" rudder).

Hull maintenance

5.3.10 Docking intervals should be integrated with the company's ongoing assessment of ship performance. Hull resistance can be optimized by new technology-coating systems, possibly in combination with cleaning intervals. Regular in-water inspection of the condition of the hull is recommended.

5.3.11 Propeller cleaning and polishing or even appropriate coating may significantly increase fuel efficiency. The need for ships to maintain efficiency through in-water hull cleaning should be recognized and facilitated by port States.

5.3.12 Consideration may be given to the possibility of timely full removal and replacement of underwater paint systems to avoid the increased hull roughness caused by repeated spot blasting and repairs over multiple dockings.

5.3.13 Generally, the smoother the hull, the better the fuel efficiency.

Propulsion system

5.3.14 Marine diesel engines have a very high thermal efficiency (~50%). This excellent performance is only exceeded by fuel cell technology with an average thermal efficiency of 60%. This is due to the systematic minimization of heat and mechanical loss. In particular, the new breed of electronic controlled engines can provide efficiency gains. However, specific training for relevant staff may need to be considered to maximize the benefits.

Propulsion system maintenance

5.3.15 Maintenance in accordance with manufacturers' instructions in the company's planned maintenance schedule will also maintain efficiency. The use of engine condition monitoring can be a useful tool to maintain high efficiency.

5.3.16 Additional means to improve engine efficiency might include use of fuel additives, adjustment of cylinder lubrication oil consumption, valve improvements, torque analysis, and automated engine monitoring systems.

5.4 Waste heat recovery

5.4.1 Waste heat recovery systems use thermal heat losses from the exhaust gas for either electricity generation, heating or additional propulsion with a shaft power take in.

5.4.2 It may not be possible to retrofit such systems into existing ships. However, they may be a beneficial option for new ships. Shipbuilders should be encouraged to incorporate new technology into their designs.

5.5 Improved fleet management

5.5.1 Better utilization of fleet capacity can often be achieved by improvements in fleet planning. For example, it may be possible to avoid or reduce long ballast voyages through improved fleet planning. There is opportunity here for charterers to promote efficiency. This can be closely related to the concept of "just in time" arrivals.

5.5.2 Efficiency, reliability and maintenance-oriented data sharing within a company can be used to promote best practice among ships within a company and should be actively encouraged.

5.6 Improved cargo handling

Cargo handling is in most cases under the control of the port or terminal operators and optimum solutions matched to ship and port or terminal requirements should be explored. However, in cases where ships use their own cargo handling equipment (e.g. cargo cranes, self-unloading booms, cargo pumps (tankers)), procedures should be in place to efficiently utilize the energy produced from any additional generators required to operate the equipment.

5.7 Energy management

5.7.1 A review of electrical services on board can reveal the potential for unexpected efficiency gains. However, care should be taken to avoid the creation of new safety hazards when turning off electrical services (e.g. lighting). Thermal insulation is an obvious means of saving energy. Also see comment below on shore power.

5.7.2 Optimization of reefer container stowage locations may be beneficial in reducing the effect of heat transfer from compressor units. This might be combined as appropriate with cargo tank heating, ventilation, etc. The use of water-cooled reefer plant with lower energy consumption might also be considered.

5.8 Fuel type

The use of emerging alternative fuels may be considered as a CO_2 reduction method, but availability will often determine the applicability.

5.9 Other measures

5.9.1 Development of computer software for the calculation of current fuel consumption, for the establishment of an emissions "footprint", to optimize operations, and the establishment of goals for improvement and tracking of progress may be considered.

5.9.2 Renewable energy sources, such as solar (or photovoltaic) cell technology, have improved enormously in recent years and should be considered for onboard application.

5.9.3 In some ports shore power may be available for some ships but this is generally aimed at improving air quality in the port area. If the shore-based power source is carbon efficient, there may be a net efficiency benefit. Ships may consider using onshore power if available.

5.9.4 Even wind-assisted propulsion may be worthy of consideration. Various systems are available for retrofit, including Flettner rotors, wing sails and aerofoil kites.

5.9.5 Efforts could be made to source fuel of improved quality in order to minimize the amount of fuel required to provide a given power output.

5.10 Compatibility of measures

5.10.1 These Guidelines indicate a wide variety of possibilities for energy efficiency improvements for the existing fleet. While there are many options available, they are not necessarily cumulative, are often area and trade dependent and likely to require the agreement and support of a number of different stakeholders if they are to be utilized most effectively.

Age and operational service life of a ship

5.10.2 All measures identified in this document as applied to part I of the SEEMP are potentially cost-effective in case of high oil prices. The financial feasibility of a specific energy efficiency enhancement can be evaluated by various means. One way would be to estimate the return on investment (ROI) time. However, while measures with lower ROI may have the lowest cost, this does not guarantee the best results in energy efficiency performance improvement. Clearly, this equation is heavily influenced by the remaining service life of a ship and the cost of fuel.

Trade and sailing area

5.10.3 The feasibility of many of the measures described in this guidance will be dependent on the trade and sailing area of the ship. Sometimes ships will change their trade areas as a result of a change in chartering requirements, but this cannot be taken as a general assumption. For example, certain types of wind-enhanced power sources might not be feasible for short sea shipping as these ships generally sail in areas with high traffic densities or in restricted waterways. Air draught limitations may also affect the feasibility of wind assistance technology and certain other emission reduction measures. Another aspect is that the world's oceans and seas each have characteristic conditions and so ships designed for specific routes and trades may not obtain the same energy efficiency benefits by adopting the same measures or combination of measures as other ships that operate in different areas. It is also likely that some measures will have a greater or lesser effect in different sailing areas.

5.10.4 The trade a ship is engaged in may also determine the feasibility of the efficiency measures under consideration. For example, ships that perform services at sea (pipe laying, seismic survey, OSVs, dredgers, etc.) may choose different methods of improving energy efficiency when compared to conventional cargo carriers. The length of voyage may also be an important parameter as may trade specific safety considerations. The pathway to the most efficient combination of measures will be unique to each vessel within each shipping company.

5.10.5 Environmental conditions and the nature of cargo carried also varies between regions. For example, some routes may carry greater volumes of goods requiring careful temperature conditioning, or some transit regions may be subject to frequent severe adverse weather conditions. This may lead to an increase in emissions of ships serving those routes and regions.

PART II - SHIP FUEL OIL CONSUMPTION DATA-COLLECTION PLAN

6 GENERAL

6.1 Regulation 26.2 of MARPOL Annex VI specifies that "in the case of a ship of 5,000 gross tonnage and above, the SEEMP shall include a description of the methodology that will be used to collect the data required by regulation 27.1 of this Annex and the processes that will be used to report the data to the ship's Administration". Part II of the SEEMP, the Ship Fuel Oil Consumption Data-Collection Plan (hereinafter referred to as "Data-Collection Plan") contains such methodology and processes.

6.2 With respect to part II of the SEEMP, these Guidelines provide guidance for developing a ship-specific method to collect, aggregate and report ship data with regard to annual fuel oil consumption, distance travelled, hours under way and other data required by regulation 27 of MARPOL Annex VI to be reported to the Administration.

6.3 Pursuant to regulation 5.4.5 of MARPOL Annex VI, the Administration should ensure that each covered ship's SEEMP complies with regulation 26.2 of MARPOL Annex VI prior to collecting any data.

7 GUIDANCE ON METHODOLOGY FOR COLLECTING DATA ON FUEL OIL CONSUMPTION, DISTANCE TRAVELLED AND HOURS UNDER WAY AND OTHER ITEMS

Total annual fuel oil[4] consumption

7.1 Fuel oil consumption should include all the fuel oil consumed on board including but not limited to the fuel oil consumed by the main engines, auxiliary engines, gas turbines, boilers and inert gas generator, for each type of fuel oil consumed, regardless of whether a ship is under way or not. Methods for collecting data on annual fuel oil consumption in metric tonnes include (in no particular order):

.1 method using bunker delivery notes (BDNs):

This method determines the annual total amount of fuel oil used based on BDNs, which are required for fuel oil for combustion purposes delivered to and used on board a ship in accordance with regulation 18 of MARPOL Annex VI; BDNs are required to be retained on board for three years after the fuel oil has been delivered. The Data-Collection Plan should set out how the ship will operationalize the summation of BDN information and conduct tank readings. The main components of this approach are as follows:

.1 annual fuel oil consumption would be the total mass of fuel oil used on board the vessel as reflected in the BDNs. In this method, the BDN fuel oil quantities would be used to determine the annual total mass of fuel oil consumption, plus the amount of fuel oil left over from the last calendar year period and less the amount of fuel oil carried over to the next calendar year period;

[4] Regulation 2.1.14 of MARPOL Annex VI defines "fuel oil" as any fuel delivered to and intended for combustion purposes for propulsion or operation on board a ship, including gas, distillate and residual fuels.

.2 to determine the difference between the amount of remaining tank oil before and after the period, the tank reading should be carried out at the beginning and the end of the period;

.3 in the case of a voyage that extends across the data-reporting period, the tank reading should occur by tank monitoring at the ports of departure and arrival of the voyage and by statistical methods, such as rolling average using voyage days;

.4 fuel oil tank readings should be carried out by appropriate methods such as automated systems, soundings and dip tapes. The method for tank readings should be specified in the Data-Collection Plan;

.5 the amount of any fuel oil offloaded should be subtracted from the fuel oil consumption of that reporting period. This amount should be based on the records of the ship's oil record book; and

.6 any supplemental data used for closing identified difference in bunker quantity should be supported with documentary evidence;

.2 method using flow meters:

This method determines the annual total amount of fuel oil consumption by measuring fuel oil flows on board by using flow meters. In case of the breakdown of flow meters, manual tank readings or other alternative methods will be conducted instead. The Data-Collection Plan should set out information about the ship's flow meters and how the data will be collected and summarized, as well as how necessary tank readings should be conducted, as follows:

.1 annual fuel oil consumption may be the sum of daily fuel oil consumption data of all relevant fuel oil consuming processes on board measured by flow meters;

.2 the flow meters applied to monitoring should be located so as to measure all fuel oil consumption on board. The flow meters and their link to specific fuel oil consumers should be described in the Data-Collection Plan;

.3 note that it should not be necessary to correct this fuel oil measurement method for sludge if the flow meter is installed after the daily tank as sludge will be removed from the fuel oil prior to the daily tank;

.4 the flow meters applied to monitoring fuel oil flow should be identified in the Data-Collection Plan. Any consumer not monitored with a flow meter should be clearly identified, and an alternative fuel oil consumption measurement method should be included; and

.5 calibration of the flow meters should be specified. Calibration and maintenance records should be available on board;

.3 method using bunker fuel oil tank monitoring on board:

.1 to determine the annual fuel oil consumption, the amount of daily fuel oil consumption data measured by tank readings which are carried out by appropriate methods such as automated systems, soundings and dip tapes will be aggregated. The tank readings will normally occur daily when the ship is at sea and each time the ship is bunkering or de-bunkering; and

.2 the summary of monitoring data containing records of measured fuel oil consumption should be available on board;

.4 method using LNG cargo tank monitoring on board:

LNG ships use the Custody Transfer Monitoring System to monitor/record the cargo volumes inside the tanks. When calculating the consumption:

.1 the LNG liquid volume consumed is converted to mass using the methane density of 422 kg/m³. This is because LNG is transported at methane boiling point, while other heavier hydrocarbons have a higher boiling point and remain at liquid state; and

.2 nitrogen mass content is subtracted for each laden voyage from LNG consumption as it does not contribute to CO_2 emissions;

.5 method using cargo tank monitoring on board for ships using cargo other than LNG as a fuel:

.1 to determine the annual fuel oil consumption, the amount of daily fuel oil consumption data measured by tank readings which are carried out by appropriate methods to the cargo used as a fuel. The method for tank readings should be specified in the SEEMP Data-Collection Plan; and

.2 the tank readings will normally occur daily when the ship is at sea and each time the ship is loading or discharging cargo; and the summary of monitoring data containing records of measured fuel oil consumption should be available on board.

7.2 Any corrections, e.g. density, temperature, nitrogen content for LNG, if applied, should be documented.[5]

Fuel oil consumption per consumer type

7.3 For the collection of fuel oil consumption per consumer type (main engines, auxiliaries, boilers and others), the methods can include:

.1 method using flow meters:

This method determines the annual fuel oil consumption by measuring fuel oil flows on board by using flow meters. In case of the breakdown of flow meters, manual tank readings or other alternative methods will be conducted

[5] For example, ISO 8217 provides a method for liquid fuel.

instead. The Data-Collection Plan should set out information about the ship's flow meters and how the data will be collected and summarized, as well as how necessary tank readings should be conducted, as follows:

.1 annual fuel oil consumption may be the sum of daily fuel oil consumption data of each consumer type on board measured by flow meters;

.2 the flow meters applied to monitoring should be located so as to measure all fuel oil consumption for each consumer type;

.3 note that it should not be necessary to correct this fuel oil measurement method for sludge if the flow meter is installed after the daily tank as sludge will be removed from the fuel oil prior to the daily tank;

.4 the flow meters applied to monitoring fuel oil flow and their link to specific fuel consumer types should be identified in the Data-Collection Plan. Any individual consumer of a consumer type not monitored with a flow meter should be clearly identified, and an alternative fuel oil consumption measurement method should be included; and

.5 calibration of the flow meters should be specified. Calibration and maintenance records should be available on board;

.2 method using bunker fuel oil tank monitoring on board:

.1 to determine the annual fuel oil consumption of each consumer type, the amount of daily fuel oil consumption data measured by tank readings which are carried out by appropriate methods such as automated systems, soundings and dip tapes will be aggregated. The tank readings will normally occur daily when the ship is at sea and each time the ship is bunkering or de-bunkering; and

.2 the summary of monitoring data containing records of measured fuel oil consumption should be available on board;

7.4 If there is a consumer type whose fuel oil consumption cannot be determined directly according to one of the methods indicated in paragraphs 7.3.1 and 7.3.2, the annual fuel oil consumption of that consumer type should be determined according to one of the following methods. The method used to determine the annual fuel oil consumption of each consumer type should be described in detail in the Data-Collection Plan. Note that each consumer type may use a different method to measure fuel oil consumption.

.1 method using subtraction:

If the fuel consumption for only one of the consumer types is not available, the fuel consumption of this consumer type may be derived by subtracting the fuel consumption of the other consumer types from the total annual fuel oil consumption measured in paragraph 7.1; and

.2 method using estimated fuel oil consumption:

In cases where none of the above methods in paragraphs 7.3.1, 7.3.2 and 7.4.1 can be applied, an alternative method that is to the satisfaction of the Administration or any organization recognized by it may be used to estimate the annual fuel oil consumption of the consumer type, based for example on manufacturer data or actual historic fuel consumption for a specified period.

Conversion factor C_F

7.5 If fuel oils are used that do not fall into one of the categories as described in the *2022 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.364(79)), and have no C_F-factor assigned (e.g. some "hybrid fuel oils"), the fuel oil supplier should provide a C_F-factor for the respective product supported by documentary evidence.

Distance travelled

7.6 Appendix IX of MARPOL Annex VI specifies that distance travelled should be submitted to the Administration and:

.1 distance travelled over ground in nautical miles should be recorded in the logbook in accordance with SOLAS regulation V/28.1;[6]

.2 the distance travelled while the ship is under way under its own propulsion should be included in the aggregated data of distance travelled for the calendar year; and

.3 other methods to measure distance travelled accepted by the Administration may be applied. In any case, the method applied should be described in detail in the Data-Collection Plan.

7.7 Laden distance should be calculated as the distance sailed when the ship is loaded.

Hours under way

7.8 Appendix IX of MARPOL Annex VI specifies that hours under way should be submitted to the Administration. Hours under way should be an aggregated duration while the ship is under way under its own propulsion.

Data quality

7.9 The Data-Collection Plan should include data quality control measures which should be incorporated into the existing safety management system. Additional measures to be considered could include:

.1 the procedure for identification of data gaps and correction thereof; and

.2 the procedure to address data gaps if monitoring data is missing, for example, flow meter malfunctions.

[6] Distance travelled measured using satellite data is distance travelled over the ground.

Total amount of onshore power supplied

7.10 The total amount of onshore power supplied should be calculated as the sum of the amount of onshore power supplied in kWh. The amount of onshore power supplied should be recorded based on a relevant document from the power supplier. The document should be stored. This information as shown on the bill from the port or electricity provider could be included in the electronic record.

Total transport work

7.11 Total transport work is the annual sum of each voyage's transport work, which is distance sailed multiplied by cargo carried during a voyage. Relevant transport work metrics per ship types are provided in table 1 below.

Table 1: Transport work to be reported per ship type

Ship type	Transport work metric
bulk carriers, tankers, combination carriers, gas carriers, LNG carriers, general cargo ships, ro-ro cargo ships (vehicle carriers), ro-ro cargo ships	$\sum_v (cargo\_mass_v \times distance_v)$
containerships	$\sum_v ((cargo\_mass_v + container\_mass_v) \times distance_v))$ and $\sum_v (No\_of\_TEU_v \times distance_v)$
cruise passenger ships	$\sum_v (No\_of\_passengers_v \times distance_v)$
ro-ro passenger ships	$\sum_v (No\_of\_passengers_v \times distance_v)$ and $\sum_v (cargo\_mass_v \times distance_v)$

A standardized data-reporting format

7.12 Regulation 27.3 of MARPOL Annex VI states that the data specified in appendix IX of the Annex are to be communicated electronically using a standardized form developed by the Organization. The collected data should be reported to the Administration in the standardized format shown in appendix 4.

8 DIRECT CO_2 EMISSIONS MEASUREMENT

8.1 Direct CO_2 emission measurement is not required by regulation 27 of MARPOL Annex VI.

8.2 Direct CO_2 emissions measurement, if used, should be carried out as follows:

.1 this method is based on the determination of CO_2 emission flows in exhaust gas stacks by multiplying the CO_2 concentration of the exhaust gas with the exhaust gas flow. In case of the absence or/and breakdown of direct CO_2 emissions measurement equipment, manual tank readings will be conducted instead;

.2 the direct CO_2 emissions measurement equipment applied to monitoring is located so as to measure all CO_2 emissions from the ship. The locations of all equipment applied are described in the monitoring plan; and

.3 calibration of the CO_2 emissions measurement equipment should be specified. Calibration and maintenance records should be available on board.

PART III - SHIP OPERATIONAL CARBON INTENSITY PLAN

9 GENERAL

9.1 Regulation 26.3.1 of MARPOL Annex VI specifies that, for certain categories of ships of 5,000 GT and above, on or before 1 January 2023, the SEEMP shall include:

.1 a description of the methodology that will be used to calculate the ship's attained annual operational CII required by regulation 28 of MARPOL Annex VI and the processes that will be used to report this value to the ship's Administration;

.2 the required annual operational CIIs, as specified in regulation 28 of MARPOL Annex VI, for the next three years;

.3 an implementation plan documenting how the required annual operational CIIs will be achieved during the next three years; and

.4 a procedure for self-evaluation and improvement.

9.2 Sections 9 to 15 of these Guidelines provide guidance for ships to which regulation 26.3 of MARPOL Annex VI applies for the following purposes:

.1 to assist them in developing part III of the ship's SEEMP, including guidance on developing a ship-specific method to collect necessary data;

.2 to describe the methodology that will be used to calculate the ship's attained annual operational CII value and report this to the ship's Administration;

.3 to determine the ship's required annual operational CII for the next three years;

.4 to develop and apply an implementation plan documenting how the required annual operational CIIs will be achieved during the next three years;

.5 to define a procedure for self-evaluation and improvement; and

.6 to develop corrective actions, as applicable.

9.3 The required annual operational CII is to be calculated in accordance with regulation 28 and taking into account the guidelines developed by the Organization.[7]

[7] Refer to the *2022 Guidelines on the reference lines for use with operational carbon intensity indicators (CII reference lines guidelines, G2)* (resolution MEPC.353(78)) and the *2021 Guidelines on the operational carbon intensity reduction factors relative to reference lines (CII reduction factors guidelines, G3)* (resolution MEPC.338(76)).

9.4 In addition, pursuant to regulation 28 of MARPOL Annex VI, part III of the SEEMP is further to include calculation methodologies and a plan of corrective actions for ships that are rated D for three consecutive years or rated as E.

9.5 The ship's attained annual operational carbon intensity is to be calculated taking into account the guidelines developed by the Organization.[8]

9.6 Ships of 5,000 GT and above that are subject to regulations 26.3 and 28 of MARPOL Annex VI are strongly encouraged to review part I of their SEEMP to revise it as needed to reflect the actions taken to achieve the ship's CII requirements.

9.7 The goal setting, as referred to in paragraph 4.1.7 in part I, should be consistent with the requirements of regulation 28 of MARPOL Annex VI and should include the ship's required annual operational CII for the next three years following the updating of the SEEMP.

9.8 In addition, while ships subject to regulation 28 of MARPOL Annex VI may rely on the CII requirements when defining goals under part I of the SEEMP, they are encouraged to consider setting additional ship-specific goals that go beyond the applicable CII requirements and strive for energy efficiency improvements and carbon intensity reductions beyond such requirements.

9.9 Ships subject to regulation 28 of MARPOL Annex VI may consider voluntarily using one or more of the trial CIIs (EEPI, cbDIST, clDIST or EEOI), where applicable, for the purpose of providing supporting data for decision-making to support the review clause set out in regulation 28.11 of MARPOL Annex VI. A standardized data-reporting format for the parameters to calculate the trial carbon intensity indicators on a voluntary basis is presented in appendix 5. A description of the methodology that should be used to calculate the trial CII should be included in the SEEMP.

9.10 Part III of the ship's SEEMP should be updated in case of voluntary modifications or necessary corrective actions are involved (every three years).

10 ATTAINED ANNUAL OPERATIONAL CII CALCULATION METHODOLOGY, DATA-COLLECTION PLAN AND DATA QUALITY

10.1 Taking into account the guidelines developed by the Organization,[9] part III of the SEEMP provides detailed information on how the ship's attained annual operational CII should be calculated. Regulation 28 of MARPOL Annex VI states that the attained annual operational CII shall be calculated, using the data collected in accordance with regulation 27 (Fuel Oil Data-Collection System).

10.2 In describing the calculation methodology, part III of the SEEMP should include a detailed description of the data required for the calculation of the attained annual operational CII. The data collection should follow the relevant methodology and requirements on the Fuel Oil Data-Collection System pursuant to regulation 27 of MARPOL Annex VI (see part II of these Guidelines).

[8] Refer to the *2022 Guidelines on operational carbon intensity indicators and calculation methods (CII Guidelines, G1)* (resolution MEPC.352(78)) and the *2022 Interim guidelines on correction factors and voyage adjustments for CII calculations (G5)* (resolution MEPC.355(78)).

[9] Refer to the *2022 Guidelines on operational carbon intensity indicators and calculation methods (CII Guidelines, G1)* (resolution MEPC.352(78)) and the *2022 Interim guidelines on correction factors and voyage adjustments for CII calculations (G5)* (resolution MEPC.355(78)).

10.3 In case of transfer of the ship from one company to another according to regulation 27.5 or 27.6 of MARPOL Annex VI, all relevant data necessary for the calculation of the attained annual operational CII should be submitted by the former company to the receiving company within one month after the date of transfer. The data should have been verified by the Administration or any organization duly authorized by it according to regulation 6.7 of MARPOL Annex VI before they are transferred to the receiving company. The format of the transfer should be consistent with appendix 4 and such that the receiving company can use it in the calculations of the attained annual operational CII for the whole year in which the transfer takes place.

10.4 In case the former company does not transfer the required data, the Administration may make relevant data submitted to the IMO Fuel Oil Consumption Database available to the receiving company. In case of a transfer of both company and Administration concurrently, the incoming Administration may make a request to the Organization for access to the data according to regulation 27.11. If no such data is available, the attained annual operational CII can be calculated and verified using the available data covering a period of the preceding calendar year as long as practically possible.

10.5 In case of transfer of a ship from one Administration to another according to regulation 27.4 of MARPOL Annex VI the data needed for calculating the annual attained CII is already in the possession of the relevant company and no further exchange of data is needed.

11 REQUIRED ANNUAL OPERATIONAL CII FOR NEXT THREE YEARS

11.1 Part III of the SEEMP describes the required annual operational CII values for the ship for each of the next three years, calculated in accordance with regulation 28 of MARPOL Annex VI and taking into account the guidelines developed by the Organization,[10] as the basis for those calculations.

12 THREE-YEAR IMPLEMENTATION PLAN

12.1 The three-year implementation plan describes the measures the ship plans to take to continue to achieve the required annual operational CII over the next three-year period. These may include, but are not limited to, measures as outlined in section 5 of these Guidelines.

12.2 The three-year implementation plan is ship-specific.

12.3 The three-year implementation plan should be SMART (Specific, Measurable, Achievable, Realistic and Time-bound) to the extent envisaged and feasible. It should include:

.1 a list of measures that improve the energy efficiency and reduce the carbon intensity of the ship, with time and method of implementation necessary for achieving the required operational CII;

.2 a description of how, when the listed measures are implemented, the required operational CII will be achieved, taking into consideration the combined effect of the measures on operational carbon intensity;

[10] Refer to the *2022 Guidelines on the reference lines for use with operational carbon intensity indicators (CII reference lines guidelines, G2)* (resolution MEPC.353(78)) and the *2021 Guidelines on the operational carbon intensity reduction factors relative to reference lines (CII reduction factors guidelines, G3)* (resolution MEPC.338(76)).

.3 the company personnel responsible for the three-year implementation plan, and for monitoring and recording performance throughout the year for the reviewing of the effectiveness of the three-year implementation plan; and

.4 identification of possible impediments to the effectiveness of the measures for improving the energy efficiency and reducing the carbon intensity of the ship, including possible contingency measures put in place to overcome these impediments.

12.4 The three-year implementation plan should be monitored and adjusted when necessary, and the data to be monitored, identified.

13 PROCESS FOR SELF-EVALUATION AND IMPROVEMENT (IN ADDITION TO SECTION 4.4. OF THESE GUIDELINES)

13.1 The purpose of self-evaluation is to evaluate the effectiveness of the planned measures and their implementation, to deepen the understanding of the overall characteristics of the ship's operation, such as what types of measures can function effectively, and how or why, to comprehend the trend of the efficiency improvement of that ship, to understand trends in the ship's utilization in terms of cargo carried and areas of operation, and to develop an improved action plan for the next cycle. This evaluation should produce meaningful feedback based on experience in the previous period, to enhance performance in the next period.

13.2 Procedures for self-evaluation of the ship's energy usage and carbon intensity should be developed and included in this section of the SEEMP. Self-evaluation should be carried out periodically based on data collected through monitoring. It is recommended that the cause and effect of the ship's performance in the evaluated period be identified in order to identify measures for improving performance during the next period.

13.3 The process of self-evaluation and improvement could consist of the following elements:

.1 regular internal shipboard and company audits to verify implementation and the effectiveness of the system;

.2 improvement, i.e. implementing preventive or modifying measures (responsible personnel within the company should evaluate such audit reports and implement corrective actions including preventive or modifying measures); and

.3 periodical review of the SEEMP and associated documents, to update the SEEMP in a manner which minimizes any administrative and unnecessary burdens on company personnel and ship staff.

13.4 The content of the self-evaluation and improvement could include the following elements:

.1 criteria for evaluation, including elements to evaluate, such as quality of monitoring, record-keeping, effectiveness of implemented measures (including cause and effect) and achievement of the goal;

.2 the evaluation of the effectiveness of the different measures taken, in terms of energy efficiency and carbon intensity;

.3 which measures contribute the most and how much, which measures do not contribute and are therefore not efficient, which ship and/or company-specific elements adversely affect the CII and how these could be improved;

.4 timeline for starting the review process ahead of the end of the compliance period and for implementation of new measures in the subsequent year;

.5 measures identified to address deficiencies and discrepancies including correction of data gaps and system weaknesses, new measures to improve implementation (e.g. training) as well as new carbon intensity improvement measures as needed;

.6 where relevant, actions that will be taken to bring the ship into better CII ratings including estimated quantification of the additional expected reduction in carbon intensity;

.7 where applicable, if a plan of corrective actions is required, the plan should include items listed under 15.4.5 to bring the ship out of inferior performance; and

.8 where relevant, identification of critical factors that contributed to missing the CII target.

14 REVIEW AND UPDATE OF PART III OF THE SEEMP

14.1 Regulation 26.1 of MARPOL Annex VI provides that "Each ship shall keep on board a ship-specific Ship Energy Efficiency Management Plan (SEEMP). This may form part of the ship's safety management system. The SEEMP shall be developed and reviewed, taking into account guidelines adopted by the Organization". Regulation 26.3.2 of MARPOL Annex VI provides that "For ships rated as D for three consecutive years or rated as E, in accordance with regulation 28 of this Annex, the SEEMP shall be reviewed in accordance with regulation 28.8 of this Annex to include a plan of corrective actions to achieve the required annual operational CII".

14.2 The company should ensure that the SEEMP is reviewed and updated when necessary, as per paragraph 9.10.

14.3 The SEEMP should include a log for when it has been reviewed and updated and identify which parts have been changed.

15 PLAN OF CORRECTIVE ACTIONS

15.1 A plan of corrective actions is not required to be included in the SEEMP unless a ship has been rated D for three consecutive years or E for one year.

15.2 For a ship that is required to develop a plan of corrective actions in accordance with regulation 28.7 of MARPOL Annex VI, a revised SEEMP including the corrective actions for CII reduction shall be submitted to the Administration or any organization duly authorized by it for verification in accordance regulation 28.8 of MARPOL Annex VI. The revised SEEMP should be submitted together with the plan of corrective actions, but in no case later than one month after reporting the attained annual operational CII in accordance with regulation 28.2.

15.3 Regulation 28.9 of MARPOL Annex VI further provides that "A ship rated as D for three consecutive years or rated as E shall duly undertake the planned corrective actions in accordance with the revised SEEMP."

15.4 **Developing the plan of corrective actions**

15.4.1 The purpose of the plan of corrective actions is to set out what actions a ship that was rated D for three consecutive years or E for one year should take to achieve at least a C rating for the calendar year following the adoption of the plan of corrective actions and ultimately the required annual operational CII.

15.4.2 The plan of corrective actions is ship-specific.

15.4.3 Many of the approaches described in section 5 of these guidelines or any other suitable measure may be applied to a ship to improve its fuel efficiency and thus its CII rating.

15.4.4 The plan for corrective action should describe the actions that the ship plans to take, the timeline in which those actions will be applied, and the expected impact their application will have on the ship's CII rating. It should be demonstrated how the corrective actions will contribute to achieving the required annual operational CII, so as to ascertain the effectiveness of the corrective actions. Experience gained from previously taken corrective actions and their degree of effectiveness should be taken into account when selecting the proper corrective actions.

15.4.5 The plan of corrective actions should be SMART (Specific, Measurable, Achievable, Realistic and Time-bound). It should include:

.1 an analysis of the cause of the inferior CII rating;

.2 an analysis of the performance of implemented measures;

.3 a list of additional measures and revised measures to be added to the implementation plan with time and method of implementation necessary for achieving the required operational CII;

.4 designation of a company person to be responsible for the added and revised measures in the implementation plan, monitoring and recording performance throughout and reviewing of the effectiveness of the corrective actions; and

.5 identification of possible impediments to the effectiveness of the measures for improving the energy efficiency and reducing the carbon intensity of the ship, including possible additional contingency measures put in place to overcome and how these impediments will be overcome.

15.4.6 The implementation of the plan of corrective actions should be monitored and adjusted when necessary. Additional measures should be taken to strengthen corrective actions in case of insufficient intermediate results.

15.4.7 The company should ensure that it is in a position to perform the actions set out in the plan of corrective actions and confirm that it is able to do so when submitting its updated SEEMP.

APPENDIX 1

SAMPLE FORM OF SHIP MANAGEMENT PLAN TO IMPROVE ENERGY EFFICIENCY (PART I OF THE SEEMP)

Name of ship:		Gross tonnage:	
Ship type:		Capacity:	
IMO number:			

Date of development:		Developed by:	
Implementation period:	From: Until:	Implemented by:	
Planned date of next evaluation:			

Review and update log

Date/timeline	Updated parts	Developed by	Implemented by

1 MEASURES

Energy efficiency measures	**Implementation** (including the starting date)	**Responsible personnel**

2 MONITORING

Description of monitoring tools

3 GOAL

Measurable goals

4 EVALUATION

Procedures of evaluation

APPENDIX 2

SAMPLE FORM OF SHIP FUEL OIL CONSUMPTION DATA-COLLECTION PLAN (PART II OF THE SEEMP)

1 Review and update log

Date/timeline	Updated parts	Developed by	Implemented by

2 Ship particulars

Name of ship	
IMO number	
Company	
Flag	
Year of delivery	
Ship type	
Gross tonnage	
NT	
DWT	
Attained EEDI (if applicable)	
Attained EEXI (if applicable)	
Ice class	

3 Record of revision of Fuel Oil Consumption Data-Collection Plan

Date of revision	Revised provision

4 Ship engines and other fuel oil consumers and fuel oil types used

	Engines or other fuel oil consumer type	Power	Fuel oil types
1	Type/model of main engine	(kW)	
2	Type/model of auxiliary engine	(kW)	
3	Boiler	(…)	
4	Inert gas generator	(…)	
5	Others (Specify)	(…)	

5 Emission factor

C_F is a non-dimensional conversion factor between fuel oil consumption and CO_2 emission in the *2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.308(73)), as amended. The annual total amount of CO_2 is calculated by multiplying annual fuel oil consumption and C_F for the type of fuel.

Fuel oil type	C_F (t-CO_2 / t-Fuel)
Diesel/Gas oil (e.g. ISO 8217 grades DMX through DMB)	3.206
Light fuel oil (LFO) (e.g. ISO 8217 grades RMA through RMD)	3.151
Heavy fuel oil (HFO) (e.g. ISO 8217 grades RME through RMK)	3.114
Liquefied petroleum gas (LPG) (Propane)	3.000
Liquefied petroleum gas (LPG) (Butane)	3.030
Liquefied natural gas (LNG)	2.750
Methanol	1.375
Ethanol	1.913
Other (……)	

6 Method to measure fuel oil consumption

The applied methods for measurement for each consumer type of this ship are given below. The description explains the procedure for measuring data and calculating annual values, measurement equipment involved, etc.

Engines or other fuel oil consumer type	**Method**	**Description**
Type/model of main engine		
Type/model of auxiliary engine		
Boiler		
Others (Specify)		

7 Method to measure distance travelled including laden distance

Description

8 Method to measure hours under way

Description

9 Processes that will be used to report the data to the Administration

Description

10 Data quality

Description

APPENDIX 3

SAMPLE FORM OF SHIP OPERATIONAL CARBON INTENSITY PLAN (PART III OF THE SEEMP)

1 Review and update log

Date/timeline	Updated parts	Developed by	Implemented by
<1st time>			
<2nd time>			
Etc.			

2 Required CII over the next three years, attained CII and rating over three consecutive years

Name of the ship		IMO number	
Company		Year of delivery	
Flag		Ship type	
Gross tonnage		DWT	
Applicable CII		☐AER ; ☐cgDIST	

Year	Required annual operational CII	Attained annual operational CII (before any correction)	Attained annual operational CII	Operational carbon intensity rating (A, B, C, D or E):
<year -1>				
<year -2>				
<year -3>				

	Required annual operational CII
<year>:	
<year + 1>	
<year + 2>	

3 Calculation methodology of the ship's attained annual CII, including required data and how to obtain these data as far as not addressed in part II

Description

4 Three-year implementation plan

Description

Company personnel to be responsible for the three-year implementation plan, monitoring and recording performance

List of measures to be considered and implemented

<table>
<tr><th>Measure</th><th>Impact on CII</th><th>Time and method of implementation and responsible personnel</th><th>Impediments and contingency measures</th></tr>
<tr><td></td><td></td><td><table><tr><th>Milestone</th><th>Due</th><th>Responsible</th></tr><tr><td></td><td></td><td></td></tr></table></td><td><table><tr><th>Impediment</th><th>Contingencies</th></tr><tr><td></td><td></td></tr></table></td></tr>
<tr><td></td><td></td><td><table><tr><th>Milestone</th><th>Due</th><th>Responsible</th></tr><tr><td></td><td></td><td></td></tr></table></td><td><table><tr><th>Impediment</th><th>Contingencies</th></tr><tr><td></td><td></td></tr></table></td></tr>
<tr><td></td><td></td><td><table><tr><th>Milestone</th><th>Due</th><th>Responsible</th></tr><tr><td></td><td></td><td></td></tr></table></td><td><table><tr><th>Impediment</th><th>Contingencies</th></tr><tr><td></td><td></td></tr></table></td></tr>
<tr><td></td><td></td><td><table><tr><th>Milestone</th><th>Due</th><th>Responsible</th></tr><tr><td></td><td></td><td></td></tr></table></td><td><table><tr><th>Impediments</th><th>Contingencies</th></tr><tr><td></td><td></td></tr></table></td></tr>
</table>

Calculation showing the combined effect of the measures and that the required operational CII will be achieved

Year	Required annual operational CII	Targeted operational annual CII	Targeted rating
<year>:			
<year + 1>			
<year + 2>			

5 Self-evaluation and improvement

Description

6 Plan of corrective actions (if applicable)

Analysis of causes for inferior CII rating

Cause	Analysis of effect	Actions

Analysis of measures in the implementation plan

Measure	Analysis of effect	Actions

List of additional measures and revised measures to be added to the implementation plan

Measure	Impact on CII	Time and method of implementation and responsible personnel			Impediments and contingency measures	
		Milestone	Due	Responsible	Impediments	Contingencies

APPENDIX 4

STANDARDIZED DATA-REPORTING FORMAT FOR THE DATA-COLLECTION SYSTEM AND OPERATIONAL CARBON INTENSITY TO THE ADMINISTRATION

Identity of the ship

Name of the ship	
Company	
Flag	
IMO number	
Period of the calendar year for which the data is submitted	
Start date for DCS (dd/mm/yy)	
End date for DCS (dd/mm/yy)	

Technical characteristics of the ship

Year of delivery		
Ship type, as defined in regulation 2.2 of MARPOL Annex VI or other (to be stated)		
Gross tonnage (GT)		
Net tonnage (NT)		
Deadweight tonnage (DWT)		
Power output (rated power) over 130 (kW)	Main Engine(s)	
	Auxiliary Engine(s)	
Attained EEDI (if applicable)		
Attained EEXI (if applicable)		
Ice class (if applicable)		

Fuel oil[1] consumption data

Total fuel oil consumption data		
Fuel oil type	Quantity in metric tonnes (t)	Method(s) used for collecting fuel oil consumption data (BDN / Flow meters / bunker FO tank monitoring / LNG cargo tank monitoring / Cargo tank monitoring other than LNG)
Diesel/Gas Oil (CF: 3.206)		
LFO (CF: 3.151)		
HFO (CF: 3.114)		
LPG (Propane) (CF: 3.000)		
LPG (Butane) (CF: 3.030)		
Ethane (CF: 2.927)		
LNG (CF: 2.750)		

[1] Regulation 2.1.14 of MARPOL Annex VI defines "fuel oil" as any fuel delivered to and intended for combustion purposes for propulsion or operation on board a ship, including gas, distillate and residual fuels.

Total fuel oil consumption data		
Methanol (CF: 1.375)		
Ethanol (CF: 1.913)		
Other (…….) (Cf: ……..)		

Total fuel oil consumption data per consumer type			
Fuel oil type	Consumer type	Quantity in metric tonnes (t)	Method used for collecting fuel oil consumption data (Flow meters / bunker FO tank monitoring / subtraction / estimated)
Diesel/Gas Oil (CF: 3.206)	Main engines(s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler(s)		
	Others (specify)		
LFO (CF: 3.151)	Main engines(s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler(s)		
	Others (specify)		
HFO (CF: 3.114)	Main engines(s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler(s)		
	Others (specify)		
LPG (Propane) (CF: 3.000)	Main engines(s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler(s)		
	Others (specify)		
LPG (Butane) (CF: 3.030)	Main engines(s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler (s)		
	Others (specify)		
Ethane (CF: 2.927)	Main engines (s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler (s)		
	Others (specify)		
LNG (CF: 2.750)	Main engines(s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler(s)		
	Others (specify)		
Methanol (CF: 1.375)	Main engines(s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler(s)		
	Others (specify)		
Ethanol (CF: 1.913)	Main engines(s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler(s)		
	Others (specify)		
Other(…….) (Cf: ……..)	Main engines(s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler (s)		
	Others (specify)		

Fuel oil consumption data while the ship is not under way, per consumer type			
Fuel oil type	Consumer type	Quantity in metric tonnes (t)	Method used for collecting fuel oil consumption data
Diesel/Gas Oil (CF: 3.206)	Main engines(s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler(s)		
	Others (specify)		
LFO (CF: 3.151)	Main engines(s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler(s)		
	Others (specify)		
HFO (CF: 3.114)	Main engines(s)		
	Auxiliary engines		
	Fired Boiler(s)		
	Others (specify)		
LPG (Propane) (CF: 3.000)	Main engines(s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler(s)		
	Others (specify)		
LPG (Butane) (CF: 3.030)	Main engines(s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler(s)		
	Others (specify)		
Ethane (CF: 2.927)	Main engines(s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler(s)		
	Others (specify)		
LNG (CF: 2.750)	Main engines(s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler(s)		
	Others (specify)		
Methanol (CF: 1.375)	Main engines(s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler (s)		
	Others (specify)		
Ethanol (CF: 1.913)	Main engines (s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler(s)		
	Others (specify)		
Other (…….) (Cf: ……..)	Main engines(s)		
	Auxiliary engine(s)/Generator(s)		
	Fired Boiler(s)		
	Others (specify)		

Total distance travelled (nm)	
Laden distance travelled (nm) (on a voluntary basis)	
Hours under way (h)	
Total amount of onshore power supplied (kWh)	

For ships to which regulation 28 of MARPOL Annex VI applies:

Total transport work	
Applicable CII	□AER ; □cgDIST
Required annual operational CII	
Start date for annual CII (dd/mm/yy)[2]	
End date for annual CII (dd/mm/yy)[2]	
Attained annual operational CII before any correction (AER in g CO_2/dwt.nm or cgDIST in g CO_2/gt.nm)	
Attained annual operational CII (AER in g CO_2/dwt.nm or cgDIST in g CO_2/gt.nm)	
Installation of innovative technology, if applicable (refer to MEPC.1/Circ.896)	□A ; □B-1 ; □B-2 ; □C-1 ; □C-2
Operational carbon intensity rating	□A ; □B ; □C ; □D ; □E
CII for trial purpose (none, one or more on voluntary basis)	□EEPI ; □cbDIST ; □clDIST ; □EEOI
EEPI (gCO_2/dwt.nm)	
cbDIST (gCO_2/berth.nm)	
clDIST (gCO_2/m.nm)	
EEOI (gCO_2/t.nm or others)	

[2] In the event of any transfer of a ship addressed in regulations 27.4, 27.5 or 27.6, these dates should be completed consistent with regulation 28.3 of MARPOL Annex VI (i.e. full 12-month period from 1 January to 31 December in the calendar year during which the transfer took place).

APPENDIX 5

STANDARDIZED DATA-REPORTING FORMAT FOR THE PARAMETERS TO CALCULATE THE TRIAL CARBON INTENSITY INDICATORS ON VOLUNTARY BASIS*

Attained annual EEOI	
Metric of Cargo Mass Carried or Work Done in EEOI calculation (gCO_2/t.nm or others)*****	
Transport work*****	
Attained annual EEPI (gCO_2/dwt.nm)	
Laden distance travelled (n.m)	
Attained annual clDIST (gCO_2/m.nm) ****	
Length of lanes (metre) ****	
Attained annual cbDIST(gCO_2/berth.nm) ***	
Available lower berths***	
End date for trial CII (dd/mm/yy)**	
Start date for trial CII (dd/mm/yy)**	
IMO number**	
End date for DCS (dd/mm/yy)**	
Start date for DCS (dd/mm/yy)**	

* For reporting a trial CII, the data should be reported as applicable taking into account the information already provided in appendix 4.
** Consistent with appendix 4.
*** Only applicable to cruise passenger ships.
**** Only applicable to ro-ro ships.
***** As defined in section 3 of *Guidelines for voluntary use of the ship energy efficiency operational indicator (EEOI)* circulated by MEPC.1/Circ.684. The distance travelled shall be determined from berth of the port of departure to berth of the port of arrival and shall be expressed in nautical miles.

***

ANNEX 12

RESOLUTION MSC.560(108)
(adopted on 23 May 2024)

AMENDMENTS TO PART A OF THE SEAFARERS' TRAINING, CERTIFICATION AND WATCHKEEPING (STCW) CODE

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO article XII and regulation I/1.2.3 of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 ("the 1978 STCW Convention"), concerning the procedures for amending part A of the Seafarers' Training, Certification and Watchkeeping Code ("the STCW Code"),

RECOGNIZING the need for training provisions to prevent and respond to bullying and harassment in the maritime sector, including sexual assault and sexual harassment,

HAVING CONSIDERED, at its 108th session, amendments to part A of the STCW Code, proposed and circulated in accordance with article XII(1)(a)(i) of the 1978 STCW Convention,

1 ADOPTS, in accordance with article XII(1)(a)(iv) of the 1978 STCW Convention, amendments to the STCW Code, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article XII(1)(a)(vii)(2) of the 1978 STCW Convention, that said amendments to the STCW Code shall be deemed to have been accepted on 1 July 2025, unless, prior to that date, more than one third of Parties or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant shipping of ships of 100 gross register tons or more have notified to the Secretary-General of the Organization that they object to the amendments;

3 INVITES Parties to note that, in accordance with article XII(1)(a)(ix) of the 1978 STCW Convention, the amendments to the STCW Code annexed hereto shall enter into force on 1 January 2026 upon their acceptance, in accordance with paragraph 2 above;

4 URGES Parties to implement the amendments to section A-VI/1 of the STCW Code at an early stage;

5 REQUESTS the Secretary-General, for the purposes of article XII(1)(a)(v) of the 1978 STCW Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Parties to the 1978 STCW Convention;

6 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Parties to the 1978 STCW Convention.

ANNEX

AMENDMENTS TO PART A OF THE SEAFARERS' TRAINING, CERTIFICATION AND WATCHKEEPING (STCW) CODE

CHAPTER VI
STANDARDS REGARDING EMERGENCY, OCCUPATIONAL SAFETY, SECURITY, MEDICAL CARE AND SURVIVAL FUNCTIONS

Section A-VI/1
Mandatory minimum requirements for safety familiarization, basic training and instruction for all seafarers

1 Table A-VI/1-4 (Specification of minimum standard of competence in personal safety and social responsibilities) is replaced by the following:

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Comply with emergency procedures	Types of emergency which may occur, such as collision, fire, foundering Knowledge of shipboard contingency plans for response to emergencies Emergency signals and specific duties allocated to crew members in the muster list; muster stations; correct use of personal safety equipment Action to take on discovering potential emergency, including fire, collision, foundering and ingress of water into the ship Action to take on hearing emergency alarm signals Value of training and drills Knowledge of escape routes and internal communication and alarm systems	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Initial action on becoming aware of an emergency conforms to established emergency response procedures Information given on raising alarm is prompt, accurate, complete and clear
Take precautions to	Basic knowledge of the impact of shipping on the	Assessment of evidence obtained	Organizational procedures

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
prevent pollution of the marine environment	marine environment and the effects of operational or accidental pollution on it Basic environmental protection procedures Basic knowledge of complexity and diversity of the marine environment	from approved instruction or during attendance at an approved course	designed to safeguard the marine environment are observed at all times
Observe safe working practices	Importance of adhering to safe working practices at all times Safety and protective devices available to protect against potential hazards aboard ship Precautions to be taken prior to entering enclosed spaces Familiarization with international measures concerning accident prevention and occupational health[1]	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Safe working practices are observed and appropriate safety and protective equipment is correctly used at all times
Contribute to effective communications on board ship	Understand the principles of, and barriers to, effective communication between individuals and teams within the ship Ability to establish and maintain effective communications	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Communications are clear and effective at all times
Contribute to effective human relationships on board ship	Importance of maintaining good human and working relationships aboard ship	Assessment of evidence obtained from approved instruction or during	Expected standards of work and behaviour are observed at all times

[1] The ILO Code of practice on accident prevention on board ship at sea and in port may be of assistance in the preparation of courses.

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
	Basic teamworking principles and practice, including conflict resolution Social responsibilities; employment conditions; individual rights and obligations; dangers of drug and alcohol abuse	attendance at an approved course	
Contribute to the prevention of and response to violence and harassment[2], including sexual harassment, bullying and sexual assault	Prevention of violence and harassment: Basic knowledge and understanding of violence and harassment, including sexual harassment, bullying and sexual assault, and the continuum of harm Basic knowledge and understanding of the consequences of violence and harassment, including sexual harassment, bullying and sexual assault on victims, perpetrators, bystanders and stakeholders, and its effects on safety, health and well-being Understand that, among others, abuse of power relations, discrimination, stress, isolation, fatigue, drugs or alcohol may contribute to violence and harassment, including sexual harassment, bullying and sexual assault Responding to violence and harassment:	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Acceptable practices and procedures designed for the prevention of violence and harassment, including sexual harassment, bullying and sexual assault are observed at all times Able to identify violence and harassment, including sexual harassment, bullying and sexual assault, and the continuum of harm and its effects Acceptable practices and procedures designed for the intervention in and reporting of violence and harassment, including sexual harassment, bullying and sexual assault are

[2] As defined in the ILO Violence and Harassment Convention, 2019 (No. 190).

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
	Ability to identify violence and harassment, including sexual harassment, bullying and sexual assault Basic knowledge of the action to take to intervene in and report violence and harassment, including sexual harassment, bullying and sexual assault Understand the basic principles of trauma-informed response and how to provide appropriate support to a victim, bystanders and self		observed at all times
Understand and take necessary actions to control fatigue	Importance of obtaining the necessary rest Effects of sleep, schedules and the circadian rhythm on fatigue Effects of physical stressors on seafarers Effects of environmental stressors in and outside the ship and their impact on seafarers Effects of schedule changes on seafarer fatigue	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Fatigue management practices are observed and appropriate actions are used at all times

***

ANNEX 11

RESOLUTION MSC.559(108)
(adopted on 23 May 2024)

AMENDMENTS TO THE REQUIREMENTS FOR MAINTENANCE, THOROUGH EXAMINATION, OPERATIONAL TESTING, OVERHAUL AND REPAIR OF LIFEBOATS AND RESCUE BOATS, LAUNCHING APPLIANCES AND RELEASE GEAR (RESOLUTION MSC.402(96))

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution MSC.402(96), by which it adopted the Requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear ("the Requirements"), which has become mandatory under chapter III of the International Convention for the Safety of Life at Sea (SOLAS), 1974 ("the Convention"), as amended by resolution MSC.404(96),

RECALLING FURTHER article VIII(b) and regulation III/3.25 of the Convention concerning the procedure for amending the Requirements,

TAKING INTO ACCOUNT the amendments to the LSA Code adopted by resolution MSC.535(107), with respect to ventilation means, and openings of the ventilation system and their means of closing for totally enclosed lifeboats,

RECOGNIZING the need to keep the Requirements up to date with regard to annual thorough examination and operational testing of ventilation systems,

HAVING CONSIDERED, at its 108th session, amendments to the Requirements, proposed and circulated in accordance with VIII(b)(i) of the Convention,

1 ADOPTS, in accordance with Article VIII(b)(iv) of the Convention, amendments to the Requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 July 2025, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have notified the Secretary-General of their objections to the amendments;

3 INVITES SOLAS Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2026 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, in conformity with Article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

5 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE REQUIREMENTS FOR MAINTENANCE, THOROUGH EXAMINATION, OPERATIONAL TESTING, OVERHAUL AND REPAIR OF LIFEBOATS AND RESCUE BOATS, LAUNCHING APPLIANCES AND RELEASE GEAR (RESOLUTION MSC.402(96))

6 SPECIFIC PROCEDURES FOR INSPECTION, MAINTENANCE, THOROUGH EXAMINATION, OPERATIONAL TESTING, OVERHAUL AND REPAIR

6.2 Annual thorough examination and operational test

1 Paragraph 6.2.3 is replaced by the following:

"6.2.3 For lifeboats (including free-fall lifeboats), rescue boats and fast rescue boats, the following items shall be thoroughly examined and checked for satisfactory condition and operation:

.1 condition of the boat structure including fixed and loose equipment (including a visual examination of the external boundaries of the void spaces, as far as practicable);

.2 engine and propulsion system;

.3 sprinkler system, where fitted;

.4 air supply system, where fitted;

.5 manoeuvring system;

.6 power supply system;

.7 bailing system;

.8 fender/skate arrangements;

.9 rescue boat righting system, where fitted; and

.10 ventilation system, where fitted."

***

ANNEX 7

RESOLUTION MSC.555(108)
(adopted on 23 May 2024)

AMENDMENTS TO THE INTERNATIONAL CODE FOR FIRE SAFETY SYSTEMS (FSS CODE)

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution MSC.98(73), by which it adopted the International Code for Fire Safety Systems ("the FSS Code"), which has become mandatory under chapter II-2 of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"),

RECALLING FURTHER article VIII(b) and regulation II-2/3.22 of the Convention concerning the procedure for amending the FSS Code,

HAVING CONSIDERED, at its 108th session, amendments to the FSS Code, proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the FSS Code, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 July 2025 unless, prior to that date, more than one third of the Contracting Governments to the Convention, or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have notified the Secretary-General of their objections to the amendments;

3 INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2026 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

5 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CODE FOR FIRE SAFETY SYSTEMS (FSS CODE)

CHAPTER 7
Fixed pressure water-spraying and water mist fire-extinguishing systems

2 Engineering specifications

1 The following new section 2.5 is added after existing section 2.4 (Fixed water-based fire-fighting systems for ro-ro spaces, vehicle spaces and special category spaces):

"**2.5 Fixed water-based fire-extinguishing system on ro-ro passenger ships' weather decks intended for the carriage of vehicles**

This paragraph details the specification of fixed water-based fire-extinguishing system on ro-ro passenger ships having weather decks intended for the carriage of vehicles as required by chapter II-2 of the Convention. The requirements of this paragraph shall apply to ro-ro passenger ships constructed on or after 1 January 2026.

2.5.1 The protected area shall be the entire length and width of the weather deck intended for the carriage of vehicles. The fixed monitor(s) shall be capable of delivering water to:

.1 the area of weather decks intended for carriage of vehicles; and

.2 the area, including superstructure boundaries located up to 8.0 m, measured horizontally, from the area intended for vehicle storage, or the next vertical boundaries, whichever is less.

2.5.2 The combined capacity of all fixed monitors shall be minimum 2.0 L/min per square metre of the protected area, but in no case shall the output of any monitor be less than 1,250 L/min. Even distribution of water shall be ensured.

2.5.3 The distance from the monitor to the farthest extremity of the protected area forward of that monitor shall not be more than 75% of the monitor throw in still air conditions.

2.5.4 Each monitor shall be located outside the area which it protects, in a safe position, with access not likely to be cut off in case of fire.

Monitors shall be installed in positions which allow for unobstructed water coverage with vehicles stowed to maximum capacity of the weather deck. However, areas that cannot be covered by water monitors shall be protected by water nozzles. Nozzles shall be designed and installed taking into account weather conditions and provide 5.0 L/min per square metre for the area they cover and have release controls in a position being accessible in case of a fire.

2.5.5 The system shall be available for immediate use and capable of continuously supplying water. The water supply shall be capable of simultaneously supplying water at the required rate for the entire width of the weather deck intended for carriage of vehicles and a length of 40 m, or the entire length of the weather deck if this is less than 40 m. In no case shall the supply capacity be less than that required for the largest monitor.

2.5.6 The system may be supplied by the fire main, the pump(s) serving other fixed water-based fire-fighting systems or a dedicated pump providing a continuous supply of seawater.

Where the ship's fire pumps are used to feed the monitor(s):

.1 it shall be possible to segregate the ship's fire main from the monitor(s) by means of a valve in order to operate both systems separately or simultaneously; and

.2 the capacity of the pumps shall be sufficient to serve both systems simultaneously, including two jets of water at the required pressure from the fire main system. In case the weather deck shall also carry dangerous goods, capacity for four jets of water at the required pressure shall be provided.

Where another fixed water-based fire-fighting system is used to feed the monitor(s):

.3 it shall be possible to segregate the other fixed water-based fire-fighting system from the monitor(s) by means of a valve in order to operate both systems separately or simultaneously; and

.4 the capacity of the pump(s) shall, in case of open ro-ro spaces, be sufficient to serve both systems simultaneously, minimum two sections of the fixed water-based fire-fighting system being close to the openings facing weather deck and one monitor serving the weather deck. For closed ro-ro spaces and special category spaces, simultaneous operation is not required."

CHAPTER 9
Fixed fire detection and fire alarm systems

1 Application

2 Paragraph 1.1 is replaced by the following:

"1.1 This chapter details the specification of fixed fire detection and fire alarm systems as required by chapter II-2 of the Convention. Unless expressly provided otherwise, the requirements of this chapter shall apply to ships constructed on or after 1 July 2012. The requirements of 2.3.1.5 and 2.4.2.2 of this chapter shall apply to ships constructed on or after 1 January 2026."

2 Engineering specifications

2.3 Component requirements

3 Paragraphs 2.3.1.3 and 2.3.1.4 are replaced by the following:

"2.3.1.3 Heat detectors and linear heat detectors shall be certified to operate before the temperature exceeds 78ºC but not until the temperature exceeds 54ºC, when the temperature is raised to those limits at a rate less than 1ºC per min, when tested according to relevant parts of standards EN 54:2001 and IEC 60092-504. Alternative testing standards may be used as determined by the Administration. At higher rates of temperature rise, the heat detector and linear heat detector shall operate within temperature limits to the satisfaction of the Administration having regard to the avoidance of detector insensitivity or oversensitivity.

2.3.1.4 The operation temperature of heat detectors and linear heat detectors in drying rooms and similar spaces of a normal high ambient temperature may be up to 130ºC, and up to 140ºC in saunas."

4 The following new paragraph 2.3.1.5 is inserted after the existing paragraph 2.3.1.4 and subsequent paragraphs are renumbered accordingly:

"2.3.1.5 Linear heat detectors shall be tested according to standards EN 54-22:2015 and IEC 60092-504. Alternative testing standards may be used as determined by the Administration."

2.4 Installation requirements

2.4.2 Positioning of detectors

5 Paragraph 2.4.2.2 and the associated table 9.1 (Spacing of detectors) therein are replaced by the following:

"**2.4.2.2** The maximum spacing of detectors shall be in accordance with the table below:

Table 9.1 – Spacing of detectors

Type of detector	Maximum floor area per detector (m^2)	Maximum distance apart between centres (m)	Maximum distance away from bulkheads (m)
Heat	37	9	4.5
Smoke	74	11	5.5
Combined smoke and heat	74	9	4.5

2.4.2.2.1 The Administration may require or permit other spacing based upon test data which demonstrate the characteristics of the detectors. Detectors located below movable ro-ro decks shall be in accordance with the above.

2.4.2.2.2 The distance between two sensor cables of the linear heat detection system shall not be more than 9.0 m, while the distance between such cables and bulkheads shall not be more than 4.5 m."

2.5 System control requirements

2.5.1 Visual and audible fire signals

6 The following new paragraphs 2.5.1.2, 2.5.1.3 and 2.5.1.4 are inserted after paragraph 2.5.1.1 and the subsequent paragraphs are renumbered accordingly:

"**2.5.1.2** On ro-ro passenger ships constructed on or after 1 January 2026, alarm notifications shall follow a consistent alarm presentation scheme (wording, vocabulary, colour and position). Alarms shall be immediately recognizable on the navigation bridge and shall not be compromised by noise or poor placing.

2.5.1.3 On ro-ro passenger ships constructed on or after 1 January 2026, the interface shall provide alarm addressability, allow the crew to identify the alarm history, the most recent alarm and the means to suppress alarms while ensuring the alarms with ongoing trigger conditions are still clearly visible.

2.5.1.4 On ro-ro passenger ships constructed on or after 1 January 2026, the smoke detector function in special category and ro-ro spaces may be disconnected during loading and unloading of vehicles. The time of disconnection shall be adapted to the time of loading/unloading and be automatically reset after this predetermined time. The central unit shall indicate whether the detector sections are disconnected or not. Disconnection of the heat detection function or manual call points shall not be permitted."

***

ANNEX 6

RESOLUTION MSC.554(108)
(adopted on 23 May 2024)

AMENDMENTS TO THE INTERNATIONAL LIFE-SAVING APPLIANCE (LSA) CODE

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution MSC.48(66), by which it adopted the International Life-Saving Appliance (LSA) Code ("the LSA Code"), which has become mandatory under chapter III of the International Convention for the Safety of Life at Sea (SOLAS), 1974 ("the Convention"),

RECALLING FURTHER article VIII(b) and regulation III/3.10 of the Convention concerning the procedure for amending the LSA Code,

HAVING CONSIDERED, at its 108th session, amendments to the LSA Code proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the LSA Code, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 July 2025 unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have notified the Secretary-General of their objections to the amendments;

3 INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2026 upon their acceptance in accordance with paragraph 2 above;

4 ALSO INVITES Contracting Governments to note the amendments in the annex are to be applied to life-saving appliances installed on or after 1 January 2026 where the expression "installed on or after 1 January 2026" means:

(a) for ships for which the building contract is placed on or after 1 January 2026, or in the absence of the contract, the keels of which are laid or which are at a similar stage of construction on or after 1 January 2026, all installations of the specified type on board those ships; or

(b) for ships other than those ships specified in (a) above, all installations of the specified type, having a contractual delivery date for the equipment or, in the absence of a contractual delivery date to the ship, actually delivered to the ship on or after 1 January 2026;

5 REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

6 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL LIFE-SAVING APPLIANCE (LSA) CODE

CHAPTER II
PERSONAL LIFE-SAVING APPLIANCES

2.2 Lifejackets

2.2.1 General requirements for lifejackets

1 Paragraph 2.2.1.6.2 is replaced by the following:

".2 turn the body of unconscious, face-down persons in the water to a face-up position where the nose and mouth are clear of the water in an average time not exceeding that of the RTD plus 1 s;"

CHAPTER IV
SURVIVAL CRAFT

4.4 General requirements for lifeboats

4.4.7 Lifeboat fittings

2 Paragraph 4.4.7.6.8 is replaced by the following:

".8 to prevent an accidental release during recovery of the boat, the hook shall not be able to support any load unless the hook is completely reset. In the case of a hook which is capable of releasing the lifeboat or rescue boat with a load on the hook when it is not fully waterborne, the handle or safety pins shall not be able to be returned to the reset (closed) position, and any indicators shall not indicate the release mechanism is reset, unless the hook is completely reset. Additional danger signs shall be posted at each hook station to alert crew members to the proper method of resetting;"

3 Paragraph 4.4.7.6.17 is replaced by the following:

".17 where a single fall and hook system is used for launching a lifeboat or rescue boat in combination with a suitable painter, the requirements of paragraphs 4.4.7.6.7 and 4.4.7.6.15 need not be applicable; provided that the single fall and hook system does not have the capability to release the lifeboat or rescue boat with a load on the hook when it is not fully waterborne.

CHAPTER VI
LAUNCHING AND EMBARKATION APPLIANCES

6.1.2 Launching appliances using falls and a winch

4 Paragraph 6.1.2.8 is replaced by the following:

"6.1.2.8 The speed at which the fully loaded survival craft or rescue boat is lowered to the water shall not be less than that obtained from the formula:

$$S = 0.4 + 0.02H, \text{ or } 1.0, \text{ whichever is less}$$

where:

S is the lowering speed in metres per second and

H is the height in metres from the davit head to the waterline with the ship at the lightest sea-going condition."

5 Paragraph 6.1.2.10 is replaced by the following:

"6.1.2.10 The maximum lowering speed of a fully loaded survival craft or rescue boat shall be 1.3 m/s. The Administration may accept a maximum lowering speed other than 1.3 m/s, having regard to the design of the survival craft or rescue boat, the protection of its occupants from excessive forces, and the strength of the launching arrangements taking into account inertia forces during an emergency stop. Means shall be incorporated in the appliance to ensure that this speed is not exceeded."

***

ANNEX 5

RESOLUTION MSC.553(108)
(adopted on 23 May 2024)

AMENDMENTS TO THE INTERNATIONAL CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS AND OIL TANKERS, 2011 (2011 ESP CODE)

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution A.1049(27), by which the Assembly adopted the International Code on the Enhanced Programme of Inspections during Surveys of Bulk Carriers and Oil Tankers, 2011 ("the 2011 ESP Code"), which has become mandatory under chapter XI-1 of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"),

NOTING ALSO article VIII(b) and regulation XI-1/2 of the Convention concerning the procedure for amending the 2011 ESP Code,

HAVING CONSIDERED, at its 108th session, amendments to the 2011 ESP Code, proposed and circulated in accordance with article VIII(b)(i) of the Convention:

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the 2011 ESP Code the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2025, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have notified the Secretary-General of their objections to the amendments;

3 INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2026 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

5 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS AND OIL TANKERS, 2011 (2011 ESP CODE)

ANNEX A
CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS

Part A
Code on the enhanced programme of inspections during surveys of bulk carriers having single-side skin construction

Annex 5
Procedures for approval and certification of a firm engaged in thickness measurement of hull structures

2 Procedures for approval and certification

Auditing of the firm

1 Paragraph 2.2 is replaced by the following:

"2.2 Upon reviewing of the documents submitted with satisfactory results, the firm shall be audited by the Administration in order to ascertain that the firm is duly organized and managed in accordance with the documents submitted and is capable of conducting thickness measurement of the hull structure of ships."

Part B
Code on the enhanced programme of inspections during surveys of bulk carriers having double-side skin construction

Annex 5
Procedures for approval and certification of a firm engaged in thickness measurement of hull structures

2 Procedures for approval and certification

Auditing of the firm

2 Paragraph 2.2 is replaced by the following:

"2.2 Upon reviewing of the documents submitted with satisfactory results, the firm shall be audited by the Administration in order to ascertain that the firm is duly organized and managed in accordance with the documents submitted and is capable of conducting thickness measurement of the hull structure of ships."

ANNEX B
CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF OIL TANKERS

Part A
Code on the enhanced programme of inspections during surveys of double-hull oil tankers

Annex 8
Procedures for approval and certification of a firm engaged in thickness measurement of hull structures

2 Procedures for approval and certification

Submission of documents

3 The chapeau of paragraph 2.1 is replaced by the following:

"2.1 The following documents shall be submitted to the Administration for approval:"

Auditing of the firm

4 Paragraph 2.2 is replaced by the following:

"2.2 Upon reviewing of the documents submitted with satisfactory results, the firm shall be audited by the Administration in order to ascertain that the firm is duly organized and managed in accordance with the documents submitted and is capable of conducting thickness measurement of the hull structure of ships."

Part B
Code on the enhanced programme of inspections during surveys of oil tankers other than double-hull oil tankers

Annex 7
Procedures for approval and certification of a firm engaged in thickness measurement of hull structures

2 Procedures for approval and certification

Submission of documents

5 The chapeau of paragraph 2.1 is replaced by the following:

"2.1 The following documents shall be submitted to the Administration for approval:"

Auditing of the firm

6 Paragraph 2.2 is replaced by the following:

"2.2 Upon reviewing of the documents submitted with satisfactory results, the firm shall be audited by the Administration in order to ascertain that the firm is duly organized and managed in accordance with the documents submitted and is capable of conducting thickness measurement of the hull structure of ships."

***

ANNEX 4

RESOLUTION MSC.552(108)
(adopted on 23 May 2024)

AMENDMENTS TO THE INTERNATIONAL CODE FOR THE SAFE CARRIAGE OF GRAIN IN BULK (RESOLUTION MSC.23(59))

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution MSC.23(59), by which it adopted the International Code for the Safe Carriage of Grain in Bulk ("the Grain Code"), which has become mandatory under chapter VI of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"),

NOTING ALSO article VIII(b) and regulation VI/8.1 of the Convention concerning the procedure for amending the Grain Code,

HAVING CONSIDERED, at its 108th session, amendments to the Grain Code proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the Grain Code, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2025, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have notified the Secretary-General of their objections to the amendments;

3 INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2026 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

5 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CODE FOR THE SAFE CARRIAGE OF GRAIN IN BULK (RESOLUTION MSC.23(59))

Part A
Specific requirements

2 Definitions

1 The following new definition is added after existing paragraph 2.7:

"2.8 The term *specially suitable compartment, partly filled in way of the hatch opening, with ends untrimmed* refers to a specially suitable compartment which is not filled to the maximum extent possible in way of the hatch opening but is filled to a level equal with or above the bottom edge of the hatch end beams and has not been trimmed outside the periphery of the hatch opening by the provisions of A 10.4."

10 Stowage of bulk grain

2 The reference to "B 6" in paragraph 10.3.1 is replaced with "B 7".

3 The following new paragraph is inserted after existing paragraph 10.3 and the subsequent paragraphs are renumbered accordingly:

"10.4 In any "specially suitable compartment, partly filled in way of the hatch opening, with ends untrimmed", the bulk grain shall be filled to a level equal with or above the bottom edge of the hatch end beams but may be at its natural angle of repose outside the periphery of the hatch opening. A compartment may qualify for this classification if it is "specially suitable" as defined in A 2.7, in which case dispensation may be granted from trimming the ends of that compartment."

4 Renumbered paragraph 10.7 (existing paragraph 10.6) is replaced by the following:

"10.7 After loading, all free grain surfaces in partly filled compartments shall be level unless the compartment is partly filled in accordance with the provisions of A 10.4, in which case the free grain surface in way of the hatch opening only shall be level."

5 The reference to "B 5.2" in renumbered paragraph 10.10.3 (existing paragraph 10.9.3) is replaced with "B 6.2".

12 Divisions loaded on both sides

6 The reference to "A 12.1.3" in paragraph 12.3.3 is replaced with "A 12.1.2".

14 Saucers

7 The reference to "A 10.9" in paragraph 14.1 is replaced with "A 10.10".

Part B
Calculation of assumed heeling moments and general assumptions

1 General assumptions

8 The following new paragraph 1.1.5 is added after existing paragraph 1.1.4:

".5 In a "specially suitable compartment, partly filled in way of the hatch opening, with ends untrimmed" which is exempted from trimming under the provisions of A 10.4, it shall be assumed that the surface of the grain after loading will slope in all directions away from the filling area at an angle of 30° from the lower edge of the hatch end beam. However, if feeding holes are provided in the hatch end beams in accordance with table B 1-2 and the free grain surface in way of the hatch opening is above the level of the feeding holes, then the surface of the grain after loading shall be assumed to slope in all directions, at an angle of 30° from a line on the hatch end beam which is the mean of the peaks and valleys of the actual grain surface as shown in figure B-1."

9 The reference to "B 5" in paragraph 1.2 is replaced with "B 6".

10 Paragraph 1.5 is replaced by the following:

"1.5 In "partly filled compartments" and "specially suitable compartments, partly filled in way of the hatch opening, with ends untrimmed", the adverse effect of the vertical shift of grain surfaces shall be taken into account as follows:

Total heeling moment = 1.12 x calculated transverse heeling moment."

2 Assumed volumetric heeling moment of a filled compartment, trimmed

11 The reference to "A 10.9" in paragraph 2.6 is replaced with "A 10.10".

12 The reference to "A 10.9" in the Note (2) for figure B 2-1 in paragraph 2.8 is replaced with "A 10.10".

13 The reference to "A 10.9" in the Note (3) for figure B 2-3 in paragraph 2.9 is replaced with "A 10.10".

3 Assumed volumetric heeling moment of a filled compartment, untrimmed

14 In paragraph 3.1, the word "provision" is replaced with "provisions".

15 The following new section 4 is inserted after existing section 3 (Assumed volumetric heeling moment of a filled compartment, untrimmed) and the subsequent sections and paragraphs are renumbered accordingly:

"**4 Assumed volumetric heeling moment of a specially suitable compartment, partly filled in way of the hatch opening, with ends untrimmed**

4.1 All the provisions for "filled compartments, trimmed" set forth in B 2 shall also apply to "specially suitable compartments, partly filled in way of the hatch opening, with ends untrimmed" except as noted below.

4.2 In a "specially suitable compartment, partly filled in way of the hatch opening, with ends untrimmed" which is exempted from trimming under the provisions of A 10.4, the resulting grain surface in way of the hatch opening and the resulting grain surface in the ends, forward and aft of the hatchway, after shifting shall be assumed to be at an angle of 25° to the horizontal."

16 The references to "figure B 4" in renumbered section 5 (Assumed volumetric heeling moments in trunks) are replaced with "figure B 5".

***

ANNEX 3

RESOLUTION MSC.551(108)
(adopted on 23 May 2024)

AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR SHIPS USING GASES OR OTHER LOW-FLASHPOINT FUELS (IGF CODE)

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution MSC.391(95), by which it adopted the International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code), which has become mandatory under chapters II-1 and II-2 of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"),

NOTING ALSO article VIII(b) and regulation II-1/2.28 of the Convention concerning the procedure for amending the IGF Code,

HAVING CONSIDERED, at its 108th session, amendments to the IGF Code proposed and circulated in accordance with article VIII(b)(i) of the Convention:

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the IGF Code, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2025, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have notified the Secretary-General of their objections to the amendments;

3 INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2026 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

5 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR SHIPS USING GASES OR OTHER LOW-FLASHPOINT FUELS (IGF CODE)

Part A

2 General

2.2 Definitions

1 The following new paragraph 2.2.43 is added after existing paragraph 2.2.42:

"2.2.43 *Ship constructed on or after 1 January 2026* means:

.1 for which the building contract is placed on or after 1 January 2026; or

.2 in the absence of a building contract, the keels of which are laid or which are at a similar stage of construction on or after 1 July 2026; or

.3 the delivery of which is on or after 1 January 2030."

4 General requirements

4.2 Risk assessment

2 Paragraph 4.2.2 is replaced by the following:

"4.2.2 For ships to which part A-1 applies, the risk assessment required by 4.2.1 need only be conducted where explicitly required by paragraphs 5.10.5, 5.12.3, 6.4.1.1, 6.4.15.4.7.2, 8.3.1.1, 8.4.2, 13.4.1, 13.7 and 15.8.1.10 as well as by paragraphs 4.4 and 6.8 of the annex."

Part A-1
Specific requirements for ships using natural gas as fuel

5 Ship design and arrangement

5.3 Regulation - General

3 Paragraph 5.3.3.3 is replaced by the following:

"5.3.3.3 For independent tanks the protective distance shall be measured to the tank shell (the primary barrier of the fuel containment system). For membrane tanks the distance shall be measured to the bulkheads surrounding the tank insulation."

4 Paragraph 5.3.4.4 is replaced by the following:

"5.3.4.4 For independent tanks the protective distance shall be measured to the tank shell (the primary barrier of the fuel containment system). For membrane tanks the distance shall be measured to the bulkheads surrounding the tank insulation."

5.12 Regulations for airlocks

5 Paragraph 5.12.1 is replaced by the following:

"5.12.1 For ships constructed on or after 1 January 2026, an air lock is a space enclosed by gastight bulkheads with two substantially gastight doors spaced at least 1.5 m and not more than 2.5 m apart. Unless subject to the requirements of the International Convention on Load Line, the sill height of the door leading to the hazardous area shall not be less than 300 mm. The doors shall be self-closing without any holding back arrangements."

6 Fuel containment system

6.4 Regulations for liquefied gas fuel containment

6.4.15 Tank types

6.4.15.3 Type C independent tanks

6.4.15.3.1 Design basis

6 Paragraph 6.4.15.3.1.2 is replaced by the following:

"6.4.15.3.1.2 The design vapour pressure shall not be less than:

$$P_0 = 0.2 + AC(\rho_r)^{1.5} \text{ (MPa)}$$

where:

$A = 0.00185 \left(\sigma_m / \Delta\sigma_A\right)^2$

with:

σ_m = design primary membrane stress;

$\Delta\sigma_A$ = allowable dynamic membrane stress (double amplitude at probability level Q = 10^{-8}) and equal to:

- 55 N/mm^2 for ferritic-perlitic, martensitic and austenitic steel;

- 25 N/mm^2 for aluminium alloy (5083-O);

C = a characteristic tank dimension to be taken as the greatest of the following:

h, $0.75b$ or 0.45ℓ,

with:

h = height of tank (dimension in ship's vertical direction) (m);

b = width of tank (dimension in ship's transverse direction) (m);

ℓ = length of tank (dimension in ship's longitudinal direction) (m);

ρ_r = the relative density of the fuel (ρ_r = 1 for fresh water) at the design temperature."

6.7 Regulations for pressure relief system

6.7.3 Sizing of pressure relieving system

6.7.3.1 Sizing of pressure relief valves

7 The chapeau of paragraph 6.7.3.1.1 is replaced by the following:

"6.7.3.1.1 For ships constructed on or after 1 January 2026, the pressure relief system for each liquefied gas fuel tank shall be designed so that, regardless of the state of any one PRV, the capacity of the residual PRVs meets the combined relieving capacity requirements of the system. The combined relieving capacity shall be the greater of the following, with no more than 20% rise in liquefied gas fuel tank pressure above the MARVS. The tank shall not be loaded until the full relieving capacity is restored:"

8 Paragraph 6.7.3.1.1.2 is replaced by the following:

"6.7.3.1.1.2 vapours generated under fire exposure computed using the following formula:

$$Q = FGA^{0.82}\ (m^3/s)$$

where:

Q = minimum required rate of discharge of air at standard conditions of 273.15 Kelvin (K) and 0.1013 MPa.

F = fire exposure factor for different liquefied gas fuel tank types:

F = 1.0 for tanks without insulation located on deck;

…"

6.9 Regulations for the maintaining of fuel storage condition

6.9.1 Control of tank pressure and temperature

9 The chapeau of paragraph 6.9.1.1 is replaced by the following:

"6.9.1.1 For ships constructed on or after 1 January 2026, with the exception of liquefied gas fuel tanks designed to withstand the full gauge vapour pressure of the fuel under conditions of the upper ambient design temperature, liquefied gas fuel tanks' pressure and temperature shall be maintained at all times within their design range by means acceptable to the Administration, e.g. by one or more of the following methods:"

7 Material and general pipe design

7.3 Regulations for general pipe design

7.3.2 Wall thickness

10 Paragraph 7.3.2.1 is replaced by the following:

"7.3.2.1 For ships constructed on or after 1 January 2026, the minimum wall thickness shall be calculated as follows:

$$t = (t_0 + b + c) / (1 - |a|/100) \text{ (mm)}$$

where:

t_0 = theoretical thickness

$t_0 = PD / (2.0Ke + P)$ (mm)

with:

P = design pressure (MPa) referred to in 7.3.3;

D = outside diameter (mm);

K = allowable stress (N/mm²) referred to in 7.3.4; and

e = efficiency factor equal to 1.0 for seamless pipes and for longitudinally or spirally welded pipes, delivered by approved manufacturers of welded pipes, that are considered equivalent to seamless pipes when non-destructive testing on welds is carried out in accordance with recognized standards. In other cases an efficiency factor of less than 1.0, in accordance with recognized standards, may be required depending on the manufacturing process;

b = allowance for bending (mm). The value of b shall be chosen so that the calculated stress in the bend, due to internal pressure only, does not exceed the allowable stress. Where such justification is not given, b shall be:

$$b = D \cdot t_0 / 2.5r \text{ (mm)}$$

with:

r = mean radius of the bend (mm);

c = corrosion allowance (mm). If corrosion or erosion is expected the wall thickness of the piping shall be increased over that required by other design regulations. This allowance shall be consistent with the expected life of the piping; and

a = negative manufacturing tolerance for thickness (%), i.e. where a is the manufacturing tolerance of -5%, $|a|$ is equal to 5 and shall be entered into the formula as 1- (5/100)."

8 Bunkering

8.4 Regulations for manifold

11 Paragraph 8.4.1 is replaced by the following, together with the associated footnotes:

"8.4.1 The bunkering manifold shall be designed to withstand the external loads during bunkering. The connections at the bunkering station shall be arranged in order to achieve a dry-disconnect operation in one of the followings ways:

.1 a dry-disconnect / connect coupling in accordance with a standard at least equivalent to those acceptable to the Organization;[1] or

.2 a manual connect coupler or hydraulic connect coupler, used to connect the bunker system to the receiving vessel bunkering manifold presentation flange;[2] or

.3 a bolted flange to flange assembly.[2]

1 Refer to the recommendations by the International Organization for Standardization, in particular publication: ISO 21593:2019, Ships and marine technology — Technical requirements for dry-disconnect/connect couplings for bunkering liquefied natural gas.

2 Refer to the recommendations by the International Organization for Standardization, in particular publication: ISO 20519:2021 - Ships and Marine Technology - Specification for Bunkering of Liquefied Natural Gas Fuelled Vessels.

12 The following new paragraphs are added after existing paragraph 8.4.1, together with the associated footnote:

"8.4.2 When intended to use either of the connections specified in paragraphs 8.4.1.2 and 8.4.1.3, these shall be combined with operating procedures that ensure a dry-disconnect is achieved. The arrangement shall be subject to special consideration informed by a bunkering arrangement risk assessment[2] conducted at the design stage and considering dynamic loads at the bunkering manifold connection to a recognized standard acceptable to the Administration, the safe operation of the ship and other hazards that may be relevant to the ship during bunkering operation. The fuel handling manual required by 18.2.3 shall include documentation that the bunkering arrangement risk assessment was conducted, and that special consideration was granted under this requirement."

"8.4.3 An emergency release coupler (ERC) / Emergency Release System (ERS) or equivalent means shall be provided, unless installed on the bunkering supply side of the bunkering line, and the said means shall be in accordance with a standard equivalent to those acceptable to the Organization;[2] it shall enable a quick physical disconnection "dry break-away" of the bunker system in an emergency event."

2 Refer to the recommendations by the International Organization for Standardization, in particular publication: ISO 20519:2021 - Ships and Marine Technology - Specification for Bunkering of Liquefied Natural Gas Fuelled Vessels.

9 Fuel supply to consumers

9.3 Regulations on redundancy of fuel supply

13 Paragraph 9.3.1 is replaced by the following:

"9.3.1 For ships constructed on or after 1 January 2026, for single fuel installations the fuel supply system shall be arranged with redundancy and segregation, so that a leakage in one system, or failure of one of the fuel supply essential auxiliaries, does not lead to an unacceptable loss of power. In the event of a leakage or failure, and in accordance with SOLAS regulation II-1/26.3, the Administration, having regard to overall safety considerations, may accept a partial reduction in propulsion capability from normal operation."

9.4 Regulations on safety functions of gas supply system

14 Paragraph 9.4.7 is replaced by the following:

"9.4.7 For ships constructed on or after 1 January 2026, in cases where the master gas fuel valve is automatically shut down when the safety system as required in 15.2.2 is activated, the complete gas supply pipe between this master gas fuel valve and the double block and bleed valves and between the double block and bleed valves and the consumer shall be automatically vented."

15 Paragraph 9.4.8 is replaced by the following:

"9.4.8 For ships constructed on or after 1 January 2026, there shall be one manually operated shutdown valve in the gas supply line to each gas consumer upstream of the double block and bleed valves to assure safe isolation during maintenance on the gas consumer."

9.6 Regulations for fuel supply to consumers in gas-safe machinery spaces

16 Paragraph 9.6.1.1 is replaced by the following:

"9.6.1 Gas fuel piping in gas-safe machinery spaces shall be completely enclosed by a double pipe or duct fulfilling one of the following conditions:

.1 the gas fuel piping shall be a double wall piping system with the gas fuel contained in the inner pipe. The space between the concentric pipes shall be pressurized with inert gas at a pressure greater than the gas fuel pressure. Suitable alarms shall be provided to indicate a loss of inert gas pressure between the pipes; or"

9.8 Regulations for the design of ventilated duct, outer pipe against inner pipe gas leakage

17 Paragraph 9.8.1 is replaced by the following:

"9.8.1 For ships constructed on or after 1 January 2026, the design pressure of the outer pipe or duct of fuel systems shall not be less than the maximum working pressure of the inner pipe. Alternatively, the design pressure of the outer pipe or duct may be calculated in accordance with 9.8.2."

18 The chapeau of paragraph 9.8.2 is replaced by the following:

"9.8.2 For ships constructed on or after 1 January 2026, alternatively to 9.8.1, the design pressure of the outer pipe or duct shall be taken as the higher of the following:"

19 Paragraph 9.8.4 is replaced by the following:

"9.8.4 For ships constructed on or after 1 January 2026, the duct shall be pressure-tested to show that it can withstand the expected maximum pressure at fuel pipe rupture."

11 Fire safety

11.3 Regulations for fire protection

20 Paragraph 11.3.1 is replaced by the following:

"11.3.1 For ships constructed on or after 1 January 2026, fuel preparation rooms shall, for the purpose of the application of SOLAS regulation II-2/9, be regarded as a machinery space of category A."

11.6 Regulations for dry chemical powder fire-extinguishing system

21 Paragraph 11.6.2 is replaced by the following:

"11.6.2 In addition to any other portable fire extinguishers that may be required elsewhere in IMO instruments, one portable dry powder extinguisher of at least 5 kg capacity shall be located near the bunkering station and in the fuel preparation room. For ships constructed before 1 January 2026, the portable dry powder extinguisher shall be provided in the fuel preparation room not later than the first survey on or after 1 January 2026."

12 Explosion prevention

12.5 Hazardous area zones

22 Paragraph 12.5.1 is replaced by the following:

"***12.5.1 Hazardous area zone 0***

For ships constructed on or after 1 January 2026, this zone includes, but is not limited to, the interiors of fuel tanks, any pipework for pressure relief or other venting systems for fuel tanks, pipes and equipment containing fuel, and interbarrier spaces as defined by paragraph 2.2.15.2."

12.5.2 Hazardous area zone 1

23 Paragraph 12.5.2.1 is replaced by the following:

".1 for ships constructed on or after 1 January 2026, tank connection spaces and fuel storage hold spaces[2]; …

[2] Fuel storage hold spaces for type C tanks are normally not considered as zone 1."

15 Control, monitoring and safety systems

15.4 Regulations for bunkering and liquefied gas fuel tank monitoring

15.4.1 Level indicators for liquefied gas fuel tanks

24 Paragraph 15.4.1.3 is replaced by the following:

".3 For ships constructed on or after 1 January 2026, liquefied gas fuel tank liquid level gauges may be of the following types:

.1 indirect devices which determine the amount of fuel by means such as weighing or in-line flow metering;

.2 closed devices which do not penetrate the liquefied gas fuel tank, such as devices using radioisotopes or ultrasonic devices; or

.3 closed devices which penetrate the liquefied gas fuel tank but which form part of a closed system and keep the gas fuel from being released. Such devices shall be considered as tank connections. If the closed gauging device is not mounted directly onto the tank, it shall be provided with a shutoff valve located as close as possible to the tank."

Part B-1

16 Manufacture, workmanship and testing

16.3 Welding of metallic materials and non-destructive testing for the fuel containment system

16.3.5 Production weld tests

25 Paragraph 16.3.5.1 is replaced by the following:

"16.3.5.1 For all fuel tanks and process pressure vessels except membrane tanks, production weld tests shall generally be performed for approximately each 50 m of butt-weld joints and shall be representative of each welding position. For secondary barriers, the same type production tests as required for primary barriers shall be performed, except that the number of tests may be reduced subject to agreement with the Administration. Tests, other than those specified in 16.3.5.2 to 16.3.5.5, may be required for fuel tanks or secondary barriers."

Part C-1

18 Operation

18.4 Regulations for bunkering operations

18.4.1 Responsibilities

26 Paragraph 18.4.1.1.1 is replaced by the following:

"18.4.1.1 Before any bunkering operation commences, the master of the receiving ship or their representative and the representative of the bunkering source (Persons In Charge, PIC) shall:

.1 agree in writing the transfer procedure, including cooling down and if necessary, gassing up; the maximum transfer rate at all stages; minimum and maximum limiting transfer pressure and temperature; bunkering line PRVs settings; and volume to be transferred;"

***

ANNEX 2

RESOLUTION MSC.550(108)
(adopted on 23 May 2024)

AMENDMENTS TO CHAPTERS II-2 AND V OF THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO article VIII(b) of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"), concerning the amendment procedure applicable to the annex to the Convention, other than to the provisions of chapter I,

HAVING CONSIDERED, at its 108th session, amendments to the Convention proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the Convention, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2025, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have notified the Secretary-General of their objections to the amendments;

3 INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2026 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

5 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

CHAPTER II-2
CONSTRUCTION – FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION

Part B
Prevention of fire and explosion

Regulation 4
Probability of ignition

1 At the end of paragraph 2.1.7, the word "and" is deleted and at the end of paragraph 2.1.8, "." is replaced by "; and".

2 The following new sub-paragraph is added after existing paragraph 2.1.8:

".9 oil fuel delivered to and used on board ships shall not jeopardize the safety of ships or adversely affect the performance of the machinery or be harmful to personnel."

Part C
Suppression of fire

Regulation 7
Detection and alarm

5 Protection of accommodation and service spaces and control stations

3 Paragraph 5.2 is replaced by the following:

"**5.2 Requirements for passenger ships carrying more than 36 passengers**

A fixed fire detection and fire alarm system shall be so installed and arranged as to provide smoke detection in service spaces, control stations and accommodation spaces, including corridors, stairways and escape routes within accommodation spaces. Smoke detectors need not be fitted in private bathrooms and galleys. Spaces having little or no fire risk such as voids, public toilets, carbon dioxide rooms and similar spaces need not be fitted with a fixed fire detection and fire alarm system. Detectors fitted in cabins, when activated, shall also be capable of emitting, or cause to be emitted, an audible alarm within the space where they are located."

4 Section 5.5 (Cargo ships) is replaced by the following:

"**5.5 Cargo ships**

(The requirements of paragraph 5.5 shall apply to ships constructed on or after 1 January 2026. Ships constructed before 1 January 2026 shall comply with the previously applicable requirements of paragraph 5.5.)

Accommodation and service spaces and control stations of cargo ships shall be protected by a fixed fire detection and fire alarm system and/or an automatic sprinkler, fire detection and fire alarm system as follows depending on a protection method adopted in accordance with regulation 9.2.3.1.

5.5.1 *Method IC*

A fixed fire detection and fire alarm system shall be so installed and arranged as to provide smoke detection in all corridors, stairways and escape routes within accommodation spaces and in all control stations and cargo control rooms.

5.5.2 *Method IIC*

An automatic sprinkler, fire detection and fire alarm system of an approved type complying with the relevant requirements of the Fire Safety Systems Code shall be so installed and arranged as to protect accommodation spaces, galleys and other service spaces, except spaces which afford no substantial fire risk such as void spaces, sanitary spaces, etc. In addition, a fixed fire detection and fire alarm system shall be so installed and arranged as to provide smoke detection in all corridors, stairways and escape routes within accommodation spaces and in all control stations and cargo control rooms.

5.5.3 *Method IIIC*

A fixed fire detection and fire alarm system shall be so installed and arranged as to detect the presence of fire in all accommodation spaces and service spaces providing smoke detection in corridors, stairways and escape routes within accommodation spaces, except spaces which afford no substantial fire risk such as void spaces, sanitary spaces, etc. In addition, a fixed fire detection and fire alarm system shall be so installed and arranged as to provide smoke detection in all corridors, stairways and escape routes within accommodation spaces and in all control stations and cargo control rooms."

Regulation 9
Containment of fire

6 Protection of cargo space boundaries

5 Paragraph 6.1 is deleted and the subsequent paragraphs are renumbered accordingly.

Part G
Special requirements

Regulation 20
Protection of vehicle, special category and ro-ro spaces

6 The title of regulation 20 is replaced by the following:

"**Regulation 20 Protection of vehicle, special category, open and closed ro-ro spaces, and weather decks intended for the carriage of vehicles**"

1 Purpose

7 Paragraph 1.1 is replaced by the following:

".1 fire protection systems shall be provided to adequately protect the ship from the fire hazards associated with vehicle, special category and ro-ro spaces, and weather deck intended for the carriage of vehicles;"

2 General requirements

2.1 Application

8 The following new paragraph 2.1.3 is added after existing paragraph 2.1.2:

"2.1.3 Passenger ships constructed before 1 January 2026, including those constructed before 1 July 2012, shall also comply with regulations 20.4.1.6, 20.4.4 and 20.6.2.3, as adopted by resolution MSC.550(108)."

3 Precaution against ignition of flammable vapours in closed vehicle spaces, closed ro-ro spaces and special category spaces

9 Paragraph 3.1.5 is replaced by the following:

"***3.1.5 Permanent openings***

In cargo ships, permanent openings in the side plating, the ends or deckhead of the space shall be so situated that a fire in the cargo space does not endanger stowage areas and embarkation stations for survival craft and accommodation spaces, service spaces and control stations in superstructures and deckhouses above the cargo spaces."

4 Detection and alarm

10 The following new paragraph is added under the existing title of section 4 (Detection and alarm):

"Passenger ships constructed before 1 January 2026, including those constructed before 1 July 2012, shall comply with the requirements of paragraph 4.1.6 not later than the first survey on or after 1 January 2028."

4.1 Fixed fire detection and fire alarm systems

11 Section 4.1 (Fixed fire detection and fire alarm systems) is replaced by the following:

"**4.1 Fixed fire detection and fire alarm systems**

The requirements of paragraphs 4.1.1 through 4.1.4 shall only apply to passenger ships constructed on or after 1 January 2026. Passenger ships constructed before 1 January 2026, including those constructed before 1 July 2012, shall comply with the requirements of paragraph 4.1.6 and the previously applicable requirements of paragraph 4.1. The requirements of paragraph 4.1.5 shall apply to cargo ships constructed on or after 1 January 2026. Cargo ships constructed before 1 January 2026 shall comply with the previously applicable requirements of paragraph 4.1.

4.1.1 In vehicle, special category and ro-ro spaces, there shall be provided an individually identifiable fixed fire detection and fire alarm system. The system shall comply with the requirements of the Fire Safety Systems Code.

4.1.1.1 The fixed fire detection and fire alarm system shall provide smoke and heat detection throughout vehicle, special category and ro-ro spaces. The Administration may accept linear heat detectors as the required system for heat detection. The system shall be capable of rapidly detecting the onset of fire. The location of detectors shall be to the satisfaction of the Administration, taking into account the

effects of ventilation and other relevant factors. After being installed, the system shall be tested under normal ventilation conditions and shall give an overall response time to the satisfaction of the Administration.

4.1.2 If a fixed water-based deluge system is used for vehicle, special category and ro-ro spaces, then a fire detection and fire alarm system identifiable to the same sections of the deluge system shall be arranged.

4.1.3 The fire detection and fire alarm system shall be designed with a system interface which provides logical and unambiguous presentation of the information, to allow a quick and correct understanding and decision-making. In particular, section numbering of the alarm system shall coincide with that of other systems, such as a fixed water-based fire-extinguishing system or video monitoring system, if available.

4.1.4 There shall be provided a fixed fire detection and fire alarm system for the area on the weather deck intended for the carriage of vehicles. The fixed fire detection system shall be capable of rapidly detecting the onset of the fire anywhere on the area. The type of detectors and their spacing and location shall be to the satisfaction of the Administration, taking into account the effects of weather conditions, cargo obstruction and other relevant factors. Different settings may be used for specific operation sequences, such as during loading or unloading and during voyage, in order to reduce the false alarms.

4.1.5 In cargo ships, vehicle spaces, special category spaces and ro-ro spaces shall be provided with a fixed fire detection and fire alarm system complying with the requirements of the Fire Safety Systems Code. The fixed fire detection system shall be capable of rapidly detecting the onset of fire. The type of detectors and their spacing and location shall be to the satisfaction of the Administration, taking into account the effects of ventilation and other relevant factors. After being installed, the system shall be tested under normal ventilation conditions and shall give an overall response time to the satisfaction of the Administration.

4.1.6 For passenger ships constructed before 1 January 2026, including those constructed before 1 July 2012, a fixed fire detection and fire alarm system complying with the requirements of the Fire Safety Systems Code shall be provided in special category spaces, open and closed ro-ro and vehicle spaces. The fixed fire detection system shall be capable of rapidly detecting the onset of fire. The fixed fire detection and fire alarm system shall provide smoke and heat detection throughout vehicle, special category and ro-ro spaces. In this context, heat detectors shall comply with the spacing and coverage area requirements as applicable for smoke detectors. Heat detectors are only required where there is already a smoke detector."

4.3 Special category spaces

12 Paragraph 4.3.1 is replaced by the following:

"4.3.1 An efficient fire patrol system shall be maintained in special category spaces."

13 The following new section 4.4 is added after existing section 4.3 (Special category spaces):

"**4.4 Video monitoring**

The requirements of paragraphs 4.4.1 and 4.4.2 apply to ships constructed on or after 1 January 2026. Passenger ships with vehicle, special category or ro-ro spaces constructed before 1 January 2026, including those constructed before 1 July 2012, shall comply with the requirements of paragraphs 4.4.1 and 4.4.2 not later than the first survey on or after 1 January 2028.

4.4.1 For passenger ships, an effective video monitoring system shall be arranged in vehicle, special category and ro-ro spaces for continuous monitoring of these spaces. The system shall be provided with immediate playback capability to allow for quick identification of fire location, as far as practicable. Cameras shall be installed to cover the whole space, high enough to see over cargo and vehicles after loading.

4.4.2 The videos recorded by this monitoring system shall be available for replay at a continuously manned control station or at the safety centre for at least seven days for installation on ro-ro passenger ships constructed on or after 1 January 2026 and 24 hours for existing ro-ro passenger ships constructed before 1 January 2026, including those constructed before 1 July 2012. The correspondence between any one video camera and the section of the fixed water-based fire-extinguishing system protecting the space covered by this camera shall be clearly displayed close to the video monitor. Continuous monitoring of the video image by the crew is not required."

5 Structural fire protection

14 Section 5 (Structural fire protection) is replaced by the following, together with the associated footnote:

"**5 Structural fire protection and arrangement of openings**

This paragraph applies to passenger ships constructed on or after 1 January 2026. Passenger ships constructed before 1 January 2026 shall comply with the previously applicable requirements of paragraph 5.

5.1 Structural fire protection

5.1.1 In passenger ships carrying more than 36 passengers, the boundary bulkheads and decks of special category and ro-ro spaces shall be insulated to "A-60" class standard. However, where a category (5), (9) and (10) space, as defined in regulation 9.2.2.3, is on one side of the division, the standard may be reduced to "A-0". Where fuel oil tanks are below a special category space, the integrity of the deck between such spaces may be reduced to "A-0" standard.

5.1.2 Where a special category space or ro-ro space is subdivided with internal decks, the fire rating of these decks shall be determined based on the capacity and arrangement of the fixed water-based fire-extinguishing system. If the fixed water-based fire-extinguishing system cannot simultaneously cover the applicable area above and below a given deck, this deck shall be of "A-30" standard while any ramps and doors between decks shall be made of steel and of a design being as tight as practical.

5.2 Arrangement of openings in ro-ro spaces and special category spaces

5.2.1 Openings in the side plating, the ends or deckhead of the ro-ro space shall be situated and arranged so that a fire in the ro-ro space does not endanger:

.1 stowage areas for survival craft;

.2 embarkation stations and assembly stations, including access to such stations; and

.3 accommodation spaces, control stations and normally occupied service spaces in superstructures and deckhouses above the ro-ro space.

Openings are not permitted for all decks directly below these objects and within a safety distance of minimum 6.0 m measured horizontally.

5.2.2 This requirement does not apply to openings fitted with closing arrangements, such as ramps and doors. Ramps and doors shall be of steel for all decks directly below accommodation spaces, control stations and normally occupied service spaces, and minimum "A-0" for all decks directly below survival craft, embarkation stations and assembly stations.

5.2.3 Openings are, however, accepted in ro-ro spaces below accommodation spaces, control stations and normally occupied service spaces, when the fire integrity of the ship's side, including windows and doors, is "A-60" on boundaries in a rectangular area measured 6.0 m horizontally forward and aft of the openings and vertically minimum two deck levels above the deck level with the opening. "A-0" windows protected by a water-based system with an application rate of at least 5.0 L/min per square metre may be accepted as equivalent to "A-60" windows. Ventilation inlets shall be designed to minimize the risk of contamination.*

* Refer to regulations 5.2, 8.2, 9.7.1.5 and 20.3.1.4.

5.2.4 Openings for mechanical ventilation of ro-ro and special category spaces are permitted below accommodation spaces, service spaces and control stations in superstructures, if the opening is protected by a closing device, with a closing arrangement not likely to be cut off in case of a fire in the ro-ro spaces, capable of being closed from a readily accessible position. The closing device shall be made of steel or other fire-resistant material. Such openings are not permitted below survival craft, the emergency generator and air intakes for the engine-room(s).

5.2.5 Notwithstanding the above, air intakes serving machinery used for the ship's main propulsion, power generation and emergency power generation shall be in a position minimizing the risk of being contaminated by a fire in the ro-ro space or special category space.

5.3 Arrangement of weather deck intended for the carriage of vehicles

5.3.1 Appropriate arrangements shall be made so that a fully developed fire on weather decks intended for the carriage of vehicles does not endanger:

.1 stowage areas for survival craft;

.2 embarkation stations and assembly stations including access to these; and

.3 accommodation spaces, control stations and normally occupied service spaces in superstructures and deckhouses adjacent to the weather deck.

5.3.2 Appropriate arrangements shall be made providing a safety distance, measured horizontally, from the designated vehicle lanes of more than 6.0 m to accommodation spaces, control stations and normally occupied service spaces in superstructures and deckhouses adjacent to the weather deck.

5.3.3 The safety distance can be reduced to 3.0 m when boundaries, including windows and doors, within 6.0 m are of "A-60" integrity. Alternatively, "A-0" boundaries protected by a water-based system with an application rate of at least 5.0 L/min per square metre may be accepted as equivalent.

5.3.4 Survival craft and embarkation stations, including access to these, shall be protected with a safety distance of more than 12.0 m. Safety distances shall be measured horizontally.

5.3.5 Notwithstanding the above, air intakes serving machinery used for the ship's main propulsion, power generation and emergency power generation shall be in a position minimizing the risk of being contaminated by a fire on the weather deck intended for carriage of vehicles."

6 Fire extinction

6.1 Fixed fire-extinguishing systems

15 The explanatory paragraph under the title of existing section 6.1 (Fixed fire-extinguishing systems) is replaced by the following:

"(The requirements of paragraphs 6.1.1 and 6.1.2 shall apply to ships constructed on or after 1 July 2014. Ships constructed before 1 July 2014 shall comply with the previously applicable requirements of paragraphs 6.1.1 and 6.1.2. The requirements of paragraphs 6.2.1 and 6.2.2 shall apply to ro-ro passenger ships constructed on or after 1 January 2026. Passenger ships with vehicle, special category or ro-ro spaces constructed before 1 January 2026, including those constructed before 1 July 2012, shall comply with the requirements of paragraph 6.2.3 not later than the first survey on or after 1 January 2028.)"

16 The following new section 6.2 is inserted after existing section 6.1 (Fixed fire-extinguishing systems) and the subsequent section (Portable fire extinguishers) and its paragraphs are renumbered accordingly:

"**6.2 Fixed water-based fire-extinguishing system on weather decks intended for carriage of vehicles**

6.2.1 In passenger ships, a fixed water-based fire-extinguishing system based on monitor(s) shall be installed in order to cover weather decks intended for the carriage of vehicles. The monitor(s) shall comply with the provisions of the Fire Safety Systems Code.

6.2.2 In passenger ships, drainage shall be provided where a fixed water-based fire-extinguishing system is installed to cover weather decks intended for carriage of vehicles. The system shall be sized to remove no less than 125% of the combined capacity of both the monitor(s) and the required number of fire hose nozzles.

6.2.3 For passenger ships constructed before 1 January 2026, including those constructed before 1 July 2012, a fixed water-based fire-extinguishing system based on monitor(s) shall be installed in order to protect areas on weather decks intended for the carriage of vehicles. Monitors shall be located in positions which ensure unobstructed protection of vehicles in the area on the weather deck intended for carriage for vehicles, as far as practicable. Operation of monitors shall be ensured by safe access ways or remote control not to be impaired by a fire in the area protected by that monitor. Capacity of each monitor shall be at least 1,250 L/min. The Administration may permit lower flow rates when the required rate is not practical given the size and arrangement of the ship. The Administration may also permit alternative arrangements for ships that have already installed a fixed water-based fire-extinguishing system based on monitor(s) prior to 1 January 2026."

17 The following new section 7 is added after existing section 6 (Fire extinction) with the associated footnotes:

"**7 Decision-making**

(The requirements of paragraph 7 shall apply to passenger ships constructed on or after 1 January 2026.)

In passenger ships, vehicle, special category and ro-ro spaces, where fixed pressure water-spraying systems are fitted, shall be provided with suitable signage and marking on deckhead and bulkhead and on the vertical boundaries allowing easy identification of the sections of the fixed fire-extinguishing system. Suitable signage and markings shall be adapted to typical patterns of crew movement taking into consideration obstruction by cargo or fixed installations. Section number signs shall be of photoluminescent material.* The section numbering indicated inside the space shall be same as section valve identification and section identification at the safety centre or continuously manned control station.

* Refer to chapter 11 of the FSS Code for the evaluation and testing of photoluminescent material."

Regulation 23
Safety centre on passenger ships

6 Control and monitoring of safety systems

18 Paragraph 6.10 is replaced by the following:

".10 fire detection and fire alarm system;"

CHAPTER V
SAFETY OF NAVIGATION

Regulation 31
Danger messages

19 The following new paragraphs are inserted after existing paragraph 1, together with the associated footnote:

"2.1 The master of every ship involved in the loss of freight container(s), shall communicate the particulars of such an incident by appropriate means without delay and to the fullest extent possible to ships in the vicinity, to the nearest coastal State, and also to the flag State.

2.2 In the event of the ship referred to in paragraph 2.1 being abandoned, or in the event of a report from such a ship being incomplete or unobtainable, the company, as defined in regulation IX/1.2, shall, to the fullest extent possible, assume the obligations placed upon the master by this regulation.

2.3 The flag State, once informed in accordance with paragraph 2.1, shall report to the Organization on the loss of freight container(s).*

* Refer to *Notification and circulation through the Global Integrated Shipping Information System (GISIS)* (resolution A.1074(28)).

2.4 The master of every ship that observes freight container(s) drifting at sea, shall communicate the particulars of such an observation by appropriate means without delay and to the fullest extent possible to ships in the vicinity and to the nearest coastal State."

20 Existing paragraphs 2, 3 and 4 are renumbered as paragraphs 3, 4 and 5, respectively.

Regulation 32
Information required in danger messages

21 The following new paragraph is inserted after existing paragraph 2 (Tropical cyclones (storms)):

"3 Loss or observation of freight container(s)

.1 Loss of freight container(s) from a ship

It is recognized that at the time of the initial reporting, not all of the information elements may be available. Any subsequent and/or additional information shall be reported by the master at the earliest opportunity after the initial reporting. The report shall include:

.1 General information

- Type of report: Loss of freight container(s) from a ship
- Time (Universal Coordinated Time) and date
- Ship's identity (IMO number/name/call sign/MMSI)
- From: Master of the ship, or contact details of their representative reporting on master's behalf
- To: Nearest coastal State where the incident occurred and flag State
- The message number: In chronological order if other freight container loss messages are sent following the first one.

At the earliest, safe and practicable opportunity, a thorough inspection shall be conducted. The number or estimated number of lost freight container(s) shall be verified. A message containing this verified number shall be marked as "final" and sent to the same recipients.

.2 Position reporting*

Position in latitude and longitude, or true bearing and distance in nautical miles from a clearly identified landmark (where possible)

- Position of the ship when freight container(s) were lost; or
- If the position of the ship when the freight container(s) were lost is not known, the estimated position of the ship when the freight container(s) were lost; or
- If an estimated position of the ship when the freight container(s) were lost is not known or cannot be determined, the position of the ship upon discovery of the loss.

* Where available, a system of mechanical, electronic and/or visual aids can be used, allowing near real-time reporting of the drop point of the freight container(s).

.3 Total number or estimated number of freight container(s) lost, as appropriate:

.4 Type of goods in freight container(s):

- Dangerous goods: Yes/No
- UN number (if known)

.5 Description of freight container(s) lost as far as available and practicable:

.1 Dimension of freight container(s) (e.g. 20 foot);

.2 Type(s) of freight container(s) (e.g. reefer); and

.3 Number or estimated number of empty freight container(s).

.6 The master may provide additional information, if available and practicable, for example but not limited to:

- Cargo description according to the dangerous goods manifest (if applicable)
- Description of any cargo spill
- Wind direction and speed
- Sea current direction and speed
- Estimated drift direction and speed of lost freight container(s)
- Sea state and wave height

.2 Observation of freight container(s) drifting at sea

.1 General information

- Type of report: Observation of freight container(s) drifting at sea
- Time (Universal Coordinated Time) and date
- Ship's identity (IMO number/name/call sign/MMSI)
- From: Master of the ship
- To: Nearest coastal State to the position of observation

.2 Position reporting

Time (Universal Coordinated Time), date and position of the observed freight container(s) in latitude and longitude, or true bearing and distance in nautical miles from a clearly identified landmark (where possible)

.3 Total number of freight container(s) observed

.4 The master may provide additional information, if available and practicable, for example but not limited to:

- Dimension of freight container(s) (e.g. 20 foot)
- Type(s) of freight container(s) (e.g. reefer)
- Description of any cargo spill
- Wind direction and speed
- Sea current direction and speed
- Estimated drift direction and speed of observed freight container(s)
- Sea state and wave height "

22 Existing paragraphs 3, 4 and 5 are renumbered as paragraphs 4, 5 and 6, respectively.

***

ANNEX 2

RESOLUTION MEPC.384(81)
(adopted on 22 March 2024)

AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973, AS MODIFIED BY THE PROTOCOL OF 1978 RELATING THERETO

Amendments to Protocol I of MARPOL

(Reporting procedures for the loss of containers)

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

NOTING article 16 of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL), which specifies the amendment procedure and confers upon the appropriate body of the Organization the function of considering and adopting amendments thereto,

HAVING CONSIDERED, at its eighty-first session, proposed amendments to Protocol I of MARPOL concerning reporting procedures for the loss of containers.

1 ADOPTS, in accordance with article 16(2)(d) of MARPOL, amendments to Protocol I of MARPOL, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article 16(2)(f)(iii) of MARPOL, that the amendments shall be deemed to have been accepted on 1 July 2025 unless, prior to that date, not less than one third of the Parties or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have communicated to the Organization their objection to the amendments;

3 INVITES the Parties to note that, in accordance with article 16(2)(g)(ii) of MARPOL, the said amendments shall enter into force on 1 January 2026 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article 16(2)(e) of MARPOL, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Parties to MARPOL;

5 ALSO REQUESTS the Secretary-General to transmit copies of the present resolution and its annex to Members of the Organization which are not Parties to MARPOL.

ANNEX

AMENDMENTS TO PROTOCOL I OF MARPOL

(Reporting procedures for the loss of containers)

PROTOCOL I – PROVISIONS CONCERNING REPORTS ON INCIDENTS INVOLVING HARMFUL SUBSTANCES

Article V
Reporting procedures

1 The following new paragraph 3 is inserted after existing paragraph 2:

"In case of the loss of freight container(s), the report required by article II(1)(b) shall be made in accordance with the requirements on danger messages as provided for in regulations V/31 and V/32 of the International Convention for the Safety of Life at Sea, 1974."

***

ANNEX 2

RESOLUTION MSC.532(107)
(adopted on 8 June 2023)

AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO article VIII(b) of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"), concerning the amendment procedure applicable to the annex to the Convention, other than to the provisions of chapter I,

HAVING CONSIDERED, at its 107th session, amendments to the Convention proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the Convention, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2025, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments, the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified the Secretary-General of their objections to the amendments;

3 INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2026 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

5 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

CHAPTER II-1
CONSTRUCTION – STRUCTURE, SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATIONS

Part A
General

Regulation 2
Definitions

1 The following new paragraphs are added after existing paragraph 29:

"30 *Lifting appliance* means any load-handling ship's equipment:

.1 used for cargo loading, transfer, or discharge;

.2 used for raising and lowering hold hatch covers or moveable bulkheads;

.3 used as engine-room cranes;

.4 used as stores cranes;

.5 used as hose handling cranes;

.6 used for launch and recovery of tender boats and similar applications; and

.7 used as personnel handling cranes.

31 *Anchor handling winch* means any winch for the purpose of deploying, recovering and repositioning anchors and mooring lines in subsea operations.

32 *Loose gear* means an article of ships equipment by means of which a load can be attached to a lifting appliance or an anchor handling winch but which does not form an integral part of the appliance or load.

33 The expression *installed on or after 1 January 2026*, as provided in regulation 3-13, means:

.1 for ships the keel of which is laid or which is at a similar stage of construction on or after 1 January 2026, any installation date on the ship; or

.2 for ships other than those specified in .1, including those constructed before 1 January 2009, a contractual delivery date for lifting appliance or anchor handling winches, or in the absence of a contractual delivery date, the actual delivery date of the lifting appliance or anchor handling winches to the ship on or after 1 January 2026."

Part A-1
Structure of ships

2 The following new regulation is added after existing regulation II-1/3-12, together with the associated footnotes:

"**Regulation 3-13**
Lifting appliances and anchor handling winches

1 Application

1.1 Unless expressly provided otherwise, this regulation shall apply to lifting appliances and anchor handling winches, and loose gear utilized with the lifting appliances and the anchor handling winches.

1.2 Notwithstanding the above, this regulation does not apply to:

.1 lifting appliances on ships certified as MODUs;[1]

.2 lifting appliances used on offshore construction ships, such as pipe/cable laying/repair or offshore installation vessels, including ships for decommissioning work, which comply with standards acceptable to the Administration;

.3 integrated mechanical equipment for opening and closing hold hatch covers; and

.4 life-saving launching appliances complying with the International Life-Saving Appliance (LSA) Code.

1.3 The Administration shall determine to what extent the provisions of paragraphs 2.1 and 2.4 do not apply to lifting appliances which have a safe working load below 1,000 kg.

2 Design, construction and installation

2.1 Lifting appliances installed on or after 1 January 2026 shall be:

.1 designed, constructed and installed in accordance with the requirements of a classification society which is recognized by the Administration in accordance with the provisions of regulation XI-1/1 or standards acceptable to the Administration which provide an equivalent level of safety; and

.2 load tested and thoroughly examined after installation and before being taken into use for the first time and after repairs, modifications or alterations of major character.

2.2 Anchor handling winches installed on or after 1 January 2026 shall be designed, constructed, installed and tested to the satisfaction of the Administration, based on the Guidelines developed by the Organization.[2]

2.3 Lifting appliances installed on or after 1 January 2026 shall be permanently marked and provided with documentary evidence for the safe working load (SWL).

2.4 Lifting appliances installed before 1 January 2026 shall be tested and thoroughly examined, based on the Guidelines developed by the Organization[3] and comply with paragraph 2.3 no later than the date of the first renewal survey on or after 1 January 2026.

2.5 Anchor handling winches installed before 1 January 2026 shall be tested and thoroughly examined, based on the Guidelines developed by the Organization[2] no later than the date of the first renewal survey on or after 1 January 2026.

3 Maintenance, operation, inspection and testing

All lifting appliances and anchor handling winches, regardless of installation date, and all loose gear utilized with any lifting appliances and anchor handling winches, shall be operationally tested, thoroughly examined, inspected, operated and maintained, based on the Guidelines developed by the Organization.[2,3]

4 Inoperative lifting appliances and anchor handling winches

Except as provided in regulation I/11(c), while all reasonable steps shall be taken to maintain lifting appliances, anchor handling winches and loose gear to which this regulation applies in working order, malfunctions of that equipment shall not be assumed as making the ship unseaworthy or as a reason for delaying the ship in ports, provided that action has been taken by the master to take the inoperative lifting appliance or anchor handling winch into account in planning and executing a safe voyage.[2, 3]

---

1 Ships certified as MODUs are those subject to the MODU Code and which carry a MODU Code Certificate on board issued by the Administration or a recognized organization. The carriage of this certificate includes authorized electronic versions available on board.

2 Refer to the *Guidelines for anchor handling winches* (MSC.1/Circ.1662).

3 Refer to the *Guidelines for lifting appliances* (MSC.1/Circ.1663)."

CHAPTER II-2
CONSTRUCTION – FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION

Part A
General

Regulation 1
Application

2 Applicable requirements to existing ships

3 The following new paragraph 2.10 is added after existing paragraph 2.9, together with the associated footnote:

"2.10 Ships constructed before 1 January 2026 shall comply with regulation 10.11.2, as adopted by resolution MSC.532(107), not later than the date of the first survey* on or after 1 January 2026.

---

* Refer to the *Unified interpretation of the term "first survey" referred to in SOLAS regulations* (MSC.1/Circ.1290)."

Part C
Suppression of fire

Regulation 10
Fire fighting

4 The following new paragraph 11 is added after existing section 10:

"**11 Fire-extinguishing media restrictions**

The purpose of this paragraph is to protect persons on board against exposure to dangerous substances used in firefighting, as well as to minimize the impact of fire-extinguishing media that are deemed detrimental to the environment.

11.1 Application

This regulation applies to ships constructed on or after 1 January 2026.

11.2 General

11.2.1 The prohibited substances in this regulation shall be delivered to appropriate shore-based reception facilities when removed from the ship.

11.2.2 Use or storage of extinguishing media containing perfluorooctane sulfonic acid (PFOS) shall be prohibited."

CHAPTER V
SAFETY OF NAVIGATION

Regulation 2
Definitions

5 The following new paragraphs are added after existing paragraph 7, together with the associated footnotes:

"8 *Bulk carrier* means a bulk carrier as defined in regulation XII/1.1.[1]

9 *Containership* means a ship which is intended primarily to carry containers.[2]

1 Refer to *Clarification of the term 'bulk carrier' and guidance for application of regulations in SOLAS to ships which occasionally carry dry cargoes in bulk and are not determined as bulk carriers in accordance with regulation XII/1.1 and chapter II-1* (resolution MSC.277(85)).

2 Refer to the term 'container' as defined in article II of the International Convention for Safe Containers (CSC), 1972."

Regulation 18
Approval, surveys and performance standards of navigational systems and equipment and voyage data recorder

6 The following reference is added to the footnote corresponding to paragraph 2:

"*Performance standards for electronic inclinometers* (resolution MSC.363(92))"

Regulation 19
Carriage requirements for shipborne navigational systems and equipment

7 The following new paragraph 2.12 is added after existing paragraph 2.11:

"2.12 Containerships and bulk carriers of 3,000 gross tonnage and upwards constructed on or after 1 January 2026 shall be fitted with an electronic inclinometer, or other means, to determine, display and record the ship's roll motion."

CHAPTER XIV
SAFETY MEASURES FOR SHIPS OPERATING IN POLAR WATERS

Regulation 2
Application

8 Regulation 2 is replaced by the following:

"**Regulation 2**
Application

1 Unless expressly provided otherwise, this chapter applies to the following ships operating in polar waters:[1]

.1 ships certified in accordance with chapter I;

.2 fishing vessels of 24 metres in length overall and above;

.3 pleasure yachts of 300 gross tonnage and upwards not engaged in trade; and

.4 cargo ships of 300 gross tonnage and upwards but below 500 gross tonnage.

[1] Refer to the *Interim safety measures for ships not certified under the SOLAS Convention operating in polar waters* (resolution A.1137(31)).

2 Ships subject to paragraph 1.1 constructed before 1 January 2017 shall meet the relevant requirements of the Polar Code by the first intermediate or renewal survey, whichever occurs first, after 1 January 2018.

3 Ships subject to paragraphs 1.2, 1.3 or 1.4 constructed before 1 January 2026 shall meet the relevant requirements of chapters 9-1 and 11-1 in part I-A of the Polar Code by 1 January 2027.

4 In applying part I-A of the Polar Code, consideration should be given to the additional guidance in part I-B of the Polar Code.

5 This chapter shall not apply to ships owned or operated by a Contracting Government and used, for the time being, only in government non-commercial service. However, ships owned or operated by a Contracting Government and used, for the time being, only in government non-commercial service are encouraged to act in a manner consistent, so far as reasonable and practicable, with this chapter.

6 Nothing in this chapter shall prejudice the rights or obligations of States under international law."

Regulation 3
Requirements for ships to which this chapter applies

9 Regulation 3 is replaced by the following:

"**Regulation 3**
Requirements for ships certified in accordance with chapter I

1 Ships subject to regulation 2.1.1 above shall comply with the requirements of the safety-related provision of the introduction and with part I-A of the Polar Code and shall, in addition to the requirements of regulations I/7, I/8, I/9 and I/10, as applicable, be surveyed and certified, as provided for in that Code.

2 Ships subject to regulation 2.1.1 above holding a certificate issued pursuant to the provisions of paragraph 1 shall be subject to the control established in regulations I/19 and XI-1/4. For this purpose, such certificates shall be treated as a certificate issued under regulation I/12 or I/13."

10 The following new regulation is inserted after existing regulation 3:

"**Regulation 3-1**
Requirements for fishing vessels of 24 metres in length overall and above, pleasure yachts of 300 gross tonnage and upwards not engaged in trade and cargo ships of 300 gross tonnage and upwards but below 500 gross tonnage

1 Ships subject to regulations 2.1.2, 2.1.3 or 2.1.4 on all voyages in the Antarctic area and voyages in Arctic waters beyond the outer limit of the territorial sea of the Contracting Government whose flag the ship is entitled to fly shall comply with the provisions of chapters 9-1 and 11-1 of part I-A of the Polar Code, taking into account the introduction and the safety-related provisions of paragraphs 1.2, 1.4 and 1.5 of chapter 1 of part I-A of the Polar Code.

2 Notwithstanding paragraph 1 above, the Administration shall determine to what extent the provisions of regulations 9-1.3.1 and 9-1.3.2 of chapter 9-1 of part I-A of the Polar Code do not apply to:

.1 fishing vessels of 24 metres in length overall and above; and

.2 ships of 300 gross tonnage and upwards but below 500 gross tonnage not engaged in international voyages."

APPENDIX

CERTIFICATES

Record of equipment for passenger ship safety (Form P)

2 Details of life-saving appliances

11 In the table for "Details of life-saving appliances", entries 10 to 10.2 are replaced by the following:

10	Number of immersion suits

Form of Safety Equipment Certificate for Cargo Ships

Cargo Ship Safety Equipment Certificate

Type of ship

12 The following new entry is added after "Gas carrier":

"Containership"

Record of equipment for cargo ship safety (Form E)

2 Details of life-saving appliances

13 In the table for "Details of life-saving appliances", entries 9 to 9.2 are replaced by the following:

9	Number of immersion suits

3 Details of navigational systems and equipment

14 In the table for "Details of navigational systems and equipment", the following new entry is added after existing entry 15 (Bridge navigational watch alarm system (BNWAS)):

"16 Electronic inclinometer"

Form of Safety Certificate for Nuclear Cargo Ships

Nuclear Cargo Ship Safety Certificate

Type of Ship

15 The following new entry is added after "Gas carrier":

"Containership"

Record of equipment for cargo ship safety (Form C)

2 Details of life-saving appliances

16 In the table for "Details of life-saving appliances", entries 9 to 9.2 are replaced by the following:

9	Number of immersion suits

5 Details of navigational systems and equipment

17 In the table for "Details of navigational systems and equipment", the following new entry is added after existing entry 15 (Bridge navigational watch alarm system (BNWAS)):

"16 Electronic inclinometer"

***

ANNEX 5

RESOLUTION MSC.535(107)
(adopted on 8 June 2023)

AMENDMENTS TO THE INTERNATIONAL LIFE-SAVING APPLIANCE CODE (LSA CODE)

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution MSC.48(66), by which it adopted the International Life-Saving Appliance (LSA) Code ("the LSA Code"), which has become mandatory under chapter III of the International Convention for the Safety of Life at Sea (SOLAS), 1974 ("the Convention"),

RECALLING FURTHER article VIII(b) and regulation III/3.10 of the Convention concerning the procedure for amending the LSA Code,

HAVING CONSIDERED, at its 107th session, amendments to the LSA Code proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the LSA Code, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 July 2025 unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments, the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3 INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2026 upon their acceptance in accordance with paragraph 2 above;

4 ALSO INVITES Contracting Government to note that the provisions in the annex are to be applied to totally enclosed lifeboats installed on or after 1 January 2029 where the expression *installed on or after 1 January 2029* means:

(a) for ships for which the building contract is placed on or after 1 January 2029, or in the absence of the contract, constructed on or after 1 January 2029, any installation date on the ship; or

(b) for ships other than those ships prescribed in (a) above, a contractual delivery date for the equipment or, in the absence of a contractual delivery date, the actual delivery date of the equipment to the ship on or after 1 January 2029.

5 REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

6 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL LIFE-SAVING APPLIANCE CODE (LSA CODE)

CHAPTER IV
SURVIVAL CRAFT

4.6 Totally enclosed lifeboats

The following new paragraphs 4.6.6 and 4.6.7 are added after existing paragraph 4.6.5:

"**4.6.6 Ventilation means**

4.6.6.1 A totally enclosed lifeboat shall be provided with means to achieve a ventilation rate of at least 5 m^3/h per person for the number of persons which the lifeboat is permitted to accommodate and for a period of not less than 24 hours. The ventilation means shall be operable from inside the lifeboat and shall be arranged to ensure that the lifeboat is ventilated without stratification or formation of unventilated pockets.

4.6.6.2 Where the means of ventilation is powered, the source shall not be the radio batteries referred to in paragraph 4.4.6.11; and where dependent on the lifeboat engine, sufficient fuel shall be provided to comply with paragraph 4.4.6.8.

4.6.7 Openings of the ventilation system and their means of closing

4.6.7.1 Each opening of the ventilation means required in paragraph 4.6.6 shall be provided with means of closing. The means of closing shall be operable by a person from inside the lifeboat. Means shall be provided to ensure that the openings can be kept closed before, i.e. while in the stowed position, and during the launching of the lifeboat.

4.6.7.2 Inlet and outlet openings of the ventilation means and their external fittings shall be located and designed in order to minimize the ingress of water through the openings, without using the means of closing required in paragraph 4.6.7.1 and taking into consideration the requirements provided in paragraph 4.6.3.2.

4.6.7.3 For a free-fall lifeboat complying with the requirements of section 4.7, the openings and their means of closing shall be designed to withstand the loads and to prevent ingress of water under the anticipated submerged condition of the lifeboat at the time of free-fall launching.

4.6.7.4 For a lifeboat with a self-contained air support system complying with the requirements of section 4.8, the openings and their means of closing shall be designed to maintain the pressure required by section 4.8.

4.6.7.5 For a fire-protected lifeboat complying with the requirements of section 4.9, the openings and their means of closing shall be designed to ensure that the capability of protecting persons in the lifeboat is not impaired, under the conditions specified in paragraph 4.9.1."

***

ANNEX 6

RESOLUTION MSC.536(107)
(adopted on 8 June 2023)

AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR HIGH-SPEED CRAFT, 1994 (1994 HSC CODE)

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution MSC.36(63), by which it adopted the International Code of Safety for High-Speed Craft ("the 1994 HSC Code") which has become mandatory under chapter X of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"),

NOTING ALSO article VIII(b) and regulation X/1.1 of the Convention concerning the procedure for amending the 1994 HSC Code,

HAVING CONSIDERED, at its 107th session, amendments to the 1994 HSC Code proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the 1994 HSC Code, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2025, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3 INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2026 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

5 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR HIGH-SPEED CRAFT, 1994 (1994 HSC CODE)

CHAPTER 7
FIRE SAFETY

Part A
General

7.9 Miscellaneous

1 The following new paragraph 7.9.4 is added after existing paragraph 7.9.3.4, together with the associated footnote:

"**7.9.4** *Fire-extinguishing media restrictions*

7.9.4.1 The following restrictions should apply for the use, storage or disposal of perfluorooctane sulfonic acid (PFOS):

.1 on all craft, use or storage of extinguishing media containing perfluorooctane sulfonic acid (PFOS) should be prohibited no later than the date of the first survey* on or after 1 January 2026; and

.2 the substances prohibited by the requirements of 7.9.4.1.1 should be delivered to appropriate shore-based reception facilities when removed from the craft.

* Refer to the *Unified interpretation of the term "first survey" referred to in SOLAS regulations* (MSC.1/Circ.1290)."

ANNEX 1

FORM OF SAFETY CERTIFICATE FOR HIGH-SPEED CRAFT

Record of Equipment for High-Speed Craft Safety Certificate

2 In the table for "Details of life-saving appliances", entries 9 to 10.2 are replaced by the following:

9	Number of immersion suits	……..
10	Number of anti-exposure suits	……..

***

ANNEX 7

RESOLUTION MSC.537(107)
(adopted on 8 June 2023)

AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR HIGH-SPEED CRAFT, 2000 (2000 HSC CODE)

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution MSC.97(73), by which it adopted the International Code of Safety for High-Speed Craft, 2000 ("the 2000 HSC Code") which has become mandatory under chapter X of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"),

NOTING ALSO article VIII(b) and regulation X/1.2 of the Convention concerning the procedure for amending the 2000 HSC Code,

HAVING CONSIDERED, at its 107th session, amendments to the 2000 HSC Code proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the 2000 HSC Code, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2025, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3 INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2026 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

5 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR HIGH-SPEED CRAFT, 2000 (2000 HSC CODE)

CHAPTER 7
FIRE SAFETY

Part A
General

7.9 Miscellaneous

1 The following new paragraph 7.9.4 is added after existing paragraph 7.9.3.5, together with the associated footnote:

"**7.9.4** *Fire-extinguishing media restrictions*

7.9.4.1 The following restrictions shall apply for the use, storage or disposal of perfluorooctane sulfonic acid (PFOS):

.1 on craft constructed on or after 1 January 2026, use or storage of extinguishing media containing perfluorooctane sulfonic acid (PFOS) shall be prohibited;

.2 craft constructed before 1 January 2026 shall comply with the requirements of 7.9.4.1.1 no later than the date of the first survey[*] on or after 1 January 2026; and

.3 the substances prohibited by the requirements of 7.9.4.1.1 or 7.9.4.1.2 shall be delivered to appropriate shore-based reception facilities when removed from the craft.

_____

[*] Refer to the *Unified interpretation of the term "first survey" referred to in SOLAS regulations* (MSC.1/Circ.1290)."

ANNEX 1

FORM OF HIGH-SPEED CRAFT SAFETY CERTIFICATE AND RECORD OF EQUIPMENT

Record of Equipment for High-Speed Craft Safety Certificate

2 In the table for "Details of life-saving appliances", entries 9 to 10.2 are replaced by the following:

9	Number of immersion suits	……..
10	Number of anti-exposure suits	……..

***

RESOLUTION MSC.524(106)
(adopted on 10 November 2022)

AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR SHIPS USING GASES OR OTHER LOW-FLASHPOINT FUELS (IGF CODE)

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution MSC.391(95), by which it adopted the International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code), which has become mandatory under chapters II-1 and II-2 of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"),

NOTING ALSO article VIII(b) and regulation II-1/2.29 of the Convention concerning the procedure for amending the IGF Code,

HAVING CONSIDERED, at its 106th session, amendments to the IGF Code proposed and circulated in accordance with article VIII(b)(i) of the Convention:

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the IGF Code, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2025, unless, prior to that date, more than one-third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have notified their objections to the amendments;

3 INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2026 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

5 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR SHIPS USING GASES OR OTHER LOW-FLASHPOINT FUELS (IGF CODE)

PART A-1
SPECIFIC REQUIREMENTS FOR SHIPS USING NATURAL GAS AS FUEL

7 – Material and general pipe design

7.4 Regulations for materials

7.4.1 Metallic materials

Table 7.3 is replaced in its entirety, by the following:

"Table 7.3

PLATES, SECTIONS AND FORGINGS see note 1 FOR FUEL TANKS, SECONDARY BARRIERS AND PROCESS PRESSURE VESSELS FOR DESIGN TEMPERATURES BELOW MINUS 55°C AND DOWN TO MINUS 165°C see note 2 Maximum thickness 25 mm see notes 3 and 4		
Minimum design temp. (°C)	Chemical composition see note 5 and heat treatment	Impact test temp. (°C)
-60	1.5% nickel steel – normalized or normalized and tempered or quenched and tempered or TMCP see note 6	-65
-65	2.25% nickel steel – normalized or normalized and tempered or quenched and tempered or TMCP see notes 6 and 7	-70
-90	3.5% nickel steel – normalized or normalized and tempered or quenched and tempered or TMCP see notes 6 and 7	-95
-105	5% nickel steel – normalized or normalized and tempered or quenched and tempered see notes 6, 7 and 8	-110
-165	9% nickel steel – double normalized and tempered or quenched and tempered see note 6	-196
-165	Austenitic steels, such as types 304, 304L, 316, 316L, 321 and 347 solution treated see note 9	-196
-165	High manganese austenitic steel – hot rolling and controlled cooling see notes 10 and 11	-196
-165	Aluminium alloys, such as type 5083 annealed	Not required
-165	Austenitic Fe-Ni alloy (36% nickel). Heat treatment as agreed	Not required

TENSILE AND TOUGHNESS (IMPACT) TEST REGULATIONS	
Sampling frequency	
◆ Plates	Each "piece" to be tested
◆ Sections and forgings	Each "batch" to be tested
Toughness (Charpy V-notch test)	
◆ Plates	Transverse test pieces. Minimum average energy value (KV) 27J
◆ Sections and forgings	Longitudinal test pieces. Minimum average energy (KV) 41J

Notes

1. The impact test required for forgings used in critical applications shall be subject to special consideration by the Administration.

2. The regulations for design temperatures below -165°C shall be specially agreed with the Administration.

3. For materials 1.5% Ni, 2.25% Ni, 3.5% Ni and 5% Ni, with thicknesses greater than 25 mm, the impact tests shall be conducted as follows:

Material thickness (mm)	Test temperature (°C)
25 < t ≤ 30	10°C below design temperature
30 < t ≤ 35	15°C below design temperature
35 < t ≤ 40	20°C below design temperature

   The energy value shall be in accordance with the table for the applicable type of test specimen. For material thickness of more than 40 mm, the Charpy V-notch values shall be specially considered.

4. For 9% Ni steels, austenitic stainless steels, high manganese austenitic steels and aluminium alloys, thickness greater than 25 mm may be used.

5. The chemical composition limits shall be in accordance with recognized standards.

6. Thermo-mechanical controlled processing (TMCP) nickel steels will be subject to acceptance by the Administration.

7. A lower minimum design temperature for quenched and tempered steels may be specially agreed with the Administration.

8. A specially heat-treated 5% nickel steel, for example triple heat-treated 5% nickel steel, may be used down to -165°C, provided that the impact tests are carried out at -196°C.

9. The impact test may be omitted subject to agreement with the Administration.

10. The use of the material shall be subject to the required conditions specified by the Administration based on the Guidelines developed by the Organization.

11. The impact test may not be omitted for high manganese austenitic steel."

RESOLUTION MSC.523(106)
(adopted on 10 November 2022)

AMENDMENTS TO THE INTERNATIONAL CODE FOR THE CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING LIQUEFIED GASES IN BULK (IGC CODE)

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution MSC.5(48), by which it adopted the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk ("the IGC Code"), which has become mandatory under chapter VII of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"),

NOTING ALSO article VIII(b) and regulation VII/11.1 of the Convention concerning the procedure for amending the IGC Code,

HAVING CONSIDERED, at its 106th session, amendments to the IGC Code proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the IGC Code, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2025, unless, prior to that date, more than one-third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world’s merchant fleet have notified their objections to the amendments;

3 INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2026, upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

5 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CODE FOR THE CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING LIQUEFIED GASES IN BULK (IGC CODE)

CHAPTER 6
MATERIALS OF CONSTRUCTION AND QUALITY CONTROL

6.4 Requirements for metallic materials

6.4.1 General requirements for metallic materials

Table 6.3 is replaced in its entirety by the following:

"**Table 6.3**

PLATES, SECTIONS AND FORGINGS See note 1 FOR CARGO TANKS, SECONDARY BARRIERS AND PROCESS PRESSURE VESSELS FOR DESIGN TEMPERATURES BELOW -55°C AND DOWN TO -165°C See note 2 Maximum thickness 25 mm See notes 3 and 4		
Minimum design temperature (°C)	Chemical composition See note 5 and heat treatment	Impact test temperature (°C)
-60	1.5% nickel steel – normalized or normalized and tempered or quenched and tempered or TMCP See note 6	-65
-65	2.25% nickel steel – normalized or normalized and tempered or quenched and tempered or TMCP See notes 6 and 7	-70
-90	3.5% nickel steel – normalized or normalized and tempered or quenched and tempered or TMCP. See notes 6 and 7	-95
-105	5% nickel steel – normalized or normalized and tempered or quenched and tempered See notes 6, 7 and 8	-110
-165	9% nickel steel – double normalized and tempered or quenched and tempered See note 6	-196
-165	Austenitic steels, such as types 304, 304L, 316, 316L, 321 and 347 solution treated See note 9	-196
-165	High manganese austenitic steel – hot rolling and controlled cooling See notes 10 and 11	-196
-165	Aluminium alloys, such as type 5083 annealed	Not required
-165	Austenitic Fe-Ni alloy (36% nickel). Heat treatment as agreed	Not required
TENSILE AND TOUGHNESS (IMPACT) TEST REQUIREMENTS		
Sampling frequency		
◆ Plates	Each "piece" to be tested	
◆ Sections and forgings	Each "batch" to be tested	
Toughness (Charpy V-notch test)		
◆ Plates	Transverse test pieces. Minimum average energy value (KV) 27J	
◆ Sections and forgings	Longitudinal test pieces. Minimum average energy (KV) 41J	

Notes

1 The impact test required for forgings used in critical applications shall be subject to special consideration by the Administration.

2 The requirements for design temperatures below -165°C shall be specially agreed with the Administration.

3 For materials 1.5% Ni, 2.25% Ni, 3.5% Ni and 5% Ni, with thicknesses greater than 25 mm, the impact tests shall be conducted as follows:

Material thickness (mm)	Test temperature (°C)
25 < t ≤ 30	10°C below design temperature
30 < t ≤ 35	15°C below design temperature
35 < t ≤ 40	20°C below design temperature

The energy value shall be in accordance with the table for the applicable type of test specimen. For material thickness of more than 40 mm, the Charpy V-notch values shall be specially considered.

4 For 9% Ni steels, austenitic stainless steels, high manganese austenitic steels and aluminium alloys, thickness greater than 25 mm may be used.

5 The chemical composition limits shall be in accordance with recognized standards.

6 TMCP nickel steels will be subject to acceptance by the Administration.

7 A lower minimum design temperature for quenched and tempered steels may be specially agreed with the Administration.

8 A specially heat-treated 5% nickel steel, for example triple heat-treated 5% nickel steel, may be used down to -165°C, provided that the impact tests are carried out at -196°C.

9 The impact test may be omitted, subject to agreement with the Administration.

10 The use of the material shall be subject to the required conditions specified by the Administration based on the Guidelines developed by the Organization.

11 The impact test may not be omitted for high manganese austenitic steel."

RESOLUTION MSC.520(106)
(adopted on 10 November 2022)

AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974 (CHAPTER II-2)

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO article VIII(b) of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"), concerning the amendment procedure applicable to the annex to the Convention, other than to the provisions of chapter I,

HAVING CONSIDERED, at its 106th session, amendments to the Convention proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the Convention, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2025, unless, prior to that date, more than one-third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have notified the Secretary-General of their objections to the amendments;

3 INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2026, upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

5 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

CHAPTER II-2
CONSTRUCTION – FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION

Part A
General

Regulation 1 – *Application*

1 Paragraph 2.5 is replaced by the following:

"2.5 Ships constructed before 1 July 2012 shall also comply with regulation 10.10.1.2, as adopted by resolution MSC.338(91) and regulations 4.2.1.6 to 4.2.1.8, as amended by resolution MSC.520(106)."

Regulation 3 – *Definitions*

2 The following new paragraphs are added after existing paragraph 58:

"59 *Confirmed case (flashpoint)* is when a representative sample analysed in accordance with standards acceptable to the Organization by an accredited laboratory reports the flashpoint as measured to be below 60°C.

60 *Representative sample* is a product specimen having its physical and chemical characteristics identical to the average characteristics of the total volume being sampled.

61 *Oil fuel* is defined in regulation 1 of Annex 1 of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto."

Part B
Prevention of fire and explosion

Regulation 4 – *Probability of ignition*

3 At the end of paragraph 2.1.4, the word "and" is deleted and at the end of paragraph 2.1.5, "." is replaced by ";".

4 The following new sub-paragraphs are added after existing paragraph 2.1.5:

".6 ships carrying oil fuel shall prior to bunkering be provided with a declaration signed and certified by the oil fuel supplier's representative, that the oil fuel to be supplied is in conformity with paragraph 2.1 of this regulation, and the test method used for determining the flashpoint. A bunker delivery note for the oil fuel delivered to the ship shall contain either the flashpoint specified in accordance with standards acceptable to the Organization, or a statement that the flashpoint has been measured at or above 70ºC;

.7 Contracting Governments undertake to ensure that appropriate authorities designated by them inform the Organization, for transmission to Contracting Governments and Member States thereof, of all confirmed cases (flashpoint) where oil fuel suppliers have failed to meet the requirements specified in paragraph 2.1 of this regulation; and

.8 Contracting Governments undertake to ensure that appropriate authorities designated by them take action, as appropriate, against oil fuel suppliers that have been found to deliver oil fuel that does not comply with paragraph 2.1 of this regulation."

E03621301

978-1-5286-6575-9