



No. 26-09 Legal Liability of MASS (UK Study) - Report Summary

In recent years, with advances in automation, communications and AI, technological development and testing of MASS (Maritime Autonomous Surface Ships) have been progressing globally.

MASS replaces or supplements some or all of the functions previously performed by humans, such as watchkeeping, navigation, decision-making, and command and supervision, through mechanical systems, remote operation, or automation technology. Consequently, it is necessary to reassess the relationship between MASS and existing maritime legislation, safety regulations, and liability regimes in the event of an accident.

With these issues in mind, our office is conducting research into the legal systems of various European countries, focusing in particular on criminal liability in the event of an accident.

As part of this research, this report summarises the current status of international discussions on MASS and the approach to liability for accidents under UK law.

- First, we examine the current state of international discussions regarding MASS through the development process of the non-mandatory MASS Code by the IMO. [\[Report A, Part 1-1\]](#)
- Next, we outline the basic provisions regarding jurisdiction in the UK and, from the perspective of legal regulations concerning vessel collisions, examine the fundamental principles governing vessel operation, safety regulations and liability in the event of an accident in the UK. [\[Report A, Part 1-2\]](#) [\[Report A, Part 1-3\]](#) [\[Report B, Part 1\]](#) and [\[Report B, Part 2\]](#)
- Furthermore, in the event of an accident involving MASS caused by a communication or system failure, we outline the allocation of liability among the parties involved and future challenges, taking into account the principles of UK law. [\[Report A, Part 2\]](#) [\[Report A, Part 3\]](#) and [\[Report B, Part 3\]](#)

Based on the findings of this report, we intend to proceed with a study of the European legal system.

(End)

Report A

Survey Report on International Deliberations Regarding Legal Liability for Autonomous Ships (Fiscal Year 2025)

8 December 2025

Having completed the survey work regarding the above subject, we hereby submit our report as follows.

Table of contents

Part 1: Issues to be addressed in light of the current status of deliberations on the development of a non-mandatory MASS Code

- 1 Progress in the development of the MASS Code at the International Maritime Organization to date
 - (1) Decision taken at MSC 98
 - (2) Approval at MSC 103
 - (3) Approval of the roadmap at MSC 105
 - (4) Amendment of the roadmap from MSC 107 to MSC 110
 - (5) Finalisation at ISWG-MASS-4
 - (6) Overview of the non-mandatory MASS Code
- 2 Legal framework governing collisions in the UK
 - (1) Regulations in the UK for preventing collisions
 - (2) Qualifications relating to seafaring operations in the UK
 - (3) The Workboat Code Edition 3
 - (4) Criminal justice proceedings in the UK
 - (5) Criminal liability in the event of a collision
 - (6) Criminal liability in relation to automated driving of vehicles in the UK
- 3 Issues to be addressed

Part 2: Legal liability arising from communication failures, software defects, and related causes

- 1 Vessels not under command as a result of loss of communication
 - (1) Criminal liability for each cause of loss of communication
 - (2) Situation in the UK
- 2 Collisions due to communication delays
 - (1) Liability of staff members relating to navigation, such as the MASS master

- (2) Liability of software designers and related parties
- (3) Liability of shipowners and related parties
- (4) Situation in the UK

Part 3: Summary

Body

Part 1: Issues to be addressed in light of the current status of deliberations on the development of a non-mandatory MASS Code

1 Progress in the development of the MASS Code at the International Maritime Organization to date

(1) Decision taken at MSC 98

At the International Maritime Organization (IMO), consideration of Maritime Autonomous Surface Ships (MASS) began at the Maritime Safety Committee (MSC) 98, held in 2017.

At MSC 98, it was agreed to raise issues related to MASS as a discussion topic for the MSC, and it was decided that a scoping exercise¹ would be conducted to examine how safety, security and environmental protection in the operation of MASS would be addressed in IMO instruments.

(2) Approval at MSC 103

At MSC 103 (May 2021), IMO completed the regulatory scoping exercise to assess the feasibility of regulating MASS and approved the results².

To take into account the varying degrees of autonomy, MASS were classified into Degree One (ships with automated processes and decision support, with seafarers on board), Degree Two (remotely controlled ships with seafarers on board), Degree Three (remotely controlled ships without seafarers on board) and Degree Four (fully autonomous ships).

In the regulatory scoping exercise, regulations such as the SOLAS Convention, its subsidiary codes, and the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREG) were included in the assessment, and the results showed that multiple high-priority issues cutting across multiple types of regulation were identified and require action. These issues include the development of terminology and definitions for MASS, and in particular, for Degrees 3 and 4, the development of internationally agreed definitions of MASS and the clarification of the definitions of “master”, “crew” and “responsible person”.

¹ <https://www.imo.org/en/mediacentre/meetingsummaries/pages/msc-98th-session.aspx>

² <https://www.imo.org/en/mediacentre/pressbriefings/pages/massrse2021.aspx>

The Committee concluded that, as the optimal way forward under the IMO regulatory framework, it would be desirable to develop comprehensive regulations for MASS in the form of goal-based standards (GBS).

In the development of IMO rules, other possible formats include prescriptive regulations and performance-based standards. For example, regulations concerning the fire-resistance performance of fire doors and the intervals for installing smoke detectors, as specified in the SOLAS Convention, are examples of prescriptive regulations. GBS are more flexible than both of these formats in terms of methods and interpretation and are considered advantageous when introducing new technologies, among others.

(3) Approval of the roadmap at MSC 105

At MSC 105 (April 2022), IMO started work on formulating a goal-based instrument to regulate the operation of MASS and approved a roadmap outlining a work plan for its development³. The roadmap envisaged the development of a non-mandatory code, with the aim of adopting it in the latter half of 2024 as the first stage. Based on experience gained in the application of the non-mandatory MASS Code, the development of a mandatory MASS Code is now envisaged, with entry into force on 1 January 2028.

The MASS Correspondence Group was also re-established and instructed to consider and take action on the following matters.

- Examine the major principles and shared understanding related to the purpose and goals of the new document
- Commence the development of a non-mandatory goal-based MASS Code
- Examine potential gaps and themes identified by the regulatory scoping exercise (RSE) (MSC.1/Circ.1638, section 5), with a focus on high-priority items
- Where possible, formulate the MSC's position on the following points and submit them to a future MSC/LEG/FAL Joint Working Group (JWG):
 - The definition of MASS and whether to revise each of the degrees of autonomy
 - Definitions of terms, such as "master", "crew", and "responsible person"
 - The definition of a remote operations station/centre
 - Whether remote operators should be included in the crew
- Limit the scope of the non-mandatory MASS Code to cargo ships, while examining the feasibility of its future application to passenger ships
- Submit a written report to MSC 107 (spring 2023), together with an oral progress report at MSC 106

(4) Amendment of the roadmap from MSC 107 to MSC 110

A. Approval at the JWG

³ <https://www.imo.org/en/mediacentre/meetingsummaries/pages/msc-105th-session.aspx>

After this, meetings of the JWG were held in September 2022 and April 2023, and approval was given for the following rules: that a human master should bear responsibility for the operation of a MASS, regardless of the level of autonomy; that the master may not need to be on board, depending on the technology used and whether people are on board; and that the master of the MASS should have the means to intervene, regardless of the level of autonomy⁴.

B. Points to note at MSC 107

Next, at MSC 107 (June 2023), shared opinions were expressed, in particular, on training, certification and skill requirements. Specifically, it was agreed that 1. the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) standards should apply to the crew on board the MASS; 2. if the remote operator at the Remote Operation Centre (ROC) or the master is not on board, the STCW standards should not apply, and all training, certification and skill requirements should be specified in the MASS Code, and in this case, the STCW requirements should be taken into consideration as a foundation; and 3. when taking into account the autonomy or remote operation, certain principles of the STCW (for example, watchkeeping arrangements) should be addressed in the MASS Code, regardless of whether the STCW standards are applied.

MSC 107 recognised that the requirements of COLREG would be relevant and applicable regardless of how a ship is operated (conventional or MASS), and decided that there was no need to amend COLREG to accommodate MASS at this stage⁵.

C. Amendment of the roadmap at MSC 108 and agreement at MSC 109 and others

At MSC 108 (May 2024), as it became clear that further work would be necessary in order to finalise the MASS Code, the roadmap was revised as follows: in May 2025, finalise and adopt the non-mandatory MASS Code; in the first half of 2026, develop a framework for the experience-building phase (EBP); in 2028, commence development of the mandatory MASS Code, based on the non-mandatory MASS Code, and consider amendments to the SOLAS Convention (a new chapter) for the adoption of the Code; and by 1 July 2030, adopt the mandatory MASS Code, for entry into force on 1 January 2032⁶. At MSC 109 (December 2024), in view of the remaining work, an agreement was made to revise the roadmap as follows (the adoption of the non-mandatory MASS Code was postponed by one year).

May 2026: Finalise and adopt the non-mandatory MASS Code

December 2026: Develop a framework for the experience-building phase (EBP) following the adoption of the non-mandatory MASS Code

2028: Commence development of the mandatory MASS Code, based on the results of the non-mandatory MASS Code and the EBP and

⁴ <https://www.imo.org/en/mediacentre/meetingsummaries/pages/joint-msc-leg-fal-working-group-on-maritime-autonomous-surface-ships-%28mass%29-.aspx>

⁵ <https://www.dnv.com/news/2023/imo-maritime-safety-committee-msc-107--244383/>

⁶ <https://www.imo.org/en/mediacentre/meetingsummaries/pages/msc-108th-session.aspx>

review by related sub-committees; also, consider adoption through a new chapter of the SOLAS Convention

By 1 July 2030: Adopt the mandatory MASS Code, for entry into force on 1 January 2032

At MSC 110 (May 2025), the above schedule was confirmed⁷.

(5) Finalisation at ISWG-MASS-4

At MSC 110, ISWG-MASS-4 was re-established, with its meeting scheduled to be held from 29 September to 3 October 2025⁸. ISWG-MASS-4 was scheduled to focus on the finalisation of Chapter 15 (Human Element) of the non-mandatory MASS Code and other related chapters, and to report to MSC 111.

At the ISWG-MASS-4 meeting (starting on 29 September 2025), the following items, among others, were confirmed:

- (1) that the STCW would apply to both crew and remote operators;
- (2) that a physical presence on board is required when crew are present;
- (3) that only one master can be in command at any given time;
- (4) that autonomous systems must always be capable of human intervention (override); and
- (5) that, in the introduction stage, the crew would serve as remote operators in remote operation centre (ROC)⁹.

These results are to be formally approved at MSC 111 (June 2026).

(6) Overview of the non-mandatory MASS Code

At the time of writing this report, the non-mandatory MASS Code has not yet been published.

It has been reported that the following topics were discussed at the IMO symposium held in May 2024¹⁰, and that the non-mandatory MASS Code, due to be reported to MSC 111, is also expected to address them.

- Maintaining the MASS Code as a goal-based code, including ensuring that it is at the appropriate level and ensuring consistency
- Ensuring the involvement of specialist sub-committees

⁷ <https://www.imo.org/en/mediacentre/meetingsummaries/pages/msc-110th-session.aspx>

⁸ Same as above

⁹ https://www.linkedin.com/posts/lydia-ferrad-09b6b6173_the-4th-session-of-the-intersessional-working-activity-7382036375749033984-iGa8

¹⁰ [https://wwwcdn.imo.org/localresources/en/About/Events/Documents/2024%20IMO-ROK%20MASS%20Symposium%20presentations/3-1.%20Development%20of%20MASS%20Code%20-%20Charles%20McHardy\(MASS%20CG%20Chair\).pdf](https://wwwcdn.imo.org/localresources/en/About/Events/Documents/2024%20IMO-ROK%20MASS%20Symposium%20presentations/3-1.%20Development%20of%20MASS%20Code%20-%20Charles%20McHardy(MASS%20CG%20Chair).pdf)

- Reviewing terms and definitions, especially the use of multiple technical terms not usually used in IMO instruments
- Facilitating the management of the operation of MASS from remote operation centre (ROC)
- Clarifying the roles and liabilities of the master and crew
- Clarifying the roles and responsibilities relating to “MASS” and “MASS master”, including:
 - What does it mean when a ship is referred to as “MASS”?
 - What constitutes a “MASS master”?
- Developing the chapter on surveys and certification
- Ensuring the distinction between “Supplementary” and “Complementary” when in use
- Defining the scope of application of the MASS Code
- Addressing items relating to the human element (such as crew training and certification)

2 Legal framework governing collisions in the UK

The following is an overview of COLREG (1), qualifications for seafaring operations (2), rules relating to MASS (3), criminal justice proceedings (4), and criminal liability in the event of a collision (5), from the perspective of regulations on collisions in the UK¹¹ and associated frameworks. Recent UK legislative measures on automated driving of vehicles are also noted.

(1) Regulations in the UK for preventing collisions

In the UK, rules for preventing collisions are implemented through domestic legislation incorporating COLREG.

The Merchant Shipping Act 1995 (MSA 1995), section 85(1), confers on the Secretary of State the right to make regulatory provisions known as “safety regulations”. Section 85(3)(k) explicitly states that measures to prevent collisions involving ships and to address the consequences of such collisions may be specified.

In response to this, the Merchant Shipping (Distress Signals and Prevention of Collisions) Regulations 1996 were established. The introductory text of these Regulations explicitly states that they were made pursuant to section 85 of the MSA 1995¹².

¹¹ When the term “the UK” is used, it generally refers to England and Wales, but may also include Scotland (for details, it is necessary to refer to the scope of application of individual legislation).

¹² <https://www.legislation.gov.uk/uksi/1996/75/introduction/made>

Section 4 of the same regulation specifies that, in principle, ships to which the regulation applies must comply with the provisions of Rules 1 to 36 and Annexes I to III of the International Regulations.

In addition, MSN 1781 (M+F) Amendment 2¹³ also has an important role in supplementing COLREG.

Thus, in the UK, the so-called collision prevention regulations are made by the Secretary of State pursuant to powers delegated under the MSA 1995, while, apart from certain exemption provisions, they take the form of directly incorporating COLREG. In this respect, the UK approach differs from that of Japan.

Section 86(4) of the MSA 1995 states that when the Secretary of State proposes to make safety regulations, before giving effect to the proposal, he shall consult persons in the UK whom he considers will be affected by the proposal¹⁴, and the specialist and technical contents reflect the opinions of marine engineering professionals and are expected to have the effect of preventing vexatious legislation.

(2) Qualifications relating to seafaring operations in the UK

Classifications in the UK are fairly complicated compared to Japan, where essentially the classifications range from 1st Class Marine Engineer (Navigation) to 6th Class Marine Engineer (Navigation) (Act on Ships' Officers and Boats' Operators, Article 5, Paragraph 1, Item 1) and 1st Class and 2nd Class Small Craft Operator and Special Small Craft Operator (Article 23-3, Paragraph 1 of the same Act).

The major classifications make a significant distinction between commercial and non-commercial use and whether the length of the ship is more than 24 metres. Ships for commercial use are classified according to their total tonnage, namely those of less than 500 tons and those of 500 tons or more (refer to, for example, section 47 of the MSA 1995). In short, the qualifications corresponding to 1st Class Marine Engineer (Navigation) to 3rd Class Marine Engineer (Navigation) of the Japanese Act on Ships' Officers and Boats' Operators are Master (Unlimited), Chief Mate (Unlimited) and Officer of the Watch (OOW) (The Merchant Shipping (Standards of Training, Certification and Watchkeeping) Regulations 2022, sections 3, 4, 6 and 7, MSN 1856 (M+F) Amendment 1)¹⁵.

For ships with a length of less than 24 metres, for non-commercial use other than leisure or sports, a navigator's qualification is not required¹⁶. However, it appears

13

https://assets.publishing.service.gov.uk/media/5dfa3bcced915d54a89bd4ab/MSN1781_Amendment2_2016.pdf

¹⁴ This appears to be similar to the public comment system in Japan (Article 39 of the Administrative Procedure Act).

¹⁵ Qualifications corresponding to 4th Class Marine Engineer (Navigation) and lower ranks may also be presented, but are omitted here for brevity.

¹⁶ Pleasure vessels are excluded from the scope of section 4 of the Merchant Shipping

that a Royal Yacht Association (RYA) qualification may be required in some cases for the use of ports and for obtaining insurance. A detailed breakdown of the RYA qualifications is posted on the association website¹⁷.

Under the current law, and pursuant to section 85 of the MSA 1995, operating qualifications for pleasure boats for commercial use are specified by the Merchant Shipping (Vessels in Commercial Use for Sport or Pleasure) Regulations 1998¹⁸; operating qualifications for workboats (including remotely operated unmanned vessels (ROUVs)) and pilot boats are specified by the Merchant Shipping (Small Workboats and Pilot Boats) Regulations 2023¹⁹; and operating qualifications for fishing vessels are specified by MGN 411 (M+F)²⁰. Among these, the Merchant Shipping (Vessels in Commercial Use for Sport or Pleasure) Regulations 1998 are scheduled to be replaced by the Merchant Shipping (Vessels in Commercial Use for Sport or Pleasure) Regulations 2025. The definitions of workboats, pilot boats and remotely operated unmanned vessels²¹ are as follows.

Workboat: This means a small vessel in commercial use for purposes other than sport or pleasure, including a dedicated pilot boat.

Pilot boat: This means a boat employed, or intended to be employed, in pilotage services (which may include supplementary work such as transporting personnel, post or small amounts of supplies between vessels within the pilotage area).

(Vessels in Commercial Use for Sport or Pleasure) Regulations 2025, with a distinction made based on a ship length of 24 metres, as follows: commercial vessels used for sport or pleasure of 24 metres or more are subject to the requirements of the REG Code, Part A, and those of less than 24 metres are subject to the requirements of the SCV Code.

¹⁷ <https://www.rya.org.uk/>

¹⁸ The specific requirements are specified in MGN 280(M), which harmonises and replaces multiple earlier codes (such as the Blue Code, Yellow Code and Red Code), consolidating them into what is now known as the Sport or Pleasure Vessel Code.

(<https://www.gov.uk/government/consultations/consultation-on-the-merchant-shipping-vessels-in-commercial-use-for-sport-or-pleasure-regulations-2025/consultation-document-the-merchant-shipping-vessels-in-commercial-use-for-sport-or-pleasure-regulations-2025-and-accompanying-code-the-code-of-pra>).

¹⁹ Specific requirements are listed in the Workboat Code Edition 3.

https://assets.publishing.service.gov.uk/media/6790d79bb1e4f5cbd3a34db5/Workboat_Code_Edition_3.pdf.

²⁰ However, operating qualifications are not necessary for fishing vessels of less than 16.5 metres.

https://assets.publishing.service.gov.uk/media/5a81568fe5274a2e8ab53727/MGN_411.pdf

²¹ Footnote 19 above: The Workboat Code Edition 3.

Remotely operated unmanned vessel: This means a vessel with no persons on board that is operated from a location remote to the vessel.

Thus, operating qualifications for navigators vary depending on the purpose for which a vessel is used and whether it is for commercial or non-commercial use. No operating qualifications are required for non-commercial pleasure boats of less than 24 metres or for fishing vessels of less than 16.5 metres, which is significantly different from the legal framework in Japan.

(3) The Workboat Code Edition 3

In the UK, the Workboat Code Edition 3 — *The Safety of Small Workboats and Pilot Boats — A Code of Practice*²² sets out detailed requirements for the operation of remotely operated unmanned vessels (ROUVs). It is divided into paragraphs ranging from 1 (Application and Definitions) to 26 (Annex References and Updates), and provisions related to COLREG appear mainly in paragraphs 5 (Navigational and Anchoring Equipment) and 7 (Remote Control of Remotely Operated Unmanned Vessels), among others.

As the Code is based on section 85 of the Merchant Shipping Act 1995 (MSA 1995), it has legal force²³. The summary below focuses on the COLREG and on qualifications relevant to navigation.

A. Applicable vessels

The Workboat Code Edition 3 (Workboat Code) applies to remotely operated unmanned vessels of less than 24 metres in full load line length operating as workboats (Workboat Code, Annex 2, Foreword (unless otherwise stated, the articles and similar provisions in this document are those from Annex 2)).

Applicable vessels are those registered as UK vessels and those operating in UK waters (Annex 2, section 1.1.1). The remote operation of vessels authorised as pilot boats or vessels carrying dangerous goods is prohibited (Annex 2, section 2.1.1).

B. Records and additional information

Both the ROUV and the Remote Operation Centre (ROC) are required to record at least the following vessel data (Code 2.2.3).

These items include (1) date and time, (2) vessel position (position information), and (3) vessel speed, as well as a wide range of additional data, such as (4) which Remote Operation Centre is in control of the vessel, (5) vessel audio, (6) Remote Operation Centre audio, (7) visual recording of Remote Operation Centre and workstations, (8) audio communications, (9) ECDIS (electronic chart display and information system) data, (10) propulsion and thruster order and response, (11) opening of any hatches or doors, (12) acceleration, (13) hull stresses, (14) wind

²² <https://www.gov.uk/government/publications/the-workboat-code-edition-3>

²³ There is also a voluntary industry standard, the Maritime Autonomous Surface Ships (MASS) UK Industry Conduct Principles and Code of Practice, but it does not have legal force.

speed and direction, (15) rolling (sideways swaying) motion, and (16) AIS (automatic identification system) data. In particular, a large number of sensors and devices are likely to be necessary for items such as (8) audio communications, (11) opening of any hatches or doors, and (15) sideways swaying.

C. Communications

The requirements related to communications are specified mainly in paragraphs 4 and 7 of the Code.

For example, in principle, back-up communications are required; therefore, if the main communication system of an ROUV fails, a usable secondary communications system shall be available. This system must be usable at all times and capable of providing vessel locating information and basic vessel functionality (Code 4.2.4).

Additionally, as part of the risk assessment for safe navigation, the following scenarios must be assessed: loss of connectivity from the ROC to the ROUV; loss of connectivity from the ROUV to the ROC; inability to re-establish connectivity between them; and loss of control from the ROC. If these risks are not resolved within the specified accepted periods, the vessel is required to enter a safe state appropriate to the conditions of operation (for example, reducing speed or emitting audio and visual warnings to other water users) (Code 7.7.1). This item is supplemented by the section on emergency systems (Code 7.9.1). It is also necessary to record certain information about all instances where contact is lost for longer than the accepted period (Code 7.7.2).

In addition, if an ROUV loses connectivity with an ROC, it must display or emit audio and visual signals indicating that it is “not under command”, to alert other vessels that it cannot navigate freely and may not give way (Code 7.7.5).

D. Cameras, sensors, audio signals, and related devices

Detailed requirements are specified for cameras; for example, they must be installed to provide horizontal and vertical arcs of visibility (Code 5.2.1) and be approved by the Certifying Authority (Code 5.2.6). The Remote Operator (RO) is required to be equipped with appropriate sensor and camera output to enable interpretation of signals from other water users (Code 5.4.2). In addition, installation of a Dynamic Positioning System (DPS) is also required (Code 5.5.1).

The Code requires that alarm, camera, sensor, radar and communication outputs provide situational awareness to detect person(s) in or on the water (Code 7.3.1.6) and that auditory alarms shall be audible in all Remote Operation Centre conditions (including the use of headsets and speakers) (Code 7.3.1.12). In addition, the remote operator has a minimum 225° front view with a pan-tilt-zoom function and is able to monitor a 360° total field of view with a pan-tilt-zoom function (Code 7.4.1.4 and 5).

In addition, an ROUV must be equipped with a speaker system for sending auditory instructions (see Code 4.3.3) (Code 7.7.4).

E. Personnel assignment and qualifications

Code 7.2.1 requires that the necessary number of (1) Remote Operator(s), (2) a Master and (3) engineering personnel²⁴ with appropriate abilities be assigned to the ROC. The training and qualifications of remote operators are discussed in MIN 698²⁵.

Code 7.2.4 provides that the training and qualification requirements applicable to manned vessels also apply to operators of remotely operated unmanned vessels. Code 7.2.5 provides that remote operators must: (1) have appropriate training and qualifications for remote operation of all vessels they are required to operate; and (2) act as Officer of the Watch (OOW).

In addition, the Master must be appropriately qualified, at a minimum, for the ROUV they are responsible for which is operating in the most onerous area category of operation (Code 7.2.9).

MGN 703 (*Information concerning the training and competence of Remote Operators working with Remotely Operated Unmanned Vessels (ROUVs), certified under the Workboat Code Edition 3*²⁶) further states, in paragraph 4.3, that Remote Operators must hold the qualifications set out in Appendix 5 of the Workboat Code Edition 3, according to their role and duties. Furthermore, Section 7, Annex A (*Training in remote operations*) sets out a detailed breakdown of the items required for training.

Based on the foregoing provisions, it would appear that ROC operators are not necessarily required to hold a certificate of competency.

F. Articles related to the COLREG

Code 2.2.2.15 states that any near misses (events where a collision was about to happen) are to be recorded. It specifies that, if a deviation from the COLREG is necessary, supporting information to prove that any departure from the COLREG was necessary to avoid immediate danger shall also be recorded.

Code 4.2.4 requires that an ROUV have a secondary communications system which can be used if the primary communication system fails and that this secondary system shall be available and be able to enable vessel locating information and basic ROUV functionality, including the ability to (1) command the vessel to enter a safe

²⁴ The source document refers to “engineering personnel”, and the definition of that term is not stated in Annex 2.

²⁵

https://assets.publishing.service.gov.uk/media/67654c6fcd5e64b69e30912/MIN_698_Amendment_1.pdf

²⁶ <https://www.gov.uk/government/publications/mgn-703-information-concerning-the-training-and-competence-of-remote-operators-working-with-remotely-operated-unmanned-vessels-rouvs-certified-und/mgn-703-information-concerning-the-training-and-competence-of-remote-operators-working-with-remotely-operated-unmanned-vessels-rouvs-certified-und#rouv-certification-and-manning>

state; (2) activate not-under-command lights; and (3) receive and respond to critical alarms.

Code 5.2.2 specifies that the provision of a proper look-out is required by the COLREG.

Code 5.3.2 specifies that the Remote Operator must carry out duties at the control position(s) as both look-out and helmsperson, and that, in performing those duties, the Remote Operator shall have (1) unobstructed all-round vision; (2) no impairment of night-vision; and (3) no other impediments to keeping a proper look-out.

In addition, Code 7.3.1.3 specifies that identification and recognition of different vessel types must be enabled (including lights, shapes and sound signals) and that this corresponds to parts C and D of the 1972 Convention on the International Regulations for Preventing Collisions at Sea (COLREG).

G. ROC

Code 7.8 specifies that, to ensure the safe operation of ROC, operators shall have regular training for emergency situations (Code 7.8.1), that critical equipment shall have emergency power supplies (Code 7.8.2), that a back-up shall be available if the ROC becomes inoperable (Code 7.8.5), and that a back-up ROC must also be provided.

H. Others

Requirements, including an SMS and cybersecurity (Code 8.1), operating procedures and risk assessments (Code 8.2), emergency situations and safeguards (Code 8.3), fire and safety procedures (Code 8.4), critical equipment (Code 8.5), Programmable Electric Systems (PES), and software and version control (Code 8.6), are specified.

I. Starting commercial use

In August 2025, the PIONEER became the first vessel in the UK to be certified as meeting the above requirements²⁷. This vessel was developed by ACUA Ocean, a company based in Plymouth, UK²⁸ and is intended for purposes including marine surveillance, monitoring and infrastructure inspection. The vessel is 14.2 metres long, and it uses hydrogen as fuel²⁹.

(4) Criminal justice proceedings in the UK

A. Investigative authorities

²⁷ <https://www.lr.org/en/knowledge/press-room/press-listing/press-release/2025/uks-first-rouv-certified-under-workboat-code-3-as-lloyds-register-awards-compliance-to-acua-oceans-pioneer/>

²⁸ <https://maritime-executive.com/article/uk-s-first-remotely-operated-and-unmanned-vessel-certified-ahead-of-trials>

²⁹ Same as above

In the UK, if a crew member is involved in a work-related accident at sea, the jurisdictions of the Health and Safety Executive (HSE), the Maritime and Coastguard Agency (MCA) and the Maritime Accident Investigation Branch (MAIB) may overlap.

Under section 258 of the MSA 1995, MCA has the authority to inspect vessels and their equipment and may assess a vessel's safety and its compliance with the requirements of the MSA 1995, among others.

MAIB is the equivalent of the Japan Transport Safety Board. Accident investigations by MAIB are conducted under section 267 of the MSA 1995 and the Merchant Shipping (Accident Reporting and Investigation) Regulations 2012. The objective of such investigations is the prevention of future accidents through the ascertainment of the causes and circumstances of the relevant accident, not to determine liability or to assign blame, except so far as is necessary to achieve that objective (MSA 1995, section 5(1) and (2)). This differs from the objective of section 268 of the MSA 1995.

HSE is an organisation established under section 10 of the Health and Safety at Work etc. Act 1974 (HSWA). HSE inspectors have powers including the right to conduct on-premises investigations, ask questions and perform inspections, and collect evidence (section 20 of this Act).

B. Roles of each organisation

The roles of each organisation are set out in the Operational Working Agreement³⁰ (OWA), as described below.

HSE is responsible for the inspection and regulation of health and safety, and major accident hazards, associated with work activities, including offshore oil and gas exploration, extraction and storage, offshore renewable energy structures and docks (port facilities). The main functions of MCA are to develop, promote and enforce high standards of marine safety, to minimise loss of life amongst seafarers and coastal users, and to minimise pollution from ships of the sea and coastline. MCA is responsible for enforcing all merchant shipping regulations in respect of occupational health and safety, the safety of vessels, safe navigation and operation (including manning levels and crew competency). Merchant shipping health and safety regulations extend to all those working on the ship and to any work activities undertaken on board. MAIB is responsible for investigating accidents related to ships and crew in the UK territorial sea and involving UK flagged vessels worldwide, to determine their circumstances and causes with the objective of preventing similar accidents in the future.

Section 4 of the OWA sets out the overarching principle that, if an activity is either a normal shipboard activity under the control of the master of the vessel (whether or not subject to HSWA), or an activity not covered by HSWA (whether or not under the control of the master) then MCA/Flag State will take the lead for enforcement and MAIB will take the lead for accident investigation. If, however, the activity is not a normal shipboard activity under the control of the master of the vessel and is

³⁰ <https://www.gov.uk/government/publications/memorandum-of-understanding-between-mca-hse-and-maib/operational-working-agreement-between-mca-hse-and-maib>

covered by HSWA, then HSE will take the lead. HSE, MCA and MAIB apply this key principle in areas where their jurisdictions overlap. It appears that HSE and MCA collaborate on certain investigations.

In the event of a collision or similar incident that is a direct result of the navigation of the vessel, notwithstanding any HSE interest, MCA or MAIB will lead the investigation of that aspect of the accident³¹.

C. MCA investigations

MCA is the legal organisation responsible for enforcing the Merchant Shipping Act and related legislation³² and enforces the law relating to violations of the MSA 1995.

The types of offence within the scope of MCA investigations are as follows³³.

- Pollution
- Breaches of collision regulations (IRPCS)
- Unsafe operation (by vessel owners, operators or users)
- Dangerous conduct (by the master or crew)
- Carriage of dangerous goods
- Fraudulent acts (relating to seafarer documentation)

MCA is not merely a public authority; it also collects evidence and other materials relating to various sanctions for breaches of regulations. More specifically, it conducts both inspections as a public authority (which appears similar to an audit under Japanese law) and investigations in its capacity as a law enforcement body.

MCA itself states that it is “the statutory authority responsible for enforcing Merchant Shipping and associated legislation” and “has wide ranging powers to take enforcement action and impose sanctions which reflect the seriousness of the legislative breach across the United Kingdom” and that “whilst prosecution remains the most serious enforcement action that MCA can take, MCA has a range of administrative sanctions available that may be considered before a prosecution is initiated³⁴”.

D. Characteristics of MCA investigations

MCA has a team called the Regulatory Compliance Investigations Team (RCIT). The RCIT is responsible for investigating suspected violations of marine regulations that

³¹ See the Supporting Principles section in

<https://www.gov.uk/government/publications/memorandum-of-understanding-between-mca-hse-and-maib/operational-working-agreement-between-mca-hse-and-maib>

³² MSA 1995 section 257

³³ <https://www.gov.uk/government/publications/mca-enforcement-policy-statement/mca-enforcement-policy-statement>

³⁴ Same as above

may affect the safety and security of individuals, vessels or the environment³⁵. In practice, the RCIT appears to be primarily responsible³⁶ for enforcement activities³⁷. The team is currently reported to consist of 10 members³⁸.

By contrast, Japan has no comparable organisation. To explain by analogy, it would be as if the Maritime Bureau of the Ministry of Land, Infrastructure and Transport had an internal team of staff seconded from the Tokyo Metropolitan Police Department who had experience in police investigations (at MCA, personnel are not seconded but are internal staff members). This analogy is based on the fact that Neil Cunningham, who currently heads the team, has had a career of more than 20 years in the police and that the recruitment requirements for the deputy head of the team include experience of (1) PACE (the Police and Criminal Evidence Act 1984), (2) CPIA (the Criminal Procedure and Investigations Act 1996), (3) RIPA (the Regulation of Investigatory Powers Act 2000), (4) coroner's courts and (5) fatal accident inquiries³⁹.

Upon completion of an investigation by the RCIT, an MCA Departmental Inspector analyses the evidence and issues a recommendation on whether to prosecute⁴⁰. To ensure a fair decision-making process, the decision to prosecute is taken independently of the investigator (Phillips Principle). It allows for a careful, impartial assessment of the Departmental Inspector's recommendation, which ensures that a justified and appropriate course of action can be taken. The final decision to initiate criminal proceedings rests with MCA's Chief Executive Officer (CEO) or an Executive Director with the appropriate delegation.

E. Involvement of the police

The above summarises the jurisdictions of MCA and HSE and MCA's basic approach to inspections and investigations.

In addition to these two organisations, the investigation of homicide offences in the UK is carried out by the police. The division of roles between the police and other organisations is set out in *Work-related deaths: A protocol for liaison (England and Wales)*⁴¹. In particular, it specifies that "the police will investigate where there is

³⁵ <https://www.gov.uk/government/publications/mca-enforcement-policy-statement/mca-enforcement-policy-statement>

³⁶ <https://hmcoastguard.org.uk/news/spotlight-regulatory-compliance-and-investigation-team>

³⁷ <https://hmcoastguard.org.uk/news/spotlight-regulatory-compliance-and-investigation-team>

³⁸ <https://hmcoastguard.org.uk/news/spotlight-regulatory-compliance-and-investigation-team>

³⁹ <https://findajob.dwp.gov.uk/details/16376564> (last accessed on 25 October 2025)

⁴⁰ <https://www.gov.uk/government/publications/mca-enforcement-policy-statement/mca-enforcement-policy-statement>

⁴¹ <https://www.orr.gov.uk/sites/default/files/om/Work-related-Death-Protocol.pdf>

suspicion that a negligent homicide caused a death (or according to medical opinion, a strong likelihood of death)”; that “investigations will be conducted and managed jointly in line with the *Work-related Deaths Protocol: Practical Guide*”; that “during the investigation, one party will assume ‘primacy’”; and that “all parties to a joint investigation will seek to progress their own investigations, regardless of who has primacy”. Thus, for example, if a vessel operator is suspected of negligence in the case of a fatal vessel collision, which may constitute a violation of section 58 of the MSA 1995, and there is also suspicion of gross negligence manslaughter, investigations would be conducted by both organisations.

If prosecution for gross negligence manslaughter is possible, the Crown Prosecution Service (CPS) conducts the prosecution. However, if proving gross negligence is difficult and the violation of the MSA 1995 is prosecuted instead, MCA will handle the prosecution.

F. Decision on whether to prosecute

In practice, MCA makes the decision whether to prosecute and, before initiating proceedings, considers whether the case meets the Full Code Test set out in the Code for Crown Prosecutors⁴².

The Full Code Test consists of two stages: the evidential stage and the public interest stage. At the former stage, the admissibility, reliability, and credibility of the evidence are considered, while at the latter stage, each case is assessed individually, including (1) the seriousness of the offence, (2) the level of culpability of the suspect, (3) the circumstances of the victim and the degree of harm caused, (4) the suspect’s age and maturity at the time of the offence, (5) the degree of impact on the community, (6) whether prosecution is a proportionate response⁴³, and (7) whether sources of information require protection⁴⁴.

A criterion for selecting the prosecuting organisation is whether the available evidence is sufficient to cross the threshold from “a significant breach of regulations” (within the jurisdiction of MCA) to “gross negligence” (within the jurisdiction of the CPS). If it remains in the former category, MCA initiates the prosecution; if it falls into the latter category, prosecutions by MCA and the CPS may be conducted concurrently. This approach appears to differ significantly from the situation in Japan, where the concept of prosecutorial monopoly (Code of Criminal Procedure, Article 247) is adopted. In the UK, where corporate crime can be prosecuted, MCA’s prosecution of regulatory breaches appears to be a common and

⁴² <https://www.gov.uk/government/publications/mca-enforcement-policy-statement/mca-enforcement-policy-statement>

⁴³ The source document uses the word “proportionate”, which is related to the principle of proportionality, suggesting that consideration is given to whether the case is worth prosecuting.

⁴⁴ <https://www.gov.uk/government/publications/mca-enforcement-policy-statement/mca-enforcement-policy-statement>

practical means of securing a conviction and a substantial fine when the suspect is a corporation.

MCA publishes an annual report⁴⁵ on cases that have been prosecuted, although not all cases are included. Similarly, the RCIT also publishes an annual report⁴⁶ on such cases.

G. Competent court

In the UK, all crimes are initially prosecuted in a Magistrates' Court⁴⁷ (Magistrates' Courts Act 1980, section 1).

Section 51 of the Crime and Disorder Act 1998 specifies that, where an adult appears or is brought before a Magistrates' Court charged with an offence and any of the conditions mentioned in subsection (2) is satisfied, the Magistrates' Court shall send him forthwith to the Crown Court for trial for the offence.

The conditions mentioned in subsection (2) are as follows:

- (a) that the offence is an offence triable only on indictment (indictable-only offence) other than one in respect of which notice has been given under section 51B or 51C;
- (b) that the offence is an either-way offence and the court is required under section 20(9)(b), 21, 22A(2)(b), 23(4)(b) or (5) or 25(2D) of the Magistrates' Courts Act 1980 to proceed to trial at the Crown Court; and
- (c) that notice is given to the Magistrates' Court under section 51B or 51C below in respect of the offence.

In summary, if the offence is indictable or if the case can be tried either at a Magistrates' Court or the Crown Court, the case will be sent to the Crown Court when certain conditions are satisfied.

The court in which a case is to be tried is usually specified by law.

For example, section 58(5) of the MSA 1995 provides as follows.

A person guilty of an offence under this section shall be liable—

- (a) on summary conviction, to a fine not exceeding the statutory maximum;
- (b) on conviction on indictment, to imprisonment for a term not exceeding two years or a fine (or both).

⁴⁵ For example, Prosecutions report 2024

(<https://www.gov.uk/government/publications/mca-enforcement-unit-prosecutions-2024/prosecutions-report-2024>) and Prosecutions report 2023 (<http://www.gov.uk/government/publications/mca-enforcement-unit-prosecutions-2023/prosecutions-report-2023>)

⁴⁶ <https://www.gov.uk/government/publications/regulatory-compliance-investigations-team-prosecutions-2025/prosecutions-report-2025>

⁴⁷ <https://www.gov.uk/courts/print>

Thus, a minor navigation error without resulting injury may be tried in a Magistrates' Court, whereas a careless act leading to a serious accident or death will be sent to the Crown Court. Section 6 of the Merchant Shipping (Distress Signals and Prevention of Collisions) Regulations 1996 provides as follows.

Where any of these Regulations is contravened, the owner of the vessel, the master and any person for the time being responsible for the conduct of the vessel shall each be guilty of an offence, punishable by either of the following:

On conviction on indictment by imprisonment for a term not exceeding two years and a fine; and

On summary conviction (a) in the case of any infringement of Rule 10(b)(i) (duty to proceed with traffic flow in lanes of separation schemes) of the International Regulations (being an offence corresponding to an offence under section 419(2) of the Merchant Shipping Act 1894) by a fine not exceeding £50,000; and (b) in any other case by a fine not exceeding the statutory maximum.

In the same way, these offences may be tried by either court. However, if tried in the Crown Court, a maximum sentence of two years' imprisonment may be imposed⁴⁸.

(5) Criminal liability in the event of a collision

A. Offences involving breaches of the COLREG

Section 6 of the Merchant Shipping (Distress Signals and Prevention of Collisions) Regulations 1996 establishes the applicable penalties. These are as reported in the previous report. As stated in (1) above, these Regulations are based on a mandate under section 85 of the Merchant Shipping Act 1995.

The parties liable are not limited to the operator (that is, the person responsible for navigation of the vessel at the time) or the master, but also include the owner (this differs from the scope of liability in Japan in respect of traffic hazards involving negligence in the pursuit of social activities (Penal Code, Article 129, Paragraph 2 and Paragraph 1)). Punishable acts are breaches of the Merchant Shipping (Distress Signals and Prevention of Collisions) Regulations 1996. In particular, under section 4(1) of those Regulations, Rules 1 to 36 and Annexes I to III of the COLREG apply, and breaches of those regulations constitute criminal offences.

B. Offences involving breaches under section 58 of the MSA 1995

Section 58 of the MSA 1995 provides that an offence is committed where (1) the master or a member of the crew of a UK ship or of a ship in UK waters (section 58(1)), (2) the person performs an act falling within paragraphs (a) or (b) on board the ship or in its immediate vicinity (section 58(2)), and the conditions grouped as C in section 58(3) are satisfied.

(a) any act which causes or is likely to cause—

⁴⁸ Since details in the previous report caused some misunderstanding on this point, the matter is discussed again in the present report.

- (i) the loss or destruction of or serious damage to his ship or its machinery, navigational equipment or safety equipment, or
 - (ii) the loss or destruction of or serious damage to any other ship or any structure, or
 - (iii) the death of or serious injury to any person
- (b) when the person omits to do anything required—
- (i) to preserve his ship or its machinery, navigational equipment or safety equipment from being lost, destroyed or seriously damaged, or
 - (ii) to preserve any person on board his ship from death or serious injury, or
 - (iii) to prevent his ship from causing the loss or destruction of or serious damage to any other ship or any structure, or the death of or serious injury to any person not on board his ship

The conditions are those in C: (a) that the act or omission was deliberate or amounted to a breach or neglect of duty; or (b) that the master or crew in question was under the influence of drink or a drug at the time of the act or omission.

Thus, a vessel collision due to negligence may fall under B(b) or C(a).

As noted in (4)G above, the criminal penalties differ depending on the court in which the case is tried: a fine not exceeding the statutory maximum may be imposed, or imprisonment for a term not exceeding two years, or a fine, or both (section 58(5)).

C. Other offences involving breaches of the MSA 1995

In addition to offences under section 58 of the MSA 1995, there are further offences under sections 94 and 98 (dangerously unsafe ship) and under section 100 (unsafe operation of a ship), among others, although these are unlikely to relate directly to collisions. (a) In the case of a summary conviction, these offences are punishable by a fine not exceeding £50,000, or in the case of conviction on indictment, by imprisonment for a term not exceeding two years, or a fine, or both.

D. Offences arising from a fatal accident

If a fatal accident results from a breach of the COLREG or from an offence under section 94, section 98 (dangerously unsafe ship) or section 100 (unsafe operation of a ship) of the MSA 1995, a prosecution for manslaughter may be brought. This is classified into offences including gross negligence manslaughter and corporate manslaughter.

(A) Gross negligence manslaughter

If a conviction for gross negligence manslaughter is secured, the sentence, as described below⁴⁹, is significantly more severe than the statutory punishment

⁴⁹ The UK Sentencing Council issues guidance for court cases in the UK, and the range of sentencing may vary depending on the seriousness of the negligence, which is determined by detailed factors taken into account. <https://sentencingcouncil.org.uk/guidelines/gross->

in Japan for the offence of causing death or injury through negligence in the pursuit of social activities (Penal Code, Article 211), which carries a maximum term of imprisonment of five years. It should be noted that the maximum sentence is life imprisonment.

Culpability A	Very high culpability: Starting point is 12 years; category range is 10–18 years
Culpability B	High culpability: Starting point is 8 years; category range is 6–12 years
Culpability C	Medium culpability: Starting point is 4 years; category range is 3–7 years
Culpability D	Lower culpability: Starting point is 2 years; category range is 1–4 years

(B) Corporate manslaughter

In the UK, a corporation is guilty of corporate manslaughter if (a) the way in which its activities are managed or organised causes a person’s death and (b) the death amounts to a gross breach of a relevant duty of care owed by the organisation to the deceased, and the way in which its activities are managed or organised by its senior management is a substantial element in this breach (Corporate Manslaughter and Corporate Homicide Act 2007, section 1(1) and (3)).

The sinking of the *Herald of Free Enterprise* on 6 March 1987⁵⁰ resulted in the deaths of 193 people. However, after the coroner expressed the opinion that the crime of manslaughter was unlikely to succeed, a corporate prosecution was brought against the company, but it ultimately failed. This outcome led to increased public support for punishment for corporate crimes, and following a report by a legal committee, this Act was enacted in 2007.

There is no maximum fine (section 1(6) of the same Act)⁵¹.

The practical significance of corporate manslaughter has been said to include (1) a reduction in the social standing of the corporation and (2) financial costs (unlike in Japan, it is possible to impose a fine with real deterrent effect).

In Japan, there is no law that imposes criminal liability on corporations for negligent homicide (or negligent homicide committed in the pursuit of social activities), and corporate manslaughter is not punishable⁵².

[negligence-manslaughter](#)

⁵⁰ The report on this accident investigation can be downloaded from the following website. https://assets.publishing.service.gov.uk/media/54c1704ce5274a15b6000025/FormalInvestigation_HeraldofFreeEnterprise-MSA1894.pdf

⁵¹ This paragraph simply specifies “a fine”. The actual amount is determined in accordance with the sentencing guidelines.

⁵² According to the Japanese Penal Code, under the principle of legality, as long as there is

E. Relationships between offences and other factors

In the UK, the offence of causing injury through gross negligence is not punishable. This applies even if a severe injury is caused.

If a collision causes a vessel to sink but no death results, the matter remains at the level of a regulatory breach and is prosecuted by MCA. Such offences are usually punishable by a fine, and if prosecuted by the Crown Court, there is no maximum fine. If a company causes an accident resulting in serious harm or a near-fatal incident, sentencing guidelines relating to breaches of occupational health and safety legislation may be applied by analogy. In some cases, fines of hundreds of thousands of pounds have been imposed. The amount of the fine may increase depending on factors such as the company's revenue and the degree of negligence. Breaches of section 58 of the MSA 1995 are often used in place of, or to supplement, offences relating to breaches of the COLREG as the reason for prosecution, particularly where injury or substantial damage has occurred.

If a death occurs as a result of a collision, breaches of the MSA 1995 or the COLREG continue to be applicable, but the focus of the investigation often shifts to homicide offences. In such cases, both breaches of regulations (MSA 1995) and homicide offences (gross negligence manslaughter or corporate manslaughter) may be

no law providing for corporate penalties, corporations cannot be penalised. On the subject of the criminal liability of corporations in relation to acts committed by employees in breach of the Foreign Exchange Act, the Supreme Court has explained that “the dual criminal liability provision in the case where the business operator is a person presumes the existence of negligence by the business operator in failing to select, supervise, or otherwise exercise care such as is necessary to prevent acts in breach of regulations by company agents, personnel or other employees performing said acts” (Supreme Court, 26 March 1965, Civil Cases Reports Compilation, Vol. 19, No. 2, page 83), and thus it relies on a presumption of negligence. Academically, the situation relating to the logical rationale for corporate penalisation and the scope of related penalties is extremely complicated. Some used to adhere to the theory that such offences were impossible (a corporation lacks a body or mind, which contradicts the requirement of psychological elements for establishing criminal liability under the Penal Code), but this objection has now been overcome. The rationales for the penalisation of corporations include, in overview, the theory of identification (that the representative of a corporation can be regarded as identical to the corporation) and the organisation model (that the corporation itself bears responsibility for breaches of a duty of care). Detailed discussions of corporate penalisation in Japan are provided by Hiroshi Itakura, “Theory and Reality in Corporate Crime” (Yuhikaku, 1975); Tomomi Kawasaki, “Corporate Criminal Liability” (Seibundo, 2004); and Ryosuke Higuchi, “Corporate Punishment and Criminal Law Theory” (new expanded edition, University of Tokyo Press, 2021).

investigated by the police and MCA. If gross negligence is established, the CPS may bring a prosecution for gross negligence manslaughter.

The CPS and MCA may prosecute simultaneously. Following the *Scot Carrier* collision in 2021, joint investigations were brought by the CPS and MCA, and the Second Officer was convicted of manslaughter (drinking alcohol, disabling alarms and chatting online) in Denmark. In the UK, the master and the company were prosecuted for breaches of regulations. The master was penalised for a breach of the SMS (safety management system) regulations (2014 regulations, section 7), and the company was penalised for a breach under section 100 of the MSA 1995 (unsafe operation of a ship). That said, since the CPS decided not to prosecute, this was not, strictly speaking, a case in which simultaneous prosecutions were conducted.

(6) Criminal liability in relation to automated driving of vehicles in the UK

In the case of automated ship navigation, it may be more difficult to prove negligence than with manned ships.

In the UK, section 34 of the Road Traffic Act 1988⁵³, relating to road traffic accidents, has been supplemented by sections 34B and 34C through section 53 of the Automated Vehicles Act 2024⁵⁴. The use and interpretation of these provisions are difficult to understand, but the contents provide that, while the automated driving function of a vehicle is operating, the “user-in-charge” (UIC) is indemnified from offences relating to the manner of driving, and a legal entity (the authorised self-driving entity, ASDE) bears criminal liability for dangerous driving causing a fatal accident. This regulation differs from gross negligence manslaughter, which requires proof of the gross negligence of an individual, in that it focuses on the fact that the system caused the fatal accident, and it has therefore been said to have the effect of reducing the burden of proof on the prosecutor in prosecuting the manufacturer or developer. It has also been said that focusing on the use of a defective system may simplify prosecutions for fatal accidents involving automation.

There is no equivalent legislation in Japan.

3 Issues to be addressed

In Japan, only individuals may bear criminal liability in the event of a collision.

To date, negligence in the operation of a vessel has focused mainly on problems related to the look-out by the navigator on duty.

However, in the future, as operation of vessels by remote operation or autonomous navigation systems is introduced, some or all roles and functions including situational awareness (for example, identifying the course and speed of other vessels), making decisions on diversions, and determining the course and speed may be transferred temporarily or intermittently from the navigator on duty to the Remote Operation Centre (ROC) or the Autonomous Navigation System (ANS).

⁵³ <https://www.legislation.gov.uk/ukpga/1988/52/contents>

⁵⁴ <https://www.legislation.gov.uk/ukpga/2024/10/contents>

This will lead to situations involving software in vessel navigation becoming far more common.

If a collision is caused by a self-learning AI system or by a complicated latent software defect, it is usually difficult for the investigative agency to prove that the software developer (an individual) could reasonably have predicted the specific malfunction scenario. Thus, if a collision caused by a defect or bug, or similar issues that could not have been predicted when the software was produced or updated occurs and results in injury, it will be difficult to hold the individual who developed the software liable.

In addition, in Japan in particular, since there is no offence of corporate manslaughter for such accidents, even if an organisation as a whole is found to be punishably negligent, cases may arise in which, when the question of liability is reduced to the level of individuals, each individual had no duty to foresee the accident or only a limited ability to avoid the result, and thus no individual is held criminally liable.

When we consider MASS to be equivalent to manned ship operations (existing ships), breaches arising from manned operations are punishable, whereas those arising from MASS operations are not, which is not preferable from the perspective of preventing collisions. More specifically, if a MASS navigates with a course and speed that would be found negligent if it were an existing ship, if the individuals involved in its operation are found to be negligent but are not found to have had foreseeability of the accident or a duty to avoid the result, or if specificity is not found, those individuals cannot be held liable for negligence.

In the future, with the advent of autonomous ships, vessel operations are expected to become increasingly organised and functionally differentiated, and it may therefore be necessary to consider appropriate legislative measures.

Par2: Legal liability arising from communication failures, software defects, and related causes

In Part 1, we examined the process by which the non-mandatory MASS Code was developed and then introduced the legal framework in the UK, comparing it with that in Japan where appropriate.

The following section considers whether criminal liability may arise in relation to several issues concerning autonomous ships. In doing so, it also briefly examines the position under UK law in order to identify issues that may need to be addressed in Japan in the future.

1 Vessels not under command as a result of loss of communication

If Autonomous Ship A becomes unable to maintain its course or speed as a result of a loss of communication and enters a state of being not under command (and is therefore unable to exhibit the lights or shapes specified in Rule 27(1) of the COLREG), can liability be established for traffic hazards due to negligence in the pursuit of social activities (Penal Code Article 129, Paragraph 2)? Here, we consider whether negligence can be established.

(1) Criminal liability for each cause of loss of communication

In this case, the issue is the cause of the loss of communication. It is likely to be accepted as a general argument that, even if communications are lost, a ship should be required either to navigate autonomously to a minimally safe location or to exhibit lights or shapes indicating that it is a ship not under command (COLREG, Rule 27(1)). Accordingly, we will proceed on that assumption in the following analysis.

A. If the loss of communication is caused by an external factor

Even in a coastal region, communications may often be unstable. For this reason, it is generally foreseeable that the operation may become impossible due to a loss of communication caused by external factors. Under such circumstances, it is necessary to take measures to avoid danger, such as performing evasive operations, displaying that the ship is not under command, or dropping anchor (in congested sea areas or major shipping lanes, if a ship is adrift because it is not under command or if it drops anchor, this may conversely lead to increased risk of collision due to traffic; therefore, at a minimum, it is probably necessary to move to a sea area where there is a low risk of collision with other ships).

In such a case, as corporate criminal liability has not been legislated for in Japan, only individual liability falls to be considered. The issue, therefore, is which individuals may bear criminal liability.

Depending on the interpretation of the Ship Safety Act and other pertinent regulations, it may be considered that a person qualified for remote support work or the shipowner bears primary responsibility for the safe navigation of the ship. However, as these are usually corporate entities, they are not subject to penalisation in Japan. Instead, it is possible to consider the negligence of the person responsible for the management and supervision of the relevant operations or administration, but concrete consideration of each individual's rights and responsibilities would be necessary. As for the so-called MASS master, who is regarded as bearing ultimate responsibility for the safe navigation of the vessel, it would be necessary before departure to consider what measures would or would not be available in the event of communication failure and to take such measures as are capable of preventing danger to navigation. If an incident such as the present one were to occur because those matters had been neglected, there is a possibility that negligence could be attributed to the MASS master personally. That said, findings of negligence in actual cases depend on the cumulative assessment of a range of facts, and more immediate and case-specific negligence may carry particular weight. The final conclusion would therefore depend on the circumstances of the individual case.

B. If the loss of communication is caused by an internal factor (such as defects in software or equipment or a blackout)

Next, we consider the case in which communications are lost due to an internal factor (such as defects in software or equipment, or a blackout).

If the loss of communication is caused by a defect in software or equipment, the negligence liability of the software designer or creator (software designer, etc.) may arise, depending on whether they could have foreseen such a defect. The ANS avoidance algorithm is extremely complicated, and, on the assumption that the

software designer, etc., designed or created the software on the basis that it contained no defects or that the equipment would function normally, it is generally difficult to argue that the defect was foreseeable. (Also, even if it may be possible to argue, in light of the entire design or creation process, that the defect was foreseeable, corporations are not subject to criminal penalties in Japan. Accordingly, negligence cannot be established on that basis alone. However, it remains possible to consider the duty of care of each person involved in the series of design or creation processes and whether their collective negligence may be established (negligence with co-principal criminality).)

The question then is whether the MASS master or ROC personnel who navigated the vessel using the software or equipment can be found negligent. The Regulations for Enforcement of the Ship Safety Act (Article 50-2, Paragraph 2) provide that, if a defect is discovered in an autonomous navigation system of a vessel equipped with such a system, the master or shipowner must report the defect to the competent local maritime authority without delay. Although this is an administrative regulation, it provides an important point of reference in interpreting the duties (legal position) of the master and the shipowner. If the master was aware that a defect could result in a loss of communication, the master may be found to have had foreseeability of that result or a duty to avoid it, and there is a substantial possibility that negligence may be established. However, it may be difficult to determine what degree of malfunction should be regarded as a “defect”. Moreover, as the shipowner is a corporation, it is not subject to criminal punishment.

Given that blackouts also occur on conventional vessels, both the foreseeability of such incidents and the duty to avoid their consequences would naturally also be recognised in the case of autonomous ships. In addition, on an autonomous ship, if no maintenance personnel are on board, it may be necessary to restart the electrical systems remotely. Alternatively, when a blackout occurs, it may be necessary, for example, to install additional auxiliary electrical systems that automatically restore power, maintain the minimum course and speed required for evasive action, indicate that the ship is not under command, or drop anchor. If the vessel is operated without such preventive measures and communication is then lost as a result of a blackout, negligence may well be attributed to the MASS master, the master (or the chief engineer).

(2) Situation in the UK

Although this can only be discussed in general terms, it is also worth briefly considering whether any criminal liability or criminal sanctions may arise under UK law if a similar incident were to occur.

First, in the UK, if the owner (including a person who has chartered the ship or who is managing its navigation (MSA 1995, section 100(4))) is found liable, the owner may incur criminal liability under section 100 of the MSA 1995. This is reflected in the Workboat Code, which requires measures such as backup communications and the ability to transfer the ship to a safe state (see Part 1, 2(3)C above).

If the signals specified in Rule 27 of the COLREG are not exhibited, a criminal offence may be committed through a breach under section 6 of the Merchant Shipping (Distress Signals and Prevention of Collisions) Regulations 1996. In addition, if the ship is unable to exhibit the required signals and therefore cannot be

regarded as not under command, the navigation rules for moving ships apply. Accordingly, if evasive measures cannot be taken, this may constitute a breach of the COLREG under the applicable navigation rules.

Thus, in the UK, the responsibility of owners and operators is more clearly defined, and because corporate criminal liability is recognised, the scope of what is punishable is broader than in Japan; accordingly, this framework may, as a general matter, be expected to have a deterrent effect in preventing accidents⁵⁵.

If legislation such as the Automated Vehicles Act 2024, as introduced in Part 1, 2(6) above, were applied to MASS, it would likely make it easier to establish the operator's criminal liability.

2 Collisions due to communication delays

The ECDIS (Electronic Chart Display and Information System) on Autonomous Ship B experienced a 30-second delay due to communication latency. The MASS master was aware that such delays sometimes occurred, though not consistently, and determined that they were within a tolerable range. An ROC staff member was remotely operating the ship and relied primarily on the ECDIS display for navigation. As a result, the staff member's assessment of ships moving across the course was delayed, the ship continued straight ahead despite being the give-way vessel, and the stand-on vessel subsequently collided with Autonomous Ship B, causing deaths and injuries. On the ECDIS display viewed by the relevant ROC operator, the other vessel appeared likely to pass safely at a distance of approximately 200 metres astern of Ship B. In such a case, could the offence of causing death or injury through professional negligence under Article 211 of the Penal Code arise? As in section 1 above, the focus here is on negligence.

(1) Liability of staff members relating to navigation, such as the MASS master

Assuming the facts are similar to those in this case, since it is possible to predict that a collision could result in death or injury, there may well be cases in which a duty to avoid the result can be established. The ROC staff member, in fulfilling look-out duties, is obviously required to take into account information, such as radar (as well as camera and speaker) information⁵⁶ and alerts from other ships when navigating. Accordingly, even if the staff member was unaware of the delay in the ECDIS display, it cannot be ruled out that the deaths or injuries resulting from the collision could have been predicted if devices such as the radar had been properly

⁵⁵ For an individual, the maximum fine for a crime that breaches section 100 of the MSA 1995 is £5,000 (section 100(3)), but for a corporation, there is generally no maximum.

⁵⁶ However, this is restricted to cases where the radar, camera and speaker use a different communication line than the ECDIS. If the communication conditions of those systems were similar to those of ECDIS (for example, if it was not possible to switch to back-up communications due to communication delay) and those systems were also delayed, it would be difficult for the staff member to have situational awareness of the extent of the communication delay.

checked. Thus, although the matter depends on the specific circumstances, it may be possible to establish negligence on the part of one or both of these persons.

If the delay is assessed as constituting a “defect”, it should be easy to support the assertion of negligence based on the master’s duty to predict defects under Article 50-2 of the Regulations for Enforcement of the Ship Safety Act.

(2) Liability of software designers and related parties

Since the company that created the software is a corporation, it is not subject to criminal penalties.

For this reason, we will consider the criminal liability of the individuals who designed and developed the software.

Although communication delays are a problem that may generally occur, the circumstances in which they arise depend on various conditions, and it is likely to be difficult to reasonably predict the length of any such delay. However, if data from the design or product testing stage indicated that the delay reached the level of a defect, and no preventive measures were taken solely because such delays were extremely rare, foreseeability may be established. Nevertheless, the bar for establishing proof will be extremely high.

(3) Liability of shipowners and related parties

Since the shipowner, the ship charterer, and the ship manager are corporations, they cannot be held criminally liable for the offence of causing death or injury through negligence in the pursuit of social activities.

The next question is whether negligence may be attributed to individuals within those corporations.

The Regulations for Enforcement of the Ship Safety Act (Article 50-2, Paragraph 2) specifies that the shipowner has a duty to report defects to the maritime authorities. If a responsible staff member of the shipowner (likely only to be a person with responsibilities and rights) was aware of communication delays that were severe enough to affect the ship’s operation and nevertheless failed to take any corrective action, it may be possible to establish both foreseeability and a duty to avoid the results. The situation is probably similar for a responsible staff member of the vessel’s operating or management company.

(4) Situation in the UK

As in section 1 above, liability in the UK is considered here in general terms.

A. Master and other relevant persons

If the master is aware of communication delays but nevertheless proceeds with navigation, and negligence is established on that basis, then, as a general rule, it is arguable that an offence may arise under sections 58 and 98 of the MSA 1995. If an ROC staff member could have recognised the communication delays but, despite this, continued navigation without due care and an accident occurred, an offence may arise under section 58 of the MSA 1995.

In this case, since deaths occurred as a result, it must also be considered whether the offence of gross negligence manslaughter can be established.

B. Shipowner or operating company

If the communication delay is due to an institutional failure (for example, insufficient investment in communication redundancy or forcing navigation to proceed despite warnings), the possibility that the managing director of the operating company or the owner may incur criminal liability under sections 58, 98, or 100 of the MSA 1995 cannot be ruled out. In addition, in this case, since deaths occurred as a result, it must also be considered whether the offence of corporate manslaughter can be established.

C. Software designers and related parties

If a known defect, or a latent defect, in the design was not disclosed and directly caused a fatal accident, gross negligence manslaughter or corporate manslaughter may apply. However, under current legislation, it is thought to be difficult to prove the criminal liability (intention or gross negligence) of the software designer or creator.

D. Summary

As in section 1 above, a significant difference is that, under UK law, owners and operators may be subject to criminal sanction even where they are corporate entities.

Part3: Summary

This report has reviewed recent developments in the non-mandatory MASS Code and outlined the relevant legal frameworks, with particular emphasis on the UK. "Globalisation" is an overused word, but in shipping (particularly overseas shipping), the regulatory framework has, in fact, been globalised for decades, as the laws governing it are set out in international treaties.

Additionally, this report has clarified that there are considerable differences between the UK and Japan in the enforcement of these regulations (including their scope).

Although criminal justice systems naturally differ from one country to another, if Japan lacks enforcement mechanisms that have been adopted in many other jurisdictions, that may place it at a significant disadvantage in the future.

It remains a matter for future research to determine whether the differences identified in this report are unique to the UK, attributable to the Anglo-American legal tradition, or more broadly observable across European jurisdictions.

End of report

Report B

Survey Report on International Deliberations Regarding Legal Liability for Autonomous Ships (Fiscal Year 2025)

21 March 2026

Having completed the survey work regarding the above subject, we hereby submit our report as follows.

Part 1: Criminal Justice Proceedings in the United Kingdom

1. Prosecuting Authorities for Maritime Offences

(1) Prosecution by Bodies Other than the CPS (Crown Prosecution Service)

In the UK¹, private prosecution has long been recognised under common law².

Legislatively, Section 6(1) of the Prosecution of Offences Act 1985 states that ‘nothing in this Part shall preclude any person from instituting any criminal proceedings’, confirming that no provision in this Part prevents any person from bringing criminal proceedings. In practice, numerous private prosecutions are brought³. Whilst private prosecutions are intended to complement those brought by the Crown Prosecution Service (CPS), they are costly and difficult for individuals to pursue⁴.

This represents a significant difference from Japan, which adopts the principle of exclusive prosecution by public prosecutors⁵.

¹ Unless otherwise stated, the following refers to England and Wales.

² It is also stated that ‘the right of an individual to bring a private prosecution has often been defended as an important and historic constitutional right acting as a “bulwark against the inaction of the authorities”’ (p. 10, ‘House of Commons Justice Committee: Private prosecutions: safeguards, Ninth Report of Session 2019–21’,

<https://committees.parliament.uk/publications/2823/documents/27637/default/>

³ For the current state of private prosecutions in the UK, see “2 The state of private prosecutions”,

<https://publications.parliament.uk/pa/cm5801/cmselect/cmjust/497/49705.htm#footnote-131>

⁴ See note 2 above

⁵ In Japan, Article 247 of the Code of Criminal Procedure stipulates that “public prosecutions shall be conducted by public prosecutors”, and all prosecutions are therefore

(2) Prosecution by the MCA

Maritime and Coastguard Agency⁶ (hereinafter 'MCA') is the statutory authority responsible for enforcing the Merchant Shipping Act 1995⁷ (hereinafter 'MSA 1995') and associated legislation, and may bring criminal proceedings in appropriate cases. This is based on the fact that such powers are widely recognised as common law rights held by bodies other than CPS, and are expressly authorised under section 6(1) of the Prosecution of Offences Act 1985. In the UK, criminal prosecutions by bodies other than CPS are permitted as a matter of principle; consequently, there is no provision corresponding to Article 247 of Japan's Code of Criminal Procedure.

Furthermore, MCA's power to prosecute is based on section 256(1) of the MSA 1995,⁸ and on the interpretation that the enforcement powers conferred on the MCA under the Act include the power to initiate criminal proceedings (Section 58 of the Act stipulates that, in England and Wales, no prosecution may be brought without the consent of the Secretary of State or the Director of Public Prosecutions, thereby presupposing that the MCA has been granted prosecutorial powers); accordingly, MCA is generally understood to have prosecutorial powers under the law⁹. Accordingly, MCA Enforcement Policy Statement explicitly states that 'prosecution is the most serious enforcement measure available to MCA'¹⁰.

2. Administrative Sanctions and the Decision Whether to Prosecute

In the UK, there also exists a system similar to Japan's suspension of prosecution¹¹.

conducted by public prosecutors.

⁶ <https://www.gov.uk/government/organisations/maritime-and-coastguard-agency>

⁷ <https://www.legislation.gov.uk/ukpga/1995/21/contents>

⁸ <https://www.legislation.gov.uk/ukpga/1995/21/section/256>

⁹ Although these points were not clear in the previous report, they have become apparent as a result of this investigation.

¹⁰ <https://www.gov.uk/government/publications/mca-enforcement-policy-statement/mca-enforcement-policy-statement>

¹¹ In Japan, the principle of discretionary prosecution (Article 248 of the Code of Criminal Procedure: 'Where, in view of the character, age and circumstances of the offender, the gravity and circumstances of the offence, and the situation following the offence, prosecution is not deemed necessary, a public prosecution may be waived') is adopted. Consequently, public prosecutors have broad discretion regarding whether or not to prosecute. In fact, 56.1% of final dispositions by the Public Prosecutors' Office are cases where prosecution is

In the UK, administrative sanctions are positioned as a preliminary stage prior to criminal prosecution, and such sanctions are diverse¹². These include: ① Inspection and Follow-up, ② Prohibition/Improvement Notices, ③ Detention of Vessels, ④ Notification of Concern (NOC), ⑤ Simple Caution, ⑥ Inquiry into Fitness to hold a Certificate of Competency (CoC). The authority to take these measures is vested in MCA under the MSA 1995¹³ .

Furthermore, when deciding whether to prosecute, MCA, like CPS, considers whether the Full Code Test¹⁴ has been met¹⁵ .

MCA must be satisfied that there is a realistic prospect of conviction and that the evidence is reliable and credible¹⁶. The assessment is made in two stages, as follows.

(1) The evidential stage

The MCA must be satisfied that there is sufficient evidence to give rise to a realistic prospect of conviction in respect of each defendant and each charge. This requires an objective assessment of the evidence, examining its admissibility, reliability and credibility. Furthermore, MCA must consider the existence of any other material that may affect the sufficiency of the evidence.

(2) The public interest stage

Where there is sufficient evidence to give rise to a realistic prospect of a conviction, MCA considers whether prosecution is necessary in the public interest.

In making this determination, MCA takes into account the following factors set out in the guidelines:

- The seriousness of the offence
- The degree of the suspect's culpability
- The circumstances of the victim and the extent of the harm
- The suspect's age and maturity at the time of the offence

suspended(https://hakusyo1.moj.go.jp/jp/71/nfm/n71_2_2_2_4_0.html).

¹² See note 10 above

¹³ However, this study did not clarify whether simplified warnings fall within the authority granted under the MSA 1995. Furthermore, regarding simple cautions, the document "Simple Cautions for Adult Offenders"

(<https://assets.publishing.service.gov.uk/media/5afeacfc40f0b6561ce44093/cautions-guidance-2015.pdf>) states that agencies with prosecutorial authority may issue simple cautions.

¹⁴ <https://www.cps.gov.uk/publication/code-crown-prosecutors#section4>

¹⁵ See note 10 above

¹⁶ See note 10 above

- Whether prosecution is a proportionate response
- Whether protection of the source of information is necessary

In practice, MCA often decides not to prosecute from the perspective of the public interest. Instead of prosecution, a warning is issued to the party who committed the offence. If the warning is not heeded, prosecution may follow.

3. Suspension of Sentence

A system of suspended sentences also exists in the UK. The legal basis for this is the Sentencing Act 2020¹⁷. Section 277 of that Act provides that where a defendant is sentenced to a term of imprisonment of not less than 14 days and not more than two years, a suspended sentence order may be made (subsections 1 and 2 of that section). Furthermore, section 286(1) of the Act defines a suspended sentence order, whilst section 288(1) stipulates that a suspended sentence order must specify an operational period, which must be for a period of not less than six months and not more than two years.

Furthermore, conditions such as community service may be attached to a suspended sentence¹⁸.

4. Summary

As outlined above, unlike in Japan, in the UK, MCA, rather than the Crown Prosecution Service, is responsible for the entire process from investigation through to prosecution and the conduct of proceedings. On the other hand, the framework comparable to suspension of prosecution appears broader than that in Japan when administrative sanctions are taken into account. Furthermore, whilst the system of suspended sentences is similar to that in Japan, it is made clear in the legislation that, in addition to a simple suspension of sentence, conditions such as community service may be imposed.

Part 2: Establishment of Offences Related to Maritime Accidents

In the following, regarding the offences that may arise in the event of a collision, as mentioned in the previous report, we shall first examine the constituent elements and specific examples, and then discuss their applicability to Maritime Autonomous Surface Ships (MASS).

1. Offences under the Merchant Shipping (Distress Signals and Prevention of Collisions)

Regulations 1996

Section 6 of the Merchant Shipping (Distress Signals and Prevention of Collisions)

¹⁷ <https://www.legislation.gov.uk/ukpga/2020/17/contents>

¹⁸ <https://www.legislation.gov.uk/ukpga/2020/17/schedule/16>

Regulations 1996 (hereinafter referred to as 'the Regulations 1996') provides as follows.

(1) Persons subject to liability

(i) the owner of the vessel concerned; (ii) the master; or (iii) the person responsible for the operation of the vessel at that time. As legal entities are not excluded from (i), this includes legal entities. (iii) includes any person making substantive decisions regarding the navigation of the vessel.

(2) Conduct

A breach of the Regulations 1996. Specifically, breach of the International Regulations for Preventing Collisions at Sea (hereinafter 'COLREG') may constitute an offence.

(3) Mental element

A. Regarding mens rea

In the UK, a subjective element known as mens rea has traditionally been required. A brief explanation of this subjective element in the UK context is provided below.

Mens rea is described as a psychological element; it was formerly known as 'malice aforethought' and is often translated in Japan as 'criminal intent' or similar terms. In other words, it encompasses not only conscious planning or deliberate intent, but also blameworthy mental states that are less intentional, such as recklessness or negligence¹⁹. Recklessness implies an awareness of the danger of the consequences.

Offences that do not require proof of mens rea are referred to as absolute liability offences. Furthermore, offences where proof of mens rea is not required for part (though not all) of the criminal act (actus reus), or where the defence must rebut the absence of criminal intent after the prosecution has completed its case, are referred to as strict liability offences²⁰.

Unless a crime is expressly provided not to require mens rea, the requirement of mens rea is implied by law²¹.

(b) The mental element under Regulations 1996

Section 6(2) of the Regulations 1996 provides: 'A person charged under these Regulations may raise as a defence that he took all reasonable precautions to prevent the occurrence of the contravention.' Thus, the commission of the offence is negated by

¹⁹ <https://www.iclr.co.uk/knowledge/glossary/mens-rea-and-actus-reus/>

²⁰ Ibid.

²¹ In *Sweet v Parsley* [1970] AC 132, the House of Lords held that, in the absence of special reasons, mens rea is an essential element of every offence, and that the courts should not interpret an offence as one of absolute liability unless it can be established that Parliament intended it to be so.

proving that reasonable precautions were taken. In the UK, this is known as the 'due diligence defence'. Given that this is provided in the text of the Regulations 1996, this offence is regarded as one of strict liability²² .

(4) Penalty

On conviction on indictment, the penalty is imprisonment for a term not exceeding two years and a fine (subsection 1 of the same section).

Furthermore, on summary conviction, the penalty for a breach of COLREG Rule 10(b)(i) is a fine not exceeding £50,000, and in all other cases, a fine not exceeding the statutory maximum. Furthermore, in the United Kingdom, the Legal Aid, Sentencing and Punishment of Offenders Act 2012 removed the upper limit on fines, thereby allowing fines to be imposed without limit (section 85 of that Act).

(5) Specific examples

For example, the following case has been reported:²³

[Court] Folkestone Magistrates' Court

[Date of hearing] 15 February 2011

[Date of Offence] 22 March 2009

[Charge] Breach of COLREG Rule 10(d)

[Case Details] On 22 March 2009, whilst the Belgian trawler De Zwerver was sailing from Milford Haven to Belgium, it was detected by the Dover Channel Navigation Information Service (CNIS) navigating within the English coastal side of the Inshore Traffic Zone off Brighton; subsequently, the vessel's movements within the inshore traffic zone continued to be monitored by Dover CNIS. Even upon reaching the waters off Dover Port, De Zwerver was still navigating within the inshore traffic zone, and during this time, the vessel had a near-miss (an incident where a collision was narrowly avoided) with a car ferry.

The ferry was forced to take evasive action to avoid De Zwerver, and the ferry's master reported the incident to Dover CNIS. De Zwerver continued to navigate within the Inshore Traffic Zone thereafter. During its voyage, radio calls were made to the vessel, but there was no response. Following the incident, attempts were made to contact the shipowner and the skipper, but these also went unanswered.

[Penalties] The skipper (in this case, the captain of De Zwerver) was fined £400, ordered to pay costs of £600 and tax of £15, whilst the company was fined £1,500, ordered to pay costs

²² In Japanese law, strict liability is primarily found in the field of civil liability.

²³

https://assets.publishing.service.gov.uk/media/5a7edde4ed915d74e6226f66/mca_prosecutions_2011.pdf

of £3,733 and tax of £15.

Thus, it is not only individuals but also legal entities (shipowners) that are considered to be those responsible for the offence. As it is the skipper who is in charge of navigating the vessel, one might assume that a breach of COLREG Rule 10 would normally be attributed solely to the skipper. However, in the UK, the safety management and operational policies of a vessel are considered to be the responsibility of the company; consequently, a breach by the skipper is often presumed to be the result of deficiencies in the company's management system, and matters such as route selection, navigation policies and safety management systems are frequently regarded as falling within the company's sphere of responsibility²⁴.

2. Offences under section 58 of the Merchant Shipping Act 1995

The Merchant Shipping Act 1995 (hereinafter referred to as 'MSA 1995') stipulates in section 58, under the heading 'Offences by seafarers and others', that acts endangering a ship, structure or person constitute an offence. Here, we shall focus specifically on those provisions relating to collision accidents.

(1) Persons subject to liability

The master of a British-registered ship or a seafarer employed on that ship, etc. (subsection 1 of the same section).

(2) Conduct and Consequences

A. Conduct (acts²⁵ and omissions²⁶)

Although paragraph 2 of the same section lists several acts, in relation to collision accidents, the requirements are: (i) where an act is committed on board the ship or in the immediate vicinity thereof which causes the death or serious injury of a person; or (ii)-1 where an act is committed which causes the death or serious injury of a person on board the ship, ②-2: where the vessel causes the loss, destruction or serious damage of another vessel or structure, or causes the death or serious injury of a person not on board, where the shipmaster has failed to take the necessary measures to prevent such an event. (1) provides for acts, whilst (2) provides for omissions.

(b) Breach of duty or failure to perform duties (discharges any of his duties, fails to discharge

²⁴ In this case, it appears to have been found that there were problems with the company's safety management system. This is also reflected in the high fine imposed on the company.

²⁵ The original text states "does any act"; to clarify the distinction from paragraph 4, this has been translated as "act".

²⁶ The original text states "omits to do anything required"; to clarify the distinction from paragraph 4, this has been translated as "omission".

any of his duties), etc.

In the performance of his duties or other functions relating to the operation, machinery or equipment of the vessel, if he acts in a manner that causes or is likely to cause the loss, destruction, death or injury listed in subsection (2)(a) of the same Article (subsection (4)(a) of the same section), or where, by failing to properly perform such duties or functions, similar consequences occur or are likely to occur (subsection (4)(b) of the same section), also constitute criminal offences.

The difference from (a) is likely that (a) refers to cases where a direct act is performed or omitted, whereas (b) appears to refer to cases where a result arises incidentally to a duty of office or as a consequence of a failure to fulfil a duty of office.

(3) Mental element, etc.

With regard to (2)(a) above, it is stipulated as a condition that the act or omission was deliberate or constituted a breach or neglect of duty (subparagraph (a) of subsection 3 of the same section)²⁷. Regarding (2)(b) above, these requirements are not imposed.

This is a requirement relating to the mens rea discussed in 1(3)(a) above.

However, as with section 6(2) of the Regulations 1996, where an act or omission is deemed to constitute a breach of duty or negligence, the offence does not stand if it is proved that the defendant took all reasonable steps to fulfil their duties. This appears to be similar to whether or not an act to avoid the result was performed in the context of negligence offences in Japan (in that sense, although it is not a matter of subjective intent, it is described here in relation to the provisions).

(4) Penalties

In summary proceedings, the penalty is a fine not exceeding the statutory maximum (subsection (a) of the same section); in proceedings by indictment: imprisonment for a term not exceeding two years, or a fine, or both (subsection (b) of the same section).

(5) Specific Examples

For example, if a watchkeeper is reading cargo-related documents at the rear of the bridge and a fatal collision occurs with a fishing vessel operating ahead, it would appear that this constitutes a failure to fulfil the duty to keep a proper look-out and a failure to properly perform the duties prescribed in section 58. However, given that the incident resulted in a fatality, it would also appear to fall under the offence of Gross Negligence Manslaughter (hereinafter referred to as 'GNM'), as described below. The determining factor in establishing which offence applies is the presence or absence of gross negligence.

²⁷ Paragraph (b) stipulates that intent or negligence is not required if 'the master or seafarer was under the influence of alcohol or drugs at the time of the act or omission'.

3. Gross Negligence Manslaughter

The offence of gross negligence manslaughter is based on case law rather than statutory law. According to *R v Adomako* [1995] 1 AC 171, the following elements are required: (a) that the defendant owed a duty of care to the deceased; (b) that the defendant breached that duty of care through a negligent act or omission; (c) that the negligent act or omission caused the death; and (d) that the negligence causing the death amounted to gross negligence and was therefore criminal²⁸ .

(1) Persons subject to liability

The persons subject to liability must be a natural person; legal entities are excluded. Furthermore, regarding the causing of death through negligence by a legal person, the question arises as to whether the offence of corporate manslaughter (an offence under the Corporate Manslaughter and Corporate Homicide Act 2007) has been committed.

(2) Conduct and Consequences, etc.

The prosecution must establish that the defendant owed a duty of care towards the victim, that this duty was breached through a negligent act or omission, and that death occurred (see (a) and (b) above). Injury is not covered by this offence.

The breach must be such that a serious and obvious risk of death was reasonably foreseeable.

Furthermore, the breach of the duty of care must be so serious (i.e. criminal) as to be reprehensible. This point was defined in *Adomako* [1994] 3 All ER 79 as follows: 'Was the defendant's conduct, in the light of the risk of death, so reprehensible as to amount to a criminal act or omission in all the circumstances? The prosecution must prove the following two elements: (i) that there were circumstances such that a reasonably prudent person in the defendant's position would have foreseen that the defendant's act or omission would give rise to a 'serious and obvious risk of death' ; and (ii) that the breach of the duty of care was, in all the circumstances, so grossly out of line with the standard expected of a person of the defendant's standing, experience and responsibility as to be reprehensible and amount to a criminal act²⁹ .

(3) Causation

It is necessary that the act or omission be the cause of death (see (c) above).

(4) Mental Element

²⁸ <https://www.cps.gov.uk/prosecution-guidance/gross-negligence-manslaughter>

²⁹ Ibid.

It is required that the negligence causing the death constitutes gross negligence³⁰. In determining whether there is a realistic prospect of conviction, the prosecutor must also take into account how the courts have historically assessed the degree of negligence required for this offence³¹.

(5) Penalty

GNM is a common law offence, and the maximum sentence is life imprisonment. The sentencing range is as reported in the previous report; sentencing varies significantly depending on the degree of negligence (A–D), with a starting point of 2–12 years and a final range of 1–18 years being the standard (it is explicitly stated that the possibility of life imprisonment exists within the system)³².

(6) Specific Examples

Although it appears rare for GNM to be established in relation to ship collisions, the following case exists:

[Case]

This case concerns the collision that occurred on 10 March 2025 in the North Sea off the coast of the United Kingdom between the container ship Solong (registered in Portugal), which was underway, and the tanker Stena Immaculate (registered in the United States), which was at anchor, resulting in the death of Mark Pernia, a crew member of the container ship Solong³³. The defendant is Motin (a Russian national), the master of the Solong.

[Facts constituting the offence]

It is stated that, in order to secure a conviction, the prosecutor was required to argue and prove the following elements.

- (1) That the defendant had a duty of care towards Mark Pernia.
- (2) That he breached that duty by failing to take any action to prevent the collision.
He had ample opportunity to prevent the collision, but failed to do so.
- (3) At the time of the breach of duty, there was a serious and obvious risk of death
- (4) The breach of duty caused or significantly contributed to the death.

The prosecution clearly argued that this was the cause of Pernia's death.

³⁰ Although I have provisionally classified this under the subjective aspect, since GNM does not require mens rea as a prerequisite, gross negligence appears to be closer to an objective breach of a duty to act.

³¹ See note 29 above

³² <https://sentencingcouncil.org.uk/guidelines/gross-negligence-manslaughter>

³³ <https://www.cps.gov.uk/cps/news/north-sea-boat-crash-captain-convicted-over-exceptionally-bad-negligence-leading-death>

(5) The negligence must be ‘genuinely and exceptionally grave’.

Despite clear visibility, a functioning radar warning system and multiple warnings, Motin failed to alter course, reduce speed or sound the alarm.

The prosecution also demonstrated that Motin was solely in charge of the vessel’s navigation, that he ignored radar and tracking data, failed to avoid the Stena Immaculate, did not stop the vessel, and did not issue a warning to his crew or the other vessel.

The jury was shown that the Solong had been heading straight towards the anchored Stena Immaculate for more than 30 minutes and that it was visible to the naked eye 12 minutes before the collision. There was no reasonable explanation for his failure to act. Data from the black box showed that no course changes or speed adjustments had been made prior to the collision. The equipment was functioning normally, and Motin’s claim of ‘rudder failure’ was completely unfounded. Furthermore, Motin had disabled the Bridge Watch Alarm System (BNWAS) and was on watch alone, contrary to standard safety procedures³⁴ .

Furthermore, regarding sentencing, the court issued Sentencing Remarks³⁵ . In these remarks, the guidelines³⁶ classify culpability into four categories (very high, high, moderate, low) and that, in making this assessment, the issue was what actually occurred during the defendant’s watch on 10 March 2025: (i) whether the defendant neglected to maintain a proper lookout and failed to notice the impending disaster until just before the collision, or (ii) whether, whilst paying some attention to basic lookout duties, he lacked the ability to navigate safely, and, furthermore, disregarded the lives of the crew of the Solong and the Stena Immaculate, failing to sound any alarm before ramming the tanker at full speed of 16 knots; and, on this point, the court ruled that the defendant had seriously failed to recognise the danger of collision and, as a result, took no action whatsoever to avoid the collision. The court further stated that, whilst this case fell just short of the level of ‘blatantly disregarding a very high risk of death’, the difference was not significant. In conclusion, the offence was classified as ‘moderate culpability’ under the guidelines (although, prior to the consideration of mitigating factors, the case was deemed to fall at the ‘upper end’ of the moderate culpability category).

Taking into account the mitigating circumstances³⁷, a prison sentence of six years was

³⁴ Regarding the above, see the same source: <https://www.cps.gov.uk/cps/news/north-sea-boat-crash-captain-convicted-over-exceptionally-bad-negligence-leading-death>

³⁵ <https://www.judiciary.uk/wp-content/uploads/2026/02/Motin-Feb-2026-Sentencing-Remarks.pdf>

³⁶ These are the guidelines referred to in (5) above.

³⁷ As mitigating factors, the following were taken into account: firstly, that a certain degree

imposed, with 11 months of pre-trial detention credited; it was indicated that parole would be possible upon completion of three-quarters of the sentence.

(7) Distinction between the offence under section 58 of the MSA 1995 and GNM

The offence under section 58 covers not only death but also injury. On the other hand, GNM is limited to death only.

With regard to the acts involved, both include both acts and omissions. As the offence under section 58 targets negligence in the performance of duties, and GNM requires that a duty of care towards the victim be established, the two appear to overlap in substance.

However, under GNM, it is required that the breach of the duty of care was such that it was reasonably foreseeable that it would give rise to a serious and obvious risk of death. Furthermore, it is held that the breach of the duty of care must be sufficiently serious to amount to a criminal act or omission.

Whilst GNM relates to offences against the person, the offence under section 58 is listed alongside other categories of conduct for which a fatal or injurious outcome is not required; consequently, it is considered to have an aspect of punishing a breach of regulations or the creation of a danger.

4. Corporate manslaughter under the Corporate Manslaughter and Corporate Homicide Act 2007

As noted in the previous report, the Corporate Manslaughter and Corporate Homicide Act 2007³⁸ is new legislation establishing the offence of corporate manslaughter.

(1) Entities subject to liability

The entities subject to criminal liability are: (a) legal entities; (b) government departments and other bodies listed in Schedule 1; (c) the police; and (d) partnerships, trade unions or employers' organisations acting as employers (section 1(2) of the Act).

Furthermore, for this offence to be established, the way in which the organisation's activities are managed or organised by its senior management must be a substantial element in the breach (section 1(3) of the Act).

of sincere remorse was demonstrated in the letter written to the judge during the proceedings; secondly, that in that letter, the defendant confirmed that he would not return to the sea in future; and thirdly, that as the defendant is a Russian national and his sole reason for staying in this country is to serve his sentence, his life in detention is likely to be more isolated than usual. The fact that the defendant's status as a foreign national is treated as a mitigating factor is particularly interesting when compared with sentencing practices in Japan.

³⁸ <https://www.legislation.gov.uk/ukpga/2007/19/contents>

‘Senior management’ refers to persons who, with regard to the organisation’s activities as a whole or a significant part thereof, (i) play a significant role in decision-making regarding management or operational methods, or (ii) actually manage or operate those activities as a whole or a significant part thereof (section 1(4)(c)). This is understood to include not only those belonging to the direct line management structure, but also those who play strategic roles or roles relating to regulatory compliance ³⁹ .

(2) Conduct and Consequences

With regard to the result, the manner in which the organisation’s activities are managed or operated must cause the death of a person (section 1 of the same act).

Acts can be categorised as follows.

The manner in which the organisation’s activities are managed or operated must constitute a serious breach of the relevant duty of care owed by the organisation to the victim (paragraph 1 of the same section).

The specific content of the relevant duty of care is set out in sections 2 and 3 to 7 of the Act (section 2(4)(a)).

A breach of the duty of care by an organisation is considered ‘gross’ where the breach deviates significantly from the standard reasonably expected of the organisation in the circumstances (subparagraph (b) of the same paragraph)

(3) Mental element

There appears to be no requirement for a subjective element. The focus appears to be solely on whether the breach of the relevant duty of care by a senior manager was gross.

(4) Penalty

An organisation found guilty of corporate manslaughter following an indictment shall be liable to a fine (section 6). There is no upper limit on the fine; it is unlimited.

5. Summary

As summarised above, in the UK, there are many situations in which criminal liability may arise from a collision involving a vessel. With regard to the parties liable, the offence of breaching the Regulations 1996 includes the shipowner, and the scope of punishment has been extended to include legal entities. Furthermore, in the UK, fines are often unrestricted and tend to be substantial (in addition, the costs associated with criminal proceedings are high and are often imposed as additional penalties). The offence of Gross Negligence Manslaughter (GNM) excludes injury from its scope; in that sense, its scope of application is narrow. Furthermore, as the requirements regarding seriousness and other factors are limited to a

³⁹ <https://publications.parliament.uk/pa/ld200607/ldbills/019/en/07019x--.htm>

narrow range, it appears that the scope of application is relatively narrower than that of the offence of professional negligence causing injury in Japan. However, once this offence is established, the maximum statutory penalty is life imprisonment, making it a severe offence.

Part 3: MASS and Criminal Liability in the UK

1. Events That May Arise in the Operation of MASS

Traditionally, navigation was carried out on the bridge. However, with the operation of MASS, navigation is carried out either by a Remote Operation Centre (hereinafter referred to as 'ROC') or autonomously by the vessel itself.

Consequently, on such vessels, the bridge may be temporarily unmanned, or personnel may be able to engage in other tasks or take breaks in the area behind the bridge.

On the other hand, potential problems include: (i) the impact of communication delays on navigation; (ii) the inability to navigate due to the loss of the main power supply or similar; (iii) the inability to navigate due to a system shutdown; (iv) a lack of proficiency in remote operation; (v) failure to respond to fallback procedures; and (vi) system defects. These are issues that were not anticipated in the era before remote operation or MASS.

In the following, due to space constraints, we will examine the existence of criminal liability under English law, focusing on ROC operators, in cases where circumstances (i), (iv) and (vi) occur and result in death or injury.

2. (1) Where death or injury results from communication delays affecting navigation

(1) Whether a communication delay may give rise to criminal liability

A communication delay between ROC and the vessel does not in itself immediately constitute an offence. However, even in the case of a communication delay, if it affects the navigation of the vessel and the vessel falls within the category of a vessel not under command (Rule 3(f) of COLREG), but fails to display the statutory lights required for such a vessel, a breach of Rule 27 of COLREG may be an issue.

(2) Offences that may arise in the event of a breach of Rule 27(a)

(a) Offence under the Regulations 1996

In the UK, as discussed in sections 2 and 1 above, a breach of the COLREG may constitute a breach of section 6 of the Regulations 1996. In cases where a vessel is being operated remotely from the ROC, the ROC staff member responsible for the command and control of the vessel is likely to fall within the scope of the phrase "the master and any person for the time being responsible for the conduct of the vessel" in that Regulation. This is because section 313(1) of the MSA 1995, which forms the legal basis for the Regulations 1996, defines the term 'master' as including the master or any person in charge of the command

or management of the vessel (excluding pilots), and, in the case of fishing vessels, as meaning the skipper; consequently, an ROC operator may also fall within the definition of 'master'. However, as the defence of reasonable precaution (section 6(2) of the Regulations 1996) is recognised, if adequate safeguards have been put in place regarding communication delays, and a communication delay occurs despite these measures, the offence will not be established. On the other hand, if adequate measures were not taken despite the possibility of communication delays being foreseeable, this defence may not hold.

(b) The offence under section 58 of the MSA 1995

When considering a violation of section 58 of the MSA 1995, the question arises as to whether an ROC operator falls within the scope of the master of a British-registered ship or a seafarer employed on that ship, as referred to in subsection (1) of that section. On this point, as discussed in (a) above, the concept of 'master' is defined in section 313 of the MSA 1995 and is a concept that may encompass an ROC operator. Furthermore, it appears that the definition of 'seafarer' may also encompass such operators.

Furthermore, as the display of the lights or shapes specified in Rule 27 of the COLREG is the duty of the ROC operator who is in command of and supervising the navigation of the vessel, the failure to display those lights or shapes may constitute a breach of duty (subsection (4) of the same section).

(c) Gross negligence manslaughter

For this offence to be established, as discussed in sections 2 and 3 above, it is required that it was reasonably foreseeable that the breach of the duty of care would give rise to a serious and obvious risk of death.

Furthermore, the breach of the duty of care must be sufficiently serious to amount to a criminal act or omission. Specifically, the following requirements must be met: (i) there must be circumstances indicating that a reasonably prudent person in the defendant's position would have foreseen that the defendant's act or omission would give rise to a 'serious and obvious risk of death'; and (ii) the breach of the duty of care must, in all circumstances, have deviated significantly from the standard expected of a person with the defendant's qualifications, experience and responsibilities, to the extent that it was reprehensible and amounted to a criminal offence.

Consequently, it is considered that the mere possibility of a delay in communication would not satisfy these requirements. Furthermore, as the offence under GNM can only be established where death has occurred, it is not punishable where the result is bodily injury.

(d) Corporate manslaughter under the Corporate Manslaughter and Corporate Homicide Act

This offence may be established where an operator of an ROC, or a person in a position to ensure the integrity or redundancy of communications, qualifies as a senior manager, and the manner in which the organisation's activities were managed or operated constitutes a serious breach of the relevant duty of care owed by that organisation to the victim. However, since a senior manager is defined as a person who, in relation to the organisation's activities as a whole or a significant part thereof, (i) plays a significant role in decision-making regarding the management or operation of those activities, or (ii) actually manages or operates those activities as a whole or a significant part thereof (section 4(c) of the Act), it is not sufficient merely for an ROC operator to be directing and supervising the navigation at the scene.

3. (4) Lack of proficiency in remote operation

(1) Does a lack of proficiency in remote operation constitute a criminal offence?

In the UK, ROC operators are required to hold appropriate qualifications and training (The Workboat Code Edition 3, Annex 2 Remotely Operated Unmanned Vessels, Section 7.2.5). Details are set out in MGN 703⁴⁰, Section 7. Annex A – Training in remote operations.

On the other hand, the term 'proficiency' appears in section 7.12.1 of the same document: Coordinate Remote Operator familiarisation.

While a lack of proficiency in itself does not appear to constitute a criminal offence, where such a lack leads to non-compliance with the COLREG, it may constitute an offence under Regulations 1996, section 6 of the Regulations 1996. Furthermore, with regard to section 58 of the MSA 1995, where a failure to fulfil the duties required by one's position is deemed to have occurred, and where this results in death or injury, there appears to be scope for a breach of that section to be established. On the other hand, offences under the Corporate Manslaughter and Corporate Homicide Act 2007 are defined such that a gross breach of the duty of care by an organisation occurs when the breach deviates significantly from the standard reasonably expected of the organisation in the circumstances. Therefore, it seems unlikely that a breach of this Act would occur if the training required by the MGN had been carried out. Furthermore, GNM holds that the breach of the duty of care must be sufficiently serious to amount to a criminal act or omission; it must satisfy the requirement

⁴⁰ <https://www.gov.uk/government/publications/mgn-703-information-concerning-the-training-and-competence-of-remote-operators-working-with-remotely-operated-unmanned-vessels-rouvs-certified-und/mgn-703-information-concerning-the-training-and-competence-of-remote-operators-working-with-remotely-operated-unmanned-vessels-rouvs-certified-und#annex-a--training-in-remote-operations>

that: (i) there were circumstances such that a reasonably prudent person in the defendant's position would have foreseen that the defendant's act or omission would give rise to a 'serious and obvious risk of death'; and (ii) the breach of the duty of care deviated significantly from the standard expected of the defendant's qualifications, experience and responsibilities, and was reprehensible and criminal in nature. The question is what standard is required of ROC operators; however, regarding COLREG, if the same standard of navigational manoeuvring as that required of ordinary seafarers is expected, it is thought that whilst such an offence would rarely be established, it cannot be said that there are absolutely no circumstances in which this offence could be established.

4. (vi) System Defects

As software developers do not directly command or manage the navigation of a vessel, it is highly likely that they do not fall within the scope of 'any person for the time being responsible for the conduct of the vessel' under section 6(1) of the Regulations 1996. Furthermore, as they do not fall within the scope of 'all seafarers employed on a British-registered ship' under section 58 of the MSA 1995, it appears difficult for that provision to apply. Furthermore, regarding the application of GNM, it must be established that, at the time of programme design: (i) a reasonably prudent person in the position of a software developer would have foreseen that their acts or omissions would give rise to a serious risk of collision; and (ii) the breach of the duty of care was, in all the circumstances, such that it deviated significantly from the standard expected of a software developer's qualifications, experience and responsibilities, and was reprehensible and criminal in nature; however, as software developers would typically design software to comply with COLREG and other relevant regulations, it is generally considered that GNM would not apply. However, in specific situations where, despite reports of a risk of collision, evasive manoeuvres by other vessels, or the fact that an accident actually occurred due to autonomous navigation, no modifications were made to the software, it seems conceivable that GNM could be recognised based on the circumstances at that particular point in time.

4. Comparison with Japan

As outlined above, this report has been able to provide a more detailed and specific account based on legal grounds and facts than the previous one.

1. Procedural Aspects

Compared to Japan, where the institution of public prosecution is the exclusive prerogative of public prosecutors, a major difference with the UK is that there is no such monopoly, and private prosecution is widely recognised (whether prosecution should be

widely permitted to members of the public or should be the exclusive prerogative of specific bodies is difficult to judge as superior in all cases, given a country's culture and historical context⁴¹).

With regard to the suspension of prosecution, a pathway to non-prosecution remains available for certain types of cases; the aim of achieving a general deterrent effect without imposing a penalty is similar to that in Japan.

Furthermore, where prosecution is brought, the fact that MCA itself is responsible for prosecuting offences under the Regulations 1996 and the MSA 1995 represents a significant difference from Japan's system of exclusive prosecution by public prosecutors. It is difficult to make a definitive judgement as to whether the Japanese or British system is superior. However, in the UK, as the agency that conducts the investigation proceeds directly with the prosecution and remains in charge until the proceedings are concluded, it can be said that there is a fertile ground for MCA to demonstrate its expertise in relation to laws falling within its own law enforcement remit. On the other hand, it appears that the Regulatory Compliance Investigations Team (RCIT), which was mentioned in the previous report, exists within MCA to complement the need to ensure that general rules regarding prosecution (decisions) are properly implemented. From this perspective, it might also be useful in Japan to actively seek the opinions of experts in maritime law interpretation, who possess a certain level of understanding regarding negligence under criminal law, when making decisions on whether to prosecute or not.

It should be noted that, although not addressed in this report, whilst the objective elements of Maritime Accident Investigation Branch (MAIB) reports may be applied to criminal proceedings, those elements relating to the assessment of negligence are generally considered inapplicable.

On the other hand, prosecution for GNM is to be carried out by Crown Prosecution Service (hereinafter 'CPS'), a point which is similar to the system in Japan.

2. Substantive Aspects

In the field of substantive law, it is significant that in the UK, it is possible to impose penalties on shipowners for offences under the COLREG. In Japan, attention tends to focus on the liability of individuals for negligence; however, even individuals are, in the first place,

⁴¹ However, unlike in Japan, the fact that private individuals retain the opportunity to bring charges without going through a prosecution review board is likely to be one of the useful institutional designs for eliminating arbitrariness and unfairness in the prosecution process.

operating the vessel only as members of a company or the vessel's operational organisation, and it is thought that a significant proportion of the factors determining whether safe operation is possible depend largely on training provided by the company and organisational measures. It may not be an appropriate approach to attribute such issues to the negligence of individuals (seafarers) in the sense of a deviation from their objective duty of care.

In Japan, the offence of causing danger through negligence in the course of business (Article 129 of the Penal Code) is not punishable in respect of legal entities. Although Japanese law also provides for corporate penalties in legislation such as the Ship Safety Act, the fines are kept to a minimum, and these provisions are not directly related to the occurrence or prevention of collision accidents (although there are provisions in Article 69 of the Ship Safety Act Enforcement Regulations, these appear to be based strictly on vicarious liability).

In the UK, as noted in the previous report, corporate manslaughter was legislated over a period of more than 20 years following the Herald of Free Enterprise incident. Although no immediate examples of its application in subsequent accidents have been found, there are cases where the law has been applied in other fields. While the threshold for meeting the requirements for senior management is high, combined with the increase in the level of fines, it is thought that a certain general deterrent effect (in the context of this paper, the prevention of collision accidents) may be occurring.

In Japan, too, it seems appropriate to give substance to general deterrence through fines; that is, to increase the level of fines to a degree that produces a deterrent effect.

3. Regarding MASS

In Japan, regarding the criminal liability of ROC operators in the event of a collision, the offence of professional negligence causing danger to navigation is based on an 'open' definition of negligence. Consequently, provided that a duty to foresee and a duty to avoid the result are specifically recognised, there are no particular constraints on the determination of guilt or innocence. Rather, if the distinction is limited to whether an ROC operator conducts the navigation from the bridge or via the ROC, there would likely be no significant difference in the duties imposed. In the UK, although the Regulations 1996 also limit the scope of the subject, it appears possible to interpret the term 'master' as including an ROC operator. Furthermore, it is said that a breach of section 58 of the MSA 1995 can also be interpreted as falling within the scope of employment.

In the UK, it would generally appear difficult to hold developers liable for software defects. This is similarly the case in Japan; as holding software developers liable requires specific foreseeability of a collision occurring, there is a certain threshold for negligence to be recognised. On the other hand, once an accident has occurred due to a software 'defect',

rectification of the defect will be required (although it is likely that identifying the cause of such a defect and repairing it will present certain difficulties; consequently, software developers are required to design systems on the premise that programme defects will need to be rectified).

End of report