

European Maritime Safety and
Security Report

The Japan Association of
Marine Safety

London Research Office

Ireland – A scene along the River Liffey, which flows quietly into Dublin Bay

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“Legal Liability of Autonomous Vessels (Significance and Findings)”

- Report Overview -

The recent adoption by the IMO of the non-mandatory MASS Code illustrates that the development of international rules for MASS (Maritime Autonomous Surface Ships) is entering a new phase.

As this international framework continues to develop, the practical implementation of MASS requires a clear understanding of how autonomous vessels relate to existing maritime law, safety regulation, accident investigation systems and the liability regime for accidents.

Against this background, the London Research Office has undertaken a study focusing in particular on criminal liability arising from accidents. This issue introduces the following two reports.

- The first report outlines the significance of examining the legal framework for MASS from the perspective of marine casualty prevention. It considers the role of existing law in preventing casualties at sea, the issues raised by MASS, European responses, the application of existing law, and approaches to criminal liability.
 - “The Significance of Examining the Legal Framework for MASS from the Perspective of Marine Casualty Prevention” (Ryosuke Tateishi, Director, The Japan Association of Marine Safety, London Research Office) – pp. 2-4
- The second report examines criminal liability under English law in vessel-collision cases. Assuming that breaches of the COLREGs may give rise to criminal liability, it analyses the potential liability of ROC operators, shipowners, operators, system developers and others where an accident results from communication delay, system defects or similar factors.
 - “Legal Liability of Autonomous Vessels” (Toshiyuki Miyoshi, Attorney-at-law and Maritime Counsel, Kyodo Law Office) – pp. 6-15

The Significance of Examining the Legal Framework for MASS from the Perspective of Marine Casualty Prevention

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1. Introduction

In recent years, against the background of advances in automation, communications technology and AI, the technological development and demonstration of MASS (Maritime Autonomous Surface Ships) have been progressing worldwide.

In Japan, advanced initiatives of international significance are being pursued through MEGURI 2040, promoted by the Nippon Foundation.^[1] Other countries are also pursuing trial operations, regulatory development and the preparation of guidelines in accordance with their respective circumstances. At the IMO, discussions toward the development of a MASS Code are under way, and these national initiatives and international deliberations are likely to exert an important influence on the future formation of the regulatory framework.

In considering the practical implementation of MASS, it is essential to review the relevant legal framework, taking into account the relationship between technological development and the safeguarding of safety at sea, and proceeding from the role that law has historically played. MASS involves the transfer, in whole or in part, of functions traditionally performed by human beings – including lookout, vessel operation, judgement, and command and supervision – to mechanical systems, remote operation and automation technologies. It is therefore necessary to reconsider the relationship between MASS and the existing maritime legal regime, safety regulation and accident–liability framework. For this reason, the London Research Office is conducting a study of the legal systems of European states, focusing in particular on criminal liability in the event of an accident.^[2]

2. The Role of Law in Preventing Casualties at Sea

Safety in maritime traffic has been maintained by establishing common rules concerning vessel equipment standards, qualification requirements, methods of operation, collision–prevention rules, and the pursuit of liability after an accident, and by requiring compliance with those rules. Where a breach of such rules results in an accident, civil, criminal or administrative liability may arise. In this way, law performs both a preventive function, aimed at preventing casualties at sea, and an ex post function, concerned with the allocation of liability and the ascertainment of causes after an accident has occurred.

The emergence of MASS raises a range of issues for this existing framework. One such issue is whether concepts presupposed by the traditional legal system, such as “master”, “crew”,

“lookout”, and “command and supervision on board” can be applied without modification to vessels involving autonomy or unmanned operation. Further significant issues include who bears the duty to ensure safety during navigation, in what manner that duty is to be discharged, and what forms of legal liability may be borne by shipowners, operators, remote-operation personnel, and system designers or developers when an accident occurs. The manner in which these issues are resolved may differ according to each country’s legal system and policy choices.

3. Survey of the Legal Frameworks of European States

National legal frameworks are not uniform. Each has been shaped by the geographical, historical, economic and industrial circumstances of the state concerned. Differences in sea-area characteristics, the volume and types of vessel traffic, the importance of maritime transport, and the organisation of maritime administration may affect the emphasis placed on safety regulation and the direction of legal development. For example, a country whose maritime traffic is centred on inland seas or coastal navigation will not necessarily require the same institutional design as one in which ocean-going navigation and international merchant shipping occupy a larger place. Moreover, where policy strongly favours technological development and industrial promotion, flexible application of existing regulation or special arrangements for demonstration projects may precede comprehensive regulation. Conversely, where safety is treated as the overriding priority, a more cautious regulatory approach to new technologies may be adopted. Accordingly, when comparing legal frameworks for MASS across countries, it should be borne in mind that these national differences are reflected in the content of the relevant measures.

In this respect, studying the approaches taken by European states is also useful for Japan’s own institutional deliberations. First, understanding how each country applies existing law to MASS, and the extent to which new legislation or regulatory measures are being developed, provides comparative material for the consideration of Japan’s own framework. Second, it offers insight into operational practice, including the conduct of trial operations and demonstration projects and the involvement of regulatory authorities. Third, by referring to overseas discussions concerning approaches to liability after an accident, methods of cause determination, and the delineation of criminal, civil and administrative liability, Japan can broaden the range of options available for future institutional design.

The studies conducted to date by the London Research Office indicate that, in many European countries, the response has not been to enact comprehensive dedicated legislation covering MASS in its entirety. Rather, many states have addressed MASS by building on existing maritime law and combining it with individual exemptions, administrative decisions, guidelines for demonstration projects and industry practice guidance. At the same time, some countries are proceeding with regulatory measures that provide a legal basis for MASS or clarify matters such as remote operation, test areas and the allocation of liability. In other words, although the application of existing law remains the basic approach, the progress of practical implementation has brought to

the surface issues that existing law alone cannot fully address, and states are now exploring legal measures to supplement or restructure the existing framework.^[3]^[4]

4. Future Studies

Several points will be important in future overseas studies. The first concerns the application of existing law to conventional vessels. Before examining the application of existing law to MASS, it is necessary to clarify how the existing maritime legal regime applies to conventional vessels and to use that analysis as the basis for considering MASS. Specifically, it will be necessary to understand how seafarer legislation, ship-safety legislation, rules of navigation, the responsibilities of the master, and marine-accident inquiry and accident-investigation systems are applied to and interpreted in relation to conventional vessels. The second concerns the allocation of liability in the event of an accident, and in particular the approach to criminal liability. It is necessary to examine in what circumstances shipowners, operators, remote-operation personnel, system designers or developers and other parties may incur criminal liability, and how existing offence definitions and principles of liability apply to MASS. The third concerns the perspective of accident investigation and cause determination. It will be necessary to understand whether accident investigations focus on human, system or organisational factors.

In examining these matters, it is also necessary to keep in view the relationship between technological development and the safeguarding of safety at sea. Consideration of the appropriate regulatory framework for MASS must take into account the progress of demonstration projects, the application of existing regulation and the requirements of safety. The relationship between safety regulation and technological development is itself one of the institutional design issues faced by each country. Taking these points into account, and building on the overseas studies conducted to date, we intend to extend the scope of our work from last year's study of the United Kingdom to the states of continental Europe.

5. Conclusion

MASS is a technology that expands the possibilities of maritime transport and maritime activities, and an area in which substantial future development is expected. To advance its practical implementation safely and sustainably, institutional consideration from the perspective of marine casualty prevention is also essential. Japan is likewise pursuing institutional deliberation and demonstration projects, and research into the approaches taken by European states provides valuable comparative material. It is also useful in considering how law can help reconcile maritime safety with technological innovation. From this perspective, we intend to continue this line of study.

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欧州海上安全レポート
European Maritime Safety Report

Legal Liability of Autonomous Vessels

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Based on a study of criminal liability relating to autonomous vessels in the United Kingdom[5] that I conducted at the request of the London Research Office of The Japan Association of Marine Safety, this article focuses on liability in the event of a collision. It addresses, in turn: (1) the application of collision-prevention law in the United Kingdom; (2) criminal liability in collisions involving conventional vessels; and (3) criminal liability in relation to autonomous vessels.

1. The Application of the COLREGs in the United Kingdom[6]

(1) Application of the COLREGs

In the United Kingdom, the legal rules concerning collision prevention are established not in primary legislation but in regulations, and they do so by directly incorporating the COLREGs.

Specifically, section 85(1) of the Merchant Shipping Act 1995 (“MSA 1995”) confers on the Secretary of State the power to make regulations known as “safety regulations”. Section 85(3)(k) expressly provides that such regulations may prescribe measures to be taken to prevent collisions involving ships and to deal with the consequences of such collisions. Pursuant to these provisions, the Merchant Shipping (Distress Signals and Prevention of Collisions) Regulations 1996 (“the 1996 Regulations”) were made; the Introductory Text to those Regulations also makes clear that they were made under section 85 of the MSA 1995. Regulation 4 provides, as a general rule, that ships to which the Regulations apply must comply with regulations 1 to 36 of the International Regulations and with Annexes I to III.

(2) Ship-operating qualifications

The classification of ship-operating qualifications in the United Kingdom is somewhat more complex than in Japan.

In the United Kingdom, the initial distinction is drawn according to two broad criteria: (i) whether the vessel is used for commercial purposes, and (ii) whether its length exceeds 24 metres. Commercial vessels are then further distinguished according to whether they are under or above 500 gross tons (see, for example, section 47 of the MSA 1995). Certificates corresponding to Japan’s first- to third-class marine officer (navigation) qualifications under the Act on Ship Officers and Boat Operators include Master (Unlimited), Chief Mate (Unlimited) and Officer of the

Watch (OOW) (Merchant Shipping (Standards of Training, Certification and Watchkeeping) Regulations 2022, regulations 3, 4, 6 and 7; MSN 1856 (M+F) Amendment 1).

With respect to the second criterion noted above, a major difference from Japan is that, for vessels under 24 metres in length that are used for non-commercial purposes other than leisure or sport, no ship-operating qualification is required. In practice, however, a Royal Yachting Association (RYA) qualification may be required as a condition for harbour use or insurance.

2. Criminal Liability in Collisions Involving Conventional Vessels in the United Kingdom

(1) Relevant authorities in the event of a collision

When a marine accident occurs in the United Kingdom, the Maritime and Coastguard Agency (“MCA”) responds in the first instance. Under section 258 of the MSA 1995, the MCA has authority to inspect ships and their equipment and may thereby verify matters such as the safety of the vessel and compliance with the provisions of the MSA 1995.

From the perspective of accident investigation, by contrast, the Marine Accident Investigation Branch (“MAIB”) is responsible. The MAIB corresponds to Japan’s Transport Safety Board. Investigations by the MAIB are conducted pursuant to section 267 of the MSA 1995 and the Merchant Shipping (Accident Reporting and Investigation) Regulations 2012. Their purpose is to prevent future accidents by establishing the causes and circumstances of the accident in question. They are not intended to determine liability, nor, except to the extent necessary for that purpose, to apportion blame (regulation 5(1) and (2)).

Where an accident at sea involves the work of seafarers, the jurisdiction of the Health and Safety Executive (“HSE”) may also overlap. The HSE is a body established under section 10 of the Health and Safety at Work etc. Act 1974 (“HSWA”). A notable feature is that HSE inspectors have powers of entry, questioning and examination, and evidence gathering under section 20 of that Act.

The respective roles of these authorities are organised by an Operational Working Agreement (“OWA”). Although a detailed discussion is omitted here, paragraph 4 of the OWA sets out the Overarching Principle. Where the matter concerns normal shipboard activities under the control of the master, whether or not the HSWA applies, or activities outside the scope of the HSWA, whether or not under the control of the master, enforcement is led by the MCA or the flag State, while accident investigation is led by the MAIB.

In addition to the HSWA, the police also conduct investigations in cases involving homicide offences. The division of roles between the police and other authorities is set out in detail in Work-related Deaths: A Protocol for Liaison (England and Wales).^[7]^[8] For example, where a fatal collision gives rise to a suspicion of negligence by the person operating the vessel, potentially

engaging section 58 of the MSA 1995, and also raises suspicion of gross negligence manslaughter, both the MCA and the police will conduct investigations.

(2) Investigation by the MCA

The MCA is the statutory body responsible for the enforcement of the MSA 1995 and related legislation, and it undertakes enforcement action in respect of breaches of the MSA 1995.

The categories of offences most frequently investigated by the MCA include: (a) pollution; (b) collision-related breaches (IRPCS) and unsafe operation by owners, operators or users; (c) conduct endangering others by masters or crew; (d) carriage of dangerous goods; and (e) fraud relating to seafarer certificates.

The MCA is not merely an administrative body; it also collects evidence in connection with the various sanctions available for breaches. In functional terms, it performs a role in which administrative investigation – broadly comparable to what Japanese law might describe as inspection or audit, overlaps with criminal investigation.

(3) Prosecution of maritime offences

At common law, private prosecution has long been permitted in the United Kingdom. Accordingly, bodies other than the Crown Prosecution Service (“CPS”)[9] may institute prosecutions. This is a major difference from Japan, where prosecution is monopolised by public prosecutors.[10] The position is also confirmed in statute: section 6(1) of the Prosecution of Offences Act 1985 provides that “nothing in this Part shall preclude any person from instituting any criminal proceedings”. In practice, private prosecutions are brought in many cases. Although private prosecution has a complementary role in relation to prosecutions by the CPS, it has been noted that the costs can be substantial and that it may be difficult for an individual to bring such proceedings.[11]

One form of prosecution by a body other than the CPS is prosecution by the MCA. The MCA has authority to prosecute breaches of the MSA 1995 and offences arising under that Act. Its prosecutorial authority is founded on the following three points: (i) section 256(1) of the MSA 1995 permits the Secretary of State to require ship surveyors to report on certain matters; (ii) the enforcement authority conferred on the MCA under the Act is understood to include the institution of criminal proceedings; and (iii) section 58 of the Act provides that, in England and Wales, proceedings may not be instituted except with the consent of the Secretary of State or the Director of Public Prosecutions, a provision that may be interpreted as presupposing that prosecutorial authority has been conferred on the MCA.

The MCA itself states that it is the statutory body responsible for enforcing merchant shipping law and related legislation, and that it has broad powers throughout the United Kingdom to take legal action and impose sanctions according to the seriousness of the breach. It also states that prosecution is the most serious legal measure available to it, while noting that a number of administrative sanctions should be considered before prosecution is pursued.[12]

Where gross negligence manslaughter can be charged, prosecution is brought by the CPS. Where, on the other hand, gross negligence cannot readily be established and proceedings are instead brought for breach of the MSA 1995, prosecution may be brought by the MCA.

(4) Principal offences that may apply

The principal offences that may apply in the event of a collision involving vessels are as follows.

(i) Breach of the 1996 Regulations

Regulation 6 of the 1996 Regulations operates as follows. First, as to the persons who may be liable, the Regulation identifies: (i) the owner of the ship; (ii) the master; and (iii) any person for the time being responsible for the conduct of the ship. The first category is not limited to natural persons and therefore includes corporations. The third category includes persons who make substantive decisions concerning vessel operation. Secondly, as to the relevant conduct, the offence consists of breach of the 1996 Regulations, which in substance means breach of the COLREGs. Thirdly, as to the mental element, proof of mens rea^[13] is not required. Under regulation 6(2), it is a defence for a person charged under the Regulations to show that “he took all reasonable precautions to avoid the commission of the breach in question”. Accordingly, proof of reasonable precautions will preclude liability. Fourthly, as to penalty, conviction on indictment may result in imprisonment for a term not exceeding two years and a fine (regulation 6(1)). On summary conviction,^[14] breach of COLREGs rule 10(b)(i) carries a fine not exceeding £50,000, while all other breaches carry a fine not exceeding the statutory maximum. It should be noted that, under section 85 of the Legal Aid, Sentencing and Punishment of Offenders Act 2012, the upper limit on fines has been removed, making unlimited fines possible.

(ii) Other offences

Other relevant offences include offences under sections 58, 98 and 100 of the MSA 1995, gross negligence manslaughter, and the offence under the Corporate Manslaughter and Corporate Homicide Act 2007. For reasons of space, only an outline is provided below.

Section 58 of the MSA 1995 criminalises conduct that endangers ships, structures or individuals. The offence is committed where a person, on board or in the immediate vicinity of his own ship, does an act that causes death or serious injury, or omits to do an act necessary to prevent the death or serious injury of a person on board, the loss, destruction or serious damage by his own ship to another ship or structure, or the death or serious injury of a person not on board.

Section 98 provides for offences by the master and owner where a ship is dangerously unsafe. Section 100 imposes on the owner of a ship a duty to take all reasonable steps to ensure that the ship is operated in a safe manner, and criminalises breach of that duty.

Gross negligence manslaughter (“GNM”) is an offence under common law rather than statute. According to *R v Adomako* [1995] 1 AC 171, the elements are: (a) the defendant owed a duty of care to the deceased; (b) the defendant breached that duty by a negligent act or omission; (c) that negligent act or omission caused the death; and (d) the negligence causing the death was gross

negligence and therefore sufficiently serious to constitute criminal conduct.[15] Where a breach of duty causes a fatal collision, the scope of section 58 of the MSA 1995 and GNM may appear to overlap. In practice, however, proceedings are often brought under section 58 of the MSA 1995. The threshold for GNM is significantly higher than for an offence under section 58: it must have been reasonably foreseeable that the breach of duty would give rise to a serious and obvious risk of death, and the breach must be so grave as to be criminal.

The offence under the Corporate Manslaughter and Corporate Homicide Act 2007 is a relatively recent statutory offence that addresses manslaughter by corporations rather than individuals. The Act was enacted following the trial arising from the capsizing of the ro-ro ferry Herald of Free Enterprise on 6 March 1987. The vessel departed Zeebrugge with its bow door open, took in a large volume of water through the bow, capsized and caused the deaths of 193 people. In the subsequent trial, the issue of whether the master, officers and others were liable for GNM arose, but all were acquitted. The important features of the 2007 Act are that it enables the pursuit of liability against a corporation rather than an individual, and that, unlike Japan's so-called dual-liability provisions,[16] it allows the corporation's own independent liability to be established.

(5) Sentencing and suspended sentences

Of the offences discussed above, GNM is a common-law offence and carries a maximum sentence of life imprisonment. The sentencing range is set out in the relevant guideline,[17] under which the sentence varies significantly according to the degree of negligence (Categories A to D). The starting points range from two to twelve years, and the overall range from one to eighteen years, with life imprisonment expressly available in principle. This is substantially more severe than the Japanese offence of professional negligence resulting in death under Article 211 of the Penal Code, which is punishable by imprisonment for a maximum of five years.

The United Kingdom also has a system of suspended sentences, governed by the Sentencing Act 2020. Section 277 permits a suspended sentence order where a sentence of imprisonment is for a term of not less than 14 days and not more than two years (section 277(1) and (2)). Section 286(1) defines a suspended sentence order, and section 288(1) requires the order to specify an operational period of between six months and two years. Requirements such as unpaid work may also be attached. Although the system broadly resembles the Japanese system, the possibility of attaching unpaid work as an additional sanction is not found in Japanese legislation and is a significant difference.

3. Criminal Liability for Autonomous Vessels in the United Kingdom

Finally, I consider, under United Kingdom law, the criminal liability that may arise in the event of a fatal accident involving an autonomous vessel. Issues specific to autonomous vessels include: (1) the effect of communication delay on vessel operation; (2) loss of control due to failure of the main power supply or loss of communications; (3) loss of control due to system shutdown; (4)

insufficient experience in remote operation; (5) failure to respond to fallback procedures; and (6) system defects. These issues did not arise prior to the emergence of remote and autonomous operation. The discussion below considers (1) and (6): first, whether an operator at a Remote Operation Centre[18] (“ROC”) may incur criminal liability where death or injury occurs; and secondly, the criminal liability of system designers and related parties.

(1) Where communication delay affects vessel operation and death or injury occurs

Communication delay between the ROC and the vessel is not in itself unlawful. However, where such delay affects vessel operation and results in the vessel becoming a vessel not under command within the meaning of COLREGs rule 3(f), the vessel must exhibit the lights prescribed for vessels not under command under rule 27.

(a) Breach of the 1996 Regulations

As noted in section 2(4) above, breach of the COLREGs constitutes breach of the 1996 Regulations. Where the vessel is operated remotely under the direction of the ROC and there is no person on board responsible for its operation, the ROC personnel directing the vessel may fall within “the master and any person for the time being responsible for the conduct of the vessel” under regulation 6. In such circumstances, the offence may be made out.

(b) Section 58 of the MSA 1995

The question here is whether the ROC operator falls within the category of the master of a UK-registered ship or a seafarer employed in such a ship for the purposes of section 58(1). The definition of “master” in section 313 is capable of including an ROC operator, and the definition of “seafarer” may also extend to such an operator. Since the duty to display the prescribed lights lies with the ROC operator who directs the vessel’s operation, failure to display those lights would appear to constitute breach of a duty arising in the course of those duties within the meaning of section 58(4). An offence under section 58 may therefore be established.

(c) GNM

GNM requires that the breach of duty give rise to a serious and obvious risk of death that was reasonably foreseeable, and that the breach be so grave as to be criminal. In other words, it must be shown that a reasonably prudent person in the defendant’s position would have foreseen a serious and obvious risk of death arising from the act or omission, and that the breach fell so far below the standard expected of a person with the defendant’s qualifications, experience and responsibilities as to be blameworthy and criminal. The mere possibility of communication delay would not satisfy this threshold, and the offence would not be established. Moreover, because GNM requires death, injury falling short of death is not punishable under this offence.[19]

(d) Offence under the Corporate Manslaughter and Corporate Homicide Act 2007

This offence may arise where the ROC operator, or a person responsible for the integrity or redundancy of communications, forms part of senior management, and the way in which the organisation’s activities are managed or organised amounts to a gross breach of a relevant duty of

care owed to the victim. However, “senior management” means a person who plays a significant role in making decisions about how the whole, or a substantial part, of the organisation’s activities are managed or organised, or in the actual management or organisation of the whole, or a substantial part, of those activities (section 1(4)(c)). Merely directing the vessel’s operation at the relevant time is insufficient. A “gross breach” means conduct that falls far below what can reasonably be expected of the organisation in the circumstances (section 1(4)(b)). The scope of the offence is therefore narrow, and even in relation to conventional vessels it is rarely established.[20]

(2) Where a system defect causes a fatal or injurious collision

A software developer does not direct or control the operation of the vessel and is therefore unlikely to fall within “any person for the time being responsible for the conduct of the vessel” under regulation 6(1) of the 1996 Regulations. Accordingly, the offence under those Regulations is unlikely to arise. Nor is the developer likely to be “every seafarer employed in a UK-registered ship” within the meaning of section 58(1), making it difficult to apply that provision. Section 98, which is confined to the master or owner, also does not apply.

As regards GNM, at the design stage it would be necessary to establish that: (i) a reasonably prudent person in the position of the developer would have foreseen a serious and obvious risk of death arising from the act or omission; and (ii) the breach fell so far below the standard expected of a developer with the relevant qualifications, experience and responsibilities as to be blameworthy and criminal. Since a developer would ordinarily design software so as to comply with the COLREGs and other relevant rules, GNM will generally not be established. Nevertheless, it cannot be ruled out entirely. For example, where reports had already been made of a risk of collision, of another vessel taking emergency avoiding action, or of an accident actually caused by autonomous operation, and the software was nevertheless left uncorrected, GNM might be established from that point onwards.

The offence under the Corporate Manslaughter and Corporate Homicide Act 2007 may also arise where a person responsible for ensuring safe collision avoidance in the software design, principally in relation to the collision-avoidance system, forms part of senior management and the way in which the organisation’s activities are managed or organised amounts to a gross breach of a relevant duty owed to the victim. As noted above, however, the scope of the offence is narrow.

4. Conclusion

Having outlined the law and criminal liability relating to collisions in the United Kingdom, I have examined, from the standpoint of United Kingdom law, several situations in which criminal liability may arise in relation to autonomous vessels.

Autonomous operation is expected to reduce the burden on those operating vessels and to contribute to a reduction in accidents. At the same time, however, the operation of a vessel will involve a wider range of actors, organisations, equipment and technologies than before.

In Japan, maritime officers have traditionally been taught that the Act on Preventing Collisions at Sea contains no penal provisions. In the United Kingdom, by contrast, breach of the equivalent legal rules constitutes a criminal offence, and liability extends not only to individuals but also to entities such as shipowners. In addition, the Herald of Free Enterprise disaster prompted the creation of a corporate manslaughter offence that differs in character from Japan's dual-liability provisions.

If the operation and technology of autonomous vessels are to develop, individuals within companies and organisations will need an environment in which they can engage in such work with confidence. There are also limits to placing the burden of ensuring safety on any single individual within an organisation. Viewed in this light, reliance solely on the liability of individual persons involved – in particular negligence offences resulting in death or injury and fine-based regulatory offences – may not always be sufficient to prevent collisions in Japan.

Legislation concerning the operation of autonomous vessels is likely to develop rapidly in Japan and other countries. In parallel, criminal law, as one aspect of ensuring safety, will require continued examination in light of developments in each jurisdiction.

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Biography

1999 Entered the Navigation Course of the Marine System Engineering Programme, Tokyo University of Mercantile Marine (withdrew in 2001).

2008 Graduated from Kobe University Graduate School of Law.

2010 Admitted as an attorney-at-law.

2016 Registered as a maritime counsel.

2025 Completed the doctoral programme, Graduate School of Maritime Sciences, Kobe University.

Main Areas of Practice

Ship-collision cases (marine accident inquiries, criminal proceedings and civil litigation).

Selected Publications

- “On the Legal Significance of the ‘Duty to Keep a Lookout’ under Article 5 of the Act on Preventing Collisions at Sea: With a View to Autonomous Vessels,” T. Miyoshi & S. Fujimoto, *Journal of the Maritime Law Study Group*, May 2019, p. 2.
- “On the Legal Interpretation of the ‘Ordinary Practice of Seamen’ under Article 39 of the Act on Preventing Collisions at Sea: An Examination Based on a Judgment in an Action Seeking

Revocation of a Marine Accident Inquiry Decision,” T. Miyoshi & S. Fujimoto, *Maritime Traffic Research*, No. 68, pp. 87–98, 2019.

- “Study of Principles in COLREGs and Interpretations and Amendments of COLREGs for Maritime Autonomous Surface Ships (MASS),” T. Miyoshi, S. Fujimoto & M. Rooks, *Transaction of Navigation*, 2021, vol. 6, no. 1, pp. 11–18. DOI: https://doi.org/10.18949/jintransnavi.6.1_11
- “Rules required for operating maritime autonomous surface ships from the viewpoint of seafarers,” T. Miyoshi, S. Fujimoto, M. Rooks, T. Konishi & R. Suzuki, *The Journal of Navigation*, pp. 1–16. DOI: <https://doi.org/10.1017/S0373463321000928> (published online by Cambridge University Press, 10 February 2022).
- “Autonomous Operation of Ships (MASS) and Criminal Liability: From the Perspective of Expertise and New Technology,” T. Miyoshi & S. Fujimoto, *Journal of the Maritime Law Study Group*, No. 206, 2025, p. 2.

Selected Committee and Study-Group Appointments

- Japan Coast Guard, “Study Group on the Operation of Autonomous Vessels” (2018, 2019).
- Japan Coast Guard, “Study Committee on the Application of the COLREGs to Autonomous Vessels.”

Notes

[1] <https://www.nippon-foundation.or.jp/what/projects/meguri2040>

[2] https://www.nikkaibo.or.jp/london_pdf/2026-09_oushu%20anzen%20report_tokushu_Jpn.pdf

[3] https://www.nikkaibo.or.jp/london_pdf/2025-06_oushu%20anzen%20report_tokushu_Jpn.pdf

[4] https://www.nikkaibo.or.jp/london_pdf/2026-06_oushu%20anzen%20report_tokushu_Jpn.pdf

[5] In this article, “the United Kingdom” refers chiefly to England and Wales.

[6] COLREGs is the abbreviation for the Convention on the International Regulations for Preventing Collisions at Sea, 1972, which has been implemented in Japan through the Act on Preventing Collisions at Sea. It is comparable to road-traffic rules for vehicles and sets out the rules of navigation at sea.

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

[8] Among other matters, the Protocol provides that the police investigate where manslaughter is suspected, or where medical evidence indicates that death is likely; that the investigation is conducted and managed jointly under the Work-Related Deaths Protocol: Practical Guide; that one agency has “primacy” during the investigation; and that all agencies involved in a joint investigation should continue their respective inquiries, whether or not they have primacy.

[9] The CPS is broadly equivalent to the Public Prosecutors Office in Japan.

[10] Article 247 of Japan’s Code of Criminal Procedure provides that “public prosecution shall be instituted by a public prosecutor,” thereby establishing a prosecutorial monopoly.

- [11] On recent private prosecutions in the United Kingdom, see Private Prosecutions: Safeguards – Government Response to the Committee’s Ninth Report:
<https://committees.parliament.uk/publications/4916/documents/49317/default/>
- [12] <https://www.gov.uk/government/publications/mca-enforcement-policy-statement/mca-enforcement-policy-statement>
- [13] In the United Kingdom, the subjective element required for criminal liability has traditionally been expressed through the concept of mens rea. It refers not only to deliberate intention but also to less intentional but blameworthy states of mind such as recklessness or negligence. Offences requiring no proof of mens rea are described as offences of absolute liability. Offences in which mens rea need not be proved in relation to part, but not all, of the actus reus, or in which the defendant must disprove the absence of a guilty mind after the prosecution has made out its case, are strict-liability offences; the 1996 Regulations are an example.
- [14] In the United Kingdom, all criminal cases begin in the magistrates’ court (Magistrates’ Courts Act 1980, section 1). Section 51 of the Crime and Disorder Act 1998 requires the magistrates’ court, where an adult appears or is brought before it charged with an offence and one of the conditions in subsection (2) is met, to send the case forthwith to the Crown Court for trial. In outline, indictable offences and either-way offences satisfying certain conditions are sent to the Crown Court. The court in which an offence is to be tried is generally determined by statute.
- [15] <https://www.cps.gov.uk/prosecution-guidance/gross-negligence-manslaughter>
- [16] Japanese law also provides for the punishment of legal persons, but generally through provisions that punish the corporation in addition to a punishable individual. Such provisions do not establish the corporation’s independent liability in the same manner.
- [17] <https://sentencingcouncil.org.uk/guidelines/gross-negligence-manslaughter>
- [18] Various Japanese renderings exist, including “remote ship-handling station”. However, an ROC may be mobile, and “centre” appears to denote a function as much as a physical location.
- [19] This differs significantly from Japan, which also punishes cases resulting in injury. For GNM, death must actually occur; the offence is said not to be established even where grave permanent disability results.
- [20] In contrast to autonomous vessels, conventional vessels are referred to in the original Japanese text as “existing ships”.