The Serious Accidents Punishment Act of South Korea and Its Impact on the Shipping Industry: Toward Sustainability

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Abstract: The Serious Accidents Punishment Act (SAPA) of South Korea mandates that chief executives secure operational safety and health to prevent industrial and civil disasters. The SAPA imposes civil and criminal responsibilities on chief executive officers, including business owners, for fatal accidents due to safety and health measures violations. We examine the SAPA’s challenges to the shipping industry and the measures taken by ship owners and ship management companies to address them. In the modern shipping industry, ships and crew often have different nationalities; hence, it may be difficult to determine which law applies or where liability lies. Business activities are mostly overseas. Ship management is performed by third parties, and the introduction of autonomous systems is leading to crew reductions and other changes; these factors create uncertainty about the SAPA’s applicability. Therefore, legal requirements and measures must be established to ensure that South Korean shipping companies do not take on excessive responsibilities internationally while still protecting workers and others. This study suggests measures to ensure safety and stability in the South Korean shipping industry following the SAPA through a horizontal comparative analysis with the UK’s Corporate Manslaughter and Corporate Homicide Act 2007, which served as a model for the SAPA.

Keywords: serious accidents punishment act; corporate manslaughter and corporate homicide act; international safety management code; ship management company; autonomous system

1. Introduction

1.1. Background

South Korea has social problems and costs due to the continuous occurrence of unexpected accidents as an adverse effect of the rapid and compressed development of various industrial fields [1]. To address these issues, South Korea enacted the Serious Accident Punishment Act (SAPA), which came into force on 27 January 2022 [2,3]. Following the example of the UK, the SAPA punishes business owners, chief executives, and corporations for fatal accidents that occur on business sites operated by them or by institutions due to failure in their obligation to implement safety and health measures. The SAPA was promulgated in 2021 due to a contested legislative process between civil groups, who presented urgent concerns and petitions representing victims of industrial and civil disasters, and businesses, who were concerned about the weakening of industrial competitiveness due to additional costs [4].

The SAPA shifts the responsibility for safety to the subcontracting business owner without judging whether the danger is within the scope of their supervision and management. This results in problems such as (a) the applicability of strict liability, and (b) the possibility of violating the principle of intention and causal link, by which liability for
a crime is established when the intention of the business owner to commit a deliberate offense is acknowledged, and (c) an imbalance or lack of conformity with international punishment regulations.

In the shipping industry, the International Maritime Organization (IMO) has been creating various global regulatory frameworks to ensure maritime safety. As the most important international treaty regarding maritime safety, the IMO adopted the International Convention for the Safety of Life at Sea. International shipping transports around 80 percent of international goods through shipping routes [5] (p. 2) At the global level, IMO regulatory instruments play an important role in preventing maritime accidents by imposing ship owner responsibility and liability for accidents. When the SAPA is applied to shipping companies, uncertainties and opacity are expected to increase because of the unique character of the shipping industry, in which business is operated through mobile workplaces called “ships” whose operation and management is performed by third parties. Regarding this problem, scholars need to take the initiative in suggesting ways to ensure legal predictability and balance so that excessive responsibility will not be concentrated on shipping companies and ensure the sustainable safety of the shipping industry under the SAPA. Moreover, since new changes in navigation and operation are expected with the introduction of autonomous ships in the future, corresponding response measures by ship owners and ship management companies should be developed.

1.2. Aims

Based on the research design in Figure 1, this study develops arguments under the premise that shipping companies, including domestic ship owners and ship management companies, may experience unexpected legal problems with the application of the SAPA. To support this argument, this study first reviews the background of the establishment, main content, precedent trends, and application to shipping companies of the UK’s Corporate Manslaughter and Corporate Homicide Act 2007 (“Corporate Manslaughter Act”), which was presented as a legislative model for the SAPA. Then, the study compares this model with the SAPA. Through this comparison, expected problems when the SAPA is applied to shipping companies in South Korea are identified.

![Figure 1. Research design and process.](image-url)

The primary aim of this study is to present countermeasures so that excessive criminal liability will not be imposed on ship owners and ship management companies who fulfill their obligations to address safety. The second aim of this study is to provide domestic ship management companies who are providing services to domestic and foreign ship owners with basic legal guidelines to minimize the negative effects of the SAPA based on
the characteristics of the shipping industry, such as internationality and logistics supply. The study design is illustrated in Figure 1.

2. Theory and Methodology
2.1. Theory

According to the Risk Society Theory of Ulrich Beck, South Korea can be considered an example of a “risk society,” in which risk and distrust coexist due to compressed development. The level of social risk in South Korea is high because of the overlapping of the premodern agricultural society of the 1950s (and before) to the 1970s, the modern industrial society of the 1970s and 1980s, and the postmodern information society of the 1980s to now. This has produced a contemporary developed nation where risks and disasters nevertheless persisted at high levels from the 2000s to 2020s [6] (p. 328). Fatal accidents have continued to occur, and a social culture that takes them for granted has formed because of the country’s growth within a short time, compared with, for instance, the UK, and the resulting internal lack of safety awareness and procedures [7] (pp. 9–22).

Reflecting on this social culture, in South Korea, according to the 2020 industrial disaster death statistics released by the Ministry of Employment and Labor, the average number of occupational deaths from industrial disasters averaged 1,927 per year between 2010 and 2020. In other words, on average, 5.3 workers per day die from industrial disasters, the highest among OECD member countries [8]. Furthermore, according to the statistics of the Korea Maritime Safety Tribunal, in the shipping industry, in 2021, the total number of Korean crew who suffered industrial disasters on ships engaged in international voyages was 239, of whom 142 were dead or missing. Most of the accidents were due to the ship sinking because of insufficient institutional arrangements and lack of safety awareness, and fatal accidents while working on ships [9]. Examples are the Sewol ferry sinking on 16 April 2014, which caused the death of 304 persons [10], and the death of a trainee crew member aboard the Sunshine, owned by Pan Ocean, after they showed symptoms of heat stroke in February 2020 [11]. These accidents were caused not by unavoidable circumstances but by the lack of social institutions and management and the absence of a legal system to enforce them.

2.2. Methodology for the Comparative Analysis with UK Corporate Manslaughter and Corporate Homicide Act 2007

This study systematically analyzes the background to the establishment, main contents, precedents, relationships with shipping-related laws, and applications of the UK’s Corporate Manslaughter Act, which was suggested as a model for the SAPA. This analysis aims to gain insights into the application of the SAPA in the shipping industry in South Korea [12]. The comparison in this study is based on the acknowledgment of the criminal liability of companies (corporations) for death cases that occur at various industrial sites in the UK [13] (p. 10, 75). However, the principle of identification is limited in its ability to impose criminal liability on companies because its application requires proof that the management had specific awareness of the risk for worker death. Nevertheless, the UK established the Corporate Manslaughter Act. It imposed criminal liability on companies as a consequence of the sinking accident of the Herald of Free Enterprise, a ferry owned by P&O European Ferries, at 7 p.m. on 6 March 1987 after leaving the port of Zeebrugge, Belgium, which resulted in 193 deaths and four missing persons [14] (p. 423).

South Korea actively accepted the social demand for legislation similar to the UK’s after the Sewol ferry accident and established the SAPA based on the UK’s Corporate Manslaughter Act, from 27 January 2022. Against this background, using the research methodology illustrated in Figure 2 below, this study preemptively examines the legal issues surrounding the SAPA and its relationships with other laws, focusing on comparing the SAPA with the UK’s Corporate Manslaughter Act. This study attempts to identify effective measures to address the requirements of the SAPA for domestic and foreign ship owners and ship management companies operating in South Korea. This study also points
to concerns about excessive legislation due to reckless legislative initiatives to resolve accidents whenever they occur and discusses the need for amendments to existing laws.

Figure 2. Research methodology.

2.3. Research Questions

This study investigates how the introduction of the SAPA may affect ship owners and domestic ship management companies that are providing services for domestic and foreign ship owners, as shown in Figure 3. The research period was from 1 January 2015 (when a legislative petition for the enactment of the “Act on Punishment of Corporate and Government Persons for Civil and Worker Accidents” was registered by the “Coalition for Enactment of the Corporate Punishment Act for Serious Accidents” in 2015, after the Sewol ferry disaster and the humidifier sterilizer disaster) to 30 December 2021. The exposure frequencies of major keywords were analyzed after data pre-processing through data reduction and expansion, extraction of Korean and English nouns, stemming, and a thesaurus check, focusing on the key phrase “punishment of serious disasters” using Knowledge Matrix Plus (KM+), a science and technology metrology program. After that, based on the research results and the opinions of the authors, research questions were formulated as follows:

RQ1. How is the UK’s Corporate Manslaughter Act, the domestic legislation’s model, applied to the shipping industry?
RQ2. Who is responsible when the SAPA is applied to shipping companies?
RQ3. What are the countermeasures to minimize criminal liability due to the enforcement of the SAPA for domestic and foreign ship owners and domestic ship management companies that provide services to domestic and foreign ship owners?

2.4. Research Contribution

This study discusses the application and interpretation of the SAPA for domestic and overseas shipping companies and domestic ship management companies providing services to ship owners. In addition, this study presents a legal basis for how the SAPA can be interpreted and applied to ship owners, charterers, ship management companies, masters, and crew, to whom the law is addressed when serious disasters occur at sea during the operation of a ship. This study aims to provide legal guidance on the enforcement of the SAPA for workers and others connected to Korean and foreign shipping companies by
considering uncertainties following its introduction. It also aims to share information about the interpretation of the SAPA internationally to be used as a basic academic resource and help the SAPA achieve its legislative purpose.

3. Review of the UK’s Corporate Manslaughter Act as a Comparative Tool

3.1. Background of Legislation

The UK’s Corporate Manslaughter Act stipulates that companies assume criminal liability if workers die due to violation of occupational safety and health regulations and in the event of large-scale public disasters caused by corporate negligence. Its objective is to strengthen minimum safety standards, clarify responsibilities in various workplaces, and support society through the trickle-down effect of strict regulation [15]. At the end of the 18th century, when the industrial revolution started, urban factories needed much labor in the UK. However, it was still an agrarian society. Children, without feudal restrictions on relocation, became factory workers in urban factories, and their working environment was extremely poor, which created a vicious cycle causing social problems such as poverty, disasters, and accidents ([16] (p. 1), [17]). Over the decades, the UK enacted a long series of voluntary workplace health and safety legislations but failed to apply strict laws to companies that caused multiple deaths due to negligence, or to enforce existing laws [16,17]. However, in the 1980s in the UK, a number of social disasters occurred in succession, and it has been named the UK’s worst disaster decade [18]. For example, in 1987, a large fire broke out in King’s Cross subway station in the center of London, causing about 30 deaths. The Herald of Free Enterprise, operating between the UK and Belgium, sank in the same year, causing 188 deaths [19]. Even in such major disasters, it was practically impossible for the courts to hold companies criminally liable for negligence, although ordinary citizens maintained that shipping companies must be held legally accountable [20]. Certainly, the UK has acknowledged the criminal liability of companies based on the principle of identification since 1944 [21]. According to the principle of identification, reasons attributable to a company or the senior management of a company with independent judgment and discretion are automatically acknowledged as attributable to the corporation. Therefore, if executives commit a criminal act, a criminal act by the

Figure 3. Flowchart presenting legal issues.
corporation is also acknowledged, and the company also has the same criminal liability [21]. However, criminal punishment of senior management was possible only when the criminal intent (mens rea), subjective awareness of the risk of death, was acknowledged. The legal problem with this is that, although criminal punishment of companies is legally possible, from a practical perspective, it was generally impossible to prove that the corporate senior management (directing mind) had a subjective awareness (mens rea) about the consequential risk of death [22] (p. 10). For this reason, it was extremely rare to impose liability for negligence on companies. When we examine the application of the law to maritime accidents, including ship sinking accidents, employees who directly operate the ship, such as the master or crew, are directly responsible, and there has been a limit to acknowledging that the executives of shipping companies are directly responsible for the accident. To address such institutional defects, the UK Law Commission proposed in a report to introduce a new type of crime, corporate killing. The UK government also acknowledged the need for the Corporate Manslaughter Act, publishing “Reforming the Law on Involuntary Manslaughter: The Government’s Proposals” [22,23].

The UK government submitted a bill for the Corporate Manslaughter Act in 2006. After many discussions, it was enacted under the name “Corporate Manslaughter and Corporate Homicide Act 2007” in July 2007 and was enforced from 6 April 2008 [24]. This innovative legislation supplanted the conventional principle of identification. It made companies take criminal liability (separately from the punishment of individuals) for major industrial disasters or serious fatal accidents caused by a gross breach of a duty of care. This law implied the change from a dependent to an independent model in criminal punishment of companies and consolidated awareness of the importance of a corporate safety culture in the UK [25] (p. 5). It has prevented major industrial disasters in the UK [14] and played important roles that can be benchmarked by many countries.

3.2. Main Content of the Corporate Manslaughter and Corporate Homicide Act 2007

The UK’s Corporate Manslaughter Act focuses on whether the overall management or operation systems of a company can prevent the breach of a duty of care by low-level workers who are responsible for practical tasks. Even if the executives are not aware of such a breach, the criminal liability of the company can be acknowledged if the breach is caused by a problem with the company’s overall management system [26].

The major legal effects of the Corporate Manslaughter Act are as follows. Section 1 of the Corporate Manslaughter Act prescribes that the Corporate Manslaughter Act is applicable if a death is caused by a failure of the operation or organization of the company and if such a failure of the operation was caused by senior management and amounts to a gross breach of a relevant duty of care owed by the organization to the deceased (“An organization to which this section applies is guilty of an offence if the way in which its activities are managed or organized—(a) causes a person’s death, and (b) amounts to a gross breach of a relevant duty of care owed by the organization to the deceased.”) [24] (sec. 1(1)). The Corporate Manslaughter Act applies in the following conditions: (1) the actor is an organization such as a company as prescribed by law; (2) the corporation, etc. bears a duty of care for victims; (3) a breach of a duty of care by the corporation, etc. is due to management failure of the corporation, etc.; (4) the management failure was committed by senior management; (5) the breach of a duty of care is a gross breach; (6) there is a causal link between the breach of a duty of care and the victim’s death. Actors who can violate the Corporate Manslaughter Act are limited to organizations, including companies [25] (pp. 18–21). The meaning of organization is defined in Section 1 [24] (sec. 1(1)). Paragraph 2. The Corporate Manslaughter Act can apply to a company, public institutions listed in Schedule 1 of the same Act, police forces, partnerships, trade unions, or employers’ associations that are employers [24] (sec. 1(2)).

Let us consider some of these requirements in more detail. First, an organization, etc., must bear the relevant duty of care for the victims [22] (p. 13, n. 20). In other words, it must be possible to consider management failure by an organization as a gross breach of
a duty of care that the corporation bears for the victims. Here, the duty of care refers to one of the items listed in Section 2, Paragraph 1, which is imposed on the corresponding corporation by the theory of negligence [22] (p. 13, n. 20).

Second, the Corporate Manslaughter Act requires the existence of a senior management failure in the corresponding organization, etc. The reason for requiring a management failure instead of gross negligence is to overcome the limitation of the identification principle. In other words, according to the principle of identification, to punish an organization, etc., for murder by gross negligence, it must be acknowledged by a senior manager who can be identified within the organization [25] (pp. 9–10). However, senior managers had little room for acknowledging gross negligence, especially in large companies. Therefore, it was also virtually impossible to punish a company for murder by gross negligence by applying the identification principle. To overcome this problem, the Corporate Manslaughter Act requires management failure instead of gross negligence [24] (sec. 8). The concept of management failure is completely distinct from the immediate cause attributable to the actor who directly caused the accident. It is determined by whether there is an appropriate safety management system in the organization or whether the organization is being operated in a way that manages risks appropriately [25] (pp. 9–10).

Third, there must be a violation of the duty of care that the corresponding organization bears to the victims due to a management failure of senior managers. The breach of a duty of care must be gross [24] (sec. 2). A gross breach of a duty of care refers to a case wherein the conduct alleged to amount to a breach of duty falls far below what can be reasonably expected of the organization under the circumstances [24] (sec. 1(4)).

Fourth, an injury is not sufficient for the Corporate Manslaughter Act to apply; the consequence of death is required [27]. However, the deceased does not have to be member of the organization, etc. The Corporate Manslaughter Act is applicable even if third parties die if the organization bore the duty of care for them [27].

Fifth, the consequence of death must be caused by a breach of duty of care. In other words, there must be a causal link between the breach of a duty of care and death, and determining this link follows the general principle used for determining causal links [28] (p. 544).

3.3. Case Studies for the Corporate Manslaughter Act

The first case of conviction after the enactment of the Corporate Manslaughter Act in 2007 was the case of Cotswold Geotechnical Holdings Ltd. in 2011 [29]. Alex Wright, a geologist, working for Cotswold Geotechnical Holdings Ltd., was killed while investigating the soil conditions at the bottom of a 3.5 m trial pit for land development in the Stroud area because of a collapse of loaded sand and gravel which struck him [29]. The UK’s Crown Prosecution Service indicted the company by applying the Corporate Manslaughter Act for the first time [29]. They decided to indict the company on the fact that its work system was required to take all reasonably necessary measures to protect the workers performing their jobs but did not do so. During the trial, the jurors also acknowledged that the work system in the drilling pit of the company was very comprehensive and excessive. Furthermore, it was revealed during the trial that the company ignored generally known recommendations of the industry and required the victim to work without fixing required devices such as props in the drilling pit [29]. As a result, the court decided to impose a fine of GBP 385,000 on the company under the Corporate Manslaughter Act in 2011. Cotswold later appealed, but the appeal was rejected by the court (Lord Judge C.J. held that “in the context of the relatively small scale of the company’s operation as reflected in its turnover and its current financial state, a fine of £385,000 would be sufficient to mark the gravity of the offence and to send the necessary message about the need for employers generally to attend to their duties to provide safe places of work.”) [29].

In the case of JMW Farms Ltd. in Northern Ireland [30], the victim, Robert Wilson, an employee of this company, died when goods piled up on the pallet of a forklift fell while being moved. The company was indicted after the accident and pleaded guilty. The court
imposed a fine of GBP 187,000 on the company [30]. Since then, the number cases in which companies are indicted and found guilty by applying the Corporate Manslaughter Act has increased. Examples include the case of Lion Steel Ltd., in which the company was fined GBP 480,000 after an employee fell from a fragile roof panel and died ([31], [32] (p. 156)). In the case of Mobile Sweepers (Reading) Ltd., an employee died while repairing a road sweeper. The company was fined GBP 8000 and ordered to publicize the violation [33].

The rulings mentioned above were for incidents more closely related to workplace health and safety, in that the victims of accidents caused by corporate activities were “workers employed by a company” rather than the public or consumers. Meanwhile, the case of the Princes Sporting Club in 2013 set a precedent in which the accident victim was a public member, an 11-year-old girl who came to the club to enjoy water sports. The girl fell into the water while boarding a banana boat, but the boat driver started the boat without knowing this, resulting in the girl’s death. The court acknowledged the parent company guilty, sentenced Princes Sporting Club to a fine of GBP 134,579.69, including the total litigation costs, and ordered to publicize the violation [34].

3.4. Applicability of Corporate Manslaughter to the Shipping Industry

The Corporate Manslaughter Act applies also to the shipping industry. The industry has unique characteristics, such as the many types of vessels in use and its international character. As a result, it is not easy to prove the responsibility of companies and punish them. There is a limit to clearly distinguishing the duty of care of the designated person (DP) involved in ship operations, maintenance, and human resources as a safety manager from the duties of actual ship operations, maintenance, and cargo transportation. In this section, the applications of the Corporate Manslaughter Act to the shipping industry and their implications through its relationships with maritime law are examined in detail.

3.4.1. Relationship of Corporate Manslaughter with Shipping Regulations

The UK had already adopted and enforced the International Safety Management Code for the safe operation of ships and the amelioration of pollution as a statutory instrument (the Merchant Shipping (International Safety Management [ISM] Code) Regulations 1998, also referred to as “the 1998 Regulations”) in the shipping industry before enacting the Corporate Manslaughter Act [35]. These regulations need to be referenced to examine their relationship with the Corporate Manslaughter Act in the shipping industry. Regulation 4 of the 1998 Regulations stipulates that all companies shall comply with the requirements of the ISM Code [35] (reg. 4). Regulation 19 stipulates that persons, companies, masters, or DPs violating the obligations provided by regulations 4, 5, 6, 7, 8, 16, and 18(3) concerned with ISM Code are punishable for specified violations [35] (reg. 19). Regulations 7, 8, and 9 in particular cover key issues in the examination of the application of the Corporate Manslaughter Act to shipping companies. First, Regulation 7 specifies that owners of all ships must operate ships according to a safety management system with the criteria under which they received the safety management certificate [35] (reg. 7). Ship owners who violate Regulation 7 can be subject to a fine not exceeding the statutory maximum or imprisonment for a term not exceeding two years. Regulation 8, which concerns DPs, mentions the privileges and responsibilities of a DP [35] (reg. 8). Shipping companies must appoint a DP who can directly report to the Chief Executive Officer to ensure the safe operation of ships and to secure connections between the company and crew [35] (reg. 8). The DP monitors and supervises the safe operation and prevention of marine pollution by each ship, and has the authority and responsibilities for resources and onshore support [36] (p. 181). According to Regulation 19, Paragraph 1 of the Regulations, companies violating Regulations 4, 5, or 8 can be subject to a fine not exceeding the statutory maximum or imprisonment for a term not exceeding two years [35].

As Mandaraka-Sheppard pointed out, “The Regulations do not define how to attribute liability to the company” [37] (p. 347). However, the Merchant Shipping Act 1995, s. 277, Ref. [35] stipulates that it applies to “a director, manager, secretary or another
similar officer of the body corporate or any person who was purporting to act in such a capacity” [38] (sec. 277), meaning that violation of the Merchant Shipping (ISM Code) Regulations 1998 [34] by a person would be the responsibility of the company. The ISM Code and The Merchant Shipping (ISM Code) Regulations 1998 are helpful for interpreting the application of the Corporate Manslaughter Act to shipping companies [39] (p. 508). They can assist with the interpretation of who can be classified by the court as executives of responsible institutions in accordance with the related provision of the Corporate Manslaughter Act [39].

3.4.2. Liability of the DP for Corporate Manslaughter: Relationship of Corporate Manslaughter with Shipping Regulations

The UK’s Corporate Manslaughter Act stipulates criminal punishment of an organization when the organization or a member of the organization causes the death of a victim, and the organization’s breach of the duty of care in relation to the accident is a gross breach [40]. A gross breach refers to a case wherein an organization has fulfilled its duty of care at a level far below what is reasonably expected under the circumstances. An organization is subject to criminal punishment if a senior manager in the organization manages specific operations in connection with the breach and there is a serious violation of the senior manager’s obligations in relation to the management and structure of the organization [40]. Executives or senior managers of an organization are defined as persons who play an important role in the activities and management of the organization in general or to a substantial extent, or who practically play an important role in the management of the organization. The Corporate Manslaughter Act provides a means of attributing certain failures of an organization to the body itself to indict involuntary manslaughter [39] (p. 508). Therefore, it is only applied to the organization and not to individuals, whether they are directors or have other roles within the organization.

In the shipping industry, the DP is responsible for ensuring the compliance of the corporate safety management system based on the issued certificate and managing and monitoring ships’ safe and efficient operations [36]. According to Regulation 8 of the Merchant Shipping (ISM Code) Regulations 1998, Section 277 of the Merchant Shipping Act 1995, and the Corporate Manslaughter Act, the DP takes responsibility as the safety manager when a fatal accident occurs on a ship [35,38].

However, Mandaraka-Sheppard writes, “it will be difficult to ascertain whether it was the act of the DP alone that caused the death. If he is not a director, he may be personally exposed to the risk of conviction if the mental element is proved and his gross negligence caused the death, but the duties under the ISM Code are not performed by him alone, unless death resulted clearly from his act or omission” [37] (p. 353). In the modern shipping industry, the DP is responsible for monitoring each ship’s safe and efficient operation to ensure safety and prevent marine pollution at sea [36]. Therefore, it is obvious that the DP takes responsibility for violations to safety procedures [39] (p. 509). Regulation 19(4) of the Merchant Shipping (ISM Code) Regulations 1998 stipulates that any contravention of regulation 8(2) by the DP shall be punishable by a fine not exceeding the statutory maximum or imprisonment for a term not exceeding two years [39]. Likewise, regulations 8 and 19 specify that the company shall take responsibility and that both the company and individuals may be indicted for such crimes ([35] (sec. 8), [35] (reg. 19(4)).

Section 28, Paragraph (3) of the Corporate Manslaughter Act applies to offenses (a) within the seaward limits of the territorial sea adjacent to the UK or (b) on a ship registered under Part 2 of the Merchant Shipping Act 1995. The Corporate Manslaughter Act is applied when foreign ships violate this law within the seaward limits of the territorial sea, by Section 28, Paragraph (3). In other words, a special duty of care should be taken because this law is also applicable to the companies owning foreign vessels [38] (reg. 28(3)).

If liability is imposed for a breach of the Merchant Shipping Act 1995 and the Merchant Shipping (ISM Code) Regulations 1998, individuals or companies could avoid liability by demonstrating the reasonableness of their actions [39] (p. 509). Section 58(6)(c) of
the Merchant Shipping Act 1995 stipulates that “in proceedings for an offence under this section it shall be a defence to prove that the accused took all reasonable precautions and exercised all due diligence to avoid committing the offence” [38] (sec. 588(6). Regulation 20 of the Merchant Shipping (ISM Code) Regulations 1998 stipulates that “it shall be a defence for a person charged with an offence under these regulations to show that he took all reasonable precautions and exercised all due diligence to avoid the commission of the offence” ([35] (sec. 8), [35] (sec. 20)). The Corporate Manslaughter Act does not have any provisions related to this; the defendant corporation must prove that it is not responsible for the death.

3.4.3. Implications

Trevor J. Douglas wrote, “the Corporate Manslaughter and Corporate Homicide Act 2007 could be said to be an Act too far as regards maritime corporations” [39] (p. 512). This is because even without the application of the Corporate Manslaughter Act, it is possible to impose responsibility on shipping companies for fatal accidents resulting from breach of a duty of care and intentional negligence at sea based on existing laws such as the current Merchant Shipping Act 1995 and the Merchant Shipping (ISM Code) Regulations 1998. For example, if a safety breach or a fatal accident occurs because a master who follows the guidelines of shipping companies sails a ship with the bow doors open, he will be punished first by Section 58 of the Merchant Shipping Act 1995 [39] (p. 512). The precondition for this is that “the act or omission was deliberate or amounted to a breach or neglect of duty” [39] (p. 512). The master could be indicted for negligence if death or injury was caused by his intention to cause injury or death or by his reckless act [41]. According to the Seaboard Offshore Ltd. v Secretary of State for Transport (“Safe Carrier”) precedent, the judge ruled that “the owner, charterer or manager is criminally liable if he fails personally in the duty, but is not criminally liable for the acts or omissions of his subordinate employees if he has himself taken all such reasonable steps” [42]. In this precedent, Judge Lord Keith said that every person related to the operation of a ship, including the master, crew, owners, charterers, and managers, is responsible for its safe operation [42]. The Merchant Shipping Act 1995 imposes the obligation for the safe operation of a ship on masters and ship owners (S.98). It requires the ship owners to verify whether the ship is operated safely (S.100). Section 277 of the Merchant Shipping Act 1995 provides an accurate guide to the scope of the senior management group [38] (sec. 277). According to this Act, the group includes not only senior managers who play important roles in the decision-making process (2007 Act, s. 1(4)(c)(i)) or in managing/organizing all or a considerable part of the company’s activities (2007 Act, s.1(4)(c)(ii)), but also secretaries, individuals, executives, and officers [39], p. 517. In other words, Section 277 of the Merchant Shipping Act 1995, which is linked to Section 1(4)(c) of the Corporate Manslaughter Act, creates corporate responsibility for the master’s actions [39], p. 517. Similarly, companies and individuals must take legal responsibility when they violate regulations 8 and 19 of the Merchant Shipping (ISM Code) Regulations 1998. The ruling in Manchester Trust v Furness clearly states that the master is an employee of a shipping company [43]. In contrast, to avoid liability caused by the master’s actions, the company referred to the Salomon v Salomon & Co. Ltd. (London, UK) precedent or their duty of care and tried to distance themselves from proximity to the master [44]. The liability for a series of accidents resulting from the master’s breach of a duty of care may be attributed to the company. As a person in charge of ship operations who has been granted the authority to represent the ship owners, the master can be considered to hold the senior position, which takes responsibility for property such as the ship, the cargo, and the lives of the crew or passengers [39] (p. 517). This is because the master is a seafarer employed by the ship owner, and the ship owner directs and supervises the crew and operates the ship through the master.

For example, a container ship is generally organized through corporate senior management and is operated and managed by receiving cargo from unspecified shippers. Hence, in terms of shipping practice, masters are engaged in ship operations according to the
corporate policy and guidelines and international practices and regulations [39] (p. 517). Therefore, it is not easy to find a person responsible for a specific action or to raise the veil of the complex management system of the shipping company. It is more difficult to identify who is responsible in a case of negligence liability because companies create thicker veils. Even if it is possible to raise the veil, it is not easy to impose liability on individuals, and the liability will inevitably become a problem for the company’s policies and operating procedures [39].

4. The SAPA of South Korea

4.1. Background of Legislation

In South Korea, the issue of corporate responsibility for onshore industrial disasters has escalated through major disasters, such as the collapse of the Seongsu Bridge (1994) and the Sampoong department store (1995). This ignited the debate on the responsibility of companies and government for social disasters and safety, which is the core background to the enactment of the SAPA [45]. Moreover, the main background to the enactment of the SAPA in the offshore area was the repeated occurrences of disasters, including the sinking of the passenger ship Changgyeong on 9 January 1953, the sinking of the ferry Namyeong, which killed 326 people on 14 December 1970, the accident of the West Sea ferry off the coast of Wido, Buan-gun, Jeollabuk-do, which killed 292 people, on 10 October 1993, and the sinking of the Sewol ferry while sailing from Incheon to Jeju Island, on 15 April 2014 [46].

The determination for early enactment of the law was strengthened as the interest and demand for the right to safety and health of innocent ordinary citizens and workers increased throughout society. The media also emphasized the safety and health of workers as a major issue. In particular, a campaign titled “Industrial Accident Death Is Corporate Murder” was launched in 2003. In 2006, corporate social responsibility was demanded through “murder company selection ceremony,” and the need for the enactment of an act modeled after the UK’s Corporate Manslaughter Act was raised. Since then, our society has faced “industrial accidents,” such as fatal gas suffocations, crushing accidents at thermal power plants, and fire-related accidents at logistics warehouse construction sites, as well as “civil disasters,” such as passenger ship sinkings and humidifier disinfectant spill accidents [46]. The outcome of these incidents the SAPA, was passed by the National Assembly on 8 January 2021, promulgated on 26 January 2021 and enforced from 27 January 2022.

Attention is focused on how this will affect our society and economy, especially since the obligations and responsibilities of companies and business owners have been raised with the enactment and implementation of the SAPA. There is an urgent need to anticipate the unexpected problems that the SAPA may pose for shipping companies and find reasonable countermeasures.

4.2. Key Factors of the SAPA

In the case of a “serious industrial disaster” that causes one or more deaths due to a breach of the duty to secure safety and health by a business owner or chief executives, the business owner or chief executives can be charged with “imprisonment for 1 year or longer or a fine not exceeding USD 77,000” for death, and “imprisonment for not more than 7 years or longer or a fine not exceeding USD 770,000” for injury and disease [47]. In addition, corporations or institutions that breach the duty to secure safety and health can be charged with a fine not exceeding USD 38,000 for fatal accidents and a fine not exceeding USD 77,000 for injury and disease [2] (art. 10). The SAPA also introduced a punitive damage system, according to which business owners and corporations who cause serious disasters or damage in violation of the duty to secure safety and health, either intentionally or by gross negligence, are liable for compensation of up to five times the amount of damage [2] (art. 15). Furthermore, the concept of “serious civil disaster” has been introduced for the punishment of accidents that occur in public facilities or public transportation, and the
business owners, corporations, etc. who cause “serious civil disaster” can be charged with the same punishment as for “serious industrial disasters” [2] (art. 2(3)).

According to Article 1, the objective of the SAPA is to prevent serious disasters and protect the lives and bodies of citizens and employees by punishing business owners, chief executives, and corporations who cause fatal accidents by violating safety and health measures. Serious disasters are classified into serious industrial disasters and serious civil disasters. A serious industrial disaster is a disaster that causes (1) one or more deaths, (2) two or more injured persons who need to be treated for six months or more, or (3) three or more occupational diseases within one year due to the same risk factor [2] (art. 2(2)). A serious civil disaster refers to a disaster that is caused by defects in the design, manufacture, installation, or management of specific materials, products, public facilities, or public transportation. It results in (1) one or more deaths, (2) ten or more injured persons who need to be treated for two months or more due to the same accident, or (3) ten or more diseased persons who need to be treated for three months or more due to the same cause [2] (art. 2(2)).

The SAPA imposes the duty to secure safety and health on “business owner and chief executives, etc.”. “Business owner” refers to a person who runs their own business or conducts business by using the labor of others. “Chief executive, etc.” refers to a person who has the authority and responsibility to represent and manage a business or who is in charge of safety and health [2] (art. 2(7, 8, 9)), as well as the heads of central administrative institutions, local governments, local public companies, and public agencies. Article 4 of the SAPA stipulates that business owners or chief executives must take measures appropriate to the characteristics and size of the business and workplace to prevent safety and health-related harms and risks to employees in a business or workplace that is practically governed, operated, and managed by the business owner, corporation, or institution [2] (art. 4). According to Article 5 of the SAPA, business owners or chief executives must take the managerial measures required to fulfill their obligations according to safety and health-related laws to prevent serious industrial disasters to the employees of subcontractors when a business owner, corporation or institution subcontracts, contracts services, consignment, etc., to a third party [2] (art. 5). However, this is only applicable when the business owner, corporation, or institution has the actual responsibility to govern, operate, or manage the facility, equipment, place, etc. Article 6 of the SAPA stipulates that if one or more deaths occur due to an industrial disaster because the business owner or chief executive, etc. violates their duty to secure safety and health, they can be charged with imprisonment for one year or longer or fined an amount not exceeding USD 77,000 [2] (art. 6). Furthermore, if two or more injured persons need to be treated for six months or more due to the same accident, or three or more occupational diseases as prescribed by Presidential Decree, such as acute poisoning, occur within one year due to the same risk factor, the owner, etc. can be charged with imprisonment for not more than 7 years or longer or a fine not exceeding USD 770,000 [2] (art. 10).

4.3. Application of the SAPA to the Shipping Industry

The ISM Code requires ship owners or ship management companies to establish, maintain and implement a Safety Management System at the global level [37] (p. 79). South Korea introduced the ISM Code in Chapter 5 of the Maritime Safety Act as domestic law [48]. Despite the implementation of the ISM Code, disasters involving the safety of crew on board ships occur regularly in South Korea due to a combination of causes such as a poor labor environment in the limited space of ships, poor safety and health systems, and a lack of a safety culture and awareness. For the South Korean context, in the onshore area, Article 3 of the Enforcement Rule for the Health and Safety at Work, etc. Act defines a serious disaster as “a disaster that caused one or more deaths,” “a disaster that simultaneously caused two or more injured persons in need of care for 3 months or longer,” and “a disaster that simultaneously caused 10 or more injured persons or persons with occupational diseases” [2] (art. 3). However, there is no clear definition or regulation
of “serious disaster” in maritime law. The SAPA newly defines “serious disaster”, which has been used in different contexts, and imposes related obligations and responsibilities on business owners and chief executives.

The SAPA aims to build a compliance system and ensure compliance management for safety and health to prevent serious disasters and continuously monitor the system. Moreover, the SAPA imposes on companies the duty to build a compliance system and manage it for efficient operation [47]. The SAPA does not affect existing related laws because it is a new regulation on the obligation of business owners, chief executives, etc., separate from the duty to take safety and health measures under the Health and Safety at Work, etc. Act. Therefore, shipping companies are also subjects of the SAPA and need to make an effort to learn and comply with its regulations.

The relationships of the SAPA to shipping-related laws are as follows. If serious disasters occur on ships, the crew, business owners, chief executives, and corporations can be investigated or punished according to the current laws, including the Criminal Act (e.g., death or injury due to occupational negligence), Ship Safety Act, Maritime Safety Act, Seafarers Act, and the Health and Safety at Work Act, etc. If the accident is a serious disaster caused by the nonfulfillment of the duty to secure safety and health by the business owner or chief executive, etc., criminal liability might be additionally imposed on the business owners or chief executives according to the SAPA. The SAPA includes “employees” among the workers under the Labor Standards Act [2] (art. 10(7[a])). Thus, crew members to whom the Seafarers Act, a special law of the Labor Standards Act, is applied are included among the employees under the SAPA [49]. Further, the SAPA includes passenger ships specified in the Marine Transportation Act [50], industrial disasters under the Health and Safety at Work Act, etc., which is applied to all workplaces [2] (art. 2(2)). Therefore, fatal accidents among the occupational accidents at sea that occur to the crew correspond to serious industrial disasters defined in the SAPA. As crew members are also included among employees under the Labor Standards Act, the SAPA is applicable to the serious industrial disasters suffered by crew members. Moreover, ship owners, users, corporations, ship management companies, seafarer management operators, and corporations who are in the employer position under the Seafarers Act are obligated to prepare institutional devices and implement safety measures inside and outside ships to prevent serious disasters to crew members before enforcement of the SAPA.

The SAPA can be expected to reinforce the ship owner’s duty of care for the safety of crew members. The question arises as to whether the master, as the main agent of the duty of care for safety, has a responsibility to understand the duty of care for safety because the holder of contracting authority is the ship owner in the seafarer employment contract rather than the master. In the Seafarers Act, “ship owners” are defined as ship managers, agents, and bareboat charterers who operate a ship. The master has the command and supervision rights for ship operation as a deputy of the ship owner. Still, he cannot exercise authority as an agent for crew members, who are employees of the ship owner. In other words, the master can only give orders to crew members as required to perform the jobs of ship operation. Therefore, the master under the Seafarers Act cannot be the main agent of the duty of care for safety but can only play his role as an assistant in the ship owner’s implementation of the duty of care for safety.

The SAPA stipulates that the responsibility for serious industrial disasters must be imposed on the person who has the authority and responsibility to supervise the business (i.e., a ship management company that is the actual ship owner, the owner of a ship who is responsible for the equipment of the ship, the charterer), rather than the person who is in charge of the safety and health operations for crew members. The business owner or chief executive, etc., must assume the duty to secure safety for the employees in the workplace through the establishment of safety and health management systems for shipping companies and the implementation of the safety management required to fulfill the obligations according to the safety and health-related laws. The direct locus of responsibility here is the ship owner, who has a real connection with operating the ship.
4.4. Practical Issues in Implementing the SAPA in the Shipping Industry and Countermeasures to Minimize Criminal Liability and Financial Problems

4.4.1. Meaning of “A Person Who Actually Operates and Manages” a Ship in the Shipping Industry

Article 4 of the SAPA stipulates that business owners or chief executives must take measures appropriate to the characteristics and size of the business and workplace to prevent safety and health-related harms and risks to employees in a business or workplace that is practically governed, operated, and managed by the business owner, corporation, or institution. These measures include (1) measures related to the establishment and implementation of safety and health management systems such as human resources and a budget for disaster prevention, (2) measures related to the establishment and implementation of countermeasures to prevent recurrence in the event of a disaster, (3) measures related to the implementation of improvement, correction, and other actions ordered by central administrative agencies and local governments by related laws, and (4) managerial measures required to fulfill the duty according to safety and health-related laws [2] (art. 4).

According to the SAPA, the meaning of “a person who operates and manages” a ship in shipping companies is interpreted as follows: First, the person who operates and manages a ship varies by type of vessel. If the ship owner on the register directly operates the ship, the ship owner becomes the person who operates and manages a ship. However, in the case of Bareboat Charter Hire Purchase (BBCHP), rather than the formal ship owner, the ship manager who governs and operates the ship will assume liability [51,52] (p. 44). In particular, the BBCHP is also subject to the SAPA because it is subject to the Seafarers Act, according to Article 3 of the Seafarers Act [49]. If a bareboat charterer operates a ship, they have full authority for the operation and will then assume the responsibility, while the ship owner is excluded [53] (p. 61). In contrast, if a time charterer operates a ship, the charterer operates the ship through crew members [53] (p. 3). In this case, the time charterer cannot govern and operate the ship, and the ship owner or bareboat charterer will assume the responsibility [53] (p. 660), [54] (p. 37).

Second, the ship owner consigns the management of a ship to a ship management company according to an in-house or third-party method based on a subcontract. Recently, the ownership, operation, and management of ships have been developing separately due to the nature of the shipping industry [55]. If the ship management company is an in-house subsidiary and is practically speaking under the government and operation of the ship owner, the ship owner will incur greater responsibility. In contrast, the risk of criminal liability of the ship owner or chief executive can be minimized if the operations related to safety and health are transferred to a separate corporation between the ship owner and ship management company or if the safety and health-related costs are accounted as a separate item from the ship management fee. Eventually, the person who operates and governs the ship among ship owners and ship management companies will be a person who operates the ship with actual responsibility and authority for safety and health ([56] (p. 241), [57] (paras. 5, 8)) For example, if a Japanese ship owner entrusts a ship to a domestic ship management company using the third-party method based on a subcontract, will it be possible to punish even the Japanese ship owner if a serious disaster occurs on the ship? Certainly, it will be theoretically possible. However, when a UK ship owner selects a domestic ship management company as a subcontractor, the UK ship owner can minimize the risk of criminal liability of the chief executive if it is proven that sufficient qualifications and performance are documented and that corresponding expenses have been recorded, including establishing and implementing a management system related to shipping safety and health. In contrast, the SAPA specifies the establishment of countermeasures and systemization of measures in case of onboard accidents and the implementation of improvement and correction orders by various international maritime conventions set by the IMO and related laws and regulations of the flag state and shipping country.
4.4.2. Challenges Arising from the Relationship between Ship Owners and Ship Management Companies under the SAPA and Measures to Address Them

The ship owner and ship management company sign a ship management agreement about all or some of the crew, technology, and operations of a specific ship. In practice, SHIPMAN 2009 is used as the standard ship management agreement. According to this agreement, the legal relationship between the ship owner and ship management company is that of consignor and consignee, a “consignment relationship” based on a subcontract that consigns ship management for the supply of crew members, safe operation of the ship, technology management, and commercial management [57].

Ship owners are responsible for controlling ship management companies by their sound ship management practices. The third party must comply with the ship owner’s instructions based on a relationship of comprehensive control and management of ships that allows them to act as the ship owners’ agents. Furthermore, ship management companies have a duty of care and a duty to be faithful [55]. Consequently, the key issues will be the interpretation of the business owner and the duty to secure safety and health, that is, management responsibility and the principle of subcontract responsibility under Articles 4 and 5 of the SAPA. The problems in application and countermeasures against them are presented below.

First, efficient risk management through advancement, systematization, and automation of the ISM-based ship safety management system of ship management companies is necessary. It is a general practice in the shipping industry for ship owners to entrust a third party with safety and health matters by signing a ship management agreement. The safety and health responsibilities for ship operation are entrusted first to the DP of the ship management company and second to the master, who is responsible for ship operation according to the safety management system of the ISM Code [57] (para. 5). It is impossible for the ship owner, who generally manages the shipping company, to supervise the safety situation of every work site onboard the ship. Moreover, corporate operations are more efficient when entrusting safety and health matters to a ship management company. According to the SAPA, the DP of the shipping company will be burdened with the primary criminal liability as well as with the negligence liability of the ship owner. In general, even in companies with accumulated know-how about ship management, the DP only receives reports about the plan and results of the tasks performed onboard; the actual management and supervision of such tasks are entrusted to the field employees. Efficient risk management through the advancement, systematization, and automation of the existing ship safety management system based on the ISM is necessary to minimize the risk of criminal liability for ship management companies, according to the SAPA. Efforts should be made to manage the ship based on risk assessment efficiently and systematically implement the duty of care for safety in the management of the ship management company. Further, specific risk targets should be selected and managed around tasks with a high risk for serious disaster.

In addition, domestic and foreign ship owners should add and strengthen provisions related to safety and health when signing ship management agreements. As mentioned above, the master is only an agent at the site manager level tasked with the duty to secure safety and health. The entity ultimately responsible under the objective of the SAPA is the chief executive. The SAPA demands that ship owners referred to as business owners or chief executives take liability for serious disaster accidents that occur due to the lack or inadequacy of safety and health plans. Therefore, ship owners should renew safety and health plans every year and faithfully implement the plans by reporting to and receiving approval from the board of directors. Moreover, it is advisable to explore countermeasures to minimize criminal liability by preparing grounds for cost payment for the facilities, labor, and other costs of safety and health under the ship management agreement with the ship management company.
4.4.3. Problem of Financial Compensation According to the SAPA

Ship management companies should actively respond to criminal proceedings for foreign ship owners or executives of ship management companies in a situation where it is unclear whether chief executives, etc., have violated the duty to take safety and health measures under the SAPA. This is because criminal proceedings can also affect civil litigation against related crew members after the punishment of the chief executive is confirmed. This raises the question of whether payments can be made through the protection and indemnity (P&I) club if costs are generated after the guilt of the chief executive or corporation under the SAPA is finally determined. Regarding these costs, the core issue is whether they are included in the fine print as compensation risk under the “penalty and fine” regulation [58] (p. 263). This article mentions the fines imposed on corporations (union members) due to the employer’s negligence, such as violation of rules regarding cargo reporting, violation of the Customs Act and the Immigration Control Act, violation of the laws on marine pollution, and restrictions on ship operations, cargo transportation, and smuggling by seafarers [58]. This article considers a situation that is different from the fine imposed under the SAPA due to the union member’s direct negligence. This article also stipulates no compensation for fines and penalties imposed when union members neglect what they naturally knew or should have known or neglect to take appropriate measures to prevent accidents [58]. In such cases, the fines under the SAPA cannot correspond to the scope of compensation of the P&I insurance and must be paid by the corresponding person.

5. Discussion

The UK’s Corporate Manslaughter Act stipulates that the Corporate Manslaughter Act is applicable if there is a failure in the organization and management of relevant activities that results in death. It is applicable if the failure occurs with senior management and corresponds to a gross breach of a duty of care for the deceased by the relevant corporation. A review of the application of the Corporate Manslaughter Act for shipping companies found that the UK imposes liability based on the related provisions of the Merchant Shipping Act 1995 and specifies the scope of application targets of the Corporate Manslaughter Act through the same regulations. Section 277 of the Merchant Shipping Act 1995, which is linked to Section 1(4)(c) of the Corporate Manslaughter Act, mentions the generation of corporate liability for the master’s actions [38] (secs. 8, 9). Moreover, companies and individuals should assume liability for violations of regulations 8 and 19 of the Merchant Shipping (ISM Code) Regulations 1998 [35].

South Korea enacted and enforced the SAPA on 27 January 2022 to reinforce corporate safety and health measures and build a safety and health management system before further disasters, with reference to the UK’s Corporate Manslaughter Act. However, confusion is expected because there are no concrete guidelines regarding the specific scope of the duty of chief executives to secure safety and health, subjects of punishment, sentencing criteria, and punishment of corporations under the SAPA. Further, the problems with and confusion regarding the application of the SAPA to the shipping industry will be aggravated. In contrast to the UK situation, the shipping companies of South Korea should prepare the following countermeasures based on Figure 4 below to minimize criminal liability under the SAPA.

First, the agreement on the establishment and implementation of the safety and health management system and the provisions of the agreement need to be stipulated. These provisions include the human resources and the budget for disaster prevention under the ship management agreement. Unlike other industries, shipping companies apply and implement the safety management system according to the ISM Code. If a serious disaster occurs on the ship, chief executives are liable for damage and criminal liability, according to the SAPA. Therefore, ship owners should add and reinforce provisions about safety and health before signing a ship management agreement with a ship management company with expertise in safety and health operations.
Second, in addition to adding safety and health provisions, domestic and foreign ship owners should stipulate and request specific provisions for securing and maintaining seaworthiness to the ship management company, which is a consignee under the ship management agreement. In other words, ship owners should entrust ship operation and management with shipping management companies based on the actual cost item accounting method. The ship management companies should protect crew members and related workers from serious disasters by updating and systematizing the compliance system for managed ships. Both ship owners and seafarers should remember that safety on board must not be ignored in the push for sustainable shipping.

6. Conclusions

People may continue to face the risk of major fatal accidents because of a lack of safety awareness and institutional inadequacy [59] (p. 222). In particular, there have been demands for legislation that can impose civil and criminal liability on natural persons and corporations in case of intention or negligence. Many casualties continue to occur due to ship sinking accidents at sea [60].

This study explored the Corporate Manslaughter Act, which was a model for the SAPA, examined its application to shipping companies and its relationships with related laws, and investigated its implications. The results demonstrate the need to create a safety culture in the merchant shipping industry for its sustainable development, including the safe operation of ships. Based on these implications, this study presents the following conclusions about future measures to accommodate the SAPA in the shipping industry.

First, to prevent disaster accidents at sea, safety and health management provisions in the Maritime Safety Act [48] should be established or revised. It is necessary to update or reorganize safety and health management regulations to allow more systematic, efficient workplace safety and health management.

Second, shipping companies should make efforts to expand their safety and health organization, labor, and budget, to prevent accidents. In particular, ship management companies should establish a culture of demanding fair compensation by calculating accurate safety and health-related costs from domestic and foreign ship owners. The ship owners also should improve their expertise in safety and health management for long-term prevention of accidents by separately calculating safety and health costs, creating an organization in charge of related tasks, hiring experts to perform safety and health tasks,
and/or using experts from safety and health organizations as appropriate to the size of the ship(s) and the land organization and the characteristics of the company’s business. Eventually, all ship owners and management companies will have to create a safety and health culture and boldly invest in safety and health measures. The government should also strive to prepare a system to stimulate such civil efforts.

Third, shipping companies should construct a compliance system to identify and address risk factors in advance. Regular diagnoses of safety and health by external institutions are required to verify the normal operation of such a system. As discussed in Heinrich’s domino theory of accidents, unsafe conditions and behaviors in the workplace or organization must be eliminated to prevent accidents and disasters. This requires a risk assessment for safety and health diagnosis, and the accident risk factors should be eliminated.

Fourth, voluntary safety culture activities and a willingness to improve the safety culture level of the ship owners, executive supervisor, master, and crew are required. No matter how well documented the facilities and systems in the ship, accidents cannot be prevented unless the Chief Executive Officer or members of the organization practice safety measures. All stakeholders, such as trade unions, business groups, governments, and academia, need the wisdom to form governance and work together to establish a safety culture for shipping companies. Through greater respect for seafarers' safety, management could achieve sustainable supply chains with positive results.

As autonomous ships are expected to be introduced progressively in the future, further studies should comprehensively examine the scope, subjects, and intensity of the application of the SAPA. Studies should also continuously expand problem-solving methods, investigate cases in countries other than the UK and identify how to minimize the risks to shipping companies inherent in countermeasures to the SAPA.

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