

LAW ENFORCEMENT OF SHIP SEAWORTHINESS TO ENSURE MARITIME SAFETY

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Abstract: Maritime safety is a fundamental aspect of sea transportation that is closely linked to ship seaworthiness. As an archipelagic state, Indonesia is highly dependent on maritime transport, making the issue of seaworthiness directly related to the protection of human lives, the smooth flow of logistics, and the stability of the national economy. This study aims to analyze law enforcement on ship seaworthiness at the Port of Cirebon and its implications for maritime safety. The research employed a juridical-empirical approach by combining normative analysis of Law No. 17 of 2008 on Shipping with empirical data obtained through interviews, observations, and document studies at the Cirebon Harbor Master and Port Authority (KSOP). The data were analyzed qualitatively using descriptive-analytical techniques to illustrate the gap between legal norms and their implementation in practice. The findings reveal that, although the existing regulations on ship seaworthiness are normatively adequate, their implementation remains far from optimal. The main issues identified include technical deficiencies in ships, unfit safety equipment, limited human resources of harbor masters, and low legal awareness among shipowners. These conditions increase the risk of maritime accidents, which may result in material losses, fatalities, and marine pollution. This research contributes theoretically by reinforcing the concept of a compliance gap in Indonesian maritime law and practically by offering recommendations to strengthen technical regulations, enhance supervisory capacity, utilize modern inspection technology, and promote continuous legal awareness programs. Therefore, the study concludes that effective law enforcement on ship seaworthiness requires synergy between normative provisions and empirical practices to ensure safe, orderly, and sustainable maritime navigation.

Keywords: ship seaworthiness, law enforcement, maritime safety, Cirebon Port

I. INTRODUCTION

Indonesia is recognized as the world's largest archipelagic country, consisting of more than 17,000 islands scattered across its vast territory. This geographical condition makes maritime transport a vital means of connecting separated regions while also serving as the backbone of the national economy. Compared to other modes of transportation, sea transport has significant advantages, particularly in terms of large cargo capacity and cost efficiency. Indonesia's strategic location along global shipping routes, especially through the Indonesian Archipelagic Sea Lanes (ALKI) recognized under international maritime law, further strengthens its role in

the global logistics system. Nevertheless, behind this strategic potential, maritime safety remains a fundamental challenge that has not yet been fully addressed.

Maritime safety is closely linked to ship seaworthiness. Law No. 17 of 2008 on Shipping explicitly requires that every vessel must meet seaworthiness standards before being granted permission to sail. These standards include technical, administrative, and safety requirements to ensure that ships can operate safely at sea. In this context, the harbor master plays a crucial role, as they are authorized to carry out inspections and issue the Sailing Permit (Surat Persetujuan Berlayar or SPB). Thus, the harbor master functions not only as an administrative officer but also as a key actor in maritime law enforcement, particularly in ensuring shipping safety.

Although the legal framework is clearly established, in practice many ships still operate without meeting seaworthiness standards. Bahri (2020) highlights that weak supervision is one of the main causes of the high number of maritime accidents in Indonesia. Common technical problems include outdated navigation equipment, radio communication systems that do not comply with international standards, a lack of qualified crew members, malfunctioning main engines, and corroded ship hulls due to poor maintenance. This situation illustrates the gap between the ideal legal norms and the reality of implementation in the field.

Data from the National Transportation Safety Committee (KNKT) reported more than 40 ship accidents in Indonesian waters throughout 2023, including fires, collisions, and sinkings, which resulted in both substantial material losses and fatalities (Nasution, 2025). These facts indicate that, despite the existence of legal regulations, enforcement and supervision remain weak. The high rate of maritime accidents underscores that the issue of ship seaworthiness cannot be underestimated, but rather requires serious attention from all stakeholders, including the government, shipowners, and users of maritime transport services.

Several academic studies also emphasize the weaknesses in maritime law enforcement. Waas (2016) argues that the effectiveness of regulation cannot be measured solely by the existence of written norms but also by the quality of supervision and the level of legal awareness among stakeholders. This view is consistent with Massie (2019), who stresses the importance of placing Indonesia's maritime law enforcement within the broader framework of international maritime law, given Indonesia's strategic position on global trade routes. Furthermore, Hutabarat (2025) found that weak implementation of seaworthiness regulations is particularly evident in ports with limited human resources and infrastructure, where inspections often become mere formalities.

Cirebon Port occupies a strategic position on the northern coast of West Java, functioning as a key hub for the distribution of agricultural and industrial goods. However, despite its vital role, several problems related to ship seaworthiness are still found, ranging from incomplete safety certificates and insufficient crew numbers to safety equipment that fails to meet standards. Interviews with harbor master officials revealed that inadequate inspection facilities and low levels of legal awareness among shipowners remain serious obstacles in ensuring that vessels departing from the port are truly seaworthy.

Based on these issues, this study is deemed important to conduct. The gap between normative regulations and their practical implementation needs to be examined in depth to identify the factors contributing to weak law enforcement. Therefore, this research aims to analyze the enforcement of ship seaworthiness regulations at Cirebon Port and its implications for maritime safety. The findings are expected to provide theoretical contributions to the development of maritime law scholarship and practical recommendations for the government, KSOP, and shipowners in order to strengthen supervision, increase legal awareness, and ultimately improve maritime safety in Indonesia.

II. RESEARCH METHOD

This study employed a juridical-empirical approach, namely a legal research method that not only examines written law (law in the books) but also investigates how such laws are implemented in practice (law in action). This approach was chosen because the issue of ship seaworthiness is not limited to legal norms as stipulated in Law No. 17 of 2008 on Shipping, but also concerns the extent to which shipowners and harbor masters comply with and enforce those provisions in practice. Thus, a juridical-empirical approach is considered relevant to assess the effectiveness of the law while evaluating the gap between normative regulations and empirical conditions at Cirebon Port (Soekanto, 2007).

The selection of this approach, rather than a purely normative one, is based on the consideration that normative legal research would only focus on examining regulations, doctrines, and legal literature. While such an approach is important, it is insufficient to answer the question of why the implementation of seaworthiness requirements remains weak. By contrast, the empirical approach allows for an exploration of the legal behavior of business actors and supervisory officials, thereby providing a more comprehensive analysis. In other words, this research focuses not only on legal texts but also on the socio-economic realities that shape compliance and non-compliance with maritime law.

The data for this study consisted of primary and secondary data. Primary data were obtained through in-depth interviews with officials from the Cirebon Harbor Master and Port Authority (KSOP), shipowners, operators, and representatives of local shipping associations. Semi-structured interviews were conducted to gather information on inspection procedures, supervisory challenges, and the level of legal awareness among shipowners. In addition, the study also conducted direct observations at Cirebon Port to assess the physical condition of vessels, safety equipment, and inspection processes prior to the issuance of the Sailing Permit (Surat Persetujuan Berlayar or SPB). These observations served as a comparative tool to evaluate the consistency between written law and actual practice (Field observation at Cirebon Port, August 2025).

Meanwhile, secondary data were collected from various sources: (1) primary legal materials, namely Law No. 17 of 2008 on Shipping and its implementing regulations; (2) secondary legal materials, including academic literature, textbooks, and journal articles (e.g., Bahri, 2020; Massie, 2019; Hutabarat, 2025); and (3) tertiary legal materials, such as KSOP annual reports, technical port documents, and related institutional publications (KSOP Cirebon, 2024a; KSOP Cirebon, 2024b). This combination of data sources integrates normative and empirical perspectives to produce a comprehensive analysis.

The data collection techniques used included interviews, observation, and library research. Interviews aimed to capture the perceptions and practical experiences of both officials and shipowners. Observations were conducted to obtain factual data on the condition of vessels and safety equipment. Library research was used to strengthen the theoretical framework and compare empirical findings with applicable regulations and previous studies. This triangulation of methods aligns with qualitative research principles and enhances the validity of the findings (Moleong, 2017).

The data were analyzed using descriptive qualitative analysis. The process consisted of three stages: (1) data reduction, namely selecting and focusing on relevant data that support the research objectives; (2) data presentation, by organizing findings into narrative and thematic tables; and (3) drawing conclusions, by comparing empirical data against legal norms to identify gaps and points of alignment. This analysis also considered non-technical factors such as shipowners' economic conditions, compliance culture, and limitations of inspection

facilities, thereby providing a holistic picture of the effectiveness of law enforcement in practice (Waas, 2016).

Through this approach, the study seeks to answer two key questions: first, to what extent are seaworthiness regulations implemented at Cirebon Port; and second, what factors hinder the effectiveness of law enforcement. Therefore, the juridical-empirical method, combined with qualitative analysis, is expected to provide theoretical contributions to the development of maritime law scholarship while also offering practical recommendations to improve the maritime safety system in Indonesia.

III. GENERAL OVERVIEW

Ship seaworthiness is a fundamental concept in ensuring maritime safety. According to Law No. 17 of 2008 on Shipping, seaworthiness is defined as the fulfillment of technical, administrative, and safety requirements that enable a vessel to operate safely at sea. This definition emphasizes that maritime safety cannot rely solely on technical aspects but must also include legal legitimacy and administrative readiness. The concept aligns with international standards set by the International Maritime Organization (IMO) and conventions such as the Safety of Life at Sea (SOLAS), which establish minimum requirements for ship construction, navigation, communication, and safety equipment. Thus, ship seaworthiness functions as a multidimensional legal instrument to protect lives, goods, and the marine environment from potential risks of accidents.

In practice, the harbor master plays a strategic role as the state official responsible for ensuring compliance with seaworthiness standards before a vessel is granted a Sailing Permit (Surat Persetujuan Berlayar or SPB). The harbor master's duties are not merely administrative, such as verifying documents, but also substantive, namely assessing the ship's technical condition and crew readiness. This places the harbor master at the forefront of maritime law enforcement. However, the effectiveness of this role is often limited by inadequate personnel, insufficient modern inspection facilities, and low compliance among shipowners. This condition is consistent with Bahri (2020), who asserts that while legal norms are clear, their implementation largely depends on the capacity of enforcement officials and the level of legal awareness among maritime stakeholders.

Theoretically, maritime safety is influenced by a combination of technical, administrative, regulatory, and cultural factors. Clear regulations without consistent supervision are ineffective, while strong supervision without stakeholder awareness is equally insufficient. Waas (2016) stresses that the success of maritime law enforcement should be measured not only by the existence of written norms but also by their consistent implementation and the compliance of business actors. Therefore, studies on ship seaworthiness must link regulatory frameworks with the behaviors of shipowners and supervisory officials in practice.

International comparisons reveal significant gaps between Indonesia and countries with advanced maritime systems. For example, Singapore and Japan are known for their low maritime accident rates due to strict and consistent enforcement of regulations. In those countries, seaworthiness inspections are supported by modern technologies, independent oversight, and high levels of compliance among shipowners. In contrast, many vessels in Indonesia continue to operate with minimal technical maintenance, inadequate safety equipment, and administrative compliance that serves merely as a formality. This disparity demonstrates that Indonesia must strengthen its institutional capacity for supervision in order to ensure that existing regulations are effectively enforced.

From a legal perspective, ship seaworthiness is directly related to the protection of public interests. Soekanto (2007) highlights the importance of distinguishing between written law (law in the books) and its application in practice (law in action). In the maritime sector, it is

common to find vessels that, while formally documented as seaworthy, fail to meet technical safety standards. This phenomenon reflects a compliance gap, the discrepancy between normative provisions and empirical implementation. Such a gap undermines the protective function of the law, which ideally should guarantee substantive safety for the public.

A qualitative approach in legal research can help explain the social and cultural dimensions that affect the effectiveness of law enforcement. Moleong (2017) argues that qualitative methods are useful for understanding shipowners' behavior, supervisory officials' attitudes, and social interactions within the shipping industry. Non-technical factors such as compliance culture, economic conditions, and local business practices often play a greater role than the law itself. For instance, shipowners with limited financial capacity tend to fulfill only administrative requirements to obtain sailing permits while neglecting technical and safety standards. This illustrates that seaworthiness must be understood holistically, beyond the regulatory framework alone.

Previous studies also highlight the complexity of seaworthiness issues. Massie (2019) emphasizes the importance of situating Indonesia's maritime law enforcement within the framework of international maritime law, given the country's strategic position on global trade routes. Meanwhile, Hutabarat (2025) points out that the weak implementation of seaworthiness regulations in major ports like Tanjung Priok stems from limited human resources and infrastructure. These studies confirm that Indonesia's seaworthiness challenges are systemic, involving not only technical issues but also institutional weaknesses and legal awareness.

As a member of the IMO, Indonesia is bound to adopt various conventions, including SOLAS and MARPOL. However, national implementation still faces challenges. For example, ship inspections in Indonesia are generally conducted manually without advanced equipment, whereas international standards require modern technologies to detect hidden damages. This situation raises questions about the extent to which Indonesia has internalized international standards into its national legal system. Such gaps highlight the urgent need for comprehensive evaluation to harmonize national and international maritime regulations.

From an economic perspective, seaworthiness also carries significant implications. Unseaworthy vessels are at high risk of accidents, which can lead to material losses, disrupt logistics distribution, and erode public trust in maritime transport. In the context of global trade, non-compliance with seaworthiness standards can also reduce the competitiveness of Indonesian ports. Therefore, the issue of seaworthiness is not only relevant for safety but also crucial for the sustainability of the national economy.

Based on the literature reviewed, it is clear that ship seaworthiness is a multidimensional concept encompassing technical, administrative, legal, social, cultural, and economic aspects. Maritime safety can only be ensured if clear regulations are accompanied by effective supervision and a high level of legal awareness among shipowners and operators. Without synergy between normative and empirical factors, regulations risk becoming mere formalities without substantive meaning. Accordingly, studying ship seaworthiness at Cirebon Port is highly relevant, not only to assess the effectiveness of regulatory implementation but also to provide concrete recommendations for strengthening maritime law enforcement in Indonesia. Ultimately, achieving safe, orderly, and sustainable shipping will reinforce Indonesia's position as an archipelagic state that relies on maritime transport as the backbone of its national economy..

IV. FINDINGS RESEARCH

This study reveals that the condition of ship seaworthiness at Cirebon Port still faces serious challenges, including technical deficiencies, administrative weaknesses, and low legal

awareness among shipowners. Most vessels operating at the port are small- to medium-sized cargo ships with an operational age of more than 20 years. Such advanced age directly affects material wear, declining engine performance, and an increased risk of structural damage. In maritime law, ship age is an important indicator frequently used in evaluating technical eligibility. Older vessels require intensive maintenance and periodic replacement of components to remain seaworthy. However, the findings show that many shipowners fail to conduct maintenance according to required standards, thereby significantly increasing the risk of maritime accidents. This condition supports Bahri's (2020) argument that seaworthiness is not merely an administrative requirement but a substantive factor directly related to the protection of human lives and cargo.

Table 1. Findings on Ship Seaworthiness at the Port of Cirebon

Inspection Aspect	Main Findings	Implications
Ship Equipment	Some navigation tools not functioning optimally	Reduces safe navigation capability
Radio and Electronics	Communication devices often did not meet international standards	Disrupts emergency communication at sea
Manning	Insufficient number of crew in accordance with IMO standards	Reduces operational effectiveness
Engines & Electricity	Engine leaks and unstable electrical system	High risk of technical failure during voyages
Ship Construction	Hull structure showed signs of corrosion	Weakens the physical durability of ships
Ship Stability	Several ships lacked updated stability documents	Increases risk of imbalance and accidents

Table 1 highlights the major technical weaknesses found in vessels at Cirebon Port. Engine leaks and unstable electricity systems are frequent, reducing both efficiency and safety. Crew shortages below the International Maritime Organization (IMO) standards exacerbate the situation, particularly in emergencies where adequate personnel are critical to rapid response. Corrosion on ship hulls reflects a lack of preventive maintenance, although hull integrity is crucial for buoyancy and overall safety. The fact that ships in such condition are still granted Sailing Permits (SPB) indicates that law enforcement remains more administrative than substantive (Nasution, 2025).

Beyond technical deficiencies, this study also found significant weaknesses in ship safety equipment. Safety gear, which should be the first line of defense for protecting lives, is often unfit for use. Field observations revealed that many vessels lacked sufficient lifeboats, life jackets were in poor condition, and fire extinguishers (APAR) were either empty or malfunctioning. Even more concerning, many vessels were not equipped with valid distress signals, either because they were expired or absent altogether. This indicates that safety equipment is often viewed merely as a formality for inspection, rather than as a vital instrument for saving lives. This aligns with Hutabarat's (2025) findings that the poor quality of safety equipment is a critical factor behind the high rate of ship accidents in Indonesia.

Tabel 2. Temuan Peralatan Keselamatan Kapal di Pelabuhan Cirebon

Equipment Type	Condition	Remarks
Lifeboats	Not all ships carried the required number	Reduces evacuation capacity in emergencies
Life Jackets	Many were worn out or unfit for use	Endangers passenger safety

Fire Extinguishers	Some not fully filled or not serviced	Ineffective in the event of onboard fires
Distress Signaling Devices	Often unavailable or expired	Hampers emergency communication at sea

Table 2 confirms that inadequate lifeboats and unfit life jackets pose direct threats to human life at sea. In the event of accidents, limited evacuation facilities increase the risk of casualties. Non-functional fire extinguishers and the absence of distress signals heighten the danger of uncontrolled fires and failed emergency communication. From a legal perspective, this reflects a moral hazard among shipowners, who prioritize administrative compliance over substantive safety. Yet, Law No. 17 of 2008 clearly mandates that seaworthiness encompasses both technical and safety equipment that must function effectively in practice.

In addition to technical and safety issues, institutional limitations were also identified. The number of harbor master officers at Cirebon Port is insufficient compared to the volume of vessels requiring inspection. Consequently, inspections are carried out manually and visually, without modern tools such as ultrasonic thickness gauges to measure hull integrity or engine diagnostic devices to assess performance. These limitations allow hidden damage to go undetected, enabling potentially dangerous vessels to continue operating. Waas (2016) emphasizes that maritime law enforcement requires consistent supervision supported by modern technology; without it, legal norms remain ineffective on the ground.

Another factor worsening the situation is the low level of legal awareness among shipowners. Many perceive seaworthiness inspections merely as an administrative procedure to obtain an SPB, rather than a mechanism to safeguard safety. This weak legal awareness is rooted in poor compliance culture and economic considerations, as vessel maintenance costs are often viewed as burdensome. This condition aligns with Massie's (2019) argument that the effectiveness of maritime law is determined not only by the availability of regulations but also by the willingness of stakeholders to comply. Therefore, legal awareness constitutes a crucial non-technical factor in realizing maritime safety.

Overall, this study shows that the enforcement of seaworthiness regulations at Cirebon Port remains ineffective. Technical challenges such as aging vessels, unfit safety equipment, limited supervisory personnel, and weak legal awareness among shipowners all contribute to the problem. The implications are severe, including threats to crew and passenger safety, substantial material losses, and potential marine pollution. Thus, strategic measures are urgently required, including improving supervisory quality, increasing the number of experts, adopting modern inspection technologies, and implementing continuous legal awareness programs. These efforts are essential to narrow the gap between normative regulations and practical realities, thereby ensuring safe, orderly, and sustainable shipping in Indonesia..

V. CONCLUSION

Based on the findings of this study on the enforcement of ship seaworthiness at Cirebon Port, it can be concluded that the legal framework governing seaworthiness in Indonesia, particularly Law No. 17 of 2008 on Shipping, is normatively adequate in terms of technical, administrative, and safety aspects. Nevertheless, the effectiveness of its implementation continues to face significant challenges in practice.

First, in terms of technical aspects, many vessels operate in conditions that do not meet seaworthiness standards. Problems include malfunctioning main engines, unstable electrical systems, corroded hulls, and navigation and communication equipment that do not comply

with international standards. The relatively old age of vessels further exacerbates these conditions, as structural limitations persist even after repairs.

Second, regarding safety equipment, most vessels are not equipped with properly functioning facilities. Insufficient lifeboats, worn-out life jackets, fire extinguishers that do not function effectively, and expired or missing distress signals indicate that shipowners often treat safety equipment merely as an administrative requirement, rather than as essential instruments for protecting lives.

Third, at the institutional level, the limited number of harbor master personnel and the lack of modern inspection facilities hinder effective supervision. Inspections that remain manual and visual are unable to detect hidden damage, allowing unseaworthy vessels to obtain Sailing Permits (SPB).

Fourth, in terms of legal awareness, many shipowners perceive seaworthiness inspections as a mere administrative formality. This weak awareness, influenced by compliance culture and economic considerations, leads to the neglect of safety aspects. Yet, Law No. 17 of 2008 clearly mandates that ship seaworthiness is a substantive obligation to ensure collective safety.

The implications of these weaknesses are severe, affecting not only the safety of crew and passengers but also the national economy and marine environmental sustainability. Unseaworthy vessels pose a high risk of accidents that may result in fatalities, financial losses, marine pollution, and reduced public trust in maritime transport.

Therefore, it can be affirmed that the enforcement of ship seaworthiness regulations at Cirebon Port has not been effective. True effectiveness can only be achieved through the integration of clear regulations, adequate supervisory capacity, modern inspection technologies, and enhanced legal awareness among shipowners. Such synergy between normative provisions and empirical practices is the key to ensuring safe, orderly, and sustainable shipping, while reinforcing Indonesia's position as an archipelagic nation that relies on maritime transport as the backbone of its national economy.

REFERENSI

- Bahri, S. (2020). Legal protection for passenger safety based on Law Number 17 of 2008 on shipping in Indonesia. *Jurnal Ilmu Hukum*, 10(2), 33–36.
- Hutabarat, B. (2025). Regulation and implementation of ship seaworthiness: A case study at Tanjung Priok Port. *Jurnal Hukum Maritim*, 3(1), 77–80.
- KSOP Cirebon. (2024). Annual report on maritime safety 2024. Cirebon: Cirebon Port Authority.
- KSOP Cirebon. (2024). Annual ship inspection report 2024. Cirebon: Cirebon Port Authority.
- Massie, C. Dj. (2019). Introduction to the law of border areas and Indonesia's outermost islands: Perspective of international maritime law. Yogyakarta: Pustaka Referensi.
- Moleong, L. J. (2017). Qualitative research methodology. Bandung: Remaja Rosdakarya.
- Nasution, M. (2025). Causes of ship accidents and prevention efforts in Indonesia. *Jurnal Transportasi Laut*, 7(2), 88–90.
- Nugrahani, F. (2014). Qualitative research methods in language education research. Solo: Cakra Books.
- Soekanto, S. (2007). Pengantar penelitian hukum [Introduction to legal research]. Jakarta: UI Press.
- Sumenda, G. E. (2017). The existence of the cabotage principle for shipping companies in Law Number 17 of 2008 on Shipping. *Lex et Societatis*, 5(7), 12.
- Waas, R. M. (2016). Law enforcement in the Indonesian Archipelagic Sea Lanes (ALKI) under international and national law. *Sasi*, 22(1), 44–49.

Law of the Republic of Indonesia Number 17 of 2008 on Shipping. (2008).
Field observation at Cirebon Port. (2025, August).
Interview with Cirebon Port Authority (KSOP) official. (2025, July).
Interview with shipowners at Cirebon Port. (2025, August).
Interview with ship operators at Cirebon Port. (2025, August).