Conference Paper

Low Shipping Safety Management in Indonesian Archipelagic Sea (ALKI)

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Abstract

The Indonesian Archipelagic Sea (ALKI) is a sea channel. ALKI II and III are routes that are busy by ships so that they have a positive impact on the growth of ship traffic in KTI. However, this has not been accompanied by an optimal safety system, especially due to the unpreparedness of the operators and regulators. This study uses quantitative analysis methods to assess the application of safety management through respondents' opinions. The results of the study indicate that shipping safety arrangements still require improvement, in particular strengthening the ability of ship crews to handle actions at sea, understanding of safety management for owners and operators, and more intensive supervision of personnel. However, the government has made efforts to synergize national laws and regulations related to shipping safety to improve safety management in ALKI 2 and 3.

Keywords: Shipping; Safety Management; Archipelagic Sea Lanes.

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1. Introduction

Indonesia is the first archipelagic country to propose the establishment of 3 sea lanes in accordance with the provisions of the 1982 Convention on the Law of the Sea (UNCLOS) to be accessible by international ships by considering the aspects of state security and hydro-oceanographic conditions. (Setiono, Benny Agus & Mudiyanto. (2010). Pengaruh Safety Equipment Terhadap Keselamatan Berlayar.Jurnal Aplikasi Pelayaran dan Kepelabuhanan. Accessed on 16 October. 2020)

The Indonesian Archipelago Sea Channel (ALKI) is established to connect two free streams, namely the Indian Ocean and the Pacific Ocean, covering: (i) ALKI I crossing the South China Sea-Karimata Strait-Sunda Strait; (ii) ALKI II crossing the Sulawesi Sea-Makassar Strait-Lautan Flores-Lombok Strait; (iii) ALKI III crossing Pacific Sumatra - Maluku Strait, Laut Seram - Banda Sea. ALKI as one of the international trade sea lanes needs to be supported by a proper national marine transportation system and carried out in an integrated manner with the development of national priority/mainstay areas.

The territorial waters of Sulawesi and Maluku are strategic areas in Eastern Indonesia which are geographically located in the two sea shipping lanes ALKI II and ALKI III and most of the world's major shipping lines (global shipping) pass through and utilize these routes as shipping lanes, so that These waters are one of the waters that are quite busy traversed by international ships. The role of sea transportation in both water areas is quite large, but it still faces constraints on the availability and quality of facilities and infrastructure. (Alnazer, H. D. (2013). Conceptual Model Of Student Satisfication In Syirian Universitas European Jurnal Of Economics Finance And Administrative Sciences. p.12-20) The export-import activities of goods at the main ports of the two islands were 58.6% and 28.26%, respectively (BPS 2013). Therefore, the marine transportation mode is very important as a tool to unite all parts of Indonesia.

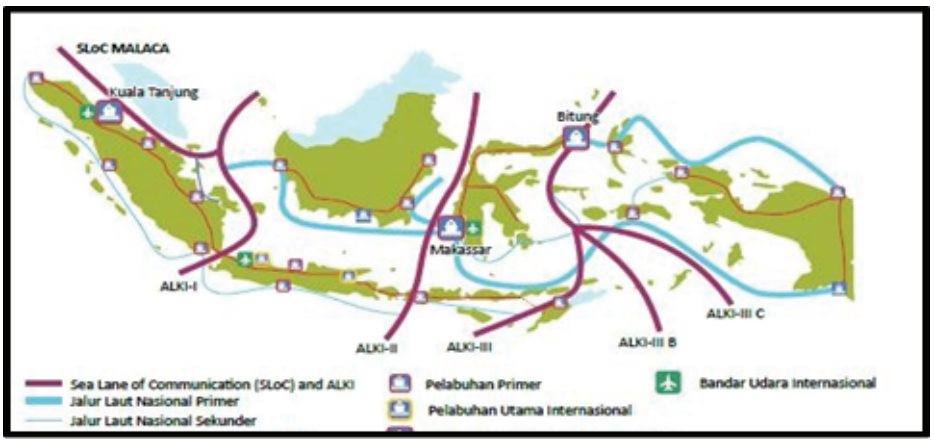

Figure 1: Indonesian Archipelago Sea Channel (ALKI)

National shipping accidents since 2000 are quite concerning. Often the safety aspect receives less attention so that in the implementation of sea transportation it is identified that the safety aspect of shipping is not yet adequate. Data that has been investigated by the National Transportation Accident Committee (NTSC), the number of victims of transportation accidents throughout 2011 has reached 247 people. This number is an increase of 174% compared to 2010 which numbered 90 people. (Biro Klasifikasi Indonesia. (1996). Kode InternasionalManajemen Keselamatan (ISM Code)) Based on NTSC data, 247 transportation accident victims consisted of 86 people at sea, 85 people on land, 71 people in the air, and 5 people in the train accident. The high marine transportation accidents came from 6 incidents, namely 1 ship sank, 3 ships exploded or caught fire and 2 collisions. It cannot be denied that the condition of marine transportation facilities in Indonesia, many of which are old, have an impact on their relatively low ability to meet the expectations of service users. Likewise, the quality of the national fleet has not been satisfactory, especially when compared to

neighboring countries, such as the Philippines. What a shipping company might do is prevent further damage from occurring through proper ship maintenance. (European Maritime Heritage. (2010). Standard uponSafe Operation of Traditional Ships in EuropeanWaters and Standards required for Ship Safety Cer-tification, Annex II, http://www.european-mariti\m\e\-\eritage.org\/docs\/sc\/NewMOUSouthAnnex_II.pdf, accessed on 18 October, 2020) However, this must be accompanied by more intensive supervision and examination by the apparatus. Therefore, this study aims to provide an overview of the causes of marine transportation accidents and efforts to improve their safety in ALKI II & III areas. Research problems that require solutions include: what factors cause the disruption of safety performance; how the qualifications and competence of human resources (at sea and on land) in handling ship accidents; and how the strategy to improve shipping safety management.

2. Research Methods

This research is based on a survey of shipping companies and ship crews at four survey locations, namely Makassar, Kendari, Ambon and Ternate. This research used interview method and questionnaire distribution. Questionnaires were distributed to ship crews and other related parties (as many as 60 respondents) to find out what factors were the causes of the decline in shipping safety performance. (J.P.G, Sianipar & Entang H.M. (2001).TeknikAnalisis Manajemen (TAM). Jakarta: Bahan AjarDiklatpim Tingkat III. p.13) These data were analyzed based on the SWOT analysis tool using 24 variables (see attachment). Broadly speaking, the SWOT theory is divided into 2 factors, namely internal and external factors are conditions that are owned by the system that can be conditioned/overcome by actions, namely Strength and Weakness.

3. Results and Discussion

3.1. Transportation Safety

Over the decades, the increase in public interest in utilizing ship services is quite large. However, the utilization of “aged” vessels is still dominant. It seems that the public interest is quite large even regardless of their age. In addition, the community also continues to preserve ships that are still of historical value in maritime activities for social, educational or cultural purposes. The ship is a traditional ship that still uses sails. Therefore, the operation of these ships, which are due to differences in character with

other commercial ships, need special safety requirements. From a legal aspect, the operation of traditional ships is subject to the ship safety rules for the Non SOLAS category. In some countries traditional vessels are regulated according to yacht regulations or with special exceptions that differ from merchant ship regulations (Ibid). Other exceptions are for cargo ships less than 500 GT, boats that are not propelled by mechanical means, wooden boats with simple construction, and leisure yachts that are not for commercial purposes (Eric, Ogden. (2010). Element of Yacht Stability, Tech-nical File. http://www.ogdenmarine-surveyors.com/pdf/techniquestabilite-en.pdf accessed on 18 October, 2020). The considerations are similar to the principles developed in the SOLAS (Safety of Life at Sea) convention, namely the safety of operation of ships (safety of operation). The approach taken is in accordance with the principles of international safety management (ISM Code), ships that are not driven by mechanical means, wooden boats with simple construction, and plesure yachts that are not for commercial purposes. The considerations are similar to the principles developed in the SOLAS (Safety of Life at Sea) convention, namely the safety of operation of ships (safety of operation). The approach taken is in accordance with the principles of international safety management (ISM Code).

Research results from the Research and Development Center for Marine Transportation show that there were 1026 ship accidents from 2001 to 2009 in Indonesian waters or on average every 3 days. According to JICA, many causes of ship accidents until now have not been officially explained by the Ministry of Transportation, however, from the JICA study found that the main cause of these accidents was the instability of the ship due to overloading and the old age of the ship. In addition, poor implementation of shipping safety management causes ship accidents to still occur (Johny Malisan, 2009) (Balamuralikrishna, Radha & John C. Dugger. (1995) SWOT Analysis: a Management Tool for InitiatingNew Programs in Vocational Schools. Journal ofVocational and Technical Education. Volume 12.Number 1. Iowa State University http://scholar.lib.vt.edu/\ejournals/JVTE/v12n1/Balamuralikrishna.html accessed on 18 October, 2020) as well as serious negligence of all parties who play a role in ensuring transportation safety and security, both ship owners, skippers and crew (Hanok Mandaku, 2012). Therefore, Classification bodies in conducting safety audits need to further increase their role so that safety management regulations can be implemented properly and correctly. Progress audits are carried out continuously so as to strengthen the relationship between ship owners and vessels and their crews. According to North Radm (2000) every shipping company must be able to ensure that there are no deficiencies in meeting the safety requirements of its ships.

3.2. Deep Ship Safety Management; Zero Accident Embodiment

Sea transportation is a mode of transportation that is full of regulations. For this reason, Indonesia continues to ratify various conventions that have been issued by international organizations that specifically handle the maritime sector (International Maritime Organization/IMO). Each member state has the responsibility to implement various international conventions for ships flying the flag of its country, and is obliged to effectively exercise its authority as well as administrative, technical and social oversight of ships flying its flag. (Arief, M. (2006). Pemasaran Jasa dan Kualitas Pelayanan "Bagaimana mengelola kualitas pelayanan agar memuaskan pelanggan".Malang: Bayumedia Publishing. p.22) Safety assurance is a must for the continuity of the shipping business. According to Benny Agus Setiono and Mudiyanto (2010), the guarantee in question is a system that is standardized, systematic, and easily understood by passengers.

Ship worthiness requires that the ship's building and engine are in good condition. Conditions in the field, especially in remote areas of the country, show that the rules concerning the reporting of the safety management system are often manipulated. In fact, to maintain the safety of ships and the environment, the ISM Code system is implemented along with a Designated Person Ashore (DPA) for periodic ship supervision and company management. Therefore the role of human resources is the key to success in organizing ship operations as a non-technical effort to improve ship safety. (Philippe, Boisson. (1999). Safety at Sea: Policies, Regu-lations and International Law, Paris: Bureau Veritas, 1999. – ISBN: 2-86413-020-3. P. 45-55) The role of land operational management (company) and synergy with ship crews is very important in improving shipping safety

3.3. Ship accidents vs ship movements

The readiness of marine vessels is important because most marine accidents that occur are caused by the old and poorly maintained fleets. If the crew is diligent in carrying out maintenance, the technical problems that arise can be suppressed. Safety equipment also needs to be considered by sea transportation service providers, because fatalities can be caused by a lack of safety equipment such as life jackets, lifeboats, life rafts. Partly (Jinca, Yamin. (2007). Keselamatan Transportasi Lautdan Penyeberangan, Rakornas Masyarakat Transportasi Indonesia (MTI). Semarang. p.23) major malfunction is also the result of the crew's lack of attention to the importance of assistive devices. The navigation technology and information systems for most ships operating in Indonesia

also need to be upgraded and updated. This is important considering that the climate is difficult to predict due to the effects of global warming (Ditjen Perhubungan Laut. (2008). RoadmapPeningkatan Keselamatan Transportasi Laut. p.20), so ships must be equipped with up-to-date navigation and information systems to avoid the worst possibility if a sudden storm occurs.

Ship accidents tend to increase, and if it is compared to the movement of ships which is represented by the number of ship visits, then Figure 2 below shows a significant increase in the rate of accidents from 2009 to 2011. Based on this, the causes of the accident include: (i) the ship sank due to the entry of water into the hull, (ii) weak stability because the ship was unable to return to its original position when it tilted, (iii) overloaded and improperly managed cargo, (iv) inadequate navigation and safety equipment, (v) lack of ship maintenance, (vi) lack of intensive supervision of shipworthiness, (vii) work discipline of the crew.

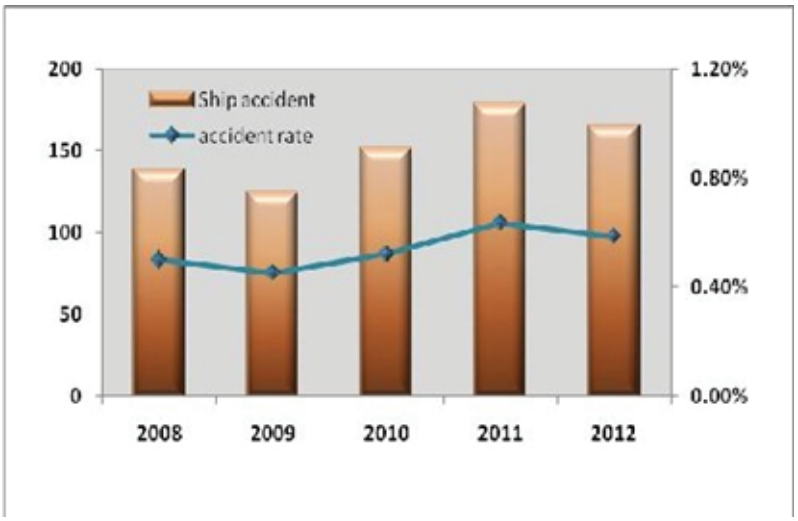

Figure 2: Ship Accidents vs Ship Movements

3.4. Analysis of safety factors

A brief explanation of the safety factors of marine transportation in Indonesia illustrates that even though Indonesia is known as a maritime country, in reality, accidents often occur so that people still feel that the safety and security aspects of shipping are not maximized. Several things are in the spotlight, including the repair of the vessels used and the awareness and active role of the community using marine transportation in complying with applicable regulations. Figure 3 below shows that the percentage of ships that are old is still dominant operating in Indonesian waters. Therefore, it

is very important for the government to participate in realizing the safety of marine transportation even though there are still many aged ships operating.

3.5. Analysis of Respondents' Opinions

Recapitulation of all data obtained from respondents' opinions on aspects of shipping safety in ALKI II and III waters, strategic efforts that need to be done are:

1. SO strategy
    (a) Sulawesi and Maluku are archipelagic regions and directly adjacent to neighboring countries so that sea transportation is important as a means of traffic which creates economic and investment opportunities with good prospects.
    (b) The ports in ALKI II and III are strategic, able to encourage the improvement of inter-island connectivity as one of the pillars to support economic growth.
    (c) Based on Act No. 17 of 2008 on shipping, the harbormaster is given the authority to carry out the function of implementation, supervision and law enforcement in the field of shipping safety.
    (d) STCW Code Amendment 1995, mandatory special training for personnel who work on board ships and the ISM Code on ship safety management and protection of the marine environment needs to be implemented continuously in order to reduce ship accidents that can pose a threat to the safety of life, ships, property.
    (e) It is necessary to increase understanding of the importance of shipping safety to owners, ship operators and the public as well as to increase the professionalism of the classification agency apparatus appointed by the government to ensure the maritimeity of ships.
    (f) The need for the socialization of non-convention ship standards (NCVS) and the need to carry out scheduled maintenance and repairs and be closely monitored by classification agencies and government authorities in an effort to realize the roadmap to zero accident program.
2. ST strategy
    (a) Sulawesi and Maluku are archipelagic areas with natural phenomena and extreme climates and fluctuating weather are a threat to the safety of marine transportation so it is necessary to supervise ship operations by safety authorities.

(b) Ports in the waters of ALKI II and III need to help socialize the conditions of safety and security of the sea because they are one of the factors that influence and disrupt the smooth flow of goods.

(c) The need for socialization of rules and regulations for shipping and maritime affairs for coastal communities in order to reduce the potential for the emergence of various crimes at sea that interfere with shipping safety and security.

(d) The need to increase the capacity of the officers in the field of shipping safety and the completeness of supporting facilities, commitment, and educational background so that they can supervise the implementation of the STCW Code provisions.

(e) There is a need for increased coordination between agencies with an interest in the port and strengthening of classification agencies in order to guarantee improved marine and ship safety.

(f) It is necessary to remind the strengthening of the information system for ship accidents and shipping accidents as well as to supervise the maintenance and repair system scheduled by the classification agency apparatus and the shipping safety authority in realizing the roadmap to zero accident program.

3. WO strategy

(a) It is necessary to strengthen government supervision of problems and developments in shipping safety conditions given the strategic position of the Sulawesi and Maluku regions which are of concern to the state.

(b) Indonesia has a reliable and safe marine transportation system, which can encourage the improvement of inter-island connectivity so that it needs to be supported by the consistent implementation of a ship safety management system (ISM Code).

(c) In accordance with Act No. 17 of 2008, Harbormaster is given greater authority in carrying out the function of implementing, supervising and enforcing the law in the field of safety

(d) Shipping so that it needs to be supported by the appropriate number and competence of surveyors and marine inspectors in order to carry out the task of inspecting and supervising the ship's maritime affairs.

(e) The need to strengthen the ability of ship crews to take emergency actions on board in the event of accidents and shipping accidents along with ISM Code regulations to minimize ship accidents that can pose a threat to the safety of life, ship, property and environmental pollution.

(f) It is necessary to increase understanding of shipping safety for ship owners and operators and other community members and to tighten the provision of safety certificates and sailing permits.

(g) There is a need for continuous socialization of the standard provisions of non-convention ships (NCVS) in order to reduce the number of ships operating, do not match the technical conditions of the ship with the conditions stated in the ship certificate and support efforts to realize the roadmap to zero accident program.

4. WT strategy

(a) It is necessary to increase government supervision of the problems and development of domestic shipping safety conditions, especially in the waters of Sulawesi and Maluku due to extreme and changing natural conditions and weather.

(b) It is necessary to increase the consequent implementation of the ship safety management system (ISM Code) because the unsatisfactory conditions of marine safety and security are factors that influence and disrupt the smooth flow of goods from and to the port.

(c) It is necessary to increase the consequent implementation of the ship safety management system (ISM Code) because the unsustainable marine safety and security conditions are a factor that influences and disrupts the smooth flow of goods to and from the port.

(d) Increasing the number and competence of surveyors and marine inspectors in carrying out the task of inspecting and supervising the maritime affairs of ships as well as understanding the coastal communities of the dangers of various crimes at sea can increase

(e) Safety and security of shipping.

(f) It is necessary to increase the capability of the crew against emergency actions on board to increase the ability of the shipping safety apparatus in pursuing the implementation of a ship safety management system.

(g) The need for effective coordination between agencies with an interest in the port and tightening the provision of safety certificates and sailing permits are important factors in improving shipping safety and security.

(h) Adhering to the ship accident and shipping disaster information system and the strict supervision of the number of ships operating that do not match

the technical conditions of the ship and the conditions stated in the ship's certificate are essential in realizing the roadmap to zero accident program.

4. Conclusion

ALKI II and III are sea lanes that have a strategic position so that to overcome the problem of low shipping safety management, it is necessary to strengthen supervision and marine inspection of ships by surveyors and marine inspectors who are competent and in an appropriate number. The captain and crew are another important factor in taking emergency action at sea according to the ISM-Code to be able to minimize accidents that pose a threat to the safety of life, ships, property and environmental pollution. In addition, to increase understanding of shipping safety management for owners, crew operators and the public as well as to increase the professionalism of classification agencies appointed by the government in classifying ships to ensure shipworthiness.

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