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DOI: https://doi.org/10.31933/unesrev.v5i4
Diterima: 07/05/2023, Diperbaiki: 18/06/2023, Diterbitkan: 19/06/2023

THE EXISTENCE OF THE BEAUTY TOWER IN MAINTAINING THE SAFETY AND SECURITY OF SHIPPING

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ABSTRACT

The Navigation Assistance Facility (SBNP) is an essential component that affects shipping safety and security, so a study was conducted to find out the role of the light tower guard in shipping and what obstacles were encountered in optimizing the part of the light guard. Normative research techniques to study the laws and regulations related to shipping implementation in Indonesia. The data came from statutes, regulations, expert theory, previous research, and books. The results showed that lighthouse keepers have two main objectives in shipping: assisting ship navigation in determining direction and location, warning ships when there is danger, and supporting shipping safety and security according to standards in SOLAS 1947 and ISM Code in the Shipping Law. The obstacles damaged buildings, electrical networks, installations, and light balloons that endangered shipping. The damage affects the performance of the light tower in determining the direction and location when the ship is sailing.

Keywords: Keywords: *Shipping Navigation Aid Facility; flares; Cruise*

INTRODUCTION

With 17,504 islands stretching from Sabang to Merauke with an estimated coastline of 81,000 km and 5.9 million km ^{2} of water, Indonesia is the largest maritime nation in the world. As a result, adequate sea transportation infrastructure, including facilities and services for port

activities, is required to connect all the islands of Indonesia.[1] So that most of the total territory of Indonesia is the sea.

As an archipelagic country, Indonesia uses a lot of shipping as transportation to pass through the island. Because people's cruise ships can deliver products to remote places that conventional ships cannot reach, this mode of transportation is still very important for the distribution of goods to the archipelago. People's shipping is ideal for domestic transportation to meet the needs of [2]People in watersheds or for transportation with *little* demand. All Indonesian people who use sea transportation facilities prioritize aspects of security and protection; after that, consider affordable prices, speed, punctuality, and aspects of comfort. Safety and protection of marine traffic related to ship accidents, including sinking and fire. [3]Therefore, adequate mechanisms and regulations are needed to achieve the objectives of transportation security and safety.

Law of the Republic of Indonesia Number 17 of 2008 concerning Shipping makes these efforts to ensure the safety and security of shipping in Indonesia. To guarantee maritime security as mandated by law, the government intends to purchase, continue operating, and maintain and monitor shipping navigation charts and telecommunication networks. Safe zones are identified by designating them as Shipping Navigation Assistance Facilities (SBNP) to benefit ship traffic flow and safety.

A navigational Assistance Facility (SBNP), which may have been built or appeared spontaneously outside the ship, assists navigators in locating the ship and its course and alert them to sea hazards and obstructions to ensure maritime security. Two types of SBNP are most widely known: Visual SBNP, namely SBNP, whose work results can be seen with the eye, and electronic SBNP, namely SBNP, whose work results can be seen/understood through electronic devices.

The SBNP facility is also used for sea transportation. The growth of the marine and fisheries industry also uses it. Because cross-sea and coastal travel has occurred in the context of commercial activities or military operations, the SBNP is needed as a beacon for navigators.[4] As part of efforts to fulfill the objectives of SISTRANAS, namely the implementation of effective and efficient transportation, the SBNP's ability is also used to identify the country's territory in the most distant islands.[5]

One type of SBNP is the beacon tower, which is used to assist fixed and beacon navigation and has a minimum visibility of 20 nautical miles. It can help navigators find the location and stern of ships, show where land and ports are, and act as boundary markers for a country.

The importance of navigational aids to the safety of navigation, including routine maintenance, monitoring, and provision of qualified personnel for light tower maintenance. When

[1]Aldin et al., " Criminal Responsibility of Syahbandar Personnel in Crime of Abuse of Authority in the Shipping Sector, " *Halu Oleo Legal Research* vol. 1, Issue 2 (2019): 247 – 248.

[2]Bambang Susantono, *Transportation and Investment Challenges and Multidimensional Perspectives. (* Jakarta, 2013), p. 150.

[3]M. Kadarisman, "Maritime Safety and Security Policy in Supporting the Sea Transportation System." *Journal of Transportation & Logistics Management* vol. 04, no. 02 (2017): 177 –192.

[4]Siswoyo. B. & Kurniawan. A., " Development of Safety Support Facilities Cruise in Harbor Biak, " *Journal Pen.Transla*te v ol.16 , n o.2 (2014): 51- 60.

[5]Santoso, Wiji. et al., "Evaluation of the Revitalization Program for Navigation Auxiliary Facilities and Shipping Safety Infrastructure in the Tarakan Navigation District, East Kalimantan," *Journal of Administrative Reform* vol.1, no.3 (2013).

a ship reaches the sea boundary of an area or port, navigation aids around navigation can assist the navigator in determining the ship's location, identifying navigation hazards, and maintaining shipping security because it provides clear data about navigational risks around. Thus, data regarding the risks associated with navigation in maritime lanes can be communicated efficiently .[6]

This cannot be separated from how well the government is doing regarding shipping development through the development of public infrastructure that affects ship visits to the region. Sea transportation or shipping is organized to get to know sea transportation services (shipping) that are smooth, effective, and of course, with a very high level of safety, reaching all parts of the sea to achieve justice, economic expansion, and consistency as operators, supporters and operators of development. Economy (sea). The presence of a light tower as one of the SBNP is an aspect that needs attention to encourage shipping safety and security as well as smooth maritime traffic.

RESEARCH METHODS

In this study, the authors used normative research. The author will look at laws and regulations related to the problems in this research, namely the Shipping Law and various implementing regulations, and collect facts and data in the field regarding the role of beacon tower guards in maintaining shipping safety and security. Data collection techniques are carried out by documentation or also called literature study. While the analysis is done descriptively.

RESULTS AND DISCUSSION

The Role of Beacon Towers in Maintaining Shipping Safety and Security

1. Shipping Safety and Security in SOLAS 1974

   SOLAS stands for *Safety of Life at Sea* or, more fully, the *International Convention for the Safety of Life at Sea* . The highest and most serious risk a crew can experience as a sailor is due to natural factors. For example, the sea weather suddenly deteriorated with strong wind gusts and big waves. However, it certainly does not rule out the possibility that ship accidents can also be triggered by other factors, such as damage to machines or other equipment, as well as the professionalism of human resources.

   SOLAS has undergone several changes (improvements). Due to the Titanic disaster in 1912, the first repetition of this agreement was accepted by 13 countries in 1914. According to this convention, merchant ships must have watertight bulkheads, fire-resistant materials, safety equipment, fire prevention and suppression equipment, and the obligation to use radio/telegraph on ships carrying more than 50 passengers. In the following years, SOLAS underwent two changes, namely in 1929 and 1948. In 1958 the *International Maritime Organization* or IMO was formed - formerly known as *the Inter-Governmental Maritime Consultative Organization*

[6] Eni Tri Wahyuni, "The Role of Navigation Assistance Facilities for Shipping Safety," *National Seminar on Maritime and Interdisciplinary Studies* vol 1, no. 1 (2019). https://e-journal.akpelni.ac.id/index.php/prosiding-nsmis/article/view/258.

(IMCO). IMO is an international body authorized to set rules and standards for shipping safety and security. This agency is under the auspices of the United Nations.

The IMO Conference was held again in 1974, from October 21 to November 1, attended by 65 delegates from signatory countries. The conference's outcome was SOLAS 1974, or *International Convention for The Safety of Life at Sea of 1974*. SOLAS was last revised in 1977, but because the changes were only technical matters and did not shift the essence of SOLAS 1974, the designation SOLAS 1974 is still used today.

2. Maritime Safety and Security in the ISM Code

The high number of work accidents in the shipping world encourages the need for ship safety management. This then gave birth to what is known as *the International Safety Management Code* (ISM Code), in particular, international safety management guidelines for the operation of fiber ships to stop or reduce environmental pollution . The Occupational Safety and Health Management System (SMK3), which has been mandated through Government Regulation No. 50 of 2012 concerning implementing an Occupational Safety and Health Management System, is a K3 management system in Indonesia that is unmistakably a requirement based on laws and regulations.

There are two types of ISM Code Certificates: *Document of Compliance* (DOC) and *Safety Management Certificate* (SMC). Ships accept SMC, while the ship owner's business accepts DOC. The Indonesian government issues DOC and SMC certificates for Indonesian-flagged vessels. Nevertheless, certification is given by each country of origin for ships with foreign flags . Five years is the validity of this certificate. Five types of audits are available for implementing the ISM Code in Indonesia, including initial, annual, intermediate, update, and periodic audits.

The Importance of Light Towers and Navigational Aids in Maintaining Shipping Safety and Security

Stationary maritime navigation devices known as beacon towers that have a visual range of at least 20 nautical miles can help navigators find the bow of ships, find land and ports, and identify national boundaries. To promote shipping safety and protection in addition to the efficient flow of sea traffic, the stability of the light skyscraper of the basic components of the SBNP—should be practiced regularly. A beacon tower is much more than a directional device in the ocean; it also represents the country's territorial boundaries, which is significant for a beacon tower located in the border region of Indonesia.

Currently, Indonesia has 284 beacon towers scattered throughout the country, some of which are strategically and historically significant, some in remote places and on borders with neighboring countries. 491 officers guarded these towers. To show its seriousness in efforts to improve the reliability of beacon towers, the National Tower of Light Day, established by the Indonesian government, occurs every year on 22 September. On this date, a warning is always

made by the relevant agencies. Various appreciations and awards were also given to the flare tower officers.

The following specifications apply to fixed beacon towers and ancillary structures constructed at sea:

a. Building foundations and structures follow construction norms and specifications;
b. The waves in the area are higher than the lighthouse floor, which they are;
c. The beacon and its components comply with International Association of Lighthouse Authorities (IALA) requirements.

The shape and construction of the beacon tower are as follows:

1) Galvanized steel, exposed concrete, covered concrete, or steel construction;
2) The lowest building height is 10 m;
3) The foundation and structure meet the construction criteria;
4) The area in question has a radius of at least 500 meters measured outside the installation or beacon tower.

The existence of navigational hazards and obstacles such as rocks, shallow water, sandbars, and long-distance hazards, as well as the location and/or bow of the ship, can be indicated to the navigator by beacon signs, fixed navigation aids with visibility equal to or more than 10 miles sea. The role of a beacon in indicating the presence of shallow water or areas deemed risky or unsuitable for sea travel, particularly at night, is essential for shipping.

Buoys or Buoy beacons are useful for enhancing a ship's navigation lights, especially beacons, which are needed to steer a ship in a dangerous direction. The yellow and black cardinal *buoys* indicate no-go zones in deep water, respectively. The special arrangement and method of flashing white light can be seen.

When a ship crosses a predetermined boundary with two green and red buoys by default or what we often see in the form of green and red light signals, the side buoys mark the two sides to the right and left. These signs control the entry and exit of the ship at a safe time when passing near buoys or red and green light poles.

Isolated danger mark / one warning symbol or indication to avoid. Denotes an isolated location, such as bedrock that is underwater. You are warned not to sail too close to this area of light.

It shows locations in the water that ships should avoid while at sea, such as shipwrecks and drainpipes on the ocean floor. The special mark *is* yellow, there is a yellow cross above the buoy, and the special mark lights flash yellow one by one.

Indicates safe and risky areas for wading in the ocean. White and red stripes. In particular, beacons are used as night signals to convey that one is in safe seas by their design, meaning, color, and lighting. It takes the shape of a float and produces a white beacon light. These nautical signs indicate the beginning and end of the channel in a defined section of the narrow channel and provide information on whether the nearby ocean water area is open or deep and safe for crossing.

Obstacles of the Beacon Tower in Maintaining Shipping Safety and Security

Various factors can pose a danger to the safety and security of ships, including:

a. hazards such as earthquakes, typhoons, tsunamis, and extremely high temperatures are examples of such hazards. Even though most of the pollution and fires are human-caused, they can still be considered a natural risk. The symptoms can be anticipated, and with greater vigilance and avoidance ;
b. There are several ways in which human-generated harm can manifest , such as murder, terrorism, vandalism, and acts of piracy. The way the captain and each crew member are more alert when the ship passes through gaps, currents, and narrow waters, other than when the ship stops or is moored at the port, can be used to anticipate these hazards;
c. Risks are posed by the special characteristics of the cargo, which require appropriate special techniques to protect the cargo from external variables that can cause oxidation processes that endanger the ecosystem and the safety of individuals and property .

In addition to the three things above, it is also known that other factors in ship accidents at sea are due to the condition of the Shipping Navigation Auxiliary Facilities and Shipping Safety Infrastructure; most of the conditions are no longer optimal or even unable to function at all. The causes of the damage varied, ranging from very old age to maintenance that did not receive serious attention from the parties concerned.

Carrying out policies in the safety field cannot be separated from the participation of companies engaged in shipping. The company must have facilities for all staff on land and at sea, which is called a safety management system. The company built this system according to the recommendations and model documents provided by the International Safety Management Code (ISM). A ship is said to be seaworthy (*seaworthiness*) if the ship meets standards for materials, construction, buildings, machinery, and electronics, all of which are supported by original certification. Knowing how to respond to ship accidents caused by collisions, aground, sinking, fires, collisions, and natural disasters is crucial before sailing (*force major*).[7]

CONCLUSION

The research findings indicate that the two main functions of beacon towers are to assist the navigation of vessels by indicating their course and position and to alert them to potentially hazardous areas such as waterways filled with coral reefs, shallow water, severe waves, and areas of high traffic. , congested areas through which ships must pass that are prone to accidents, including bays and harbor entrances. In other words, think of the beacon as a traffic light at sea.

[7]Agus Santosa , "The Role of Responsibilities of Captains and Harbor Masters for Shipping Safety Through Utilization of Navigational Aids at the Port of Tanjung Emas Semarang," *Journal of Maritime Saintek* vol 20, no. 1 (2019): 29-42. https://jurnal.unimar-amni.ac.id/index.php/JSTM/article/download/215/147147192.

This is useful for supporting shipping safety and security as standard in SOLAS 1947 and the ISM Code, later adopted in the Shipping Law and various implementing regulations. Meanwhile, the obstacle often found in the role of light towers for the safety and security of shipping is the condition due to the age of the light tower, which is very old. There was a lot of damage, ranging from buildings, electrical networks/installations to light bulbs. This certainly greatly affects the performance of the beacon tower as a sign of direction and location for sailing ships.

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