



The Strategy of Minimizing Safety Incidents and Implementing Risk Management to Overcome Crew Error (Human Error) on PT. Meratus Line Surabaya

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Abstract

This study aims to describe the efforts of PT. Meratus Line Surabaya in minimizing the risk of human error among ship crew members. The research employed a qualitative approach with managers, staff, and crew as the subjects. Data were collected through observation, interviews, and documentation, and then analyzed descriptively. The findings indicate that risk prevention is carried out through the selection and placement of crew according to their qualifications, skill enhancement through training, and the provision of personal protective equipment. The strategies implemented include workplace orientation, familiarization, and continuous training to create a safe working environment. The challenges encountered involve unauthorized task execution, improper use of personal protective equipment, and lack of discipline. The solutions applied consist of direct supervision, regular inspections, and guidance through training. This study highlights the importance of a systematic approach in managing human error risks in the maritime sector.

Keywords :

*Safety Incidents;
Risk Management;
Human Error.*

INTRODUCTION

Indonesia is an archipelagic country that has a strategic position in international trade routes. High shipping activities in archipelago waters make a great contribution to national development, both in terms of economy and improving people's welfare. However, the high intensity of sea traffic also has the potential to cause various problems, especially related to shipping safety. A number of cases of marine accidents such as ship fires, collisions, and ship sinkings are still frequent and most of them are caused by human error.

The United Nations Convention on the Law of the Sea (UNCLOS) 1982 and Law Number 17 of 2008 concerning Shipping have actually regulated aspects of shipping safety and security. However, its implementation in the field is often not optimal. This condition is exacerbated by weak law enforcement and there is still undisciplined behavior on the part of the crew and supervisory officials. In many cases, marine accidents are always associated with human error, which basically arises from negligence before and during duty on board.

Human error in the context of occupational safety is defined as an action or decision that deviates from the proper procedures so as to cause potential danger. According to Transiska (2015), work accidents can be caused by two main factors, namely unsafe action and unsafe condition. Other research shows that around 80–85% of work accidents are triggered by unsafe actions, which include a lack of education and training, excessive workload, imbalances in the physical condition of workers, and the use of inappropriate personal protective equipment (PPE) (Mu'nis et al., 2024). Meanwhile, Islam et al. (2016) emphasized that human error is the main element in work accidents in the ship engine repair sector. This fact shows the importance of a systematic strategy to minimize the potential for human error in the shipping industry.

In Indonesia, the government has made efforts to encourage the culture of Occupational Safety and Health (K3) through various regulations, including the "Indonesia with a Culture of K3 in 2015" agenda and participation in the Declaration on Safety and Health at Work. However, at the operational level of shipping companies, implementation still encounters obstacles. Many regulations are only used as administrative formalities without being accompanied by strict supervision and disciplinary commitment from actors in the field. This causes work accidents to continue to recur, even though legal sanctions are clearly regulated.

PT. Meratus Line as one of the national shipping companies has an important role in supporting inter-island connectivity through sea transportation services. The company operates a fleet with shipping routes connecting various major ports in Indonesia. In practice, PT. Meratus Line emphasizes the importance of safety, quality, and customer satisfaction. However, with operational complexity and high crew mobility, the risk of human error remains a major challenge that needs to be taken seriously.

Based on these conditions, this study aims to describe the strategy of PT. Meratus Line Surabaya in minimizing the risk of human error by ship crews. The focus of the research is directed to three aspects, namely the implementation of prevention strategies, the company's efforts to reduce human error, and the obstacles faced along with the solutions implemented. This research is expected to contribute to the development of risk management strategies in the maritime sector, especially in creating a stronger and sustainable workplace safety culture.

LITERATURE REVIEW

The literature in this study aims to summarize several concepts and propositions, thoughts or conceptual foundations in the creation of a work. To make it easier for the author and readers to understand the thesis entitled risk management strategies in minimizing crew error (human error) on board PT Meratus Line Surabaya's ship.

a) Strategy

Strategy is an important tool to achieve company goals effectively and efficiently. In the context of modern management, strategy is understood as a set of actions designed to anticipate internal and external challenges in order to achieve short-term and long-term visions, missions, and goals (Dirgantoro, 2001).

b) Risk Management

Risk management is a systematic process of identifying, measuring, and controlling potential risks that can hinder the achievement of organizational goals. According to Fahmi (2010), risk management helps companies map problems, determine solutions, and conduct continuous monitoring. Its application provides benefits in the form of a more prudent decision-making basis, minimizes potential losses, and encourages business sustainability.

c) Human Error

Human error is defined as a mistake in human decisions or actions that can reduce the effectiveness, safety, and performance of the system (Dhillon, 2012). Human error categories include:

1. Operating errors, due to unclear procedures, complex working conditions, or lack of training.
2. Assembly error, an error during assembly due to limited operator skills.
3. Design error, design failure that does not meet the needs of the system.
4. Inspection error, an error in the inspection process because the inspection results are inaccurate.
5. Installation error, failure during equipment installation.
6. Maintenance errors, errors in maintenance or repair of equipment.
7. Human error is closely related to work accidents, both caused by unsafe behavior and unsafe working conditions.

d) Crew

Crew members are all personnel who work on board the ship in accordance with their respective positions (Law No. 17 of 2008 concerning Shipping). The captain has a central role as the highest leader on the ship with responsibility for the ship's seaworthiness, service users, and luggage. Ship officers hold technical and operational roles according to their areas of expertise, while ratings support the execution of duties in the field.

e) Theoretical and Thinking Framework

The theoretical framework of this research emphasizes the relationship between strategy, risk management, human error, and occupational safety. Human error, facilities, and work equipment are seen as the main factors causing accidents in shipping companies. Thus, risk management strategies are key to minimizing human error, improving work safety, and maintaining the continuity of company operations..

CONCEPTUAL FRAMEWORK

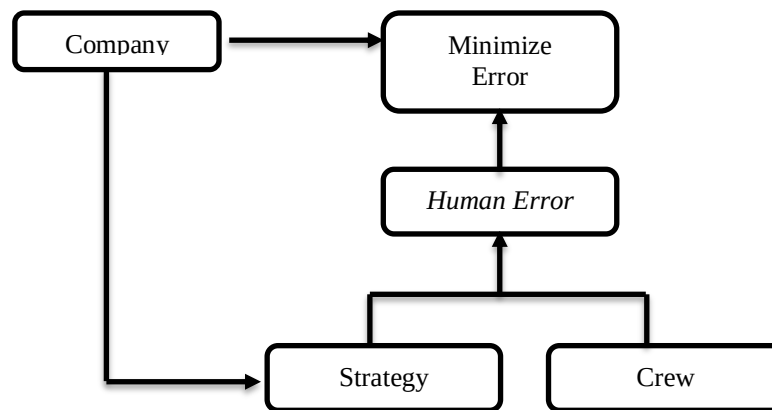


Figure 1. Theoretical Framework

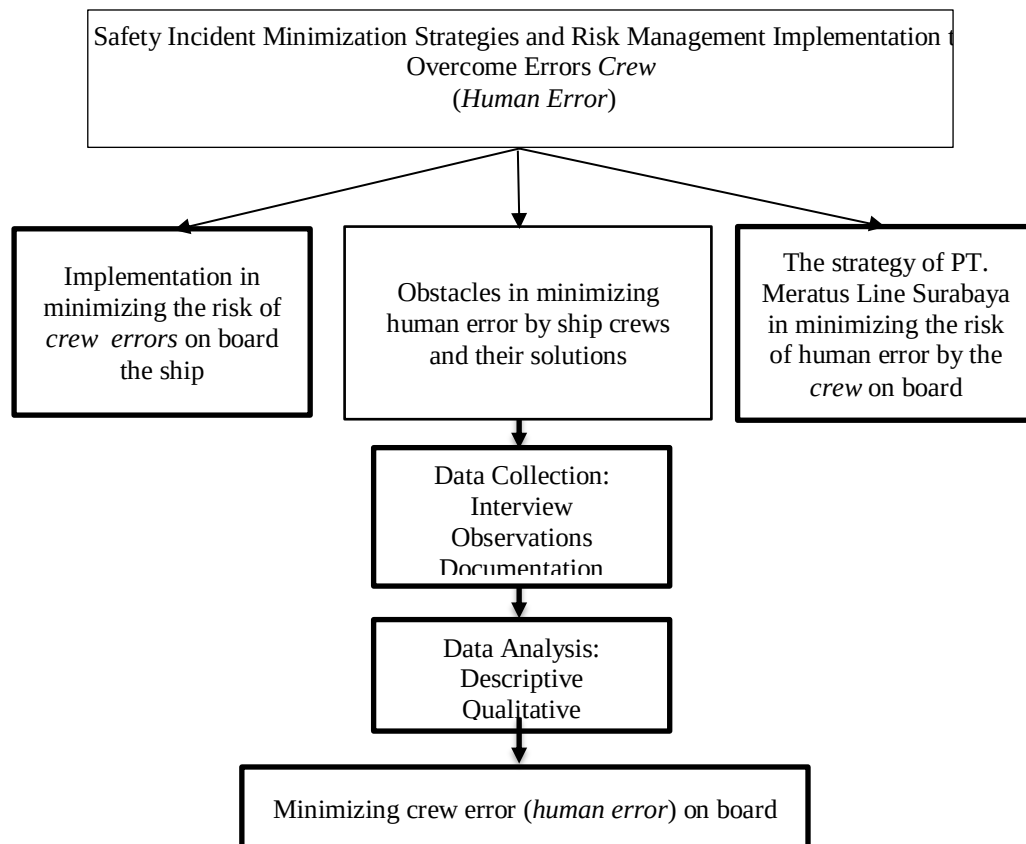


Figure 2. Frame of Mind

RESEARCH METHOD

This study uses a descriptive qualitative approach. The location of the research is PT Meratus Line Surabaya. The research subjects consisted of safety managers, operational staff, and crew.

a) Data Collection

Data collection by:

1. Field observation on ship operational activities.

2. In-depth interviews with 12 respondents (safety managers, training staff, crew members).
 3. Documentation in the form of incident reports, training notes, and SOPs.
- b) Data Analysis
- Data processing analysis using the Miles & Huberman (1994) model: data reduction, data presentation, conclusion drawing.
- c) Data Validity
- Validity is maintained by triangulation of sources (managers, crew, documents) and methods (observations, interviews, documentation).

RESULT AND DISCUSSION

The results of the research conducted at PT. Meratus Line Surabaya shows that this shipping company has implemented various risk management strategies in order to minimize human error by the crew on board. The findings of the research are divided into 3 main aspects, namely:

a) Company Overview

PT. Meratus Line Surabaya is a national shipping company that was established in 1957 and now operates 59 container ships with active status. The company has an extensive network of shipping routes, covering major ports throughout Indonesia as well as international routes to Southeast Asia, including direct services from Surabaya to Dili (Timor Leste).

The operational activities of PT. Meratus Line is supported by the Crewing Management division which functions as ship manning management. This division is responsible for recruiting, selection, training, placement, and monitoring crew performance. With a large number of employees, both on land and on ship, PT Meratus Line emphasizes the principles of safety, quality, and focus on service users (safety, quality, and customer focus) in every business activity.

The company's vision is to become a trusted partner in the shipping sector of Southeast Asia and Oceania, while its mission is oriented towards providing transportation solutions that are competitive, reliable, efficient, and supported by a professional workforce. The company's organizational structure consists of several divisions, including Directors, General Managers, Crewing Managers, Operational Divisions, Finance Divisions, Recruiting Divisions, and Database Divisions which coordinate with each other in supporting shipping activities.

In addition, the company is equipped with supporting facilities such as head office, training room, equipment warehouse, transportation facilities, as well as a payroll and crew welfare system in accordance with MLC 2006 (Maritime Labour Convention) standards.

b) Implementation of Strategies in Minimizing Crew Errors

Based on the results of observations and interviews with management, staff, and crew of the ship, it is known that the company carries out a fairly systematic strategy in reducing the risk of errors. These efforts include:

1. Strict selection and placement according to qualifications to ensure that the crew on duty meets competency standards.
2. Upskilling through regular training, safety briefings, and familiarization with equipment and work procedures.
3. Provision of complete Personal Protective Equipment (PPE), such as safety shoes, helmets, gloves, and safety belts.
4. Socialization of safe work procedures and supervision so that crews comply with operational standards.
5. Periodic monitoring of crew performance and discipline

c) Corporate Risk Management Strategy

1. Crew selection and certification to ensure legality and workworthiness.
2. Familiarization and training for new crews, which are carried out with hands-on practice methods and safety demonstrations.
3. A safe work environment with facility maintenance, regular inspections, and the creation of a disciplined work culture.
4. Compliance with national and international regulations in the field of shipping safety.
5. Continuous training so that crews can adapt to changes in technology and regulations

The results of the study show that the risk management strategy implemented by PT. Meratus Line Surabaya plays an important role in minimizing human error by the crew on board. Field findings show that the company's efforts are not only limited to the implementation of technical procedures, but also involve aspects of continuous selection, training, and supervision. This emphasizes that risk management that is carried out systematically can improve work safety and reduce the potential for accidents in the shipping environment.

Here are some of the things discussed in this study:

a) Implementation of the Strategy to Minimize Human Error

PT. Meratus Line Surabaya implements a systematic risk management strategy in an effort to reduce human error on board. This implementation includes the selection and placement of crew according to qualifications, skill improvement through training, detailed introduction of work aspects to safety aspects, implementation of safe work procedures, and the provision of adequate personal protective equipment (PPE). This strategy is in line with the concept of risk management according to Fahmi (2010), which emphasizes the need for a continuous process in identifying, analyzing, and controlling risks.

b) Risk Management Strategy

The company's strategy includes several key steps:

1. The selection and placement of crews is in accordance with the ISM Code, which requires qualifications and adequate physical conditions.
2. Familiarization and training for new crews, to reduce the potential for accidents due to lack of experience.
3. Occupational safety protection through the provision of PPE, such as safety shoes, helmets, and gloves.
4. Creation of a safe working environment, with the maintenance of working conditions that support safety.
5. Compliance with national and international regulations, including the ISM Code which emphasizes life safety, prevention of environmental damage, and asset protection.
6. Continuous training, designed to improve the competence and safety awareness of all personnel.

These steps show that PT. Meratus Line strives to build a sustainable safety culture, in line with international standards

c) Obstacles and Solutions

In its implementation, the company faces several obstacles, including: crew working without authorization, the use of inappropriate or damaged PPE, and undisciplined behavior such as joking at work. To overcome this, PT. Meratus Line conducts direct supervision, routine checks, and briefings through training. With this step, the company seeks to minimize operational errors while strengthening work discipline.

d) Research Limitations

This research only focuses on risk management strategies at PT. Meratus Line Surabaya, especially in minimizing human error by crews. The scope of the research is limited to the implementation of the strategy, the form of obstacles that arise, and the solutions implemented, so it has not explored external factors or comparisons with other shipping companies.

CONCLUSION

From the overall discussion that has been presented in this study, the following conclusions can be drawn:

1. The implementation of strategies in minimizing crew errors is carried out through selection and placement according to qualifications, skill improvement through training, detailed introduction of work aspects, implementation of safe work procedures, and provision of personal protective equipment.
2. The company's risk management strategy includes proper selection and placement, familiarization and training for new crew, protection with safety equipment, creation of a safe work environment, compliance with shipping regulations, and ongoing training programs.
3. The obstacles faced include crews carrying out duties without authority, the use of inappropriate or damaged PPE, and undisciplined behavior. The completion is carried out through direct supervision, routine checks, and briefings through training.

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