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Optimization Of Loading And Setting Of Cement Packing Bag On People's Shipping Ship In Maccini Baji Port - Pangkajene Islands Regency

* Nurwahidah[1], Haerani Asri[2], Nurwahidah[3],Tasdik Tona[4], Eva Susanti[5], Nur Khairul Mubarak[6]
[12456]Makassar Maritime Polytechnic
[3]Makassar State University
E-mail:nurwahidahpipmks@gmail.com

Abstract

This research aims to determine the conditions of loading activities on people's cruise ships regarding the cargo of cement packing bags on people's cruises, and the cement packing bag transportation system on people's cruise ships that is in accordance with guidelines by referring to the principles of handling and regulation. In this research, primary and secondary data collection methods were used. Quantitative descriptive research is used to solve problems regarding the conditions of loading activities at ports and public shipping vessels on cement packing bags on public shipping ships and the cement packing bag transportation system on public shipping ships which refers to the principles of cargo handling and management. Based on the results of questionnaire calculations, the conditions of loading activities on people's shipping vessels regarding cement packing bag cargo on people's shipping, depend on human resources, facilities and infrastructure, as well as health and safety, while the results of observations on several activities of the transportation and stopping system on people's shipping vessels must be taken into account. regarding the stowage plan, there is preparation of the loading space/cleaning of holds in the cement bag loading rack, which is not properly coordinated by the officer in charge/officer, the stability of the ship needs to be considered, the condition and location of the loading and unloading equipment, the volume of the loading space and the carrying capacity of the ship, Destination port of cargo, quantity, weight, type and nature of cargo in each hold. The author made observations on 6 ships.

Keywords: Loading Optimization, Cement Bag Packing Arrangements, People's Shipping Vessels

1. INTRODUCTION

The development of transportation is greatly influenced by various geographical, economic, political and social factors. Then the level of development is influenced by the nature and level of human life, so it is said that transportation and movement are the cause and effect of the progress of human civilization. The Government has given special attention to this by expanding the transportation system in the eastern Indonesian region, in underdeveloped, remote, outermost, border areas (3TP). As an effort to reduce price disparities and improve the economy of the community in the realization of social justice for all Indonesian people. Especially in the eastern Indonesian region by prioritizing the regularity of ship visits that can stimulate the growth of trade and development activities in general (Jinca, 2001).

The management of people's shipping with separate zones is still needed, because remote areas that are not crossed by large ships automatically still depend on small ships such as KLM or PLM. In addition, there are docks that cannot be docked by iron ships or shallow ports. People's shipping can overcome this, thereby helping national transportation. Indonesia as the largest archipelagic country still needs people's shipping as one of the modes of inter-island transportation. The government is committed to modernizing and improving the safety and security of people's shipping while still considering local wisdom. Another problem is the guarantee of safety and good service from people's shipping. (Yusuf Romadhon and Resista Vikaliana, 2017).

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According to Rahmat Firmansyah, et al., (2019) That, the amount of service time available is 5,610 hours/year, the truck load capacity is 49,500 tons/year, and the number of loading and unloading workers (labor) is 9,900 people/year. The load projection in 2020 is 106,632 tons, for the medium term (2024) it is 292,291, and for the long term (2029) it is 858,913. The number of fleet needs (trucks) for the long term (10 years) is 28,764 trucks/year. Meanwhile, Ahmad Zulfikar Zuhdy, By using multiple regression analysis with the independent variable of how much goods are unloaded and loaded, a projection of the equation for loading and unloading productivity is obtained, the results of this projection are then input in determining the level of loading and unloading productivity. The results of the study showed that the productivity of loading and unloading in 2017 at the pier (THSB) was 37.29 t/k/h, while the productivity at the port (THSP) was 33.58 t/k/h. Based on the productivity standards of the Indonesian port IV Cab. Makassar for general cargo ships of 20-24 t/klj, it can be concluded that the productivity of loading and unloading is not optimal.

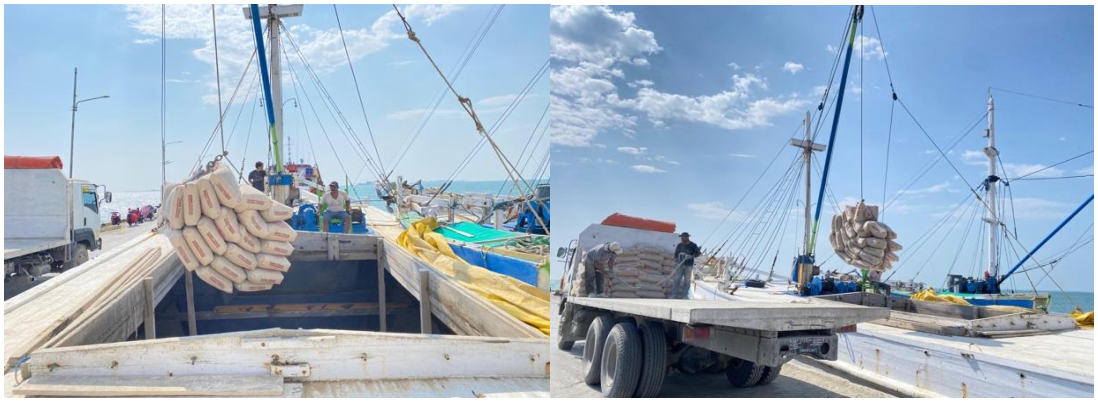

Figure 1. Cement Packing Bag Loading Activity on the People's Shipping Ship at Maccini Baji Port, 2024

The image of Maccini Baji port which is in the process of transferring passengers and cargo from the islands of Sabutung, Kalmas, Tupabiring and Liukang Tanggaya sub-districts, is a driving force for the economy between regions in the islands and the mainland of Pangkajene city.

Likewise, the existence of PT Semen Tonasa provides an opportunity for logistics transportation on people's shipping ships at Minasa Baji-Pangkep Port to the Ports in Palu (Central Sulawesi), Mamuju (West Sulawesi), Kendari (Southeast Sulawesi), Oba (North Maluku), Balikpapan (East Kalimantan), and Sorong (West Papua). Supported by brands that are already well-known in the Eastern Indonesia Region and its surroundings. However, loading on a special Perla fleet transports cement cargo in bag packaging or cement packing bags. The transportation pattern uses trucks and then transferred to the ship by carrying/shouldering or using a ship's derrick/crane with a limited capacity of only two tons or 20 bags. The conventional transfer process is carried out by ABK and workers with limited knowledge skills that are only passed through work experience passed down from generation to generation. Knowledge of the procedures for placement and the risks that can occur is certainly something that has been neglected due to the lack of education and limited information obtained and the lack of specific job training for those involved in activities at the Port. Then the ship's bush children and port workers do not know the risks of the work being done and the stages of the cement cargo transfer procedure, because of ignorance of knowledge related to the dangers of cement and health risks carrying out loading activities without using work safety equipment, such as helmets, safety shoes and masks to protect against health hazards and work accidents.

According to Triatmodjo (2010: 3) a port is a water area protected from waves, which is equipped with sea terminal facilities including a dock where ships can moor to load and unload goods, cranes for loading and unloading goods, sea warehouses (transit) and storage areas where ships unload their cargo, and warehouses where goods can be stored for a longer period while awaiting delivery to the destination area or customer.

According to DA Lasse (2014), Indonesian legislation states that a port is a place consisting of land and/or waters with certain boundaries as a place for government activities and business activities which are used as a place for ships to dock and for passengers to embark and disembark.

David House (2013:153-154) on Seaman Ship Techniques explains that in preparing the cargo space, several things must be considered, namely: The compartment must be swept clean and all previous cargo remains removed, The gutter must be cleaned and all water suction in the hold must work properly, The fire or smoke detector system must be tested and seen to be functioning properly, The hatch drying system and holes

between decks must be clean and free from congestion, The ceiling (cargo board), fixed dunnage installed on the ship's body are checked and damaged ones must be replaced, must be tested and seen to be a repair status.

According to Sasono (2012:137) a port is a place formed by land and surrounding waters with certain boundaries as a place for government and economic activities to take place, which is used as a place for ships to rest, to disembark and embark passengers and/or to load and unload goods used with a shipping security system and other activities.

According to Utami (2018:30) loading and unloading is the transfer of cargo from a ship to a land transportation vehicle through a warehouse and from a land vehicle or warehouse to a ship. According to Suyono (2011:30) loading activities are the work of loading goods or moving goods from a dock to a ship or from a barge to a ship or from a truck to a ship until they are arranged in a ship using a ship crane or land crane. According to Martopo (2013:8) basically what needs to be considered in handling cargo on a ship are the important stages in loading and unloading. To get the expected activities, the sailors need to understand and implement the principles of loading. According to Herman Budi Sasono, (2012). Loading and unloading activities at the dock are the activities of unloading imported goods and inter-island goods from the ship using a crane and ship sling to the nearest land at the edge of the ship which is commonly called the dock.

Ship cargo according to Istopo (2010) is all kinds of goods and merchandise that are handed over to the carrier to be transported by ship, to be delivered to people or goods at the destination port. According to Arso Martopo and Soegiyanto in their book "Cargo Handling" (2000:07), cargo handling is a term in sailor skills, namely knowledge about loading and unloading cargo from and to the ship in such a way that the five principles of good loading are realized.

In Law of the Republic of Indonesia No. 17 of 2008 concerning Shipping and Government Regulation of the Republic of Indonesia No. 20 of 2010 concerning Transportation in Waters, it is mandated that the development of people's shipping sea transportation is carried out so that the business life and important role of People's Shipping sea transportation are maintained as part of the potential of national sea transportation which is an integral part of the national transportation system. Article 1 of Law Number 17 of 2008 concerning Shipping states that sea transportation which uses a term of transportation in waters is the activity of transporting and/or moving passengers and/or goods using ships.

Pelayaran rakyat (Petra) once played a very important role in the history of national sea transportation. Until the early 2000s, the Petra fleet managed to transport 35% of the general cargo load of domestic sea transportation. Along with the development of sea transportation technology and the increase in the control of illegal logging, the pelra fleet has increasingly declined. The results of the study illustrate that the obstacles in the development of pelra include aspects of cargo, aspects of fleet rejuvenation, aspects of capital/financing, aspects of management and human resources. Based on the results of the study, companies should provide safety and supporting equipment for pelra ships. The government provides training and skills for pelra ship sailors regarding cargo handling so that sailors working on pelra ships can carry out loading and unloading activities properly and improve the certification of pelra ship sailors so that human resources can be qualified. (Syafril KA, 2018).

The level of loading and unloading productivity at Maccini Baji Port is 33.6 Tons/Gang/Hour with a standard of 70%, which means that in this case it shows that the productivity level has not reached the performance standard target, productivity analysis based on T/S/H (Ton/Ship/Hour) obtained a loading and unloading productivity level of 22.42 Tons/Ship/Hour with a standard of 70%, which in this case shows that the productivity level has not reached the performance standard target, this shows that visiting ships are not very productive because the effective loading and unloading time is still low, Analysis of the overall pier utilization rate or Berth Occupancy Ratio (BOR) obtained a BOR value in 2021 of 20% which is still far from the standard value, meaning it is stated as good according to the performance standards of the Director General of Sea Transportation of 70%, where the factors that affect loading and unloading productivity are the environment, human resources (TKBM), loading and unloading equipment, car queues.

Based on the results of mapping several studies above, there are still gaps in previous discussions and research (research gaps), especially in the management, management or strategy of the cargo service system from more efficient public service ships and productivity at the Pelra port. The novelty of this research is to determine the strategy of the cement packing bag loading service system on non-conventional ships, especially on the Pelra ship fleet at the Minasa Baji port. Finding policies to maximize the role of PeIra in improving the economy of the community in the underdeveloped areas of the Pangkajene Islands.

2. METHOD

This study aims to improve the role of Peira sea transportation in the national sea transportation system, especially to serve remote border areas and the interior. The analysis used is comprehensive, with a descriptive approach both quantitative and qualitative, supported by primary data from measurements, observations, and interviews as well as secondary data in the form of literature and laws and regulations.
In this study, primary and secondary data collection methods were used.
In this study, the author uses descriptive analysis, namely a way of formulating and interpreting existing data so that it can provide clearer descriptions regarding the conditions of loading activities at the Port and people's shipping vessels for cement packing bags on people's shipping vessels and the cement packing bag transportation system on people's shipping vessels that refer to the principles of handling and arranging cargo.
The assessment criteria used are presented in the form of a Likert scale instrument table as follows:

Table 1. Likert scale instrument

Answer Choice Score
Strongly Agree (SS) 4
Agree (S) 3
Disagree (TS) 2
Strongly Disagree (STS) 1

Source: Sugiyono, 2017

Furthermore, the calculation results from the descriptive analysis can be measured through the score criteria table below:

Table 2. Respondent response score criteria against actual scores

Criteria Score Interval
76% – 100% Very Good
51% – 75% Good
26% – 50% Enough
0% – 25% Not Good

Source: Sugiyono (2012:184)

3. RESULTS AND DISCUSSION

a. Research result

1) Data analysis

Quantitative descriptive research is used to solve problems regarding the conditions of loading activities at ports and people's shipping vessels for cement packing bags on people's shipping vessels and the cement packing bag transportation system on people's shipping vessels which refers to the principles of handling and arranging cargo.

The following data were found when conducting direct field observations by visiting people's shipping vessels that were carrying out loading and unloading activities, which were then analyzed in completing the research report. Table 5.1 contains the names of people's shipping vessels that the research team encountered in the field when collecting direct data.

Table 3. Names of People's Shipping Ships.

No	**Name of the People's Shipping Ship.**	**Results**
1	KLM Marine Paradise	450 Ton
2	The Faithful Akbar	350 Ton
3	Bone Rate Jaya 01	500 Ton

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4	Five Seven Seven	375 Ton
5	Hasta	300 Ton
6	Sunshine 03	150 Ton

As Respondentin this study are all ABK on the people's shipping vessels in the port of Maccini Baji. Respondents used as many as 21 people. Analysis of Loading Optimization and Packing Bag Cement Arrangement on People's Shipping Vessels in the Port of Maccini Baji- Pangkajene Islands Regency.

Name Name Age Experience
1 A 57 30 Years
2 H 35 15 Years
3 AB 46 20 Years
4 B 48 24 Years
5 HD 32 10 Years
6 US 33 11 Years
7 JD 66 40 Years
8 DL 27 2 Years
9 AH 40 6 Years
10 TR 47 5 Years
11 HM 51 20 Years
12 AC 42 1 Year
13 AM 50 5 Years
14 MD 54 5 Years
15 JF 16 1 Year
16 AD 62 40 Years
17 MR 30 1 Year
18 RL 36 5 Years
19 HE 51 25 Years
20 HK 31 10 Years
21 SD 47 20 Years

Table 4 Optimization of Loading and Arrangement of Cement Packing Bags on People's Shipping Ships at Maccini Baji Port - Pangkajene Islands Regency

No	Optimization of Loading and Packing Bag Cement Arrangement	Cement Carrier Ship Capacity (Ton)
1	Human Resources	70.75
2	Facilities and infrastructure	78.57%
3	Occupational Health and Safety	49.83%

a) Human Resources

Based on the table and description above, the results of the calculation of human resource analysis in Optimizing Loading and Arranging Cement Packing Bags on People's Shipping Ships at Maccini Baji Port - Pangkajene Islands Regency are as follows:
Percentage (%) of actual score
= (Actual score)/(Ideal score) x 100%
Percentage (%) of actual score
= 416/(4 x 21) x 100%
Percentage (%) of actual score = 416/588x 100% = 70.75%

From the results of the analysis calculations above, the achievement of the percentage of human resource development is 70.75%, so that if it is associated with the previously determined score with an interval of 51-75%, it can be said that human resources in the Optimization of Loading and Arrangement of Cement Packing Bags on People's Shipping Ships at Maccini Baji Port - Pangkajene Islands Regency are included in
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the Good category.

b) Facilities and infrastructure

Based on the table and description above, the results of the calculation of the analysis of facilities and infrastructure in the Optimization of Loading and Arrangement of Cement Packing Bags on People's Shipping Ships at Maccini Baji Port - Pangkajene Islands Regency are as follows:

Percentage (%) of actual score = (Actual score)/(Ideal score) x 100%
Percentage (%) of actual score = 396/(4 x 21) x 100%
Percentage (%) of actual score = 396/504x 100% = 78.57%

From the results of the analysis calculations above, the achievement of the percentage of facilities and infrastructure is 78.57%, so that if it is associated with the previously determined score with an interval of 76-100%, it can be said that human resources in the Optimization of Loading and Arrangement of Cement Packing Bags on People's Shipping Ships at Maccini Baji Port - Pangkajene Islands Regency are included in the very good category.

c) Occupational Health and Safety

Based on the table and description above, the results of the Occupational Health and Safety analysis calculations in the Optimization of Loading and Arrangement of Cement Packing Bags on People's Shipping Ships at Maccini Baji Port - Pangkajene Islands Regency are as follows:

Percentage (%) of actual score = (Actual score)/(Ideal score) x 100%
Percentage (%) of actual score = 293/(4 x 21) x 100%
Percentage (%) of actual score = 396/588x 100% = 49.83%

From the results of the analysis calculations above, the achievement of the Occupational Health and Safety percentage is 49.83%, so that if it is associated with the previously determined score with an interval of 26-50%, it can be said that human resources in the Optimization of Loading and Arrangement of Cement Packing Bags on People's Shipping Ships at Maccini Baji Port - Pangkajene Islands Regency are included in the sufficient category.

b. Discussion

The expected results of this study are to determine the conditions of loading activities on people's shipping vessels for cement packing bag loads on people's shipping vessels and the cement packing bag transportation system on people's shipping vessels that are in accordance with the guidelines by referring to the principles of handling and arrangement. Through the results of this study, it is expected to ensure human resources, facilities and infrastructure, as well as health and safety in Optimizing Loading and Arranging Cement Packing Bags on People's Shipping Vessels at Maccini Baji Port - Pangkajene Islands Regency.

Based on the results of the questionnaire calculation, the condition of loading activities on people's shipping vessels for cement packing bag loads on people's shipping vessels depends on human resources, facilities and infrastructure, and health and safety. Here are some descriptions of:

1) Conditions of loading activities on people's shipping vessels for cement packing bag cargo:

a) Human Resources

The achievement of the percentage of human resource development is 70.75%, so that if it is associated with a predetermined score with an interval of 51-75%, it can be said that human resources in Loading and Arranging Packing Bag Cement on People's Shipping Ships at Maccini Baji Port - Pangkajene Islands Regency are included in the Good category. So it is said to be optimal in the development of human resources in loading activities on people's shipping ships for cement packing bag loads on people's shipping ships, but it needs to be improved regarding educational support in loading and unloading activities, giving appreciation in improving education. Worker qualifications are a prerequisite for accepting as part of the organization.

b) Facilities and infrastructure

The achievement of the percentage of facilities and infrastructure is 78.57%, so that if it is associated with a predetermined score with an interval of 76-100%, it can be said that human resources in the Optimization of Loading and Arrangement of Packing Bag Cement on People's Shipping Ships at Maccini Baji Port - Pangkajene Islands Regency are included in the very good category. So it is said to be optimal in the readiness of facilities and infrastructure in loading activities on people's shipping ships for cement packing

bag loads on people's shipping ships, but it needs to be improved regarding the completeness of the PPE (Personal Protective Equipment) needed for workers on the ship and maintenance of loading and unloading equipment is carried out in accordance with organizational directions, so that loading activities on ships are even more optimal.

c) Occupational Health and Safety
Occupational Health and Safety Percentage of 49.83%, so if associated with a predetermined score with an interval of 26-50% then it can be said that human resources in Optimization of Loading and Arrangement of Packing Bag Cement on People's Shipping Ships at Maccini Baji Port - Pangkajene Islands Regency are included in the sufficient category. So it is said to be less than optimal in the readiness of facilities and infrastructure in loading activities on people's shipping ships for cement packing bag loads on people's shipping ships, so it needs to be improved related to the company's efforts in providing information related to cement loading techniques and health or risks have been conveyed through stickers etc., activeness in efforts to improve occupational safety and health, understanding of work equipment in protecting health, training on occupational safety and health in the workplace, and preparing adequate health and welfare programs, so that loading activities on ships will be optimal.

2) The cement packing bag transport system on people's shipping vessels refers to the principles of handling and arranging cargo.

From the results of observations in several activities of the transportation and unloading system on the people's shipping ship, attention must be paid to the stowage plan, there is preparation of the loading space/cleaning of the hold in order to load cement bags, which is not well coordinated by the Officer in charge/Councilman, Ship stability needs to be considered, Condition and location of Loading and unloading equipment, Volume of loading space and ship's carrying capacity, Port of destination of cargo, quantity, Weight, Type and nature of cargo in each hold The author made observations in 6 ships:

a) Cleaning activities of cargo space/hatch on the ship (70%) or only 7 (seven) activities and the remaining 4 (four) activities that were not carried out cleaning the cargo space/hatch (30%). Thus this percentage, Arrangement of cement bag loads by following the stowage plan from the Officer, there are still 5 (five) loading and unloading activities that are not in accordance or 45% that have not followed the Officer's guidance. Likewise with supervision in loading, the tally man who is in charge of calculating and supervising the loading of cement bags by 50% does not carry out his duties properly.

b) Condition and location of loading and unloading equipment, the ship's crew did not pay attention to the condition and location of the loading and unloading of cement packing bags which referred to existing procedures, this resulted in there still being torn and damaged cement bag cargoes whose condition was not reported so that when unloading there was a difference in calculation which caused the company to claim due to the loss of cement bag cargo.

c) The volume of the cargo space and the ship's carrying capacity are not observed according to procedures and the cargo of the people's shipping ship usually exceeds the cement load capacity on the ship.

d) The crew must always pay attention to the destination port of cargo, quantity, weight, type and nature of the cargo in each hold.

4. CONCLUSION

The expected results of this study are to determine the conditions of loading activities on people's shipping vessels for cement packing bag loads on people's shipping vessels and the cement packing bag transportation system on people's shipping vessels that are in accordance with the guidelines by referring to the principles of handling and arrangement. Through the results of this study, it is expected to ensure human resources, facilities and infrastructure, as well as health and safety in Optimizing Loading and Arranging Cement Packing Bags on People's Shipping Vessels at Maccini Baji Port - Pangkajene Islands Regency.
Based on the results of the questionnaire calculation, the condition of loading activities on people's shipping vessels for cement packing bag loads on people's shipping vessels depends on human resources, facilities and infrastructure, as well as health and safety.

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