Applied Business and Administration Journal (ABAJ)
Vol. 3, No. 03, September 2024, pp.15-22
ISSN: 2828-0040

Analysis of Existing Constraints During Loading and Unloading of Goods at Belawan Port by PT. Gelora Perkasa

Fadiyah Hani Sabila[1], Wawan Dwi Yogo Cahyadi[2]

[1,2] Politeknik Adiguna Maritim Indonesia Medan

Article Info

Article history:

Received 08 27, 2024
Revised 09 30, 2024
Accepted 09 30, 2024

Keywords:

Loading and Unloading
Ports
Work Safety

ABSTRACT

The purpose of this paper is to discuss the analysis of constraints that exist during the loading and unloading of goods from ships to the dock and then until they are stored in the owner's warehouse. The research methods used in this study are field research and library research. The author found several constraints or obstacles in the loading and unloading process, namely constraints in the form of natural factors such as bad weather, strong winds, and rain. Under these conditions, unloading activities must be stopped to ensure the safety of goods and workers, as goods exposed to rain will be damaged and their quantity reduced, resulting in losses. In addition, the factor of damaged loading and unloading equipment also hampers the loading and unloading process, with equipment breakdown due to lack of maintenance from the mechanical division on the loading and unloading equipment and several other constraints. After identifying these constraints, PT. Gelora Perkasa has several efforts to minimize them, starting from constraints in the form of natural factors, where the action taken is to temporarily stop loading and unloading activities to prevent greater losses due to damage to goods. Meanwhile, to prevent the consequences of damaged loading and unloading equipment, it is necessary to carry out more intensive maintenance, and equipment that is no longer suitable for use should be replaced and no longer used to avoid obstacles during loading and unloading activities.

Corresponding Author:

Wawan Dwi Yogo Cahyadi
wawandwiyogocahyadi341@gmail.com

INTRODUCTION

The business activities of PBM, or Stevedoring Companies, include loading and unloading goods to and from carrier vessels. The stevedoring business conducted by Stevedoring Companies (PBM) is a service activity engaged in loading and unloading to and from ships, consisting of stevedoring, cargodoring, and receiving/delivery activities. The loading and unloading process often experiences delays, which will reduce work effectiveness, resulting in losses in both time and materials. Ineffective transport facilities and congestion obstacles, during unloading, often cause transport facilities, usually trucks to the dock, to be less smooth, making it one of the factors causing slow loading and unloading processes.

With the fulfillment of adequate loading and unloading equipment, loading and unloading activities and export/import activities of various commodities through the port will increase. And currently, many multinational companies have stated their commitment to utilizing the port and sending their products to several countries. Then, various supporting infrastructure

and human resources within the company will continue to be improved to increase activities at the port.

Because based on observations at this time, loading and unloading at Belawan Port still has several constraints during loading and unloading of goods, such as weather factors that hinder the loading and unloading process, so loading and unloading activities must be stopped so that goods to be loaded or unloaded are not damaged. In addition, the factor of damaged loading and unloading equipment also hampers the loading and unloading process. The damage to loading and unloading equipment is due to lack of maintenance from the mechanical division on the loading and unloading equipment and natural factors such as strong winds and rain. Under these conditions, loading and unloading activities must be stopped to ensure the safety of goods and workers.

LITERATURE REVIEW

2.1. Port

Government Regulation of the Republic of Indonesia No. 69 of 2001 on Port Affairs defines a port as a place consisting of land and surrounding waters with certain boundaries, used for government activities and economic activities, serving as a place for ships to dock, anchor, embark and disembark passengers, and load and unload goods. It is equipped with shipping safety facilities and port support activities, as well as serving as a transfer point for intra and inter-modal transportation.

Meanwhile, the concept of port affairs encompasses everything related to port operation activities and other activities in carrying out port functions to support the smooth flow, security, and order of ship traffic, passengers and goods, sailing safety, as well as serving as a transfer point for and between modes of transportation.

2.2. Definition of Analysis

According to Fransiskus, J. H. (2023), analysis is the process of searching for or systematically arranging data obtained from interviews, field notes, and other materials. This is done by organizing data, breaking it down into units, systematizing, arranging into patterns, choosing what is important and what will be studied, and drawing conclusions so that it can be easily understood and all information can be communicated to others.

2.3. Constraints

According to Danu Prastya (2018:329), constraints are factors that hinder or limit an activity. Thus, it can be explained that constraints often occur in any field of work. For example, in port operations, constraints frequently occur that impede time and cost, resulting in losses for the company.

2.4. Loading and Unloading

According to Utami (2018:30), loading and unloading is the transfer of cargo from ships to land transport vehicles through warehouses and from land vehicles or warehouses to ships. From the above conclusion, it can be summarized that loading and unloading is an activity of raising and lowering goods from ships.

The Decree of the Minister of Transportation No. KM 14 of 2002 defines a stevedoring company (PBM) as an Indonesian legal entity specifically established to organize and operate

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loading and unloading activities of goods to and from ships. The stevedoring workforce (TKBM) refers to all workers registered at the local port who perform loading and unloading work at the port. A loading and unloading service provider is a company that conducts loading and unloading activities using stevedoring workforce (TKBM) and loading and unloading equipment.

The business activity of loading and unloading goods is carried out by business entities specifically established for loading and unloading goods at ports. These entities are required to have a business license, and the implementation of loading and unloading activities is carried out using loading and unloading equipment by stevedoring workers at the port. The loading and unloading equipment must meet operational requirements and ensure work safety.

The loading and unloading equipment available at Belawan port are as follows:

1. Harbour Mobile Crane (HMC), also often referred to as a land crane, is a port loading and unloading equipment that can move from place to place and is flexible, so it can be used for loading and unloading containers as well as bulk goods/general cargo with a lifting capacity of up to 100 tons.
2. Reach Stacker (RS) is a mobile device with a spreader used for lifting on/lifting off containers in the Container Yard (CY) or Container Depot.
3. Fork Lift (FL) is a mobile device with forks used for lifting on/lifting off containers, and is also often used for loading and unloading cargo-type goods such as unloading cement cargo. Fork Lifts (FL) have a lifting capacity of up to 32 tons.
4. Rubber Tyred Gantry (RTG) is a loading and unloading equipment that can move in the stacking field, functioning to lift on/lift off containers to and from trailers or vice versa in stacking according to block, slot, row, and tier.
5. Container Gantry Crane (CC) is a loading and unloading equipment permanently installed at the edge of the dock using rails so it can slide, functioning for loading and unloading containers with a considerable reach.

METHODS

1. Field Research

In collecting field data, the author uses two writing methods:

a. Interview: Conducting direct interviews with leaders and employees involved in the field of loading and unloading goods at the port of PT. Gelora Perkasa in Belawan Port.
b. Observation: To strengthen the data or information that the author obtains from direct observation at the research object.

2. Library Research

This is a library research by analyzing various types of scientific information through readings relevant to the main topic being studied. In this case, the author collects data through books and other sources.

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RESULTS AND DISCUSSIONS

4.1.Quality of Loading and Unloading Services at PT. Gelora Perkasa Port in Belawan Port

4.1.1. Loading and Unloading Work Safety

Occupational Health and Safety (OHS) for Loading and Unloading Workers (TKBM) becomes one of the determining factors for the smoothness and productivity of loading and unloading goods at the port. Only workers whose safety and health are well protected can achieve optimal cargo handling performance levels.

Conversely, workers whose health is not taken care of or whose safety is not guaranteed in carrying out loading and unloading tasks/activities will consistently fail to contribute work performance, and will even become a burden for the company as a result of operational risks such as work accident risks and other risks.

The rapid industrial progress has become the source of an explosion in cargo consisting of chemicals as raw materials transported by sea. The properties of such materials invite risks that disturb and even endanger the safety and health of workers performing loading and unloading at ports. Risks in the form of work accidents from small to large scale can basically be prevented by reducing the possibility of occurrence and mitigating by localizing the consequences.

Preventing and mitigating risks can be done by installing and providing:

a. Light Fire Extinguishers (APAR)

   APAR is available in various types and sizes. Its use is adjusted according to the class division determined based on the material causing the fire.

b. Fire extinguishing installations

   APAR fire extinguishers are only limited to small fire points or still in the early stages, while for fires that have grown large, such as ship fires, the use of APAR is not sufficient, but rather permanently installed installations. The use of water as an extinguishing medium is widely practiced because large amounts of water are easily obtained and effective for solid materials.

c. Personal Protective Equipment (PPE)

   Personal Protective Equipment (PPE) is equipment worn by individual workers to protect them from exposure to hazardous contaminants or in conditions such as radiation, noise, lack of oxygen, and impact/falling of hard objects. PPE can protect TKBM by reducing the possibility and consequences of risks in the workplace, both against work accidents and occupational diseases.

d. Training Programs Education and Training (DIKLAT) for TKBM in ports must be designed in accordance with occupational safety and health provisions to ensure that each individual knows, understands, and is able to implement the applicable standard operating procedures (SOP).

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4.1.2. Loading and Unloading Services and Equipment Used

Based on research obtained from direct interviews, the quality of loading and unloading services at PT. Gelora Perkasa Port in Belawan Port is considered quite good. Currently, the loading and unloading equipment at PT. Gelora Perkasa Port is increasingly developing and becoming more sophisticated. PT. Gelora Perkasa in Belawan Port has several loading and unloading equipment such as; crawler cranes with capacities of 50 tons, 100 tons, and 250 tons, and also mobile cranes with a capacity of 40 tons which are commonly used in stacking fields due to their agile movement, as well as forklifts with capacities of 5-10 tons which are usually used in storage warehouses because they can reach narrow spaces. PT. Gelora Perkasa in Belawan Port also has loaders used for loading and unloading bulk cargo such as corn.

The loading and unloading process at the port will certainly involve many companies, so good coordination from all parties is needed. The smoothness of this process also depends on the provision of adequate loading and unloading equipment. Moreover, nowadays more companies are comfortable using it. The transfer of bulk or non-bulk cargo cannot be done with bare hands, so there must be auxiliary equipment. The types of auxiliary equipment for the loading and unloading process at this port have become increasingly diverse and certainly more sophisticated. So the loading and unloading equipment can help move the cargoes in ships of any size easily. The work speed of field officers who carry out the transfer is certainly better, so the work is completed quickly and reduces the possibility of overtime. This not only benefits field employees so they don't work beyond normal hours due to overtime, but also benefits companies that don't incur overtime costs for their employees.

Types of Loading and Unloading Auxiliary Equipment: The provision of this loading and unloading equipment is usually from companies that rent from other companies such as equipment owned by PT PELINDO. The types of equipment needed are diverse, depending on the type of cargo that needs to be unloaded.

The types of loading and unloading equipment often used when loading and unloading goods at the port are:

a. Harbour Mobile Crane or called land crane, this tool is often used when loading and unloading both cargo ship loads and container ships. This tool has a strong enough capacity to lift loads of 80-100 tons.

b. Electrical Grab which is called a picking tool that can grip bulk cargo such as fertilizer, corn, wheat, and other types of bulk cargo. Grabs have a capacity of about 60-80 tons.

c. Fork Lift, this tool is often used to lift containers and is also often used to unload parts of cargo ships that are types of loads such as cement filled in jumbo bags or called large bags shaped like bags that can be filled with as many as 50 sacks of cement.

d. Hopper is one of the equipment or facilities that must be present at the Port. A hopper is a container for filling bulk cargo with a hole outlet from below which has a device or called a truck underneath. Hoppers have several types including static hoppers and mobile hoppers, but in Belawan Port there are only mobile hoppers assisted by forklifts to be brought to the edge of the Port dock if they want to carry out loading and unloading of bulk cargo.

e. Trucks or called motors in the Belawan Port Area, this tool is often used to carry out unloading of bulk cargo and container types. Trucks called motors are also very important

in unloading to deliver unloaded goods. After the cargo is loaded into the truck, the goods must be delivered to the owner's warehouse.

Each type of auxiliary equipment is used for conditions that indeed require the performance of that auxiliary equipment. It is best if all types of these auxiliary tools are available in the port area to make it easier for officers to take the loading and unloading equipment, and can be carried out quickly when wanting to load and unload goods at the Port.

4.2.The Process of Loading and Unloading Goods at PT. Gelora Perkasa Belawan Port Along with Required Documents

4.2.1. Process of Loading and Unloading Goods

Based on field observations, there are several processes of loading and unloading activities carried out at PT. Gelora Port. Usually, before carrying out loading and unloading, the PBM (Stevedoring Company) must stand by at the port before the ship docks. After the ship arrives or has docked, the PBM meets the first officer on board to check documents and goods to be unloaded. The documents requested by the PBM are:

a. Loading List
   A list made by the loading and unloading Port that is recommended to the ship regarding what goods will be loaded onto the ship.
b. Pre-stowage Plan
   A Pre-stowage Plan is a document with a temporary picture of the place or location of cargo or goods to be unloaded, made by the first officer.
c. Daily Report and Time Sheet
   A daily report made by the Stevedoring Company (PBM). This document is made to report to the ship every morning to know how much cargo has been unloaded or loaded.
d. Mate's Receipt
   A receipt from the ship that the goods have been received on board.
e. Bill of Lading
   A document often used in shipping, also referred to as a sea transportation agreement made by the shipping company. On the back of this document, there are articles about the agreement. This document functions as a sea transportation document, receipt on board, freight receipt, and proof of ownership.

After checking the documents, the PBM must check if the goods are damaged. After checking the goods, the PBM can then carry out the process of loading and unloading goods.

The loading and unloading implementation processes are as follows:

a. Stevedoring, which is the activity of unloading ship cargo from the ship to the dock, or loading goods from the dock onto the ship.
b. Cargodoring, which is the activity of moving goods that have been unloaded on the dock to warehouse locations.
c. Receiving, which is the process of receiving goods to be loaded onto the ship by the port from the owner of the goods or authorized party. The received goods will be stored in the warehouse until the time of loading onto the ship.
d. Delivery, which is the process of handing over goods stored in the warehouse from the results of unloading ship cargo by the port to the owner of the goods or authorized party.

e. Truck Loosing, which is the process of moving goods resulting from unloading ship cargo from the dock by the owner of the goods or authorized party to locations outside the Port area.

4.2.2. Constraints in Loading and Unloading Activities at PT. Gelora Perkasa Port in Belawan Port and Efforts to Overcome Them

1. Constraints in loading and unloading activities The constraints or obstacles in the loading and unloading process at PT. Gelora Perkasa port in Belawan Port are as follows:
    a. Constraints in the form of natural factors such as bad weather including strong winds and rain. In these conditions, unloading activities must be stopped to ensure the safety of goods and workers. It's possible that goods exposed to rain will be damaged or their quantity reduced, resulting in losses.
    b. Constraints due to damaged loading equipment that hinder the loading and unloading process. The damage to loading and unloading equipment is due to lack of maintenance from the maintenance division. The consequence of this damaged equipment can result in delays of several hours. In addition, there are constraints related to the condition of goods, such as items with very large weights that require more manpower and special equipment. There are also constraints in the form of land transportation (trucks). In unloading activities, transportation delays often occur due to traffic jams, which can also hamper the smooth loading and unloading process because it doesn't go according to plan.

2. Efforts made to overcome the constraints that arise in the loading and unloading process. To overcome the constraints that occur in the loading and unloading process, PT Pelabuhan Belawan takes the following steps:
    a. For constraints in the form of natural factors, the action taken is to temporarily stop loading and unloading activities to prevent greater losses due to damage to goods.
    b. For constraints due to damaged loading and unloading equipment, more intensive maintenance is needed, and equipment that is no longer suitable for use should be replaced and not used again.

CONCLUSION

Based on the research results and discussion, it can be concluded that the quality of loading and unloading at PT. Gelora Perkasa Port in Belawan Port is considered quite good. Adequate facilities and infrastructure, spacious areas, and cleanliness that is continuously maintained, the loading and unloading process will run well if there are no bad weather factors and no damage to loading and unloading equipment.

Referring to the above conclusions, the author suggests to PT. Gelora Perkasa Port in Belawan Port to always be quick in overcoming any constraints that occur in the field, as well as providing the best services to consumers, and always maintaining the already good services from PT. Gelora Perkasa Port in Belawan Port itself due to increasingly fierce global competition, and mechanics should always carry out maintenance on loading and unloading equipment to avoid constraints during loading and unloading.

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