

**ANALYSIS OF SLOW COAL LOADING IN MV. PLACID SEA
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Abstract

PT. Indo Dharma Transport Banjarmasin is located in South Kalimantan and is one of Indonesia's best ship agency companies. This research aims to determine the factors that cause the slow process of transferring or loading coal from barges to large ships on MV. Placid Sea in Taboneo Anchorage, Banjarmasin, and to find out how to minimize the loading time of coal from barges to large ships. This research was conducted at PT. Indo Dharma Transport Banjarmasin. This type of qualitative descriptive research is the result of research in the form of data not stated in numbers but presented in the form of a narrative. The results showed the slow process of transferring or loading coal from barges to large ships on MV. The Placid Sea in Taboneo Anchorage was due to several factors that hindered the loading process, including damage to the loading and unloading equipment, bad weather, and the slow process of barging berthing. Therefore, periodic maintenance and checks on loading and unloading equipment are needed to avoid damage during the loading process and assist tug boats in barging and berthing.

Keywords: berthing; loading and unloading tools; slow loading

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INTRODUCTION

PT. Indo Dharma Transport Banjarmasin is an agency company that handles ships entering the Banjarmasin area, South Kalimantan. This company takes care of all permits and coal loading documents. As an agent, PT. Indo Dharma Transport provides services to service users, ranging from licensing arrangements at KSOP (Office of Harbor Masters and Port Authority), Customs and Excise, Immigration Offices, and the Port Quarantine. The smooth process of loading goods and managing documents is very important because the carrier certainly does not expect delays in the loading process. In the coal loading process, obstacles are often found that cause the loading process to be slow, PT. Indo Dharma Transport

Banjarmasin as a shipping agent, must know the causes of delays and minimize these delays as much as possible. In addition, province of South Kalimantan, ports play a crucial role in facilitating the flow of maritime transportation traffic and as a driving factor for the region's economic growth (Elyanti, 2018).

According to Martopo and Soegianto (2001), cargo handling is the knowledge of loading and unloading cargo from and onto ships in such a way as to realize the five principles of good loading and is one of the skills of seafarers that involves various aspects of how to load the above. The ship, how to carry out cargo maintenance while on a voyage, and how to unload at the destination port. Moreover, the operating

circumstances of the ship during loading and unloading operations and management administration at the port of origin and port of destination determine the efficiency of the ship's operation (Dio, 2020).

Regulations for handling hazardous cargo are different in each country, including packaging and arrangement during transportation and storage (Almukabir & Fitri, 2020). Dangerous cargo refers to items that, by their very nature, whether handled, worked with, not hoarded, or stored in accordance with existing instructions, rules, and standards, can cause disaster or loss to people, things, and the environment (Puspitasari & Sihombing, 2021).

Coal is sedimentary rock derived from fossils that are used as fuel which is plant remains and is formed through organic deposits of a long process in coalification" (Idris, 2018). Coal's life cycle begins below and ends with the poisonous waste it generates; this is frequently referred to as the chain of ownership (Wahid, 2021).

Coal, one of the most complicated geological substances, is composed of organic and mineral matter (Dai et al., 2020). It is an organic sedimentary rock and is a solid hydrocarbon fuel formed from growing Plants that have undergone biochemical, chemical and physical decay in oxygen-free conditions at certain pressures and temperatures for a very long time. In other words, coal is plant fossils that have been in certain conditions for a very long time.

Coal requires special treatment and proper equipment for unloading or loading, thereby reducing the risk of delays in loading and unloading activities. Based on the description above, the formulation of the problem in this study is what factors cause delays in the coal transfer/loading process and what efforts must be made to minimize delays in the coal transfer/ loading process from barges to large ships on MV. Placid Sea?

METHOD

The research used to develop this proposal is descriptive research with a qualitative approach (Sugiyono, 2019). What is meant by a qualitative approach is a research procedure that produces descriptive data in the form of written or spoken words from people and observable behaviour; therefore, qualitative research can reveal phenomena on a subject that wants to be studied in depth.

The research activity aims to make a systematic, factual and accurate description of the role of the population being studied. As for the application of this descriptive research, the author describes the situation and conditions in the field in general. As for applying this qualitative research, the author tries to observe the problems that cause delays in the transfer/ loading of coal from barges to large ships.

A. Population and sample

The population in this study are all processes of transferring/loading coal from barges to MV. Placid Sea, while the samples in this study were 28 coal loading processes from barges to MV. Placid Sea in Taboneo Anchorage from September 27, 2017, to October 7, 2017.

B. Data Collection Techniques and Research Instruments

In this study, the authors used several data collection techniques that the author considered the most appropriate: interview, observation, and documentation study techniques.

C. Data Analysis Techniques The data

The analysis technique that the author uses in this study is qualitative analysis, where the data obtained are arranged systematically, then an analysis is made in order to obtain clarity about the problems discussed in this study. The author makes a qualitative analysis so that an understanding and understanding of the problem under study is obtained to explain and find solutions to these problems in this study.

RESULTS AND DISCUSSION

A. Overview of MV. Placid Sea

MV. Placid Sea is a ship with a bulk carrier with five hatches and four cranes equipped with grabs to carry out the loading and unloading of bulk cargo. MV. Placid Sea is a fleet of ships from the company "Cosco Bulk Carrier" this ship was built in 2004 by "Cosco Nantong Shipyard" in Nantong, China. MV. Placid Sea is a Panamanian-flagged vessel with IMO number 9285110 with call sign H8UT.

MV. Placid Sea has a gross tonnage of 30,953 T and a deadweight up to 55.604 T. This ship has a crane and grab with 200 metric tons per hour. Placid Sea has a sailing route that is not fixed or tramper.

Table 1
MV ship data. Placid Sea

Name of Ship	Placid Sea
IMO Number	9285110
Flag	PANAMA
Type of Ship	BULK CARRIER
Manager & Owner	COSCO BULK CARRIER
Gross Tonnage	30953 tons
DWT	55604 tons
Year of Build	2004

B. Coal Loading Process in MV. Placid Sea

There are two different loading methods in the coal loading process because of MV. Placid Sea, which will carry out the loading of coal.

1. Initial Draft Survey and Cargo Hold Inspection on MV. Placid Sea by the surveyor and chief officer, the surveyor is from the company, the bulk carriers have different types. Placid Sea is a type of Geared Bulk Carrier. Geared Bulk Carrier is a bulk carrier equipped with a crane, so this ship can carry out loading and unloading without using a conveyor, port crane, or floating crane. The loading process on the MV. Placid Sea.
2. An initial Draft Survey was conducted to determine the draft of large ships and ensure that the hold was clean of objects that could contaminate the

cargo. The loading and unloading company (PBM) gives the loading and unloading cooperative a work order. Then the cooperative prepares the loading and unloading workforce (TKBM) to be assigned to the MV. Anindya.

3. PT. Kalimantan Mandiri Sukses, as the loading and unloading company, transports heavy equipment for loading and unloading, such as bulldozers, loaders, fenders, mooring lines, wire lines, and other loading and unloading equipment to large ships using LCT (Landing Craft Tank) vessels from the PBM base.
4. Installation of fenders and mooring lines on the starboard side and port side of large ships by the foreman and mooring crew for safety when the barge is leaning against a large ship, each with four fenders.

Table 2
List of loading and unloading equipment PT. KMS

No.	Name of Equipment	Quantity	Conditions
1.	Bulldozer	3	not good
2.	Loader	1	good
3.	wireline	4	good
4.	mooring line	6	not good
5.	Fender	8	good

Source: PT. Kalimantan Mandiri Sukses: 2017.

5. The foreman or agent on board then coordinates with the chief officer for the stowage plan and loading sequence, then the crew prepares power for the crane and opens the hatch cover on the hatch to be loaded.
6. Maneuvers process tug boat is to lean the barge to the hull of a large ship, and the tug boat coordinates with the foreman for a fast and safe docking. In this process crew, the tugboat is tasked with wrapping the mooring line to the bollard with instructions from the foreman and ensuring the mooring line is firmly attached to the barge bollard.

The maneuvers process is assisted by the tug boat to speed up the docking process.

7. After the ship is successfully docked, the workers or TKBM must be ready on cranes their respective the same time, the process of transferring heavy equipment (bulldozer) from the deck of a large ship to a barge is also carried out.
8. Loading and unloading activities from barges to MV hatches. Placid Sea uses a crane to start. The agent on board and foreman record all the loading and unloading activities, from the ship arriving at the loading point, initial draft survey, docking the barge, starting loading, until the ship sails back.

Table 3
List of barges berthing on MV. Placid Sea

No.	Name of Barge	Towing Tug boat	Total Load
1.	BG. TGH 2521	TB. Sanle 9	5,092 mt
2.	BG. MJP 32TB	MJP 202	7,210 mt
3.	BG. PB 3016	TB. MJP 201	7,236 mt
4.	BG. TGH 2502	TB. Sanle 23	5.140 mt
5.	BG. TGH 2505	TB. Sanle 22	5,233 mt
6.	BG. TGH 2507	TB. Sanle 37	5,282 mt
7.	BG. TGH 2515	TB. Prime 16	5,150 mt
8.	BG. MJP 32TB	MJP 202	6,937 mt
9.	BG. PB 3016	TB. MJP 201	7,094 mt

Source: PT. Kalimantan Mandiri Sukses: 2017

9. When all the cargo on the barge has been loaded into the ship's hold, the barge will be cast off from the hull, and the next barge will be docked for loading and unloading.
10. Trimming cargo, when the cargo in the hold has mounted, the trimming process is carried out using a bulldozer. The bulldozer will be transferred from the ship's deck into the hold to be trimmed.
11. After the loading activity is almost finished (90% of completion), an Intermediate Draft Survey by surveyors and chief officers' shortages cargo have not been loaded according to the stowage plan. After knowing how much cargo, the loading process continues until complete loading.



Figure 1. The loading process on the MV. Placid Sea

12. After complete loading, the surveyor and chief officer conduct a Final Draft Survey to determine how much total cargo has been loaded on board. The surveyor will issue a Final Draft Survey Report.
13. After that, the LCT rests on the hull, and all heavy equipment and loading and unloading equipment are transferred from the ship's deck to the LCT.
14. The last is managing loading documents by agents on board, including mate's receipt, shipping

order, cargo manifest, stowage plan, and statement of fact or timesheet.

C. Barriers That Appear in the Process of Loading Coal in the MV. Placid Sea

Coal loading process from barge to MV. Placid Sea must be optimized and carried out quickly, but in the process, several obstacles arise, which cause the coal loading process to be slow from the barge to the MV. Placid Sea. The obstacles that appear in the MV. Placid Sea:

1. Slow process of anchoring the barge to the hull of the ship.

**Table 5
List of barges that dock on MV. Placid Sea**

No	Name of Barge	Towing Tug boat	Assist tug boat	Total	Time Loading Processing
1.	BG. TGH 2521	TB. Sanle 9	No assists	5,092mt	75 min
2.	BG. MJP 32TB	MJP 202	TB. Albatross 3	7,210mt	30 min
3.	BG. PB 3016	TB. MJP 201	TB. MJP 202	7,236mt	25 min
4.	BG. TGH 2502	TB. Sanle 23	TB. Albatross 3	5,140mt	30 min
5.	BG. TGH 2505	TB. Sanle 22	No assists	5.233mt	75 min
6.	BG. TGH 2507	TB. Sanle 37	TB. Sanle 22	5,282mt	30 min

No	Name of Barge	Towing Tug boat	Assist tug boat	Total	Time Loading Processing
7.	BG. TGH 2515	TB. Prime 16	No assists	5,150mt	60 min
8.	BG. MJP 32TB	MJP 202	No assists	6.937mt	60 min
9.	BG. PB 3016	TB. MJP 201	No assist	7,094mt	60 min

Source: PT. Kalimantan Mandiri Sukses: 2017

2. Bad weather

During the loading process, the weather conditions were heavy rain accompanied by strong winds, so the loading process had to be stopped to avoid water entering the ship's hold, which could reduce the coal's quality and increase the weight of the coal due to high water content.

Table 6

Data stop loading due to bad weather

No.	Day/Hour	Weather Conditions	Wind Speed
1.	1 Oct 2017/ 03.00 - 07.15	Rain, <i>slight</i>	20 knots
2.	6 Oct 2017/ 14.30 - 15.30	Rain, <i>rough</i>	30 knots

Source: PT. Indo Dharma Transport: 2017.

Operating a crane during strong winds is also very dangerous due to the high risk of grab carried away by wind forces and causing errors in the swing crane and breaking the wire crane.

3. Damage to loading and unloading equipment.

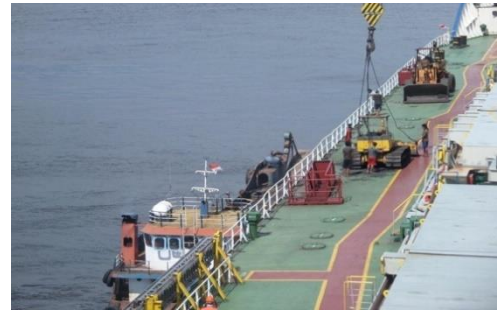


Figure 2. The occurrence of damage to the bulldozer

Source: Private collection: 2017

PT. Kalimantan Mandiri Sukses, as PBM appointed by the shipper, provides loading and unloading equipment such as bulldozers and loaders. However, the condition of the bulldozers they provide is not good, so damage often occurs during operation.

The damaged bulldozer caused the loading process to be slow due to the crane barge's less than optimal load collection process. In this case, the mechanic from PBM must work quickly to deal with a bulldozer the damaged.

Table 7
Loading tool breakdown list

No	Name of tool	Number of equipment damaged	Description
1.	<i>bulldozer</i>	1 unit	broken <i>track chain</i>
2.	<i>mooring line</i>	2 units	broken

Source: PT. Kalimantan Mandiri Sukses: 2017.

According to Safrianda (2016) that equipment damage is one of the factors causing delays in loading and unloading activities. The delay was caused by some equipment that was operated during loading and unloading activities that were

poorly maintained, while good and well-maintained equipment did not hinder the loading and unloading process.

D. Efforts to Minimize Coal Loading Process Delays The

Emergence of obstacles in transferring/ loading coal from barges to MV. Placid Sea so that the loading process is hampered must be minimized as much as possible to avoid long delays.

Efforts are being made to minimize delays in loading the MV. Placid Sea:

1. Prepare an assist tug boat for the process of leaning the barge to the hull. The function of an assist tug boat is to accelerate the barge to dock to the hull in a safe condition. Thus, two tug boats play a role in anchoring the barge to the hull of a large ship. The PBM must prepare an assist tug boat to stand by and be ready to lean on the barge when the towing tug boat and barge carrying coal have arrived at the loading location.
2. For bad weather problems, such as heavy rains, strong winds, high waves, etc., there are actions taken to keep coal in good condition, such as in rainy conditions, namely by closing all ship hatches and waiting for the rain to stop until can continue the loading process.
3. Ensure that all loading and unloading equipment is in good condition. Periodic inspection of loading and unloading equipment must be carried out by the PBM so that when the loading and unloading equipment is operated, there is no damage or trouble. A mechanic must stand by to handle any possible damage to the heavy equipment in the loading process. The case crane of a damaged ship's crew must act quickly to repair the damage. If the bulldozer cannot be used, the bulldozer must be immediately imported from ground to replace the damaged bulldozer.

CONCLUSION

Based on the results of this study, it can be concluded that several things regarding the factors of the slow coal loading process in MV. The absence of assist tugboats in anchoring the barge to the hull of the large ship caused the slow loading of coal to the large ship. Damage to loading and unloading equipment makes loading coal from barges to large ships not optimal. Bad weather during the loading process affects the slow loading of coal from the barge to the MV. Placid Sea.

Referring to the results of the research above, it is hoped that further research can further explore problems related to problems that often occur during coal loading and unloading activities, especially related to the readiness of loading and unloading equipment. Besides that, it is also necessary to pay attention to the readiness of other supporting facilities for these activities, including skilled operators.

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