
ANALYSIS OF OCCUPATIONAL SAFETY IMPLEMENTATION DURING HATCH COVER OPERATION ON MV.GENTA MARU

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Abstract

This research was conducted on MV. GENTA MARU, a company owned by TOEI REEFER LINE Ltd. For 1 year and 3 days, starting from January 13, 2023 to January 16, 2024. The data sources obtained were primary data directly from the research location by conducting observations and direct questions and answers with officers, crew members, especially the deck section, and literature related to the title of the thesis.

Keywords: Hatch cover operation, MV.Genta Maru, Personal protective equipment, Work safety.

INTRODUCTION

Along with the advancement of technology in the shipping sector, safety becomes the main priority in activities on board ships. Supporting facilities available on ships are very helpful in improving safety, both for cargo and for ship crews and workers in ports.

According to Azwar S, 2020. The hatch cover is one of the means used to protect the cargo and the ship itself. Therefore, many merchant ships, especially cargo ships, are now equipped with sophisticated hatch covers. This effort is made to improve work safety on ships, in accordance with the loading principle. Before the existence of ships with a modern hatch cover system (MacGregor) that operates hydraulically, a fairly simple manual hatch cover system (lifting hatch) was previously used. The operation of this manual system is more complicated, slow, and has a high risk for the ship, as experienced by the author during the practice.

Such as a work accident during the operation of the hatch cover that occurred on September 15, 2023 on the ship while carrying out pre-operation. At the time of the incident, we were going to carry out a tuna loading operation in the middle of the sea and the weather was bad with waves of 1.5-2 M so that when we were going to carry out the process of opening the hatch, the ship tilted and the hatch that was lifted using a winch and crane hook suddenly fell. The man who was working on the main deck of the ship had his hand caught in the hatch cover and the man forgot to wear gloves, resulting in his nails peeling off. After that, he was taken to the hospital for immediate treatment.

LITERATURE REVIEW

Definitions

a. Work safety

An effort or activity with the aim of creating a safe working environment, as well as preventing accidents. An unwanted event that is detrimental to productivity.

b. Work accident

An accident that occurs to a person due to work relations and is most likely caused by a dangerous relationship with the worker and during working hours.

Rules and Regulations

Regulations relating to occupational safety (According to the Transportation Education and Training Agency Book, BST, Module-4: Personnel Safety and Social Responsibility, Department of Transportation 2000) include:

- a. Law No. 1 of 1970 concerning safety.
- b. SOLAS1974, along with its amendments, namely regarding safety of life at sea
- c. STCW 1987, the 1995 amendments concerned training standards for seafarers.
- d. ISM CODE, namely regarding the international code for the safe operation of ships and the prevention of pollution.
- e. International Code of Practice, namely regarding instructions regarding work procedures (safety) on equipment, ship operations, etc.

Hatch Cover Function

The function of the palka cover is to protect the cargo in the palka so that it is not damaged by weather conditions and also when the ship is in transit the cargo in the palka is not damaged by incoming sea water and rain which can cause damage to the cargo.

Care System

Maintenance system according to NSOS Maintenance and Repair Management:

Daily Care

After the ship is used in the port, the maintenance is as follows: tapped, ground, or brushed with a wire brush, and then cleaned of dirt. When the ship is anchored or when the ship is traveling, this step can be done. When the ship is operated in the port, it must be tapped, ground, or brushed with a wire brush, then cleaned of dirt, and then painted. After painted, several times it is painted. When the anchor is lifted or dropped, you can do this.

RESEARCH METHOD

This research was conducted on MV.GENTA MARU owned by TOEI REEFER LINE LTD. shipping company for 1 year and 3 days, from January 13, 2023 to January 16, 2024. While on board, the author underwent and assisted officers in completing tasks and problems that arose, with research priorities while carrying out daily activities and guard duties on deck. The type of research used is quantitative descriptive research, which provides an in-depth and objective understanding of

the factors that influence the use of personal protective equipment by crew on the MV.GENTA MARU ship. Data were collected through observation, namely direct observation in the field regarding the importance of implementing occupational safety during hatch closing operations, as well as a questionnaire containing questions about how to use safety equipment, causes and prevention of accidents, hatch closing equipment and maintenance systems, and provision of equipment. This questionnaire was distributed to all respondents on board the ship to collect information relevant to the research objectives. The study population included the entire ship's crew totaling 25 people, with a sample of 10 deck crew involved in implementing occupational safety during hatch closing operations. This thesis uses a descriptive analysis method, based on data from observations and interviews. The analysis steps include recording the total number of crew members and selecting samples in groups.

RESULTS AND DISCUSSION

Research Result

MV. GENTA MARU is a ship owned by the shipping company TOEI REEFER LINE LTD and was built on October 7, 2011 in TOKYO (JAPAN). MV. GENTA MARU is generally operating with the OCEAN GOING shipping route with several countries, namely Japan, Korea, Bangkok, Taiwan, Majuro, and Malta, the type of cargo is frozen tuna.

Table 1. Level of diploma held by officers of MV. GENTA MARU

No.	Name	Position	Certificate
1.	Capt. Ken Miyahara	Master	ANTI
2.	Makoto Nakamura	Chief Officer	ANTI
3.	Pirham's Word	Second Officer	ANT-II
4.	Good Luck	Third Officer	ANT-III
5.	Muhammad Asirullah	Chief Engineer	ATT-I
6.	Zulkifli Rino	Second Engineer	ATT-II
7.	Ryoto Suzuki	Third Engineer	ATT-II
8.	Jaehyun	Fourth Engineer	ATT-III

MV. GENTA MARU is a research object where in its operation using hatch covers. On the ship also has 4 hatches where each hatch has 2 hatch covers.

During the handling and operation of the hatch cover, it is necessary to prepare supporting tools to lift the hatch cover such as a winch, boom (loading rod), sling, wire, and others. In the implementation of opening and closing the hatch, the workers who work and the ship's crew who are in charge of supervising the loading and unloading activities and preparing the equipment needed during the operation.

The arrangement of the hatch cover is carried out when the cargo has been compacted, and the hatch will be closed with the help of a boom and crane. If only part of it is being closed, then what has not been closed is usually the unfinished cargo being compacted in the hold. This hatch cover is quite heavy and large and can be dangerous if the sling breaks, so you have to be very careful when placing it in its seat.

Number of Respondents

This study involved 10 respondents who have characteristics based on their employment status. To clarify the characteristics of the respondents, a table regarding the number of respondents is presented as below:

Table 2. Respondent composition by employment status

NO	SUBJEK	STATUS PEKERJAAN
1	Subjek 1	MASTER
2	Subjek 2	CHIEF OFFICER
3	Subjek 3	SECOND OFFICER
4	Subjek 4	THIRD OFFICER
5	Subjek 5	Bosun
6	Subjek 6	ABLE 1
7	Subjek 7	ABLE 2
8	Subjek 8	ABLE 3
9	Subjek 9	ABLE 4
10	Subjek 10	Cadet
Total		10 Orang

Information:

Description of Research Variables

The research is a result that explains the knowledge and understanding of ABK at the port regarding the ability to apply work safety when opening and closing the hatch, as well as ABK discipline in using work safety equipment on board ships based on respondents' responses in providing information on the questionnaire questions submitted.

The above occupational safety is useful for protecting workers from potential hazards that may occur during the operation of the hatch cover. In this case, the author will attach it to Appendix (1), which the author will distribute to respondents (samples) containing several questions. For each questionnaire question, the value is 10 (ten) if the answer is correct for each question, and if it is wrong, the value is 0 (zero).

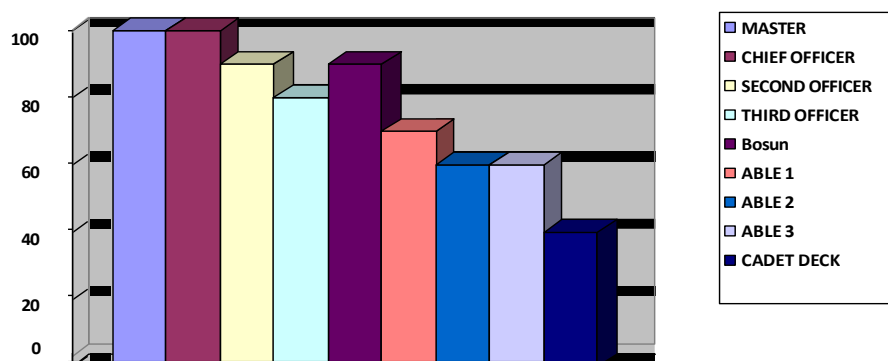


Figure 1. Percentage and categorization of research results

Graph Conclusion:

From the data obtained, in general, the level of use of work safety equipment for work safety on the MV. GENTA MARU ship is still low. Officers on board have a higher percentage of using work

safety equipment compared to other ABK. However, Bosun and AB 2 also showed that there are still a large number who do not use work safety equipment.

AB 2 and AB 3 have the same percentage (50%) in terms of not using work safety equipment, indicating similarities in behavior related to the use of work safety equipment.

Table 3. Condition of work safety equipment and its uses

No	Nama alat	Jumlah	Baik	Rusak	Kegunaannya
1	Sepatu Pengaman (Safety Shoes)	28	25	3	Sebagai pelindung kaki terhadap benturan penutup palka yang sedang diangkat/diletakan
2	Baju kerja (warfack)	26	25	1	Sebagai pelindung badan dari goresan benda keras dan tajam maupun dari panas cahaya matahari
3	Sarung tangan	40	33	7	Sebagai pelindung tangan jika mengangkat benda berat
4	Helm	25	24	1	Sebagai pelindung kepala jika terbentur benda keras dan juga bahaya kejatuhan benda

DISCUSSION

Judging from the incident, ships that use hatch covers are still very simple to operate, have high risks and are relatively slow because they have to be lifted one by one and their position must be adjusted on the hatch threshold, so it takes a long time.

Occupational safety factors during hatch cover operation

In this reality, not all crew members and workers have adequate skills in operating pontoons. The equipment that is of special concern in carrying out hatch cover operations includes:

- Safety shoes function to protect the feet from impact with hard objects.
- Clothes (work clothes) function to protect the body.
- Gloves function to protect the hands.
- Helmets function to protect the head from impacts from hard or sharp objects.

The above work safety equipment is used to protect workers from dangers that may occur at any time when operating the hatch cover. The limited skills of ABK/laborers and knowledge of occupational safety are influenced by several fundamental factors, such as education level, culture, and experience. These diverse backgrounds cause differences in ABK/labor skills and their views on occupational safety.

In the operation of the hatch cover requires many personnel compared to the mac. Gregor system which can be done by one person. The personnel needed in the operation of the hatch cover are:

e) Winch Driver

Winch driver or the person holding the handle must be handled by an experienced person, such as a bosun. The bosun must be able to control the movement of the boom and wire cargo and understand the signals from the pilot.



Figure 2. The person who is controlling the Winch
Source. MV.Genta Maru 2023

a. Factors affecting the operation of hatch covers in occupational safety

The inefficiency of the use of this hatch cover in its operation is influenced by several factors. These factors must receive special attention and good preparation so as not to hinder the work of the hatch closing system.

b. Factors in providing adequate work equipment in handling the operation of hatch covers

Before starting the voyage, it is very important to provide and check adequate work equipment in this case directly related to the handling of the Hatch Cover, because it is possible that when we are going to work, the equipment on the ship is no longer suitable for use or may not be available on the ship. So that it can cause accidents for workers who do not use inadequate work equipment as a means of protection.

c. Directed work procedure factors in handling hatch covers

In the handling of hatch covers, procedures must be observed during the activity in order to improve overall safety for officers, crew and port workers, so that it is necessary to establish work procedures that can guarantee safety and reduce the risk of accidents, especially in handling hatch covers. Several methods that need to be observed in the work procedure are:

- 1) Introduction to the world of work
- 2) Coordinated work activities
- 3) Awareness of the hazards posed in handling hatch covers.

CONCLUSION

The conclusion from the results of the observations and analysis carried out by the author is that the lack of awareness, experience and skills possessed by workers, especially port workers, is a factor that influences the high level of accidents in handling pail covers.

The suggestions that can be given after analyzing the data are as follows:

1. In carrying out handling of hatch covers, first carry out an inspection of the work safety equipment on board the ship, so that in operating the hatch cover the risk of accidents to workers can be minimized.

2. The author should expand the references of theory and literature related to the research to enrich the perspective and analysis. Multidisciplinary approach can also improve the quality of the research, Readers are advised to understand the background and context of the research and read critically to assess the validity of the arguments and findings presented by the author, Research subjects are advised to continue to actively participate in related studies so that research results can continue to be improved.

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