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Feasibility Analysis of Lifeboat Safety Equipment (A Case Study on the Ship of MT. Lapetta)

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Abstract: During shipping, there are frequently emergency situations that put people's lives in jeopardy. As a result, every ship must include life safety equipment, including a lifeboat that may be utilized to exit the ship in the event of an accident. The goal of the study was to see if lifeboat safety equipment could be installed aboard the ship MT. Lapetta in line with the 1974 SOLAS rules. The possibility of lifeboats on MT. Lapetta is the subject of this qualitative descriptive investigation. The findings of this investigation show that the lifeboats on board the ship MT. Lapetta do not meet the 1974 SOLAS eligibility standards, particularly in terms of the completeness of the parts that should be aboard the lifeboats.

Keywords: Feasibility, Equipment, Safety, Lifeboat, MT. Lapetta.

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I. INTRODUCTION

The Unitary State of the Republic of Indonesia is a maritime nation that plays a critical role in international affairs. Transportation is a way of accelerating the economy's wheels, strengthening the nation's unity and integrity in order to strengthen the realization of archipelago insight, increase national resilience, and strengthen international ties. Shipping, as one of the modes of transportation, must be organized in such a way that it can provide transportation services that are safe, fast, smooth, orderly, and efficient, as well as a comfortable and serene atmosphere that reflects the "Five Images of Human Transportation" objective.

Shipping is a cohesive system that comprises maritime transportation, ports, safety and security, and environmental preservation. The fulfilment of safety and security criteria for transportation in waterways, ports, and the maritime environment is contingent on shipping safety and security. (Aditama, Daryanto, and Wisudo, 2014). Transportation safety is not only determined by the competence and skills of the crew in accordance with applicable regulations (Malisan, 2013) but is also determined by the feasibility of the safety equipment on board.

The IMO (International Maritime Organization) has developed rules connected to maritime issues, one of which is related to SOLAS (Safety Life at Sea), which must be followed by all parties, including ship owners, crew, and cargo owners as the embodiment of SOLAS. If the ship is in an emergency, these tools will be used to save the passengers, crew, and ship officers.

Human life at sea is largely dependent not only on the ship's condition, but also on the preparedness of its safety equipment to be deployed at any time, particularly in an emergency. Safety equipment, such as lifeboats, life rafts, lifebuoys, life jackets, and other floating instruments (life buoyant), must be prepared on board the ship in accordance with the terms of the 1974 International Convention for the Safety of Human Life at Sea (SOLAS'74) (Directorate General of Sea Transportation, 1980). A lot of these items of equipment must be inspected on a regular basis to ensure that they are still fit for usage.

A lifeboat is a lifeboat that can be used for the evacuation of all crew members and passengers because it has a construction that is stronger than other lifeboats and has a capacity of up to a maximum of 150 people depending on the size of the lifeboat (Ministry of Transportation, Directorate General of Sea Transportation, 1983). When it is an emergency and requires leaving the ship, the crew and passengers leave the ship by using the lifeboats or life rafts on board in accordance with the emergency certificate of leaving the ship.

This study intends to examine the feasibility of safety equipment, namely the lifeboat on one of the tankers, namely the MT Lapetta ship. Based on the incident on April 18, 2019, when the crew was going to carry out drills for lowering lifeboats. There was a problem with the introductory wire block found in the goddesses. The block broke and the bearing in it, causing the hanging lifeboat to swing and hit the hull.

II. METHODOLOGY

This research is qualitative with descriptive analysis. The analysis was carried out by adjusting the state of the lifeboats in MT. Lapetta complies with the rules posted on SOLAS. Data collection was carried out by observation and documentation studies carried out at PT. Sarana Multi.

III. DISCUSSION

A lifeboat is a lifeboat that can be used to evacuate all crew members and passengers because it has a stronger construction than other lifeboats and has a capacity of up to a maximum of 150 people depending on the size of the lifeboat. According to SOLAS, 1974 every safety device on board the ship must always be maintained so that it is always in good condition and ready to be used in an emergency, but based on the observations of researchers the condition of the lifeboats on board the MT. Lpetta there are several safety equipment that still deviates from these provisions. Lifeboat equipment on board the MT. Lapetta can be seen in Table 1.

Table 1. Equipment for lifeboats

No.	Equipment's Name	Specification	Total	Criteria	Remarks
1	Oars		1 pcs	Good	
2	Sparring	Iron	1	Good	
3	Lifeboat Motor	BUKH RH.24 RNE	1 Unit	Good	
4	Sumbat / Prop	Iron	2 pcs	Good	In position
5	Ganco / Hook	Plastic	1 pcs	Good	
6	Floating Anchor		1 pcs	Good	
7	Indonesian Flag and Pole	Nil	1 Nil	Nil	NIL
8	Emergency Ration	Surya Segara Exp:04/2019	30 pcs	Good	
9	Drinking Water Tank		2 pail	Good	
10	Water Dipper	Plastic	1 pcs	Good	
11	Drinking Water	Nara, Exp:06/2019	30 pcs	Good	
12	Wet Compass	Nil	Nil	Nil	Requested
13	Charts No. 2 & 3	Nil	Nil	Nil	Requested
14	Charts Tube	Nil	Nil	Nil	Requested
15	Portable Fire Extinguisher	Dry Powder 6 kg Unitor	1 bottle	Good	
16	First Aid Kit	Exp:09/2018	1 pcs	Good	
17	Hand Pump	1	1 pcs	Not good	In position
18	Draining Scoop	Plastic	1 pcs	Not good	
19	Signalling Mirror	Nil	Nil	Nil	Requested
20	Fog Horn	Nil	Nil	Nil	Requested
21	Red Hand Flare	Huahai Marine Signal Exp:05/2019	6 pcs	Good	
22	Parachute Signal	Huahai Marine Signal Exp:05/2019	4 pcs	Good	
23	Orange Smoke Signal	Huahai Marine Signal Exp:05/2019	5 pcs	Good	
24	Waterproof Flashlight	KAOKAKO JPN	2 pcs	Not good	Requested
25	Oil Lantern		1	Not good	Requested
26	Waterproof Lighter		2 pcs	Not good	Requested
27	Thing Pole	Nil	Nil	Nil	Requested
28	Folding Knife		1 pcs	Not Good	
29	Can Opener		1 pcs	No Good	
30	Lifeboat Axe		1 pcs	No Good	
31	Lifeboat Equipment Box	Nil	1 NIL	NIL	Requested
32	Pilot Ladder	Nil	NIL	NIL	NIL
33	Painter Rope		2	Not good	Requested
34	Lifeboat Rope	Nil	NIL	Nil	Requested
35	Galvanish Bucket		1 pcs	Good	
36	Imersion suit	Neptune	3 pcs	Good	
37	Thermal Protective Aids		4 pcs	Good	

Source: MT Lapetta ship, 2019

The proportion of eligibility for lifeboat equipment on the MT. Lapetta ship was calculated using table 1.

a. Judging from the number:

Fulfilled : $27 / 37 \times 100\% = 72.97\%$

Not fulfilled : $10 / 37 \times 100\% = 27.02\%$

b. Judging from the condition:

Good : $18 / 37 \times 100\% = 48.64\%$

Poor : $19 / 37 \times 100\% = 51.36\%$

Based on the results of the above calculations, it is known that the MT. Lapetta in terms of the amount of equipment and its condition is still lacking to meet the standards because the total number of lifeboats inventory is 37 inventories and 27 inventories are fulfilled so that the average value produced is 72.97%. And in terms of the condition of the lifeboat equipment that was not fulfilled as many as 10 inventories so that the average value produced was 27.02%. In terms of good condition, there are 18 inventories so the average value produced is 48.64% and in poor condition are 19 inventories so the average value produced is 51.36%. Thus the lifeboats in MT Lapetta are not suitable according to the 1974 SOLAS rules.

Lifeboat Maintenance at MT. Lapetta

The procedure and maintenance of the MT Lapetta ship have been determined by the company, including the schedule for checking safety equipment on the lifeboats, which is in the first week. However, maintenance is not always carried out according to a predetermined schedule, in fact, there is still some equipment that is not maintained. The implementation of the ship safety equipment maintenance schedule can be seen in Table 2.

Tabel 2. Life Saving Appliance Maintenance Record

No.	Safety Appliance	Check Point	Month			
			January	February	March	April
1	Life Boat	Life Boat Davit	03.01.2018	01.02.2018	04.03.2018	10.04.2018
		Lifting Hook	03.01.2018	01.02.2018	04.03.2018	10.04.2018
		Boat Winch	03.01.2018	03.02.2018	04.03.2018	10.04.2018
		Launching instruction	04.01.2018	03.02.2018	04.03.2018	10.04.2018
		Life Boat Marking	04.01.2018	03.02.2018	06.03.2018	10.04.2018
		Life Boat ladder	04.01.2018	06.02.2018	07.03.2018	11.04.2018
		Life Boat Hull	04.01.2018	06.02.2018	07.03.2018	11.04.2018
		Boat Hooks	05.01.2018	06.02.2018	07.03.2018	11.04.2018
		Propeller	05.01.2018	07.02.2018	07.03.2018	11.04.2018
		Engine	06.01.2018	06.02.2018	07.03.2018	11.04.2018
		Pyrotechnics	06.01.2018	06.02.2018	07.03.2018	11.04.2018

Source: LSA Maintenance Record of MT. Lapetta, 2019

Explanation :  Executed according to schedule
 Implemented Not according to schedule

From Table 2 the implementation of maintenance of safety equipment obtained the percentage of maintenance implementation as follows:

 Executed according to schedule : $3/4 \times 100\% = 75\%$
 Implemented not according to schedule: $1/4 \times 100\% = 25\%$

From the percentage above, it can be seen that maintenance of safety equipment has been carried out but has not met the standards and there are still some that are not in accordance with the predetermined maintenance schedule.

IV. CONCLUSION

The maintenance of lifeboats at MT. Lapetta was not carried out on a regular basis, according to this report. As a result, numerous elements of the lifeboat were destroyed and were no longer usable. Furthermore, there are still certain tools on the lifeboat that aren't fully functional. As a result, the lifeboat at MT. Lapetta does not meet the standards.

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