

Indonesian Sea Accident Analysis: Case Study from 2011 - 2015

Danny Faturachman¹ and Y. A. Dewanto²

¹Marine Engineering Department, Faculty of Ocean Technology, Darma Persada University, Indonesia

²Faculty of Ocean Technology, Darma Persada University, Indonesia

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Abstract: Indonesia is the world's largest archipelago, 2/3 of the country is covered by sea. But due to many factors a lot of ship accidents occurred every year, and claiming a large number of casualties. There are so many accident in sea transportation in Indonesia. Accidents occurring in rivers, lakes, and crossing that reached Marine Court in 2003-2013 is due to Total of Factor Ship's Accident: human error 57%, force majeure 24%, others 19%. Efforts have been done to improve the safety of domestic sea transportation, as the result to be fully compliance to the SOLAS regulations, worsen by the varying sea and cargo characteristics, and low educated passengers, they are very vulnerable to accidents. Most of the accidents occur due to the low awareness of the aspects of security and safety of the crew. The figures differ from the manifest of passengers and number of passengers on the ground become commonplace. There are four main issues in maritime transport, i.e. no persons or Government agencies that are willing to hold the responsibility of safety and security, tariff policy, the quality of human resources, as well as the implementation and enforcement of the regulations is not clear. Safety of sea transportation should also start from the port conditions are sterile. The port is the main key from out the influx of sea transport. Unfortunately, almost all ports in Indonesia does not have any crossing facilities or equipment to control weight, dimensions, and other types of payloads in any vehicle that boarded the ship. It becomes a threat to the safety of shipping crossing, particularly if a malicious payload that went into the ship without appropriate handling procedures.

1 INTRODUCTION

Ship accident that occurred recently in the Indonesian waters can occur at anytime and anywhere. Due to unforeseen circumstances, the various parties associated with industry transportation create a variety of sea conditions are very strict with regard to the safety and security of the ship in accordance with the condition of the waters of Indonesia (Dewanto and Faturachman, 2018). Sea transport old very important role in maritime countries, such as in Indonesia whose territory is an archipelago. Associated with sea transport, there are three aspects that are interlinked with each other, i.e. traffic and sea transportation port and also safety and security covering their cruise (Abrahamson, 1980). From (Dewanto and Faturachman, 2018) Marine Court Decision from 2003-2013 the total of ship accident in Indonesia: sunk 31%, collision 26%, grounded 17%, fired 17%, and others 9%. The total of Factor Ship's Accident: human error 57%, force majeure 24%, other 19%, and the total of Ship Area of Accident:

western part of Indonesia 61%, centre part of Indonesia 32% and eastern part of Indonesia 7%. In this paper we will continue the result of the Indonesian Sea Accident Analysis from 2013 until 2016. The methodology used in this research was quantitative methods, the data founded from the Marine Court and processed to know the

2 LITERATURE REVIEW

Basically, the safety of transport is the right of every citizen, which is why the Indonesian Government must perform and protect the organization from transport that is safe, orderly, gentle and accessible. Passengers are transported must obtain a guarantee of security and the transported goods to the port of destination in a condition as when received at the port of loading. Transport with a guarantee of security services that give a feeling of certainty and peace of mind for the traveller or the owner of the goods, so

that the activities of the community economic, social, noodles can be protected. If the aspects of safety in transport is assured, and the rights of the users that are protected, there would be no cost which appear productive pro unnecessary and counterproductive. Principles of safety of transport for the attention of the Government for long time, established in 1999 presidential decree number 105 year 1999 on the establishment of the National Transportation Safety Committee (NTSC). To minimize the occurrence of accidents at sea, it requires an effort to rescue the soul in order to satisfy all the rules by the standards and even more to ensure the safety at sea, requires a support in the world there are three organizations that govern the safety of the ship. The IMO (International Maritime Organization), ILO (International Labour Organization) and ITU (International Telecommunication Union), Indonesia is one of the three members of the organization and has ratified the convention. As a consequence of its membership, Indonesia must implement the rules properly and concretely demonstrated in certification through an independent evaluation every 5 years. International conventions governing the safety of the ship include: 1. SOLAS 1974 (Safety of Life at Sea) and amendments; 2. MARPOL 73/78 and the protocols; 3. 1966 Convention on the load path; 4. Collreg 1972 (Collision Regulations); 5. Tonnage Measurement 1966; 6. STCW 1978 Amendments 95; 7. ILO. 147 of 1976 on Minimum Employment Standards for Commercial Ship crew; 8. ILO Convention. 185 Year 2008 on the SID (Seafarers Identification Document) which has been ratified by Law no. 1 Year 2009 (Faturachman and Shariman, 2012).

3 PROBLEM IDENTIFICATION

According to the research before (Dewanto and Faturachman, 2018), if it is restricted to the scope of the company (in terms of the micro), it appears that the occurrence of accidents owing to the discrepancy between the three major elements of production (sub human systems, environment and management physic) resulting in the occurrence of an action and the circumstances are not safe. But directly of the accident can be grouped into two outlines causes, namely:

- a. Unsafe actions of humans (Unsafe Acts) for example: work without any authorize-failed to give a warning, working with the wrong speed and so on.
- b. A state of insecurity (Unsafe Condition) for example: the safety equipment on board which are damaged or are not usable, environmental and

weather on the waters is not good for malicious items that can ship exploding/burning.

Marine accidents increases along with the increasing number of ships. As has been widely understood, marine accidents can be caused by human factors, natural, and technical, as well as the interaction and combination of all three of these factors. In sailing, a man as transport users to interact with the ship and the surrounding environment (including other ships, cruise lines, ports, and the situation of local conditions). These interactions are sometimes very complex and related to various aspects of the. Aware of the multiplicity of aspects related to the third of these factors, seeking the safety of cruise through a reduction in the number of accidents and the risk of death and serious injuries due to accidents and goods transported is certainly not enough attempted through mono-sector approach, but rather takes a multi-sector approach to the efforts. Operationally, these sectors are grouped into five approaches known as 5-E Approach, namely: engineering approach (engineering), education (education), law enforcement (enforcement), and raising (encouragement), as well as the readiness of emergency (emergency preparedness). The things that hinder the process of improving safety of navigation are as follows:

1. The division of responsibilities for safety management of multi sector
2. The absence of adequate and accurate information
3. Inadequacy of actions to coordinate and to implement's handling of safety in all sectors which require improvement
4. Inadequacy of availability of human and financial resources to support the action/preventive programs crash.

Shipping safety programs have come back to much to be done. But it is difficult to measure the degree of success because these programs is still done separately. If it exists coordination is very doubtful its effectiveness. The problem of coordination between institutions for programs increase safety of seafaring still is very weak. Each party is still running singly tracer, and as a result the impact of concrete in the form of a decrease in the number of accidents is still far from hope (Trans Asia Consultant, 2009; Global Maritime Distress Safety System, 1992; ILO, 2008; IMO, 1997; National Transportation Safety Committee, 2009; Load Line Convention, 1966; Marine Pollution, 1978; International Safety Management Code, 1993; International Ship and Port Facility Security Code, 2003).

4 RESULT AND DISCUSSION

Table 1: Number of Ship Accident According to Marine Court Decision 2011-2015

No	Description	2011	2012	2013	2014	2015
	Type of Accident					
1	Sunk	7	16	3	10	9
2	Collision	5	7	8	19	3
3	Grounded	3	3	14	13	2
4	Fired	4	6	5	5	3
5	Others	2	2	3	2	2
	Number of Accident	21	34	33	49	19

Source: Marine Court, Secretary General, Ministry of Transportation, Indonesia

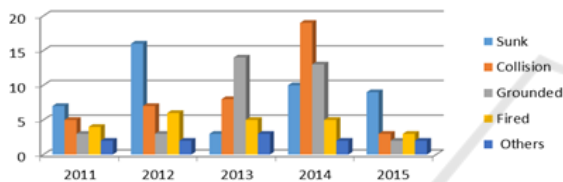


Figure 1: Number of Ship Accident According to Marine Court Decision 2011-2015

From Table 1 and Figure 1, describes five types number of Ship Accident, dominantly in 2011, 2012, 2015 was Sunk, 2013 was Grounded, and 2014 was Collision.

Table 2: Number of Marine Court Decision by Factor Ship Accident 2011-2015

No	Description	2011	2012	2013	2014	2015
	Ship Accident Factor					
1	Human Error Factor	19	17	18	25	7
2	Force Majeure Factor	0	11	7	18	11
3	Others Factor	2	6	8	6	1
	Number of Accident	21	34	33	49	19

Source: Marine Court, Secretary General, Ministry of Transportation, Indonesia

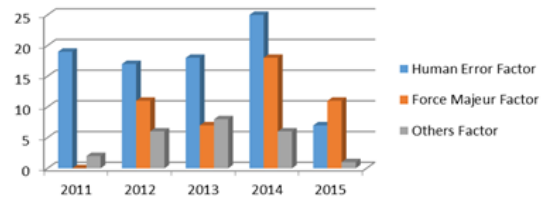


Figure 2: Number of Marine Court Decision by Factor Ship Accident 2011-2015

From Table 2 and Figure 2 describes three types number of factor ship accident, from 2011 until 2014 caused by Human Error factor, 2015 was Force Major Factor.

Table 3: Number of Victims According to Marine Court Decision 2011-2015

No	Description	2011	2012	2013	2014	2015
	Ship Accident Victims					
1	Injured	0	14	0	3	0
2	Missing	12	35	1	40	0
3	Death	32	68	8	16	7
	Number of Accident	44	117	9	59	7

Source: Marine Court, Secretary General, Ministry of Transportation, Indonesia

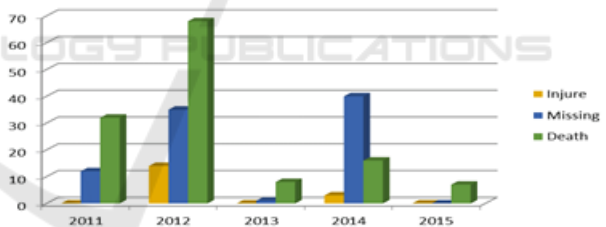


Figure 3: Number of Victims According to Marine Court Decision 2011-2015

From Table 3 and Figure 3 describes number of Victims, from 2011 until 2013 and 2015 mostly death victims, 2014 missing victim.

Table 4: Number of Marine Court Decision by Ship Area of Accident 2011-2015

No	Description	2011	2012	2013	2014	2015
	Ship Accident Victims					
1	Western part Indonesia	8	20	21	33	13

2	Centre part Indonesia	10	12	12	15	4
3	Eastern part Indonesia	3	2	0	1	2
	Number of Accident	21	34	33	49	19

Source: Marine Court, Secretary General, Ministry of Transportation, Indonesia

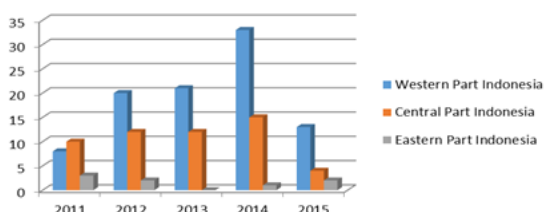


Figure 4: Number of Marine Court Decision by Ship Area of Accident 2011-2015

From Table 4 and Figure 4 described number of Ship Area of Accident, from 2011 – 2015 mostly happened in Western Part Indonesia.

5 CONCLUSION

From the Marine Court decision from 2011-2015, after processing the data, by percentage:

1. Total of ship accident:

- Sunk 45 from 156 accident = 29%.
- Collision 42 from 156 accident = 27%.
- Grounded 35 from 156 accident = 22%.
- Fired 23 from 156 accident = 15%
- Others 11 from 156 accident = 7%.

Total of ship accident number dominantly was Sunk.

2. Total of factor of ship accident:

- Human error 86 from 156 accident = 55%.
- Force Majeure 47 from 156 accident = 30%.
- Others 23 from 156 accident = 15%.

Total of factor number of ship accident dominantly was Human Error.

3. Total of victims:

- Injured 17 from 236 victims = 7%.
- Missing 87 from 236 victims = 37%.
- Death 131 from 236 victims = 56%.

Total of victims number dominantly was death.

4. Total of ship area of accident:

- Western part Indonesia 95 from 156 accident = 61%
- Centre part Indonesia 53 from 156 accident = 34%

- Eastern part Indonesia 8 from 156 accident = 5%

Total of ship area of accident number dominantly was in Western part Indonesia.

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