

Safety & Security Analysis Of Sea Transportation In Indonesia

A. Danny Faturachman, B. Shariman Mustafa

Abstract— Indonesia waters as a liaison between the city and the island, also has a variety of wealth which became the object of the future welfare of the people hope. For these necessary safeguards particularly against sea cruise in the area of maritime safety because Indonesia greatly affect development efforts, especially the continuation of transport activity. Maritime transport holds a very important role in maritime countries, such as in Indonesia whose territory is an archipelago. Associated with maritime transport, there are three aspects that are interlinked with each other, i.e. traffic and sea transportation, port and also the safety and security of the cruise.

Keywords—safety, security, sea transportation, Indonesia

I. INTRODUCTION

Indonesia as an archipelago country consisting of thousands of Islands and has a vast sea area so indispensable transportation mode is ocean freight as a means of mobility and driving force of economic development nationwide. Even in parts of Indonesia, the ship is one of the means of transport used to get in touch with the outside world. A great potential this is very useful when coupled with the assurance of the safety and security of the marine mode of transportation.

Sea transport holds a 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 [1].

With still large number of ship accident, which resulted in the loss of life and loss of possessions due to accidents on board. To that end, the sea transport sector should implement strict regulations setting transparent and good national and international regulations in the form of the Convention – the Convention has been established and agreed upon international countries to be applied and enforced.

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. International institutions specializing in the maritime areas of the IMO (International Maritime Organization) to make the International Convention SOLAS (Safety of Live At Sea) as well as various derivatives of its implementation in the form of codes such as the ISM (International Safety Management) Code, ISPS (International Port Facilities Security) Code, the IMDG (International Maritime Dangerous Goods) Code. SOLAS is a fixed rule that is mandatory for all countries to implement it, it is no exception that come into Indonesia ratified it. Therefore, the Government of Indonesia implement it by making the ACT No. 17 of 2008, who then makes a wide range of Government Regulation (PP) as a technical guide its implementation, as the consummation of legislation and other regulations.

II. THE REGULATION ON THE SAFETY & SECURITY OF SEA TRANSPORTATION

The Act No. 17 of 2008 about the cruise, in the General provisions States that the safety and security of the cruise is a State satisfy the requirements of safety and security related to transport in the waters, port, and the maritime environment. Therefore all parties related to the cruise activities must meet the requirements that have been set.

A. Safety and security shipping according to act no. 17 years 2008 on shipping [5].

Safety is a State of a person or more to avoid the threat of danger. Accidents are events that are not predictable and was not expected to cause any harm, while security is a State of safe and at peace.

According to act no. 17 2008 stated:

- a. safety and security shipping is a circumstance satisfy the requirements of safety and security related to transport in the waters, port, and environment maritime;
- b. seaworthy ship is ship the state of being eligible safety vessel, prevention pollution waters of vessels, ship's crew, line and unloading, loading, welfare crew and passengers, health legal status vessel, management safety and prevention pollution of vessels, management and security ship to sail in certain waters;
- c. the safety of the ship is the State of the vessel that meets the requirements of material, construction, buildings, machinery and electricity, stability, order and supplies including supplies helper tools and radio, electronic

F. A. Author is with the University Malaysia Pahang, Faculty of Technology, Lebuhraya Tun Razak 26300, Gambang, Kuantan, Pahang, Malaysia (phone: 60095492252; fax: 60095492167; e-mail: fdanny30@yahoo.com).

S. B. Author, was with University Malaysia Pahang, Faculty of Technology, Lebuhraya Tun Razak 26300, Gambang, Kuantan, Pahang, Malaysia (phone: 60095492252; fax: 60095492167; e-mail: shariman@ump.edu.my).

board, as evidenced by certificates after examination and testing.

- B. Act No. 17 of 1985 [6] concerning the ratification of the United Nations Convention on the Law of the Sea, explained that each country must implement effectively jurisdiction and his control in the field of administrative, technical and social for the ships that fly the flag.

Therefore, every country should:

- a. Maintain a register of the ships containing the names and other information about the ships that fly the flag, except vessels excluded from the international rules that are generally accepted because of their small size;
- b. Run jurisdiction under the national legislation of each ship flying its flag and the captain, officers and crew associated with the problem of administrative, technical and social of the ship.

Furthermore, every country should take action necessary for ship who wears its flag, to guarantee safety at sea, with regard to:

- a. construction, equipment and worthiness sea vessel;
- b. vessel's crews, labor requirements and training the crew, with comply with international prevailing;
- c. discharging signs, maintaining communication and prevention a collision course.

- C. International Provisions governing the safety of shipping internationally:

1. SOLAS 1974, among others, set:

- i. Safety measures to prevent fires for passenger ships carrying more than 36 passengers (chapter II-2, regulation 17-34).
- ii. Fire safety measures to prevent ships carrying not more than 36 passengers (chapter II-2, regulation 35-50).
- iii. Efforts of safety against fires to ship goods (chapter II-2, regulation 51-54).
- iv. Efforts of safety against fires to ship tanks (chapter II-2, regulation 54-64).
- v. Tools Redeemer for passenger ships (chapter III regulation 27-34).
- vi. Instruments of saviors for ships goods (chapter III of regulation 35-38).

vii. Certificates.

viii. SOLAS also set about:

construction (structure, stability, machinery and electrical installations, fire protection, fire detector and fire extinguisher); navigation, safety radio communications; helper device, such as a float, the safety of navigation; applicability of provisions to enhance the safety and security of the cruise includes the application of the ISM Code and ISPS Code.

2. International Convention on Standards of Training, Certification and Watch keeping for Sea farers, 1978 and was last modified in 1995.

3. The International Convention on Maritime Search and Rescue, 1979.

4. The International Aeronautical and Maritime Search and Rescue Manual (IAMSAR).

III. SAFETY STANDARDS FOR SHIPS OPERATING IN RIVERS AND LAKES

Shipping safety issues recently sent on the surface and becoming warmer theme facility, either in print and electronic, as by accident boat few days these days. Shipping role in sea transportation safety system is an important thing for transportation reflected because of this danger full tinged and the threat of a storm. , mist and movements of the ocean waves, the current, coral sea, land shallow and shipping route fixed and immutable. This is why cruise in Indonesia very risky, therefore safety aspect actually should have secured. To support the national development, body-bagged and shipping is very determining element in the smoothness of sea transport.

The lack of harmony of handling system and sea transportation problems and the lamp attention to shipping, safety issues can obstruct transportation service provision across the Indonesia. A smooth sea transportation is the media interactions between island that acts as a connecting bridge are both effective and efficient in the embodiment of geo strategy. Such a system could cruise the new safety requirements are achieved when sailing and port that affect the safety of the cruise can be fulfilled. Sea transport from the point of economics is a broad scope of business units. Efforts related to the shipping company's terminal unit, fleet, and others; the provision of port facilities, shipbuilding facilities as passengers, and so on [2].

Cruise safety element is just one link, but crucial to the economic benefits of the entire maritime transport chain. Transportation as a general in Indonesia is facing many challenges. But in all likelihood that will happen can be anticipated by structuring national transportation system that is more resilient, which is inseparable from the three things which are natural, human and technical resources. Examples of the safety of vessels operating in rivers and Lakes can be seen in table 1 and 2 [4] below:

Passenger Ferry Principal Dimensions:

Name	: MV. Cantika Torpedo
LOA (Length Over All)	: 39.80 m
Breadth	: 6.80 m
Depth	: 2.60 m
Aux Engine	: Genset Perkins 4 TGM
Passengers	: 436 set
Main Engine	: 3 x CAT 3412 E @ 1100 HP 3 x Gear Box MG 6620 SC Ratio 2.29 SAE 0.2 x 3 x Gear Box MG 6620 SC
Velocity max	: 30 knot
Route	: Ambon – Amahai

TABLE 1.
SOUL RESCUE TOOL

No	Description	Below	Upper Deck	Main Deck	Lower Deck
1	Raft Safety	-	8	-	-
2	Lifebuoy Without Rope	6	6	-	-
3	Lifebuoy With Rope	-	2	-	-
4	Lifebuoy Lamp	-	-	2	2
5	Smoke Signal Lights Safety Buoy	-	-	-	2
6	Life Jacket (Children)	-	10	10	10
7	Life Jacket (Adult)	-	100	100	100
8	Parachute Rocket	-	1	-	-
9	Smoke Signal	-	1	-	-
10	Safety Box	-	1	1	1
11	Ship Position Tool Instruction	-	1	-	-
12	Meeting Place When Accident	-	1	-	4
13	List Of Safety	-	-	-	1
14	Emergency Door	-	-	-	2
15	Lifeboat		1		

TABLE 2.
FIRE PREVENTION TOOL

No	Description	Below	Upper Deck	Main Deck	Lower Deck
1	Safety Plan	-	-	-	1
2	Portable Extinguisher 6 Kg	2	1	1	4
3	Portable Extinguisher 9 Kg	-	1	1	-
4	Faucet Fire	-	1	-	-
5	Fire Hose Box	2	-	2	1
6	Fire Pump	1	-	-	-
7	Bilge Pump	1	-	-	-
8	Emergency Pump	1	-	-	-
9	Fire Alarm Button	1	2	1	2
10	Safety Box	-	1	1	1
11	Remote Pump Controller	-	1	-	-
12	Remote Oil Controller	-	1	-	-
13	Fireman's Axe	1	-	-	1
14	Signal Lamp	-	1	-	-
15	Master Control	-	1	-	-
16	Emergency Battery Lamp	1	-	-	-
17	Camera	-	-	1	1
18	Horn	-	-	-	1
19	CO2 40 Kg Bottle	1	-	-	-
20	Fire Control Panel	-	-	1	-
21	Bilge Pump Alarm	-	1	-	-

IV. PORT FACILITY SECURITY STANDARDS

Based on act no. 17 / 2008 on shipping, government regulation no. 5 / 2009 about navigation, order no. 61 year 2009 about port, transportation ministry decree no. 54 year 2002 on the sea port, transportation minister decree no. 33 year 2003 on the amendment SOLAS 1974 on ship and port facility security code (ISPS) in Indonesia, transportation minister decree no. 3 year 2004 about the appointment as director general of sea transportation authority for the ISPS code designed, director general of sea transportation decree No. Kl. 93 /I/ 3-04 / 2004 on guidelines recognized the organization (RSO), director general of sea transportation

decree No. Kl.93 / 2 /I-04 / 2004 about appointing guard director and rescue as caretaker implementation ISPS code.

According to the ISPS security consists of:

1. Security level 1, a State where the minimum security measures for protection should be implemented at all times (ISPS Part A 2.1.9).
2. Security level 2, the additional level of protection where appropriate security measures should be continued to be kept for a period of time as a result of an increase in the risk of an event (ISPS Part A 2.1.10).
3. Security level 3, the highest level for the continuation of actions of protection specifically set requirements for a limited period of time when a security incident is possible or real though showed no special objectives (ISPS Part A 2.1.11).
4. Restricted Area, an area where people who do not get permission are prohibited from entering the area. All those who conduct activities in the area following the procedure of ISPS Code.

V. CONCLUSION

1. In standards of safety, ship seaworthy is a main factor that must be met first before the issuance certificate safety ship. Calculation design ship must be done in carefully and thoroughly.
2. Safety standard ships that operate on the lakes and rivers refers to the rules of both national and international. International rules which have been adopted by the Bureau of Classification of Indonesia are the Rules for the Classification and Construction of Inland Water Vessels. Whereas the national rules which that Act No. 17 of 2008 about the cruise, Government Regulation No. 8 of 2009 about transport in water and Transport Minister Regulation No. 65 in 2009 on a Non Standard Ship Convention.
3. The procedure of security levels of 1,2 and 3 includes:
 - ◆ procedures to control access to port facilities / jetties at the sentry main and the sentry two-wheeled vehicle
 - ◆ security procedures in the area limited in
 - ◆ the procedures of the port facility security in handling charge
 - ◆ safety procedures on delivery of supplies of a vessel
 - ◆ procedures of security in handling freight not ownerless
 - ◆ the procedures of the port facility security on the monitoring

REFERENCES

- [1] Abrahamson, B.J. *International Ocean Shipping: Current Concepts and Principles*, West view Press, Inc. Boulder, Colorado, 1980.
- [2] Papacotas, C.S., and Prevedouros, P.D. *Transportation Engineering and Planning*, 2nd ed., Prentice Hall, New Jersey, 1993.
- [3] Peraturan Pemerintah No. 65 tahun 2005 tentang Pedoman Penyusunan dan Penerapan Standar Pelayanan Minimal.
- [4] Studi Standardisasi di Bidang Keselamatan & Keamanan Transportasi Laut, PT. Sumaplan Adisipta Persada, Jakarta, 2010.
- [5] Undang-Undang No. 17 tahun 2008 tentang Pelayaran, 2008, Biro Hukum dan KSLN Dephub, Jakarta.
- [6] Undang-Undang No. 17 tahun 1985 tentang pengesahan United Nation Convention on the Law of the Sea, 1986, Biro Hukum dan KSLN Dephub, Jakarta.