

# Analysis of Sea Border Crossing Transportation Between Three Countries in Sumatera Island, Case Study: Tanjung Balai Karimun Port – Harbour Front Port, Singapore and Tanjung Balai Karimun Port – Kukup and Puteri Ports, Malaysia

Danny Faturachman<sup>1</sup>, Karina A. Sulaeman<sup>2</sup>

<sup>1</sup>Department of Marine Engineering, Darma Persada University, Indonesia

<sup>2</sup>Department of English Language and Culture, Darma Persada University, Indonesia

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**Keywords**— *Ferry, Harbour Front, Kukup Port, Puteri Port, Sea Border Crossing, Sumatera Island, Tanjung Balai Karimun.*

**Abstract**— *Indonesia water area is connecting cities, islands, and countries as border in Sumatera Island involving 3 countries. They are Indonesia, Malaysia and Singapore. This research was conducted to inventories safety concern in sea crossing transportation in Sumatera Island especially in the border between Indonesia, Malaysia and Singapore, also to analyse safety and security standard of sea border crossing transportation by reviewing safety equipment in the sip and condition of sea crossing ports at the border of Indonesia, Malaysia and Singapore. Beside Batam, Tanjung Balai Karimun also serves passenger ferry to Singapore and Malaysia. This research is expected to identify safety equipment in ferries serving Tanjung Balai Karimun – Singapore (Harbour Front Port) and also Tanjung Balai Karimun – Malaysia (Kukup and Puteri ports) to prevent future sea transportation accident.*

## I. INTRODUCTION

Physical activities connectivity after implementation of ASEAN Economic Community in 2015 has been the focus of ASEAN countries in transportation field. All ASEAN countries work together to make it into reality, especially in transportation infrastructure. ASEAN countries agree to develop roll on-roll off (ro-ro) ferry transportation networking system in South East Asia. ASEAN countries agree to establish eight ro-ro ferry transportation systems.

These eight systems are Zamboanga City (Mindanao, Philippines)-Muara (Brunei Darussalam), Davao City-General Santos (Mindanao, Philippines)-Bitung (Sulawesi, Indonesia), Johor (Malay Peninsula, Malaysia)-Sintete

(Kalimantan, Indonesia). Then, Tawau-Tarakan (Indonesia)-Pantoloan (Sulawesi, Indonesia), Brooke's Point (Palawan, Philippines)-Labuan (Malaysia)-Muara (Brunei Darussalam), Dumai (Sumatera, Indonesia)-Malacca (Malay Peninsula, Malaysia), Belawan (Sumatera, Indonesia)-Penang (Malaysia), and Phuket (Thailand)-Belawan (Sumatera, Indonesia).

But in reality on the field, especially in previous research, these ro-ro ferry lines are not/haven't been detected. What are known are passenger ferry lines, even those are not yet integrated between Thailand, Philippines and Brunei (no research has been conducted). The well-integrated are passenger ferry lines between Singapore, Malaysia and Indonesia, particularly in Batam, Nunukan in

Indonesia with Tawau in Malaysia, also Tanjung Balai Karimun with Malaysia in Johor and Singapore. as for Sumatera island, beside Batam, there are several cities in Sumatera island close to Batam, they are Tanjung Balai Karimun that is also serving passenger ferry to Singapore and Malaysia, and dan Dumai – Melaka in Malaysia. This research will study condition on the field of shipping nd ferry terminals/ports particularly Tanjung Balai Karimun, Harbour Front in Singapore, and Kukup-Puteri in Malaysia.

## II. LITERATURE STUDY

According to United Nation Convention on the Law of the Sea (UNCLOS) Number 17/1985 every citizen of flag member state must conduct administration, technical and social activities based on effective jurisdiction-supervision on board the sip of flag state. Therefore, every member state has to:

- a. Maintain registered flag state ships and non flag state ships carrying the flag, kexcept ships exempted from accepted international law due to small=non standard size,
- b. Conduct jurisdiction under its national aw concerning ships flying its flag and to captain/skipper, crews with regard to administration, technical and social matters on board the ship.

Furthermore, each member states shall take necessary action for ships flying its flag to guarantee safety sea regarding:

1. Construction, euiptment and seaworthiness of the ship;
2. Shipmanning , labor requirement, ship crew training by considering following applied international provision ;
3. Use of signs, , maintenance of communication and collision prevention.

According to International regulation:

*SOLAS (Safety of Live At Sea)*, there are arrangements on:

- Safety action to prevent fire on passenger ship carrying more than 36 passengers (Chapter II-2 rule 17-34).
- Safety action to prevent fire on passenger ship carrying less than 36 passengers (Chapter II-2 rule 35-50).
- Safety equipments for passenger ship (ChapterIII rule 27-34).

*SOLAS* also arranges:

- Construction (structure, stability, mchinery, electrical installation , fire safety, fire detector and fire extinguisher).
- Radio communication and navigation system.
- Personal safety equipment like ring buouy, safety jacket etc.

ASEAN countries agree on three main projects of Ro-Ro vessel that connect island nations in south East Asia. This policy should have been implemented in 2015. Those three routes of Roll-On Roll-Off. Ro-Ro vessel are Dumai—Malaka (Malaysia), Belawan—Penang (Malaysia)—Phuket (Thailand), and General Santos/Davao (Philippines)—Bitung (Indonesia). Previous research has identified sea crossing of Davao – Bitung and research between three countries of Indonesia, Malaysia, Thailand. So far, some projects in IMG-GT format are Ro-Ro ship crossing routes of Malaka (Malaysia) – Dumai (Indonesia), Belawan (Indonesia) – Penang (Malaysia) – Phuket (Thailand). The well-integrated are passenger ferry lines between Singapore, Malaysia and Indonesia, particularly in Batam, Nunukan in Indonesia with Tawau in Malaysia, also Tanjung Balai Karimun with Malaysia in Johor and Singapore. as for Sumatera island, beside Batam, there are several cities in Sumatera island which are close to Batam like Tanjung Balai Karimun that is also serving passenger ferry to Singapore and Malaysia.

## III. RESULT AND DISCUSSION

The In order to integrate facility and infrastructure of transportation that meet safety and security standard of transportation particularly in border areas with neighboring countries safe secured, and passenger-convenient transportation system is totally needed. This system is also for cargoes movement between countries and to sustain continuous development on sea transportation with regard to Law Number. 17/2008 on shipping, In general provision, safety and security touches water transportation, harbor /port matters, and maritime environment. In that regard, all parties involved in shipping shall meet determined requirement.

In safety and security of sea crossing transportation framework, especially between Indonesia, Malaysia and Singapore, condition of utilized ship will be reviewed. Safety equipment available in the ship should refer to SOLAS. The review also covers the terminals condition in Tanjung Balai Karimun, Harbour Front, Singapore, Kukup and Puteri ports in Johor, Malaysia from safety concern, also they should be adequate and feasible for passengers.

### 3.1. Overview of city and Port of Tanjung Balai Karimun

Karimun Regency is in Riau islands Province, Indonesia. It has total size of 7.984 km<sup>2</sup> consisting of 1.524 km<sup>2</sup> land size and 6.460 km<sup>2</sup> water area. This regency has 98 islands 67 are inhabited. The population is 174.784. It has border with Meranti islands on the west, Pelalawan and Indragiri Hilir on the south, Malaka strait on the north and Batam city on east.

Tanjung Balai Karimun is the capital city of Karimun regency in Riau islands province. This Tanjung Balai city is located in south east of Karimun islands and in general is part of BBK (Batam-Bintan-Karimun) free trade zone which is quite strategic due to its international sea shipping line, west side of Singapore. This city is close to Sumatera island mainland (Riau province) also with Malaysia. The establishment of Karimun business body will provide accurate and detailed information on potentially growing business.

Tanjung Balai Karimun port, is located in Karimun island. Tanjung Balai Karimun port is one of port branch managed by P.T. (Persero) Indonesia Port I headquartered in Medan. As one of branch, geographically the location has direct border with neighboring countries Malaysia and Singapore, known with Malaka strait and Singapore strait as the most crowded and busiest in the world. These both straits are “Straits Used for International Navigation” according to international sea law definition (UNCLOS). Given this condition, Tanjung Balai Karimun port has significant role from economic activities by way of sea transportation of ships for loading-unloading cargoes and passengers.



Fig.2: Map of Tanjung Balai Karimun



Fig.1: Map of Karimun Regency

Tanjung Balai Karimun port has been existing since 1958. its operation has been under management of P.T. Pelabuhan Indonesia I (Persero) since 1998 and appointed as port branch class III based on Director decision of P.T. Pelabuhan Indonesia I (Persero) No. OT.09/1/2/PI-98 dated January 16, 1998. Then it was upgraded to class II, in 2009 by Directors Letter PR 02/3/II/PI-09 dated August 18 2009. This port is located in big Karimun island at geography of 00° 59' 17" LU and 103° 26' 14" east Longitude, generally is part of Karimun regency administration.

Tanjung Balai Karimun port is economic gateway in Riau islands and as the integration of inter transportation and transportation type particularly inflow and outflow of ships, cargoes and passengers. Tanjung Balai Karimun port is entrance gate in Karimun island and as international port particularly from Riau islands to Singapore and Kukup, Malaysia.



Fig.3: Schedule and ticket booth of ferry in Tanjung Balai Karimun

### 3.2. HarbourFront Centre port, Singapore

Tanjung Balai Karimun-one of cities that is closest to our neighboring country Singapore has four ferry trips every day from Tanjung Balai Karimun ferry terminal to Harbour Front Singapore. The shipping operators are Indo Falcon and Sindo Ferry. Likewise, from HarbourFront Singapore to ke Tanjung. Balai Karimun, it has a4 Ferry trips, opetated by same operators, Indo Falcon and Sindo Ferry.

Trip from TanjungBalai Karimun to HarbourFront Singapore is 1 hour 30 minutes. Harbour Front port is modern and already integrated with mall, so this accommodates passengers who want to do sightseeing /tour and shopping in Singapore.



Fig.4: HarbourFront port, Singapore

### 3.3. Kukup Ports, Malaysia

Kukup ferry terminal is located in fisherman villain Pontian district, Johor. Distance from Johor Bahru is around 40 km, and it serves ferry crossing to Indonesia particularly to Tanjung Balai Karimun.



Fig.5: Kukup ferry Terminal, Malaysia

Kukup Malaysia is one of fisherman villages and travel/tour destination in Johor Malaysia. there are many resorts and restaurants in Kukup. The resorts provide various recreational activities and the restaurants provide seafood. Kukup terminal is also as transit point for

Karimun island residents who want to vusit other areas in Malaysia.



Fig.6: Distance from Tanjung Balai Karimun- Kukup port

Trip from Tanjung Balai Karimun port to Kukup Malaysia is on around 1 hour.

### Puteri Port, Malaysia

Puteri port Johor is a port closest to Hello Kitty Town and Legoland amusement parks in Johor Malaysia. Residents of Karimun and the surroundings who want to tour to both parks can use ferry that serves Tanjung Balai Karimun – Puteri port Johor Malaysia. The trip is around 1 hour and 20 minutes (80 minutes).

Tehere are 4 trips from Tanjung Balai Karimun to Puteri port Johor Malaysia and viceversa. The earliest trip from Tanjung Balai Karimun is 08.00 WIB and the latest is 15.45 WIB. While from Puteri port Johor Malaysia to Tanjung Balai Karimun, the earliest is 08.00 Malaysia time and the latest is 16.30 Malaysia time.



Fig.7: Distance from Tanjung. Balai Karimun – Puteri port



Fig.8: Puteri port Johor, Malaysia



Fig.9: Ferry ship that serves Johor – Tanjung Balai Karimun

#### IV. CONCLUSION

Based on the research, it can be concluded that:

1. Port at at Tanjung Balai Karimun is still conventional given its old building and non-modern equipment. This

port needs to be modernized because it is travel destination for Singapore and Malaysia citizens.

2. Ports in Malaysia especially Puteri port is appropriate as ferry port and there is mall around the port and travel destinations especially in Johor Bahru.
3. Port in Singapore is modern and integrated with travel/tour destination so tourists from many countries will make it their destination.
4. Ships serving Malaysia and Singapore are ferry ships generally run around 1,5 - 2 hours, and use adequate facilities and appropriate for safety equipments.
5. Relatively no accident has ever happened even though there still minor matters because sometimes sea animals/plants are stuck in the propeller but this can be handled well. Generally shipping lines of Tanjung Balai Karimun to Singapore and Malaysia are relatively safe.

#### REFERENCES

- [1] Firmin H. Aikpo, Miriac Dimitri S. Ahouanse, Lucien Agbandji, Patrick A. Etorh, Christophe S. Houssou(2017).Assessment of contamination of soil by pesticides in Djidja's cotton area in Benin. International Journal of Advanced Engineering Research and Science (ISSN : 2349-6495(P) | 2456-1908(O)),4(7), 001-005. <http://dx.doi.org/10.22161/ijaers.4.7.1>
- [2] Perfect, T. J., & Schwartz, B. L. (Eds.) (2002). Applied metacognition Retrieved from <http://www.questia.com/read/107598848>
- [3] Myers, D. G. (2007). Psychology(1stCanadian ed.). New York, NY: Worth.
- [4] Cognition.(2008). In Oxford reference online premium dictionary. Retrieved from <http://www.oxfordreference.com>
- [5] Blue, L. (2008, March 12).Is our happiness preordained? [Online exclusive]. Time. Retrieved from <http://www.time.com/time/health>
- [6] J. Clerk Maxwell (1892), A Treatise on Electricity and Magnetism, 3rd ed., vol. 2. Oxford: Clarendon, pp.68–73.
- [7] I. S. Jacobs and C. P. Bean (1963), “Fine particles, thin films and exchange anisotropy,” in Magnetism, vol. III, G. T. Rado and H. Suhl, Eds. New York: Academic, , pp. 271–350.
- [8] K. Elissa, “Title of paper if known,” unpublished.
- [9] R. Nicole, “Title of paper with only first word capitalized,” J. Name Stand. Abbrev., in press.