

Analysis of Indonesian Sea Border Ferry Cross Countries

Case studies: The Comparison Between Indonesia and Malaysia (Batam – Johor and Nunukan - Tawau)

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Abstract: Indonesian waters in addition to providing a links between the city and the island, also among countries. As the border of Sumatera island, Batam as a bridge between Indonesia and Malaysia, also Singapore. And in Kalimantan island, Nunukan as a bridge between Indonesia and Malaysia. The location would be very strategic being the region of the border between countries, supported by a network of sea transport international traffic crowded. The activity of the transportation development in Indonesia, especially sea transportation has been increasing. It is because the impact of the economic, social, culture of the society activities. The research objective is to know whether the population in Indonesia especially the resident from Batam and Nunukan and also the people of Malaysia, from Johor and Tawau want to use ferry cross country is quite big enough. In addition, is also to know the ferry terminal and sea port in Indonesia and Malaysia, accept the kinds of vessels and safety tools on board. This research use method case study with the data collection gained from the field on board between ferries from Batam – Johor and Nunukan – Tawau. The result that indicated ferries from Batam is good enough and more modern and also have better facilities than in Nunukan.

1. Introduction

Indonesia as an archipelago country consisting of thousands of Islands and has a wide sea area so that an indispensable mode of transportation is the ocean freight as a means of mobility and driving force of economic development nationwide. Transportation is the artery of the economy of the community and the nation of Indonesia. Development of the activity of transport in Indonesia is increasing, especially sea transport. This is the impact of the activity of the economy, social and cultural activities of the community. In the framework of safety and security, sea border crossings transport security in particular between Indonesia and Malaysia would be seen how the State of the condition of ferry crossing the pass between Indonesia and Malaysia. In addition, it will also be seen how safety standards refer to SOLAS (Safety of Live At Sea) safety tools in the form already filled on the ships. It will also be seen crossing the terminal condition in the port of Batam, Indonesia and the port of Stulang, Johor Bahru, Malaysia and also in the port of Nunukan, Indonesia and Tawau, Malaysia.

As a border on the island of Sumatera, Batam city became the liaison between Singapore and Malaysia with Indonesia. Batam city entered in the Riau Islands province. The Riau Islands province is located on the site of a very strategic because being in the border region between countries, neighbouring with one world business centre in the world (Singapore) and is supported by the presence of an international sea transportation network traffic between 3 countries (Indonesia, Singapore and Malaysia).

In addition, the waters of Indonesia as well as a liaison between the city and the island, as the boundary between countries on the island of Kalimantan/ Borneo, namely the port of Indonesia in Nunukan, Taka Tunon and Malaysia, Tawau port. For all it needed safeguards particularly against shipping in the area of maritime safety because Indonesia greatly affect the continuation of the especially development efforts the transport activity. Sea transport holds a very important role in the country's maritime as well as Indonesia whose territory is an archipelago.

2. Literature Study

2.1. Review the Regulations

References [5] stated that:

- a) 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.
- b) Ship seaworthy is a ship that meets State requirements for the safety of the ship, the prevention of pollution of waterways from ship, crews, load, loading, the well-being of the crew and passenger health, legal status, the management of ship safety and the prevention of pollution from ships, and sailing ships for security management in specific waters.
- c) Safety of the ship is a ship that meets the requirements of building materials, construction, machinery and electricity, stability, order and helper tools and equipment, radios, electronic board, as evidenced by the certificate after examination and testing for maintaining the integrity of the specifications.

To control the safety of shipping internationally is governed by the following provisions:

- a) The International Convention for the Safety of Live at Sea (SOLAS), 1974, as it has been perfected and these international rules concerning the following provisions: construction (structure, stability, machinery and electrical installations, fire protection, fire detectors and fire brigade); navigation, safety radio communications; helper Device, such as floats, lifeboats, rafts helper; the applicability of the provisions to enhance the safety and security of shipping including the implementation of the International Safety Management (ISM) Code, and the International Ship and Port facility Security (ISPS) Code.
- b) International Convention on Standards of Training, Certification and Watch keeping for Seafarers, 1978 and last year changed the year 1995.
- c) International Convention on Maritime Search and Rescue, 1979.
- d) International Aeronautical and Maritime Search and Rescue Manual (IAMSAR).

2.2. Problem Identification

In the context of the integration the transportation facilities and infrastructure that fulfils the requirements of security and transport safety, especially in the border area to the neighbouring country there should have been a system safety and security transportation to provide comfort for passengers and hopefully also for process of goods transportation system between the state and the achievement of the sustainable development business. Indonesian Regulation no. 17 of the years 2008 about shipping, in general provisions it was stated that the safety and security related to

waters, ports, maritime and the environment. Therefore, all sides related to the voyage activities must meet the requirements that have been set.

In order to safety & security, transportation safety of the sea border crossing between Indonesia and Malaysia will look at how the crossing of the ship passing between Indonesia and Malaysia. There will also be seen how safety standards which refers to SOLAS been fulfilled and is on the ferrys. Research in Batam island is want to know whether desire inhabitant of Batam and especially inhabitant of Malaysia to use crossing ferry cross country. It can be determined comparison between terminal and port in Malaysia with in Batam, kinds of vessels, including also in terms of safety and security of passengers on a ship (safety tools), because the travel Batam - Johor Bahru further than Batam - Singapore and also port in Malaysia (in terms of provide security and comfort to passengers) compared to port in Batam [2]. There is also be seen in the condition of the crossing between Nunukan port and Tawau port in Kalimantan Island in terms of safety would have sufficient and appropriate for passengers.

3. Problem Statement

3.1.Review of Batam City

Batam City is one of the administration city of the province of Riau islands located at 0° 25'9" – 1° 15'00" northern latitudes and 103°34'35" - 104°26'4" east longitude. In Batam having broad territorial waters reached currently 1.570 km². Land area is inhabited by 988.550 people. This population is the third population populous of Sumatera Island after the city of Medan and Padang. Consists of 12 district in Batam, among of them are Batu Ampar, Belakang Padang, Bulang, Galang, Lubuk Bajo, Sei Beduk, Batu Aji, Segulung, Bengkong, Batam city and Sekupang. Transportation is support facilities for mobility, where people of Batam city can use public transport such as taxi facilities, the bus, and motorcycle taxi [1]. Other than land transportation, sea transportation is one of the important transport also. The use of sea transportation connecting Batam with the island around and to the neighbouring country like Singapore and Malaysia, make development and facilities of sea transport completely enough, include the ferry for the border of country vessel.

3.2.Review of Nunukan

District Nunukan is one district in north Kalimantan province in Indonesia. The district capital is located in the Nunukan Island. The district occupies a land of 14.493 km² and sparsely populated by 140.842 inhabitant (census results Indonesia 2010). Motto of district Nunukan is 'penekindidebaya' which means 'build region' derived from the Tidung language, the area language in Nunukan. In 2003 happened a biggest human tragedy in Nunukan, when workers whom have no permission for working in Malaysia deported back to Indonesia through Nunukan. Port in Nunukan is cross to the port of city Tawau, Malaysia. For the city of Nunukan who want to go to Tawau needed necessary documents called PLB (fitting cross pass). Everyday there always ferries boat at least 5 units with capacity less than 100 people going round trip between Nunukan and Tawau [7].

3.3.Review of Ferry Terminal

The Ferry Terminal is the point at which passengers and goods into and out of the system and is an important component in the transportation system [6]. While the ferry is a transport vessel at close range. The ferry terminal which can hold activities out of the incoming passengers from close-range ships transport or ship crossings. Also as a terminal for passenger transfer processes of activity sub transit system to other transit systems of different characteristics. Seen from the angle of system the

scope of the port, the ferry passenger terminal as a component of a functioning port sub system hosts activities for passengers between the islands. Ferry passenger terminal component among others consist of [4]:

1. The dock is a Dock Area buildings that used to tether the ferry docked and perform loading and unloading goods and of the ascending-lose passengers. The form of the dock depending the usability of the harbour and the depth of cruise groove.
2. Public service area, public service area includes among other: terminal building and parking area for passenger cars.
3. Dock dimension: long of the dock determine capacity of many vessel lean and anchored. Wide dock depends on activity service dock against the type and the size of the vessel. Technically at least wide of the pier is 3-25 meters. Thickness dock (pavement) hanging capacity to be held because burden construction and load life of moving on it.
4. Facilities dock especially for the survival of a ship like channel of drinking water / clean water, fuel of a ship, and others.
5. Terminal building is a container processing passengers and baggage that will embarkation or debarkation from a ferries. Ship passanger terminal is a component of sub-system port, so activity here is a service for the people of user sea transportation. Facilities container these activities includes: service pre and post travel passengers: information service and the ticket, service for processing passengers and baggage, supporting services to meet the wants and needs of passengers.
6. Parking area passenger vehicle for passenger vehicle a supporting ferry terminal among other: taxi, private cars, motorcycle taxi, public transport and others.

3.4.Ferry Boats Classification

Ferry boats have several types and classified based on how the landing and also a way of loading and unloading a boat ferry:

1. Based on the way the landing:
 - a. Direct ferry landing on the sand called LCM (Landing Craft Manuals) or LST (Landing Site of tanks).
 - b. Ferry landing at the pier. This requires a boat dock for the recliner. Access the charge contained in the stomach, stem and the stern, but access is rarely used in the stomach because it takes up a place at a time when docked at the pier. Passenger access is next, leading directly to the deck aside.
2. Based on how a loading and unloading. The great technology loading and unloading on the ferry can be distinguished as follows:
 - a. LO/LO (Lift On /Lift Off), which is in charge of a vessel by shifting of vertical synchronization;
 - b. RO/RO (Roll On /Roll Off), the transfer of a vessel with charge horizontally;
 - c. Suction, which is the kind of vessel is that the charge by means of suck /pumped through the pipe , usually combined with a conveyor belt;
 - d. Special conveyor belt, which is the kind of vessel handle one kind of charge. Ferry boat, because of its contain of cargo, people and vehicles, did not need special loading and unloading equipment, type suitable is RO /RO.

- e. Including of RO/RO: Short distance vessel, Intermediate distance vessel, Long distance vessel.

Types of ferries which sailed between Batam – Johor Bahru, Malaysia is the short distance vessel or called also fast ferry. This ship could be said to fast ferry because manipulate the speed in splitting the beach and the strait of. Usually a kind of this ferries used in aquatic or the ocean are not high waves, very suitable for the transportation of the coast of river and lake. Tis ferries used for the line Batam – Singapore, Batam - Malaysia, Batam – Tanjung Pinang and Batam – mainland of Riau province.

4. Result and Discussion

4.1. Batam Center Ferry Terminal.

Batam Center is one of five international ferry terminal in Batam and is the busiest terminal due to serve the route from Batam towards Singapore and Malaysia. Its location is in the center of town and the administrative center of Batam city, exactly in the way of Engku Puteri, Batam and adjacent to the hotel, the mall, and the center of Promotion of Sumatera, Batam Authority, the Mayor's Office, Immigration Office, Bank of Indonesia, Legislator Office, and other government offices in Batam [3]. The interest of this terminal is the bridge connecting with the mall, namely Mega Mall, one of the largest malls in Batam, so tourists who come from Singapore or Malaysia can shop there, see in Figure 1 & 2.



Figure 1: The atmosphere inside the Batam City Terminal



Figure 2: The bridge connecting between terminals and malls

Batam Center Ferry Terminal is a newly refurbished ferry terminal by Government. The port is also used as one of the existing tourist harbor in Batam city. It also used to be set off from Batam to

Johor Bahru, Malaysia from Johor Bahru, Malaysia while we must wear a ferry port of Stulang (in Malaysia, also called sea port with the Jetty).

Port of Batam Center have a decent facility as the international ferry terminal which has separated between departure and arrival passengers and also has good safety procedures as well as connected with a bridge straight to the mall so that tourists can go shopping. It is not inferior to the ferry port either in Malaysia or Singapore. The port location in the mall [8].

4.2. Port of Stulang Laut, Johor Bahru, Malaysia.

Port of Stulang Laut, Johor, Malaysia is a modern harbour adjacent to the Mall is free of tax (duty free) so that tourists who want to shop for goods can buy anything with cheap price.



Figure 3: Port of Stulang Laut, Johor, Malaysia

There are two kinds of berthing off a ship which floats as well as four kinds of berthing others to support regular in the harbor of Stulang Laut. So that it a time can be made to subside and the support of sailing the ship. This port especially be able to accommodate until 8 ferries per hour. The port is main harbor in the actual and official international port as the entrance of Malaysia in the south with provide a service ferry to various international tourist destination including Batam islands and Bintan in Indonesia. The place of sale ticket ferry can be seen in Figure 3 and birthing place of ferry can be seen in Figure 4.



Figure 4: Place of sale ticket Ferry in the ports of Stulang Laut



Figure 5: Berthing place of Ferry in Stulang Laut

 DAILY FERRY SCHEDULE AT THE ZON FERRY TERMINAL, JOHOR BAHRU SECTOR : BATAM CENTER					
DEPARTURE TIME					
TZFT TO BATAM CENTER			BATAM CENTER TO TZFT JOHOR BAHRU		
0730	1330		0730	1330	
0830	1430		0830	1430	
0930	1530		0930	1530	
1030	1630		1030	1615	
1130	1730		1130	1700	
1230	1830		1230	1745	
Malaysian time			Indonesian time		
SECTOR : TG. PINANG					
DEPARTURE TIME					
TZFT TO TG. PINANG			TG. PINANG TO TZFT		
1300			1230		
1700			1500		
Malaysian time			Indonesian time		
• Business hour: 7 am - 9 pm daily Tel: 07-2211677 • Schedule above is subject to change without any prior notice • Online booking is available at www.zonferry.com.my					
TICKET COUNTER PRICE AT TZFT					
FROM	DESTINATION	ADULT		CHILDREN	
		ONE WAY	TWO WAY	ONE WAY	TWO WAY
TZFT	BATAM CENTER	RM 69	RM 110	RM 46	RM 69
TZFT	TG. PINANG	RM 86	RM 144	RM 54	RM 86
Note: 1. Seaport charges is RM10.00 per passenger for international Departure from TZFT. 2. Children under 2.5 years old are subject to seaport charges only and no ticket required. 3. Passengers must be at Terminal ferry 30 minutes before ferry departure. 4. Online booking is available at www.zonferry.com.my					
The ZON Ferry Terminal (TZFT) Tenggara Senandung Sdn. Bhd. 88, Jalan Ibrahim Sultan, Stulang Laut, 80300 Johor Bahru, Johor, Malaysia Tel: 007-221 1677 Fax: 007-221 1676 website: www.zonferry.com.my email: enquiry@tsja.atlan.com.my					

Figure 6: Schedule the departure of a vessel and the ticket price from port Stulang Laut

In Figure 6 and 7 we can see a schedule of the ferries and ticket price, also shipping route from Stulang Laut, Johor.

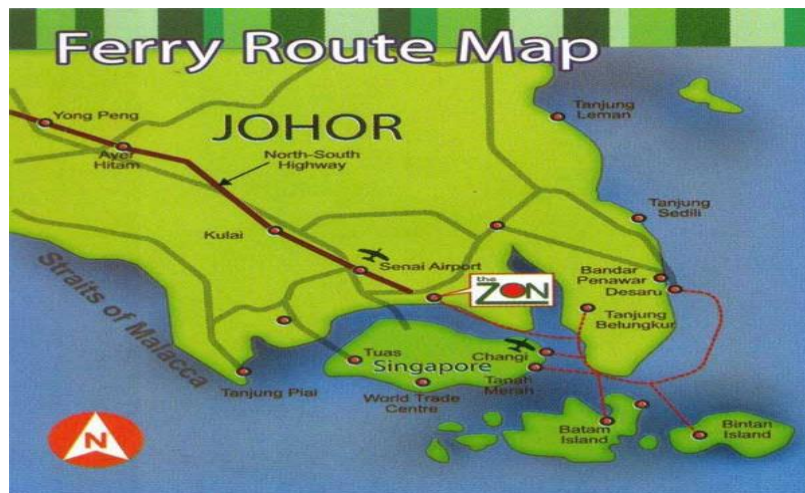


Figure 7: Shipping route of Batam to Singapore & Stulang Laut

4.3.Ferry Port Tunon Taka, Nunukan

The port serves ferry trip Tunon Taka towards the port of Tawau, Malaysia. In a journey that takes approximately 1 hour with the ticket price per person is Rp. 200.000 for each way. In Figure 8 we can see the Ferry fort of Nunukan, type of ferry in Figure 9 and ticketting in Figure 10, also berthing place in Figure 11.



Figure 8: Ferry Port Tunon Taka, Nunukan



Figure 9: Type of Ferry in port of Tunon Taka, Nunukan



Figure 10: Ticketing in Tunon Taka Port, Nunukan



Figure 11: Berthing Place of Tunon Taka, Nunukan

Fast ferries sailing the route Nunukan - Tawau, Malaysia especially in Tunon Taka port have well-ordered and operating on schedule. And according to an interview with Commander Patrol KSOP class III Tarakan, his states that have never received a report or notice any problems to passenger ships, cruise lines from Nunukan to Tawau no problem sailing (accident) so far, and explain that as officers here should be more extras in the monitoring, alerting and crack down on when the ships were not willing to follow the rules that exist about the safety of sea transport (especially the rules relating to SOLAS).

4.4.Tawau Ferry Terminal, Malaysia

The ferry port in Tawau, in Fig. 12 we can see the ferry terminal in Tawau, sailed to the port of Nunukan, Tunon Taka in Indonesia. The ticket price is RM 65 (approximately Rp. 230.000) for all the way. Departure schedules twice every day at 9.00 a.m. and 14.00 p.m time Malaysia. Ships that sailed were: 1) M.V. Tawindo Express, 2) M.V. Mid East Express, 3) M.V. Labuan Express, 4) M.V. Mega Express, 5) M.V. Nunukan Express, 6) M.V. Full Moon Express, 7) M.V. Francis Express.



Figure 12: Tawau Ferry Terminal

In Figure 13 we can see the sample picture of ferry from Tawau to Nunukan and Safety facilities on the ship basically enough available where safety outfit (life jacket) is enough and put under the passenger seat so that it can immediately use when the accident occurred, as well as the existence of a raft of safety located outside of the ship, at any time an accident happened can be directly used.



Figure 13: Examples of Ferry from Tawau to Nunukan

5. Conclusion

1. Batam city in General and the port of Batam Center in particular has the facilities of international standard of technology and the distance nearer to Johor Bahru, Malaysia as the powers in order to be optimized and increasing the number of passengers served strategies, so that will add to the income of the area and could rival the route of Batam - Singapore. The city of Nunukan in general and port Tunon Taka in particular has facilities not international standard, where there are still development look to improve to international port international crossing. Nunukan is closer to Tawau. Malaysia by using ferries travel time takes only 1 hour and transporting hundreds of passengers every day as the power possessed to be its use in passengers increase that can be served consequently this could put revenue also.

2. For fast ferries sailing the route Batam - Johor, Malaysia in particular Batam Center has arranged and operated on schedule. Although there are only 2 ports serving the departure to Malaysia, Batam Center and a new Harbor Bay, but the interest of tourists to pay a visit to and from Batam always increasing. From Nunukan to Tawau usually the passenger mostly are Indonesian migrant workers.
3. Safety facilities in a basically enough available where life jacket there is enough and put under the passenger seat that can be used when the accident, so are the raft safety outside a ship can be directly used.
4. Fast ferries sailing the route Nunukan - Tawau, Malaysia especially in Tunon Taka port have well-ordered and operating on schedule. And according to an interview with Commander Patrol KSOP class III Tarakan, his states that have never received a report or notice any problems to passenger ships, cruise lines from Nunukan to Tawau no problem sailing (accident) so far, and explain that as officers here should be more extras in the monitoring, alerting and crack down on when the ships were not willing to follow the rules that exist about the safety of sea transport (especially the rules relating to SOLAS).

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