WWJMRD 2019; 5(11): 61-65
www.wwjmrd.com
International Journal
Peer Reviewed Journal
Refereed Journal
Indexed Journal
Impact Factor MJIF: 4.25
E-ISSN: 2454-6615

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Maritime safety as a core issue to promote the development in international transport

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Abstract
Currently Southeast Asia includes many important waters and large marine ecosystems such as the Strait of Malacca, East Sea, Gulf of Thailand, Sulu Sea and Sulawesi Sea. Not only serving as important transport hubs, these seas are a rich marine environment of marine species and plants, with biodiversity, economic and environmental potential of the area. However, maritime safety and marine environment in the region are facing many risks such as environmental pollution due to incidents of collision, discharge, oil spill from ships, reserves and quality of fish decline due to methods of artisanal fishing, illegal fishing, and natural disasters happening continuously. In addition, the existence of territorial and territorial sovereignty disputes makes it more difficult to manage and enforce maritime safety and marine environment management. All of these issues require increased cooperation between countries in and outside the region to ensure maritime security and thereby contribute to creating a stable environment for developing economies in Southeast Asia. Scholars consider the 1982 UN Convention on the Law of the Sea to be the most important legal framework for the rights and obligations of coastal states, flag states and port states. . In addition to the Convention on the Law of the Sea, international conventions of the International Maritime Organization (IMO) also play a particularly important role, including the conventions on maritime safety and the Convention on Search, the Convention on Maritime Terrorism, the Convention on the Prevention of Pollution from Ships, the Convention on Civil Liability. In addition to international frameworks, countries in Southeast Asia have also begun to establish cooperation frameworks in the field of maritime safety and environmental protection such as the Tokyo Memorandum on the control of nations. ports, ReCAAP Agreement on anti-piracy and armed robbery for ships in Asia, Cooperation program for marine environmental protection within the framework of the United Nations, Triangle Triangle Initiative coral, Partnership in environmental management in the seas in East Asia (PEMSEA), Maritime Forum of Southeast Asia.

Keywords: maritime safetu, maritime development, shipping management

1. Introduction
The following are the major international shipping conventions, adopted by the International Maritime Organization (and the International Labour Organization) concerning safety and pollution prevention. However, many other maritime instruments concerning more specific issues are also in force worldwide. SOLAS (International Convention for the Safety of Life at Sea, 1974) lays down a comprehensive range of minimum standards for the safe construction of ships and the basic safety equipment (e.g. fire protection, navigation, lifesaving and radio) to be carried on board. SOLAS also requires regular ship surveys and the issue by flag states of certificates of compliance. MARPOL (International Convention for the Prevention of Pollution from Ships, 1973/1978) contains requirements to prevent pollution that may be caused both accidentally and in the course of routine operations. MARPOL concerns the prevention of pollution from oil, bulk chemicals, dangerous goods, sewage, garbage and atmospheric pollution, and includes provisions such as those which require certain oil tankers to have double hulls. COLREG (Convention on the International Regulations for Preventing Collisions at Sea, 1972) lays down the basic "rules of the road", such as rights of way and actions to avoid collisions. LOADLINE (International Convention on Loadlines, 1966) sets the minimum permissible free board, according to the season of the year and the ship's trading pattern. ISPS (The International Ship and Port Facility Security

Code, 2002) includes mandatory requirements to ensure ships and port facilities are secure at all stages during a voyage. ISM (The International Safety Management Code, 1993) effectively requires shipping companies to have a licence to operate. Companies and their ships must undergo regular audits to ensure that a safety management system is in place, including adequate procedures and lines of communication between ships and their managers ashore. STCW (International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978/1995/2010) establishes uniform standards of competence for seafarers. ILO 147 (The ILO Merchant Shipping (Minimum Standards) Convention, 1976) requires national administrations to have effective legislation on labour issues such as hours of work, medical fitness and seafarers' working conditions. This was superseded by the ILO Maritime Labour Convention, 2006) which entered into force on 30 August 2013. According to statistics, in 2011, there were more than 60 maritime accidents nationwide, causing more than 40 deaths and missing, nearly 30 waterway vehicles sunk and wrecked; In particular, there are five particularly serious cases, causing huge losses of people and property. In terms of quantity as well as nature, the maritime accidents happened last year tend to increase suddenly and unpredictably. According to the authorities, the cause of accidents occurred largely due to the limited level of officers and crew members who did not comply with the regulations on duty shifts such as realms, speed of safety and cooperation. Enterprises avoid collision in narrow lanes, beacons, ... Maritime pilots also violate regulations and rules of seaports, lead ships to speed, not according to plan, avoid crossing each other in narrow channel areas. Not allowing, leading to unfortunate maritime accidents. Another reason, many ships do not maintain equipment periodically, when bad weather occurs, it often happens. In particular, the lifesaving and fire-fighting system is not maintained, ready to operate in situations and lack of skill and experience of crew members, often leaving great losses. Determining safety is a key step, the maritime industry has focused on propagating and popularizing safety and order in many suitable forms; strengthen inspection and timely detection and resolutely handle strictly with the highest penalty for violations. At the same time, to inspect and supervise the operation of the system of buoys, maritime signs and other maritime support equipment, to make the best use of the via-port infrastructure system's capacity. ; step by step improve the quality of crew members, ... In addition, it is necessary to clearly define the responsibilities of the Vietnam Register for the inspection of means of transport quality, contributing to enhancing the capabilities safe operation of ships. In the coming time, it is necessary to urgently review and amend the process of technical supervision and evaluation of ships according to the quality management system ISO 9000-2008; improve the quality of technical supervision in building and repairing ships, fully complying with international rules and treaties.

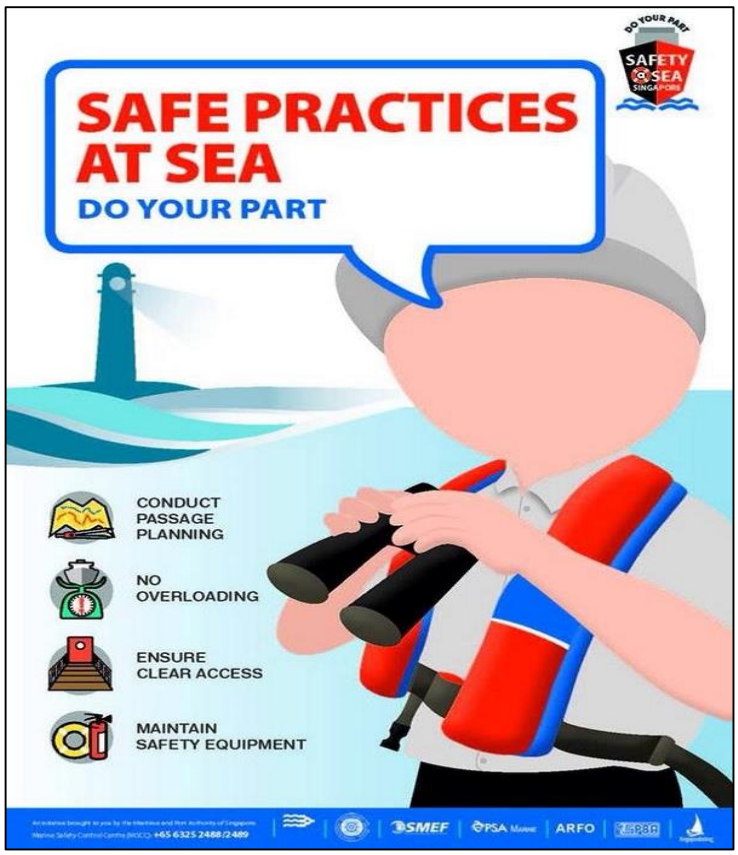

Fig. 1: The importance of maritime safety

Maritime is a unique and dangerous industry, therefore, in order to ensure maritime safety, according to us, the Ministry of Transport should consider to apply appropriate remuneration to the officials engaged in maritime safety and security work, collecting seagoing ship inspection fees from the second time on; additional funding for this work, in order to enhance the inspection and supervision of maritime activities in seaport waters. In some key national

seaports and storm-sheltering areas for ships and boats, there must be adequate investment in channel dredging, synchronous investment in means, equipment and machinery. maritime safety and security cases such as automobiles, special canoes, information systems, signals VTS, AIS, ... Regulations on safety, maritime security and prevention Environmental pollution needs to be updated, amended and supplemented regularly and timely by the branch management agency, in line with the development situation of the industry and in compliance with new regulations of international organizations, avoiding to happen Unfortunate cases. At the same time, it is necessary to study and adjust functions and tasks among the sectoral management agencies, ensuring uniformity, bringing about high efficiency, preventing overlapping phenomena. The South China Sea area, the Spratly Islands, is an important location on the international maritime route linking the Atlantic Ocean to the Indian Ocean and the Pacific Ocean. According to statistics, more than 90% of the world's commercial shipping is carried by sea and 45% of that goes through the South China Sea.

2. Central tasks

After more than 20 years of renovation, economic potential of the sea is constantly growing. Thus, in Resolution IX, on the "Vietnam Sea Strategy" adopted at the 4th meeting of the Central Committee of the X Party Central Committee stated that by 2020, the marine economy will contribute 53-55% of GDP, and 55-60% export turnover nationwide. In reality, marine and coastal economies contribute 48-49% of GDP. This further affirms: The importance of marine economy to the country's development process, especially in the context of: The 21st century is considered by the world as "the century of the ocean". In order to successfully achieve the objectives of the sea strategy of Vietnam and at the same time to serve effectively the marine economy, the maritime safety assurance sector has increasingly affirmed its importance and key position in establishing and Maintaining a maritime safety environment, facilitating the development of trade, maritime economics and humanitarian objectives, combining security and national defense, search and rescue, coordinating marine environmental protection, contributing to Assertion of sovereignty, national sovereignty over the sea and islands. The number of ship arrivals and departures in the South East region is lower than before, about 50 turns per day, however, the tonnage of ships and cargo through the port is larger. Therefore, although the number of marine accidents occurs less but the extent of damage more serious. The objective of the maritime safety industry is to: To set up and maintain a maritime safety environment, to facilitate the development of trade, marine economy and humanitarian objectives, to combine defense and security protection, to coordinate search and rescue and security To protect the marine environment, thus asserting sovereignty and national sovereignty over the sea and islands in accordance with the relevant law provisions;To upgrade and perfect the existing signaling system, to set up signaling systems in the sea areas and navigable channels suitable to the requirements of the seaport system; establish radio navigation signaling system; synchronous investment in auxiliary production establishments, management establishments, equipment and facilities in service of management and production; Training and recruitment of labor force, striving to 2020, technical infrastructure to ensure maritime safety in our country reached the advanced level compared with the region and keep pace with the development of the world; To perfect the system of legal documents, standards, technical regulations as well as mechanisms and policies on assurance of maritime safety; New investment, upgrading and development of traditional maritime signaling system, radio navigation signaling system (RACON, RTE, AIS), marine support system (DGPS, VTS, ENC) and automatic hydrographical monitoring stations; To concentrate on new investment, upgrading and development of maritime signaling systems on sea islands, especially the lighthouses on Truong Sa and Hoang Sa archipelago in order to contribute to the protection of national sovereignty and sovereignty over the sea. island; To invest in specialized equipment and essential infrastructures in service of the assurance of maritime safety; To develop and train human resources capable of applying advanced science and technology in the field of maritime safety; To renovate and consolidate the organization and managerial apparatus to suit the tasks in each stage of development; Strengthening international integration and participation in international and regional organizations on maritime safety in order to enhance the national position in the region and the world; Access to high levels of technical and development cooperation in the field of maritime safety; Strengthen international relations and international cooperation to ensure maritime safety, thus contributing to the protection of national sovereignty at sea.

To renovate, upgrade and standardize the existing lighthouse system; To build additional lighthouses in sea areas with sea economic activities, border and island areas with important positions on national defense and security; embellish the lighthouses of historical value; To add necessary items to the lighthouses in the border areas of the island to combine defense and security tasks with the affirmation of national sovereignty and sovereignty; Upgrading investment to standardize maritime signaling system on navigable channels; Installation of radar drainage (RACON) on the system of lighthouses, signaling fixed in navigable channels; Install Active Radar Reflex (RTE) on some signal buoys; installation of Automatic Identification Equipment (AIS) on lighthouse under Signaling of drainage, construction of base stations and central stations; Installation of monitoring and remote control equipment on signal lights on maritime channels and construction of central management stations. The maritime signaling system has to meet following requirement: Maritime signage is a device or facility established to guide the seafarer in navigating and identifying the position of the vessel. The maritime signal's validity is the maximum distance from the observer to the signal that the observer perceives the signal to orient or position itself. The maritime signal's day-to-day validity is the maximum distance that observers can perceive to be signaled during the day; Identified with meteorological visibility by 10 knots. The maritime signal strength of a maritime signal is the maximum distance an observer can recognize the signal of the signal. The nominal maritime signal strength is the signal strength of the signal in atmospheric conditions with a meteorological distance of 10 nautical miles (corresponding to the atmospheric emission factor T = 0.74) with the spectator touch-up

threshold of conventional observation by 0.2 micro-lux. The geographic visibility of the maritime signal is the maximum distance an observer can recognize the signal or light source from the signal under ideal vision conditions. Atmospheric Transfer Factor is a measure of the intensity of light emitted by a light source remaining after it passes through the atmosphere at a distance of one nautical mile. This coefficient is determined by region on a multi-year basis. Marine lights are maritime signals that are permanently established at necessary locations along the coast, in seaport waters and in the sea of Vietnam. Signals are maritime signals fixed at locations necessary to signal navigational channels, signaling dangerous obstacles, shallow or signaling a particular location. Tunneling is a maritime sign consisting of two separate posts lying on the same vertical plane to form a fixed orientation. The spindle's axis is the intersection of the vertical plane passing through the crater against the earth's surface. The latter is the farthest target along the axis of the target, measured from the observer in the direction of the target. The first target of the target is the nearest target along the axis of the target, measured from the observer in the direction of the target. The navigational orientation is the area on the axis of the target where the user is aware of the safe direction. The vertical angle of the pepper is the angle created by the direction from the observer's eye to the top of the pepper and the horizontal plane. Horizontal angle of the pepper is the angle created by the direction from the observer's eye to the pepper and the axis of the pepper in the horizontal plane. The lateral deviation of the divergence is the maximum distance along the line perpendicular to the axis of the divergence that the ship can deviate but not out of the direction of the divergence. Flow notification is the common name of the two-sided signaling, flow directional signaling, azimuth signaling, isolated obstacle signaling, safe water signaling and specialized signaling. Floating Signals are maritime signals designed to float on the water, anchored or anchored in a certain position. Lightning is light in which the total light time in one cycle is shorter than the total darkness and the flashing time is equal. Lightning is lightning in which all light periods and dark times are equal. Long flashing is a flash in which flashing time is not less than 2.0s. Fast flash is a flash in which flashes are repeated at a frequency of 50 to less than 80 times per minute. Very fast flashing is light in which flashes are repeated at frequencies of 80 to less than 160 times per minute. Single flash is a flash in which a flash is repeated at regular intervals less than 50 times per minute. Blinking light is a light emitted in groups with a defined period. Maritime AIS is a radio signal that transmits maritime safety information to AIS stations installed on board, operating on VHF maritime frequency bands. Racer radar is a maritime signaling device for receiving and transmitting radio signals over maritime radar frequency bands. Nominal nominal sound signal (P n) is the distance that in foggy weather conditions, seafarers can hear the sound signal of the signal with a probability of 90%. The commonly used term of the acoustic signal (Pu) is the distance in which fog weather can be heard by the seafarer at a probability of 50%.

Although still able to do the task, the requirements of the new situation, the system of marine lights, maritime signals existing for decades must also be modernized. Accordingly, this system must be capable of controlling, remotely monitoring, supplementing, enhancing marine support tools for seafarers, such as automatic identification AIS, VTS management system ships Marine, ENC electronic chart enhances the ability to manage and mitigate the risk of marine equipment ... towards establishing an electronic marine environment. This is the number one priority solution to a total of 13 solutions to ensure current maritime safety. However, this requires huge capital investment due to high equipment costs, if equipped with AIS system for 600 maritime signals, 50 lighthouses now cost millions of dollars. Mass production system is a very high input price, but we also have localization solutions, self-study, production, towards the same international technical features, continue to 2015 research dynamic system, then 2-3 years implementing that system, and continue to transfer to the member units. At the same time, improving the quality of surveying, deepening dredging channels, ensuring the depth of the channel for ships of ten thousand tons into safe seaports is a sustainable solution. In order to improve maritime safety, there should be comprehensive solutions on the state management of maritime navigation, the coordination between maritime safety, maritime port and related units in the work. Managing the navigable channels and seaports, raising the sense of responsibility to navigators and owners are carried out. In addition to the management and operation of the maritime signaling system well in accordance with the standards published by the navy, the depth survey will also be carried out in a timely manner and disclosed to the public. Seafaring communities use the best services thus reducing the risk of unsafe security. For the crossroads of the sea, Ganh Rai Bay - the economic development area should have solutions to stream flow, more strict rules and regulations, the means of itinerary here, especially with the means inland waterways for improved navigational safety. Hopefully with the above-mentioned solutions, this year, Vietnam's maritime safety assurance branch not only assists the ship with safe navigation, but also conducts ships in and out of ports. As a result, the flow of luong lanes contributes to the creation of a maritime safety environment for the marine economic sector of Vietnam. To set up an electronic navigable channel chart on the navigable channel from the "0" float to the wharf to serve the management and operation of the navigable channel and issue a maritime notice; To build a new navigational traffic control system (VTS) on the high-density channels of vessels in and out of the sea, with complicated maritime conditions and high risks of insecurity, Hon Gai - Cai Lan, Hai Phong, Da Nang, Dung Quat, Van Phong, Cai Mep - Thi Vai, Can Tho - Tra Vinh; Build DGPS stations in high-density navigable maritime areas such as Hai Phong, Quang Ninh, Da Nang, Dung Quat, Van Phong, Sai Gon, Vung Tau, Cai Mep - Thi Vai. Maritime navigation from the sea into the port, the right is the right of the channel, the left is the left channel. Maritime navigation at sea, direction is determined as follows: In the direction from North to South, the right is the right of the channel, the left is the left; In the east to west direction, the right side is the right side of the channel, the left side is the left side of the channel; The dominating side of the maritime signal; In the direction of the navigational channel, the signal on the right controls the right of the channel, the signal on the left controls the left channel. By geography: Northern controlled from 315º to 45º; the east is controlled from 45º to 135º; the south is

controlled from 135º to 225º; The West is controlled from 225º to 315º. To renovate and upgrade a number of stations in charge of navigable channels, which lack the necessary items for station operation; To build new management stations for existing channels, newly invested streams without management stations;To build a system of hydrographical station monitoring stations in important maritime areas with high density of ships and boats, with complicated hydrographical regime such as Quang Ninh, Hai Phong, Nghi Son, Cam Ranh, Nha Be, Thi Vai, Ganh Rai Bay, Tien River, Hau River, Nam Can. Measure wind direction/wind speed, air temperature/humidity, rainfall, solar radiation; Combined with Rosette & CTD seawater sampling and analysis system: temperature, depth, conductivity, salinity, ... All data of meteorological and satellite sensors are automatically retrieved and stored in the data logger in conjunction with the onboard control system to display, analyze and exploit live data in real time. Investment equipment and software multi-beam survey (Multi-beam); RTK equipment and software; equipment and software Side-scan-sonar; software package navigational channel electronic navigation; Maritime Signaling Management Information System, Maritime Notice Information System. Shipping is fast growing and has become a modern mode of transport in the international transport system due to the economic-technical advantages such as the transport capacity of shipping is very large, the cost shipping. Every year, goods transported by sea account for over 80% of the total volume of imports and exports of our country; the volume of cargo through seaports has been increasing, from 34 million tons in 1995 to more than 73 million tons in 1999 and reaching 154 million tons in 2006 and over 260 million tons in 2010. However, sea transport has been affected. It is very much on the natural conditions of the operating environment such as weather, hydro-meteorology, in the history of world maritime, there is no fleet of any country without accidents and risks. The consequences of maritime accidents are often very large and there are accidents that can result in remedies that can take tens, hundreds of years, such as stabbing and large amounts of oil spilled into the River Sea. Therefore, the issue of ensuring sea traffic safety now has become the top concern of marine countries, with fleets.

3. Conclusion

Maritime transport enables trade and contacts between all the European nations and provides the main vehicle for European imports and exports to the rest of the world. Almost 90% of the EU external freight trade is seaborne, while short sea shipping represents 40% of intra-EU exchanges in terms of ton-kilometers. The quality of life on islands and in peripheral maritime regions depends on good maritime transport services. Each year, more than 400 million passengers embark and disembark in European ports. Overall, maritime industries are an important source of employment and income for the European economy. The JRC supports the European Commission in its effort to improve maritime safety and security by developing systems to improve maritime surveillance capabilities and to collect information about maritime accidents. Marine safety needs to be viewed against the background of the shipping industry and its particular characteristics. An account of this background is given by Gilbert (1994). Since 1945, international trade has experienced an explosive growth. One consequence has been a massive increase in vessel size. Contrary to what might be expected, the industry is a ‘low entry’ one. As Gilbert states, ‘In boom times, banks and financial institutions have been only too willing to lend money to almost anyone who could submit a reasonable prospectus’. Most ships are custom built. The owner identifies a particular market. Shipyards are then prepared to tailor the design to the owner's requirements. Ships are built with single or double hulls, single or twin screws, and slow or medium speed engines, in combination with a wide variety of cargo, ballast and fuel systems. This is in marked contrast, for example, with the situation pertaining to the design of aircraft. Another characteristic feature is manning. Crews often contain many nationalities, some of whom may have difficulty in communicating with each other. Shipping is vulnerable to the international economic cycle, so that in bad times large numbers of ships are laid up and sections of the industry are barely viable. This increases reluctance to incur expenditure on safety.

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