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## Policy and regulatory framework to enhance Thailand's casualty investigation

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**POLICY AND REGULATORY FRAMEWORK  
TO ENHANCE THAILAND'S  
CASUALTY INVESTIGATION**

**SHINABHAT MANEERIN**

A dissertation submitted to the World Maritime University in partial fulfilment  
of the requirements for the award of the degree of Master of Science in  
Maritime Affairs

2023

## Declaration

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

(Signature): .....

(Date): .....

Supervised by: Professor Henning Jessen

Supervisor's affiliation: .....

## Acknowledgements

I would like to devote this section to express my wholehearted gratitude to everyone that plays vital roles contributing to the completion of this research and to my study MSc in Maritime Affairs, Maritime Law and Policy Specialization at the World Maritime University (WMU), academic year 2023.

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## Abstract

Title of Dissertation: Policy and Regulatory Framework to Enhance Thailand's Casualty Investigation

Degree: **Master of Science**

The dissertation is a study of marine casualty investigation in Thailand. Thailand established the Marine Accident Investigation Office (MAIO) in March 2022 to be an independent marine casualty investigation in accordance with the IMO's Casualty Investigation Code and in line with the III Code. However, Thailand is still facing challenges in its marine casualty investigation as Thailand's current policy and legislation do not adequately prescribe the framework to optimize Thailand's marine casualty investigation resulting in confusion and efficiency of Thailand's casualty investigation such as the investigation reports do not provide adequate details of the marine casualty, Marine Department (MD), which is Thailand's maritime administration still involve in marine casualty investigation without clearly defined legal basis and framework to cooperate with MAIO.

Applying qualitative method, this study examines international legal instruments, including UNCLOS and IMO's legal instruments namely, SOLAS, Casualty Investigation Code, MARPOL, Load Lines and III Code, then Thailand's plan, policy and legislation that comply to such international legal instruments, including Thailand's Overall Maritime Strategy and the legal basis of MAIO, Thailand's investigation reports available in GISIS, Thailand's IMSAS in February 2023, in order to identify gaps and challenges of Thailand's marine casualty investigation. An interview was also conducted with participants who are the officials of MD and investigators of MAIO to gather up to date information of current developments of Thailand's marine casualty investigation and also other substantial inputs. A comparison between Thailand's marine casualty investigation and examples of other

countries shall be made to apply the applicable lessons from these examples to Thailand. This comparison of other countries' examples shall include the Philippines and the United States.

The information acquired shall be analyzed to produce recommended policy and regulatory framework to enhance the work of Thailand's marine casualty investigation; not only in compliance with the IMO's standard, but also enhancing capacity of Thailand's marine casualty investigation.

**KEYWORDS:** MD, MAIO, Casualty Investigation Code, marine casualties

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## List of Abbreviations

CG-INV	Office of Investigations & Casualty Analysis
COLREG	Convention on the International Regulations for Preventing Collisions at Sea, 1972
III Code	Implementation of IMO Instruments Code
IMO	International Maritime Organization
LL	International Convention on Load Lines, 1966
MARINA	The Philippines' Maritime Industry Authority
MARPOL	International Convention for the Prevention of Pollution from Ships 1973
MD	Thailand's Marine Department
MIO/MAIO	Thailand's Marine Investigation Office/Marine Accident Investigation Office <sup>1</sup> (referring to the same organization)
MOT	Thailand's Ministry of Transport
MOU	Memorandum of Understanding
NTSB	The United States' National Transportation Safety Board
PCG	The Philippines' Coastguard
SIS	Substantially interested State
SOLAS	International Convention for the Safety of Life at Sea 1974
UN	The United Nations
UNCLOS	United Nations Convention on the Law of the Sea
USCG	The United States Coast Guard

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<sup>1</sup> Initially, upon its establishment and shortly after, the Marine Accident Investigation Office (MAIO) was titled Marine Investigation Office (MIO) and later on changed the title to MAIO. Thus, some materials discussed in this study still contain the old abbreviation, MIO. Regardless, these two abbreviations refer to the same organization.

## **Chapter 1 Introduction**

### **1.1 Background of the Study**

Marine casualties and incidents such as collision, capsizing, fire and explosion usually cause damages that result in injuries of Seafarers and relevant personnel, damage to ship, port, surrounding communities and environment. On some occasions, such damage can be severe including life loss, destruction of ships, ports and surrounding communities and also long - term damage to marine environment. Marine Casualty investigation plays a vital role in identifying causal factors of such marine casualties and incidents. As prescribed in the IMO 's Casualty Investigation Code, Marine safety investigations do not seek to apportion blame or determine liability. Instead, a marine safety investigation is an investigation conducted with the objective of preventing marine casualties and marine incidents in the future. (IMO, 2008)

Thailand, as an IMO member state, is currently in the process of developing its independent casualty investigation mechanism to improve its maritime safety and marine environment in accordance with IMO's regulations.

### **1.2 Problem Statement**

Thailand has established a Marine Accident Investigation Office (MAIO) in 2022. The MAIO's purpose is to be Thailand's independent casualty investigation agency in accordance with Thailand's Maritime Strategy to Promote safety of life at sea as a flag, coastal and port State in line with IMO's instruments including III Code, SOLAS and Casualty Investigation Code.

As the MAIO is relatively new, problems and challenges of Thailand's casualty investigation still persist including current policy and legislation inadequately prescribe the directions of Thailand's marine casualty investigation, the casualty investigation reports inadequately identifying causal factors of marine accident and inadequately providing practical safety recommendations and the lacking of statutory regulations that explain the distinct roles of MAIO and the Marine Department (MD) in casualty investigation and absence of a framework for their cooperation usually

leads to confusion and sometimes ineffectiveness of marine casualty investigation operation. Hence, there is room to make improvement in Thailand's marine casualty investigation.

### **1.3 Research Questions and Objectives**

The research questions of this study include (1) what are the challenges of Thailand's marine casualty investigation and (2) how can such challenges be addressed by policy and regulatory framework and thus enhance Thailand's casualty investigation.

Therefore, the objectives of this study are to identify and discuss the challenges of Thailand's marine casualty investigation, particularly the work of the MAIO and MD, in order to address such challenges by proposing a possible distinct framework for the MAIO and MD and subsequently their possible cooperation regarding their tasks on casualty investigation with the aim to improve Thailand's casualty investigation regime and maritime safety.

### **1.4 Research Method**

This study applies mixed method between qualitative research and legal research as follows;

#### **1. Document analysis**

Document analysis is a systematic procedure for reviewing or evaluating documents—both printed and electronic (computer-based and Internet-transmitted) material (Bowen, 2009)

The documents analyzed in this study includes international legal instruments namely UNCLOS, SOLAS, Casualty Investigation Code, III Code, MARPOL, Load Lines, particularly on chapters or articles regarding casualty investigation.

Thailand's Overall Maritime Strategy and Thailand's legislation relevant to marine casualty investigation including Navigation in the Thai Waters Act, B.E. 2456 (1913), Thai Ministry of Transport Order No. 367/B.E. 2565 (2022) on the

establishment of the Marine Investigation Office to establish the Marine Accident Investigation Office (MAIO) Marine Department's orders and announcements on establishing casualty investigation committee.

Other documents to be analyzed in this study also include Thailand's investigation reports (available on IMO GISIS), corresponding documents such as notes, reports, of Marine Department and the Ministry of Transport that the researcher has access to as an employee of the organization<sup>2</sup> and other dissertations on casualty investigation including the Analysis of the Draft of the Navigation Act B.E. ...: the Investigation of Marine Accidents by Achicha Panicha from Thammasat University, Thailand to apply the findings of this dissertation into this study's discussion and the Critical analysis of marine casualty investigation in the Philippines by Alberto T. Ferre of the World Maritime University to make comparison with Thailand's casualty investigation and to apply the lesson learnt from the Philippines as Thailand and the Philippines are neighboring countries in Southeast Asia and share several characteristics.

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<sup>2</sup> During the time of the study and the conducting of this research, the researcher maintains his status as an employee of his organization, International Affairs Division, Marine Department, Ministry of Transport, Thailand and thus able to access his organization's database and coordination channel to retrieve documents that are of substantial value to of discussion of this research.

## 2. Online Semi-structured Interview

Semi-structured interview with prepared questions, but allowing flexibility for participants for providing other inputs is conducted via online remote platform. Interview participants are from the Marine Department and Marine Investigation Office as follows;

**Figure 1** *Interview Participants*

No.	Participant	Organization	Designation
1	LEG	Legal Bureau, Marine Department	Legal Officer
2	POL	International Affairs Division, Planning Bureau, Marine Department	Transport Technical Officer
3	HM	Marine Safety and Environment Bureau, Marine Department	Harbor Master
4	INV1	Marine Accident Investigation Office	Investigator
5	INV2	Marine Accident Investigation Office	Investigator

The gathered data then shall be processed, analyzed and coded to formulate discussion and produce recommendations.

### **1.5 Scope and limitations**

#### 1.5.1 Focuses on legal and policy aspects of casualty investigation

This research will focus on legal and policy aspects of casualty investigation rather than safety management in depth. The research focuses on the policies and regulations related to the two government agencies, MD and MAIO in relation to the implementation of marine/maritime casualty investigation. Some principles of safety management will be mentioned such as when this study examines the casualty investigation manual or procedure, but shall not elaborate safety management in depth.

### 1.5.2 Relevant agencies in discussion

While there are more other agencies working on maritime affairs in Thailand such as the Royal Thai Navy, Marine Police, Department of Marine and Coastal Resources, Thailand Maritime Enforcement Coordinating Center, these agencies shall not be part of discussion of this study as they are not the main agencies implementing IMO instruments which prescribe matters related to maritime transport. Therefore, this study's discussion shall focus on the roles of MD and MAIO, both are agencies under the Ministry of Transport and are the main agencies implementing IMO instruments in Thailand.

### 1.5.3 Thailand's maritime legislation in discussion

Thailand has two main maritime legislations namely the Navigation in the Thai Waters Acts, B.E. 2456 (1913) as amended and the Thai Vessel Act, B.E. 2481 (1938). This study shall discuss only the Navigation in the Thai Waters Acts, B.E. 2456 (1913) as amended and the secondary legislations that prescribed coherent with it because most of the developments regarding Thailand's casualty investigation are made to the Thai Waters Acts, B.E. 2456 (1913) as amended not the and the Thai Vessel Act, B.E. 2481 (1938). Full text of the Navigation in the Thai Waters Acts, B.E. 2456 (1913) as amended" is as appeared in **Appendix B**.



## **Chapter 2 Casualty investigation in International legal instruments**

This chapter shall elaborate on the definition of Casualty Investigation as prescribed in international legal instruments as follows;

### **2.1 United Nations Convention on the Law of the Sea (UNCLOS) 1982**

The part of UNCLOS that specifically prescribes casualty investigation is as follows;

*“Article 94 Duties of Flag State paragraph 7*

*Each State shall cause an inquiry to be held by or before a suitably qualified person or persons into every marine casualty or incident of navigation on the high seas involving a ship flying its flag and causing loss of life or serious injury to nationals of another State or serious damage to ships or installations of another State or to the marine environment. The flag State and the other State shall cooperate in the conduct of any inquiry held by that other State into any such marine casualty or incident of navigation. “*  
*(The United Nations, 1982)*

Furthermore, UNCLOS is acknowledged to be a "framework convention" for maritime affairs as it prescribes the fundamental maritime elements including rights and responsibilities of maritime states as flag, coastal and port state and defining the state's jurisdiction. The term "competent international organization" as prescribed in UNCLOS (article 2 of Annex VIII) implies exclusively to the IMO and several provisions of UNCLOS also urge the states to comply to the relevant international rules and standards developed by or through the "competent international organization". (IMO, 2014)

In other words, UNCLOS prescribes jurisdiction, rights and responsibilities of states as flag, coastal and port state, it prescribes the duties of flag state in casualty investigation and also lays a basis for further conformity to relevant international rules and standards such as IMO Conventions.

## **2.2 IMO instruments on Casualty Investigation**

The International Maritime Organization is a specialized agency of the United Nations which is responsible for measures to improve the safety and security of international shipping and to prevent pollution from ships. It is also involved in legal matters, including liability and compensation issues and the facilitation of international maritime traffic. It was established by means of a Convention adopted under the auspices of the United Nations in Geneva on 6 March 1948 and met for the first time in January 1959.

By the time IMO came into existence in 1958, several important international conventions had already been developed, including the International Convention for the Safety of Life at Sea of 1948 (SOLAS), the International Convention for the Prevention of Pollution of the Sea by Oil of 1954 (OILPOL, predecessor of MARPOL) and treaties dealing with load lines and the prevention of collisions at sea (COLREG). IMO was made responsible for ensuring that the majority of these conventions were kept up to date. It was also given the task of developing new conventions as and when the need arose. (IMO, n.d.). These IMO instruments prescribe casualty investigation as follows;

### **2.2.1 SOLAS**

The main objective of the SOLAS Convention is to specify minimum standards for the construction, equipment and operation of ships, compatible with their safety. Flag States are responsible for ensuring that ships under their flag comply with its requirements, and a number of certificates are prescribed in the Convention as proof that this has been done. (IMO, n.d.)

SOLAS Chapter 1 prescribes the role of administration and contracting government in casualty investigations as follows;

*“Chapter I - General Provisions*

*Regulation 21 Casualties*

*(a) Each Administration undertakes to conduct an investigation of any casualty occurring to any of its ships subject to the provisions of the present Convention*

*when it judges that such an investigation may assist in determining what changes in the present regulations might be desirable.*

*(b) Each Contracting Government undertakes to supply the Organization with pertinent information concerning the findings of such investigations. No reports or recommendations of the Organization based upon such information shall disclose the identity or nationality of the ships concerned or in any manner fix or imply responsibility upon any ship or person.” (IMO, 1974)*

SOLAS Chapter XI-1 prescribes that administrations shall conduct marine casualty investigation in accordance with the convention and its supplementary code, the Casualty Investigation Code. The code is referred to in this SOLAS’s chapter as follows;

*“Chapter XI-1 – Special measures to enhance maritime safety*

*Regulation 6 Additional requirements for the investigation of marine casualties and incidents*

*Taking into account regulation I/21, each Administration shall conduct investigations of marine casualties and incidents, in accordance with the provisions of the present Convention, as supplemented by the provisions of the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code) adopted by resolution MSC.255(84), and:*

*.1 the provisions of parts I and II of the Casualty Investigation Code shall be fully complied with;*

*.2 the related guidance and explanatory material contained in part III of the Casualty Investigation Code should be taken into account to the greatest possible extent in order to achieve a more uniform implementation of the Casualty Investigation Code;*

*.3 amendments to parts I and II of the Casualty Investigation Code shall be adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the annex other than chapter I; and*

*.4 part III of the Casualty Investigation Code shall be amended by the Maritime Safety Committee in accordance with its rules of procedure.” (IMO, 1974)*

### **2.2.2 Casualty Investigation Code 2008**

As prescribed in SOLAS Chapter XI-1 Regulation 6, the Casualty Investigation Code 2008 is an IMO instrument supplemented to SOLAS prescribing specifically Casualty Investigation which incorporates and builds on the best practices in marine casualty and marine incident investigation that were established by the Code for the Investigation of Marine Casualties and Incidents (IMO, 2008).

The code prescribes marine casualty, incident and investigation as follows;

*“2.9 A marine casualty means an event, or a sequence of events, that has resulted in any of the following which has occurred directly in connection with the operations of a ship:*

- .1 the death of, or serious injury to, a person;*
- .2 the loss of a person from a ship;*
- .3 the loss, presumed loss or abandonment of a ship;*
- .4 material damage to a ship; MSC 84/3 ANNEX 4 Page 8*
- .5 the stranding or disabling of a ship, or the involvement of a ship in a collision;*
- .6 material damage to marine infrastructure external to a ship, that could seriously endanger the safety of the ship, another ship or an individual; or*
- .7 severe damage to the environment, or the potential for severe damage to the environment, brought about by the damage of a ship or ships. However, a marine casualty does not include a deliberate act or omission, with the intention to cause harm to the safety of a ship, an individual or the environment.*

*2.10 A marine incident means an event, or sequence of events, other than a marine casualty, which has occurred directly in connection with the operations of a ship that endangered, or, if not corrected, would endanger the safety of the ship, its occupants or any other person or the environment. However, a marine incident does not include a deliberate act or omission, with the intention to cause harm to the safety of a ship, an individual or the environment.*

*2.11 A marine safety investigation means an investigation or inquiry (however referred to by a State), into a marine casualty or marine incident, conducted with the objective of preventing marine casualties and marine incidents in the future. The investigation includes the collection of, and analysis of, evidence, the identification of causal factors and the making of safety recommendations as necessary” (IMO, 1974).*

### **2.2.3 MARPOL**

The International Convention for the Prevention of Pollution from Ships (MARPOL) is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes (IMO, n.d.). MARPOL prescribes casualty investigation as follows;

*“Articles 12 Casualties to ships*

- (1) Each Administration undertakes to conduct an investigation of any casualty occurring to any of its ships subject to the provisions of the regulations if such casualty has produced a major deleterious effect upon the marine environment.*
- (2) Each Party to the Convention undertakes to supply the Organization with information concerning the findings of such investigation, when it judges that such information may assist in determining what changes in the present Convention might be desirable” (IMO, 1983).*

#### **2.2.4 Load Lines**

As limitations on the draught to which a ship may be loaded make a significant contribution to her safety, the provisions of Load Lines convention are made for determining the freeboard of ships by subdivision and damage stability calculations (IMO, n.d.). The Load Lines Convention prescribed casualty investigation as follows;

*“Article 23 Casualties*

*(1) Each Administration undertakes to conduct an investigation of any casualty occurring to ships for which it is responsible and which are subject to the provisions of the present Convention when it judges that such an investigation may assist in determining what changes in the Convention might be desirable.*

*(2) Each contracting Government undertakes to supply the Organization with the pertinent information concerning the findings of such investigations. No reports or recommendations of the Organization based upon such information shall disclose the identity or nationality of the ships concerned or in any manner fix or imply responsibility upon any ship or person.”*

*(IMO, 1966)*

### **2.2.5 IMSAS and III Code**

To ensure member states' responsibilities as flag, coastal and port state and their implementations of IMO instruments, the IMO commenced the IMO Member State Audit Scheme (IMSAS) to audit the member states of their obligations to the IMO instruments they are party to. The IMSAS uses The IMO Instruments Implementation Code (III Code) as a standard of audit as III Code prescribes how member states shall proceed to meet the audit standard.

Regarding casualty investigation, the III Code prescribes as follows;

*“23 A flag State should develop and implement a control and monitoring programme, as appropriate, in order to: .1 provide for prompt and thorough casualty investigations, with reporting to the Organization as appropriate;*

*Flag State investigations*

*38 Marine safety investigations should be conducted by impartial and objective investigators, who are suitably qualified and knowledgeable in matters relating to the casualty. Subject to any agreement on which State or States will be the marine safety investigating State(s), the flag State should provide qualified investigators for this purpose, irrespective of the location of the casualty or incident.*

*39 The flag State is recommended to ensure that individual investigators have working knowledge and practical experience in those subject areas pertaining to their normal duties. Additionally, in order to assist individual investigators in performing duties outside their normal assignments, the flag State is recommended to ensure ready access to expertise in the following areas, as necessary:*

- .1 navigation and the Collision Regulations;*
- .2 flag State regulations on certificates of competency;*
- .3 causes of marine pollution;*

- .4 interviewing techniques;*
- .5 evidence gathering; and*
- .6 evaluation of the effects of the human element.*

*40 It is recommended that any accident involving personal injury necessitating absence from duty of three days or more and any deaths resulting from occupational accidents and casualties to ships of the flag State should be investigated, and the results of such investigations made public.*

*41 Ship casualties should be investigated and reported in accordance with the relevant international instruments, taking into account the Casualty Investigation Code, as may be amended, and guidelines developed by the Organization. The report on the investigation should be forwarded to the Organization together with the flag State's observations, in accordance with the guidelines referred to above. “ (IMO, 2013)*

In summary, the international legal instruments, namely UNCLOS and IMO instruments, prescribe rights and jurisdictions on casualty investigation for party state and prescribe the definition of casualty investigation in maritime safety and marine environment aspects and the measures that member states must undertake to comply with such instruments.



## **Chapter 3 Marine Casualty Investigation and relevant agencies in Thailand**

This chapter shall explain Marine Casualty Investigation and relevant agencies in Thailand as follows;

### **3.1 Thailand's Competent authorities relevant to Marine Casualty Investigation**

Thailand's Competent authorities relevant to Marine Casualty Investigation are as follows;

#### **3.1.1 Ministry of Transport**

The Ministry of Transport is established as per the Re-organization of Ministry, Sub-ministry, and Department Act, B.E. 2545 (2002) as amended and has the authority in accordance with Section 20 of the act which prescribes that Ministry of Transport has authority on transportation, transport business, traffic planning and the development of transportation infrastructure and other civil services prescribed by law.

The Ministry of Transport also has the responsibilities in accordance with the Thailand's Overall Maritime Strategy as follows;

1. Develop a specific strategy in relation to transportation in order to implement the obligations of international conventions.
2. Conducts and supervises marine safety investigations.
3. Supports and steers the enactment of laws relating to the implementation of international conventions.
4. Supports affiliated agencies regarding personnel and budgets in order to implement the obligations of international conventions.
5. Evaluate the outcomes and performance of affiliated agencies regarding the implementation under the obligations of international conventions.

MAIO and MD, the main agencies of this study's discussion, are both agencies under the Ministry of Transport.

### **3.1.2 Marine Accident Investigation Office (MAIO)**

By virtue of section 21 of the State Administration Act, B.E. 2534 (1991) as amended, Ministry of Transport issued the Ministry of Transport Order No. 367/B.E. 2565 (2022) on the establishment of the Marine Investigation Office to establish the Marine Investigation Office (MIO). The MAIO has a commitment to investigate very serious marine casualty in accordance with the International Standard of the International Maritime Organization.

Ministry of Transport issued the Ministry of Transport Order No. 367/B.E. 2565 (2022) prescribes missions, authorities and functions and structures of the MAIO with the parts that are significant for this study's discussion are highlighted and underlined as follows;

#### ***“1. Missions***

*1) Consider the casualty notification in accordance with Section 102 and Section 173 of Navigation in the Thai Waters Act, B.E. 2456 (1913) in which the marine casualty shall be investigated and reported to the IMO by the Marine Casualty Investigation Committee in accordance with the Casualty Investigation Code of the IMO.*

*2) Coordinate attendance with the representative, advisor, and specialist assigned by the Flag State, or relevant organization to participate in the marine safety investigation.*

*3) Prepare the marine safety investigation report of very serious marine casualties, including investigation reports of the casualties that shall be investigated.*

*4) Coordinate with the relevant agencies responsible for maritime safety and marine investigation to comply with the Casualty Investigation Code and report the final marine safety investigation report to the IMO and publish report.*

5) *Study, collect, and analyze the information and details regarding marine casualties, including compiling the statistics of the marine casualty under the Casualty Investigation Code.*

6) *Propose the revision of national law of marine casualty investigation in accordance with the relevant IMO conventions or international agreements.*

7) *Prescribe the qualifications for Marine Casualty Investigator.*

8) *Provide training and relevant course of the marine safety investigation for the investigators.*

9) *Cooperate or support the work of relevant or assigned organizations.*

## **2. Authorities and functions**

1) *Perform as the secretariat of the Marine Casualty Investigation Committee.*

2) *Receive notification and inform substantially interested states, and consider the marine casualty occurred to the ship which is a Thai flag, or the foreign ship within limits of the territorial sea of Thailand.*

3) *Collect, record, and analyze the information on the relevant evidence according to the assignment from Marine Casualty Investigation Committee.*

4) *Prepare the technical report and the draft report relevant to the investigation to submit to the Marine Casualty Investigation Committee for its consideration.*

5) *Cooperate, communicate, and coordinate with the relevant organization, both domestically and internationally, in relevant to the investigation.*

6) *Set up follow up procedure for tracking the safety recommendations.*

7) *Study, collect database, and analyze the marine casualty statistics for use by the Marine Casualty Investigation Committee.*

8) *Prepare and publish the investigation; track the implementation of safety recommendations and preventive measures, casualty statistics and analysis, and other safety- related information for public according to the assignment from the Marine Casualty Investigation Committee.*

9) *Study and analyze to draft and develop the national law on the marine casualty investigation.*

10) *Provide relevant training course of the marine safety investigation for Marine Casualty Investigation Committee and relevant officers.*

11) *Arrange the investigation equipment.*

***12) Investigate the marine casualties, especially the very serious marine casualties that occurred to the ship which is a Thai ship engage on the international voyage, or the foreign ship within limits of the territorial sea of Thailand.***

***13) Investigate the very serious marine casualties for domestic passenger ship which carries 100 passengers or more, and domestic cargo ships of 500 gross tonnage or more.***

14) *Train and provide knowledge on marine casualty investigation to the relevant officers.*

15) *Cooperate or support the work of the relevant or assigned organizations.*

16) *Perform other duties specified by law or as assigned by Marine Casualty Investigation Committee*

### **3. Structures**

#### **3.1 The marine safety technical section has the function as follows:**

- *Conduct case study research on the casualties that occurred in and outside Thai territorial waters.*
- *Develop, study, innovate and analyze the details information on the relevant evidence according to the assignment from Marine Casualty Investigation Committee to establish a guideline for preventive measures.*
- *Provide advice in preparing the draft technical report and draft report related to the investigation for consideration by the committee.*
- *Cooperate, communicate and coordinate with the relevant organization both domestically and internationally in relevant to the investigation, and consider and provide comments on the investigation report and research study.*
- *Follow up on the implementation of safety recommendations and preventive measures to report the progress to the committee.*
- *Study and analyze the statistics of marine casualties for the benefit of the committee.*
- *Participate in the study and analysis of drafting and developing the legislation regarding the investigation in order to meet the standards of the IMO.*
- *Provide comments and suggestions regarding the training of relevant officers to comply with the IMO standards.*
- *Cooperate or support the work of the relevant or assigned organizations.*

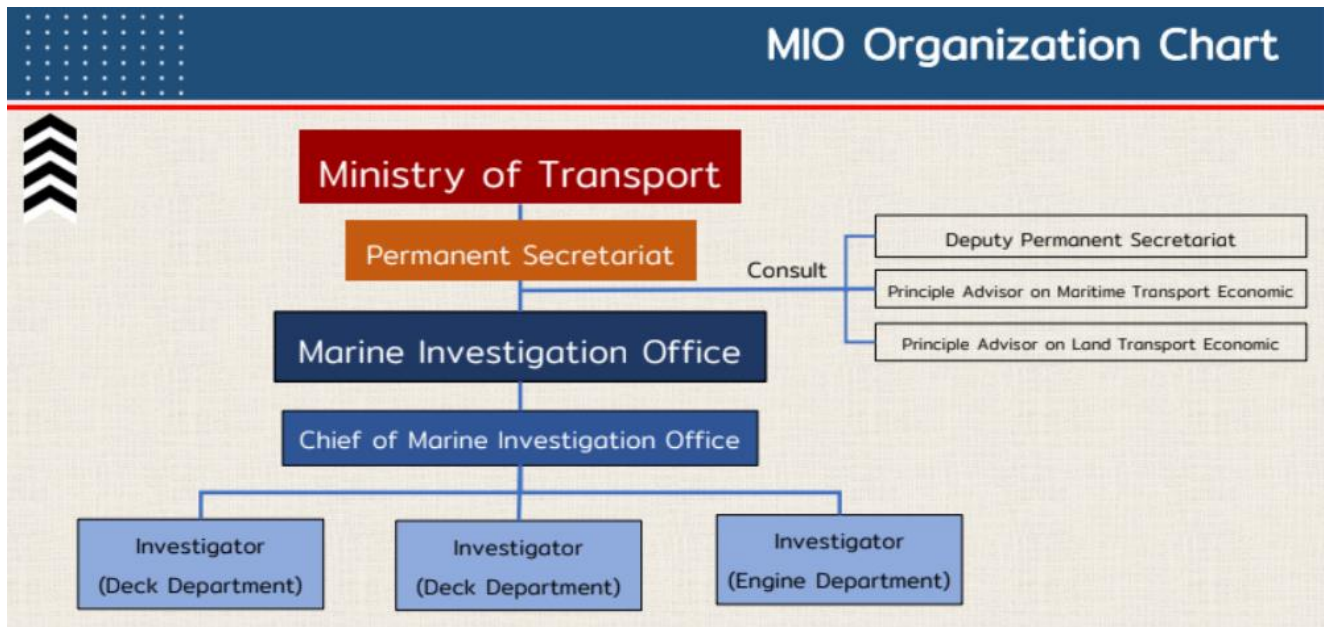
### **3.2 The operational section has the function as follows:**

- *Receive the notification and consider the casualties that occurred in and outside Thai territorial waters including notifying another substantially interested State.*
- *Collect, record and analyze the information on the relevant evidence according to the assignment from the Committee.*
- *Prepare the technical report and the draft report relevant to the investigation, to submit to the Committee for its consideration.*
- *Cooperate, communicate and coordinate with the relevant organization both domestically and internationally in relevant to the investigation.*
- *Follow up on the implementation of safety recommendations and preventive measures and report the progress to the committee.*
- *Provide comments and suggestions regarding the arrangement of tools, equipment, and necessary materials for investigations and preparation for the investigation to be proceeded effectively*
- *Other operations, working in conjunction with or supporting the operations of other relevant or delegated agencies.”*

*(Ministry of Transport, 2022)*

Full text of this “Ministry of Transport Order No. 367/B.E. 2565 (2022)” is as appeared in **Appendix D**

The organization chart of the MAIO is as appeared in **Figure 2 MIO/MAIO<sup>3</sup> Organization Chart**



<sup>3</sup> As explained earlier in the abbreviation section, initially, upon its establishment and shortly after, the Marine Accident Investigation Office (MAIO) was titled Marine Investigation Office (MIO) and later on changed the title to MAIO. Thus, some materials discussed in this study still contain the old abbreviation, MIO. Regardless, these two abbreviations refer to the same organization.

### **3.1.3 Marine Department (MD)**

The Marine Department is Thailand's main maritime administration. The Marine Department is an agency under the Ministry of Transport, established by the Ministerial Regulations on the Division of Marine Department, Ministry of Transport B.E.2558 (2015) with the main responsibilities prescribed in Clause 2 of the regulations which prescribes that the Marine Department shall have responsibilities regarding the regulatory mission, the promotion and development of maritime transport and trade system aiming to connect with the other transportation modes for passengers and cargo transportation, port, dock, Thai fleets, and other relevant businesses. To facilitate people to achieve convenience, readiness, inclusiveness, and safety, along with strengthening the export business, the department shall have authorities as follows:

(1) Proceed in accordance with the law relating thereto the navigation in the Thai waters, the Thai vessels, the prevention of collisions at sea, the promotion of maritime trade, multimodal transport, and other relevant laws.

(2) Study, analyse, and develop the infrastructure of maritime transport.

(3) Promote and develop the maritime transport and trade system connectivity.

(4) Proceed to regulate maritime transport and business.

(5) Collaborate and coordinate with the relevant domestic and international agencies in maritime transport, trade, in relation to related conventions and international agreements.

(6) Any other work specified by the law to be under the authority of the department; or assigned by the minister or the cabinet. (MD, 2023)

The Marine Department performs these authorities in accordance with the Navigation in the Thai Waters Acts, B.E. 2456 (1913) as amended and Thai Vessel Act, B.E. 2481 (1938), Thailand's main maritime legislations, being the primary enforcer of these legislations. Furthermore, the Marine Department has the responsibilities in accordance with the Thailand's Overall Maritime Strategy as follows;



1. Develops specific strategy in order to implement international obligations - as a flag, port, and coastal State.

2. Develops and promulgates laws in order to implement international conventions.

3. Surveys and issues certificates in conformity with the international convention.

4. Conducts port state control to foreign ships sailing within Thai territorial waters.

5. Regulates the standards of training and certification for seafarers in accordance with national legislation.

6. Regulates ship registration.

7. Regulates recognized organizations to act on behalf of the government in accordance with the international conventions.

8. Regulates ship routing vessel traffic services.

9. Regulates waste and pollution from ships.

10. Regulates and provides pilotage services.

11. Regulates cargo carried by ships.

12. Regulates port reception facilities.

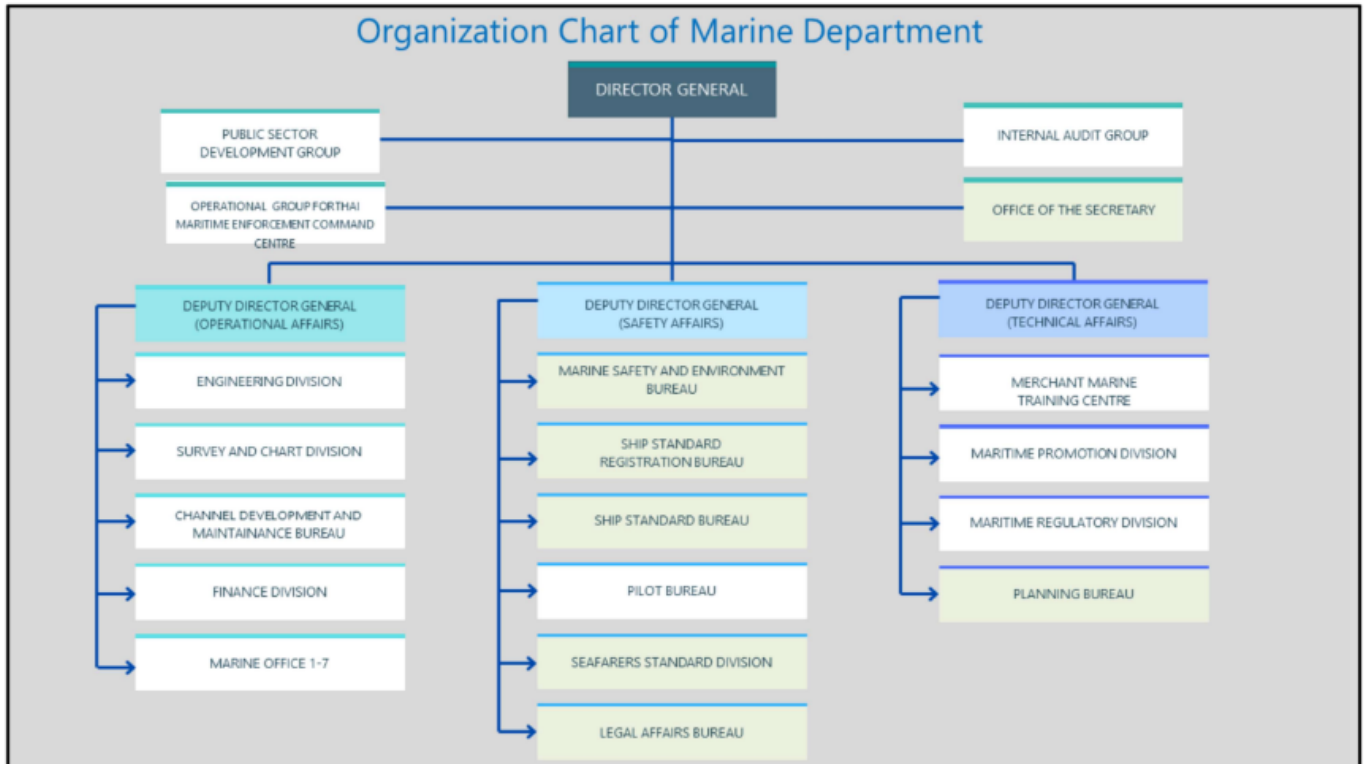
13. Regulates and provides buoys, lighthouses, and aids to navigation within responsible areas.

14. Surveys and issues chart and information relating to maritime safety.

15. Evaluate the outcomes and performance of affiliated agencies regarding the implementation under the obligations of international conventions. (MD, 2023)

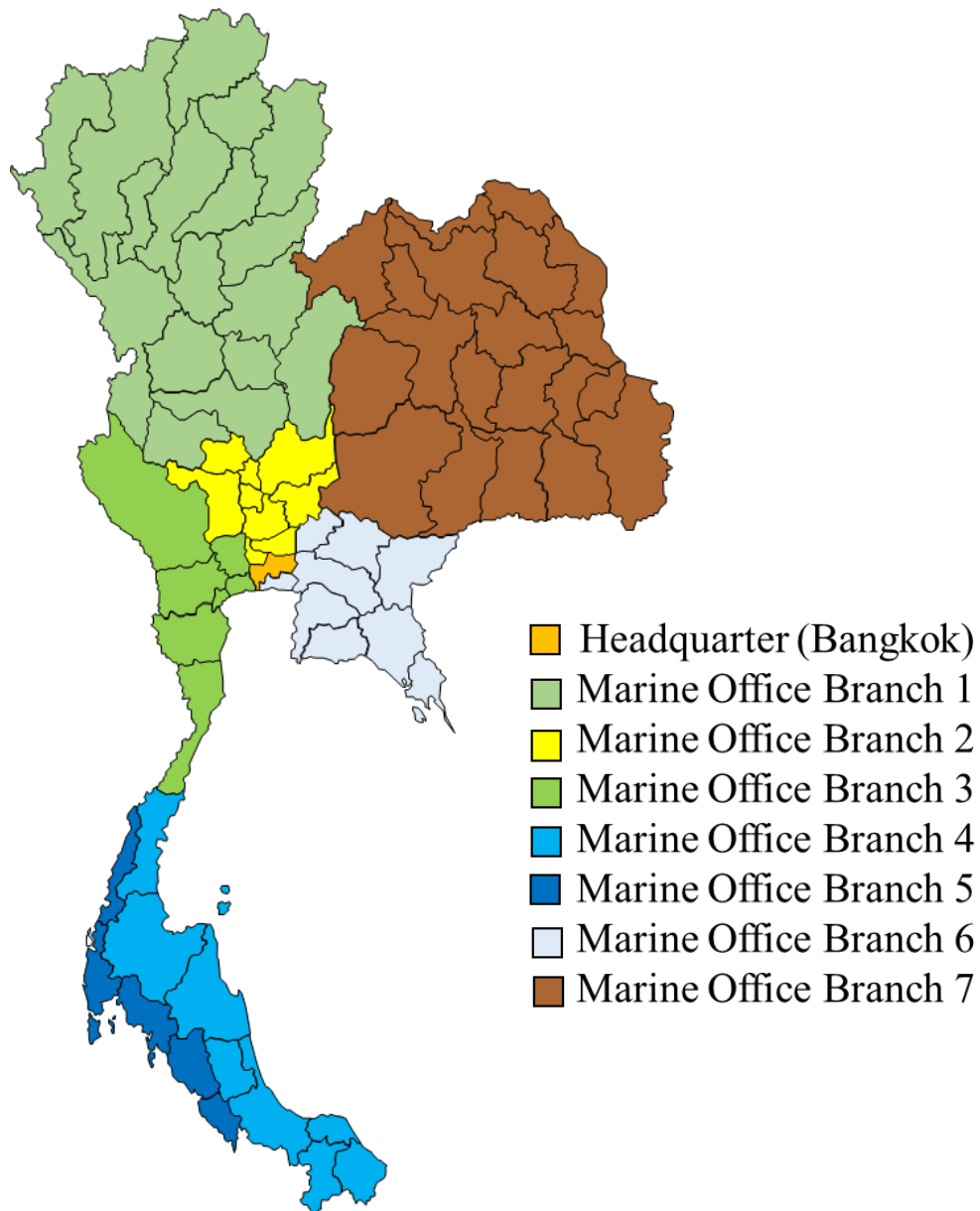
The Marine Department has a headquarter in Bangkok and also local branches in every province of Thailand. The headquarters stipulates plan, policy and order and the local branches enforce them and perform the responsibilities of the Marine Department locally.

MD's organizational structure is as appeared in **Figure 3** *Structure of Marine Department*



*Note.* Adapted from “Structure of Marine Department” by MD, 2016. (<https://md.go.th/2014-01-19-01-58-01/>). Copyright 2016 by MD.

Thailand's Marine Department's headquarters and its marine local branches are as appeared in **Figure 4** *Thailand's Marine Department's headquarters and its marine local branches*



*Note.* Adapted from “Structure of Marine Department” by MD, 2016. (<https://md.go.th/wp-content/uploads/2014/01/Structure-of-MD.pdf>). Copyright 2016 by MD.

It is also important to note that before the establishment of MAIO in 2022, MD was also responsible for conducting marine casualty investigation despite such responsibility not explicitly prescribed in any legislation or policy as elaborated before. This shall be discussed in detail in the next chapter.

### 3.1.4 Current cooperation between Marine Department (MD) and Marine Accident Investigation Office (MAIO)

An apparent cooperation between MD and MAIO is that as the MAIO submits the investigation reports to IMO GISIS, it reports to the International Affairs Division of MD within 7 days as appears in **Figure 5 MAIO - MD Coordination for Reporting Marine Casualty Investigation Report to IMO GISIS**



Apart from this coordination and the aforementioned committees, sub-committee and working groups in 3.1.1 - 3.1.3 respectively, there are also other statutory coordination and cooperation frameworks between MD and MAIO which are committees, sub-committees and working groups where representatives of these two agencies are members of. This shall be explored further in the following chapters.

## 3.2 Thailand's Overall Maritime Strategy

Thailand became a member state of the IMO in 1973 and, as an IMO member state, has developed Thailand's Overall Maritime Strategy to ensure Thailand's compliance with IMO 's instruments, fulfilling Thailand's responsibility as flag, Coastal and port state.

This strategy prescribes Thailand's objectives of obligations as flag, Coastal and port state and also prescribes activities to be taken to achieve each objective. The strategic objective that is relevant to casualty investigation is prescribed in Part 11: Targets, Responsibilities and Timeframes, Strategic Objective 1 - Promote safety of life at sea as a flag, coastal and port state, Target 1.9 Transparent marine safety investigation and the action plans to achieve target 1.9 are as appeared in **Figure 6 Thailand's Overall Maritime Strategy, action plans for goals 1.9, Transparent marine safety investigation.**

**Action plans for goal<sup>4</sup> 1.9**

Transparent marine safety investigation.

Goals description: Thailand will establish an independent marine safety investigation authority under the Ministry of Transport to ensure that the investigation is impartial and without direction or interference from any persons or organizations that may be affected by its outcome and find the root causes of the accidents as well as issue recommendations with a view to preventing similar marine casualties and marine accidents in the future.			
Timeframe	Main agencies	Supporting agencies	Detail
June 2020	Ministry of Transport	Marine Department	The Permanent Secretary of the Ministry of Transport signs the Ministry of Transport order to establish the Marine Casualty Investigation Board, which consists of representatives from the public and private agencies involved. The Board is responsible for investigating marine casualty under the International Convention of IMO and submits the investigation report to the Permanent Secretary of the Ministry of Transport. The Permanent Secretary of the Ministry of Transport also signs the Ministry of Transport order to appoint the working group for establishing marine safety investigation authority under the Ministry of Transport.

<sup>4</sup> Editorial inconsistency in the published strategy. Nevertheless, 'goal' and 'target' are synonymous hereinafter.

July 2020	Ministry of Transport	Marine Department	Develop manuals and Standard Operation Procedures (SOPs) for the Marine Casualty Investigation Board to meet the standards and requirements of the Casualty Investigation Code and organize the meeting of the working group for establishing marine safety investigation authority to develop details for the establishment of the marine safety investigation authority.
August 2020	Ministry of Transport	Marine Department	Gather information to support the establishment of the marine safety investigation authority to determine the responsibilities and authorities of the authority. The Marine Casualty Investigation Board has developed manuals and Standard Operation Procedures (SOPs).
September 2020	Ministry of Transport	Marine Department	Organize a meeting of the working group for establishing marine safety investigation authority to summarize the guidelines/format of the establishment of the authority.
October 2020	Ministry of Transport	Marine Department	Begin the process of establishing the marine safety investigation authority in accordance with relevant legal procedures.
After the COVID-19 situation relieved	Ministry of Transport	Marine Department	Organize training for casualty investigators according to the model course of the International Maritime Organization (IMO).
June 2021	Ministry of Transport	Marine Department	Establish the marine safety investigation authority under the Ministry of Transport.

*Note.* From “Thailand’s Overall Maritime Strategy”, by the Government of Thailand, 2023. (<https://md.go.th/wp-content/uploads/2021/03/full->

[translated\\_Thailands-Overall-Maritime-Strategy-as-of-21-01-2023.pdf](#) ) Copyright 2023 by the Government of Thailand.

Full text of this “Thailand’s Overall Maritime Strategy” is as appeared in **Appendix C**

Thailand has undergone several measures in accordance with these action plans and eventually, the Marine Investigation Office, as Thailand’s independent marine safety investigation authority, was established in 2022 as per Ministry of Transport Order No. 367/ B.E. 2565 (2022) on the establishment of the Marine Investigation Office.

This Thailand’s Overall Maritime Strategy consists of implementing mechanism that are substantial to the discussion of this study are as follows;

### **3.2.1. National Committee for Coordination with IMO**

1. Acts as a national agency responsible for coordinating with the International Maritime Organization (IMO).

2. Studies, analyzes, and monitors resolutions and recommendations from the IMO in order to notify, monitor, and expedite associated agencies to develop targets, policies, action plans, and maritime transportation activities.

3. Acts as the national agency for coordinating with, contacting, and assigning government and private sectors related to maritime transportation activities to proceed and implement the mandated targets, policies, and action plans in conformity with the responsibilities as previously mentioned.

4. Studies contemplate and analyze comments and suggestions made by government and private sectors who are related to maritime transportation activities regarding participation in IMO activities.

5. Designates the Sub-Committee and assistant secretariat of the National Committee for Coordination with IMO in order to perform tasks as deemed appropriate.

This committee’s composition consists of representatives from agencies under the Ministry of Transport including

- (1) Marine Department

- (2) Office of Transport and Traffic Policy and Planning
- (3) Ministry of Foreign Affairs
- (4) Ministry of Digital Economy and Society
- (5) Department of Marine and Coastal Resources
- (6) Office Of Natural Resources and Environmental Policy and Planning
- (7) Pollution Control Department
- (8) Port Authority of Thailand
- (9) International Affairs Division, Office of the Permanent Secretary of Transport also serves as the committee’s secretary

**3.2.2. The Sub-Committee for Formulation and Steering on Overall Maritime Strategy**

1. Studies, analyzes and contemplates the approach to becoming a party of IMO conventions.
2. Develops Overall Maritime Strategy and action plans in order to implement international conventions, and present them to the National Committee for Coordination with IMO for approval.
3. Steers, monitors, evaluates, reviews the progress of the implementation of the Overall Maritime Strategy and action plan, and presents the National Committee for Coordination with IMO for consideration.
4. Coordinates and invites associated agencies, organizations, or the private sector in order to attend the meeting as deemed necessary.
5. Designates working groups to perform tasks as deemed necessary.

This sub-committee has composition as follows;

- (1) Director General of the Marine Department as the chair of the sub-committee
- (2) Deputy Director General on safety affairs, Marine Department
- (3) Representative of Office of the Permanent Secretary of Transport
- (4) Representative of Royal Thai Navy
- (5) Representative of Ministry of Digital Economy and Society
- (6) Representative of Ministry of Foreign Affairs



- (7) Representative of Office of Search and Rescue Commission
- (8) Representative of Thailand Maritime Enforcement Coordinating Center
- (9) Representative of Hydrographic Department, the Royal Thai Navy
- (10) Representative of Meteorological Department
- (11) Representative of Pollution Control Department
- (12) Representative of Department of Marine and Coastal Resources
- (13) Representative of Department of Industrial Works
- (14) Representative of Department of Disaster Prevention and Mitigation
- (15) Representative of Office of the Council of State
- (16) Representative of Budget Bureau
- (17) Representative of National Broadcasting and Telecommunication Commission
- (18) Director of Legal Bureau, Marine Department
- (19) Director of Ship Standard Bureau, Marine Department
- (20) Director of Marine Safety and Environment Bureau, Marine Department
- (21) Director of Ship Registration Standard Bureau, Marine Department
- (22) Director of Seafarers' Standard Division, Marine Department
- (23) Director of International Obligation Division, Marine Department
- (24) Director of Planning Bureau, Marine Department as a sub-committee's secretary
- (25) Chief of the International Affairs Division, Planning Bureau, Marine Department as a sub-committee's secretary assistant
- (26) Representative of the International Affairs Division, Planning Bureau, Marine Department as sub-committee's secretary assistant

### **3.2.3. Working groups on Flag state Key Performance Indicators (KPI)**

As prescribed in responsibility No.5 of the sub-committee '5. Designates working groups to perform tasks as deemed necessary.', the sub-committee designates Flag, Coastal and Port states Key Performance Indicators (KPI) working groups. The role of these working groups is to assess the performance of Thailand's flag, coastal and port state's agencies.

The working group that is substantially related to this study is the Flag State KPI working group as the MAIO and MD are the composition of this working group. The composition of this working group is as follows;

(1) Deputy Director General on safety affairs of the Marine Department as the Chair of the working group

(2) Representative of the Office of the permanent secretary of transport

(3) Director of Ship Standard Bureau, Marine Department

(4) Director of Marine Safety and Environment Bureau, Marine Department

(5) Director of Legal Bureau, Marine Department

(6) Director of Seafarers' Standard Division, Marine Department

(7) Director of Standard Ship Registration Division, Marine Department

(8) Department's Secretary, Marine Department

(9) Chief of International Affairs Division, Planning Bureau, Marine Department

(10) Representative of Marine Accident Investigation Office

(11) Chief of Ship Inspection Group, Ship Standard Bureau, Marine Department, as a working group's secretary

(12) Representative of Ship Standard Bureau, Marine Department, as sub-committee's secretary assistant

(13) Representative of Marine Safety and Environment Bureau, Marine Department, as sub-committee's secretary assistant

(13) Representative of Legal Bureau, Marine Department, as sub-committee's secretary assistant

(14) Representative of Seafarers' Standard Bureau, Marine Department, as sub-committee's secretary assistant

(15) Representative of Ship Standard Registration Bureau, Marine Department, as sub-committee's secretary assistant

(16) Representative of Human Resource Section, Marine Department, as sub-committee's secretary assistant

Structure of the National Committee for Coordination with IMO, The Sub-Committee for Formulation and Steering on Overall Maritime Strategy and Working groups on Flag, Coastal and Port states Key Performance Indicators (KPI) is as appeared in **Figure 7** *Evaluation and Review of the State's Performance*?

## EVALUATION AND REVIEW OF THE STATE'S PERFORMANCE



These three working groups were established by the decision of the Sub-Committee on 30<sup>th</sup> June 2021

## **Chapter 4: Challenges in Thailand’s Marine Casualty Investigations**

This chapter shall elaborate the challenges in Thailand’s Marine Casualty Investigations particularly comparing before the establishment of the MAIO in 2022 and after its establishment.

### **4.1 Plan - Policy challenges**

As prescribed in the previous chapter, Thailand has developed Thailand’s Overall Maritime Strategy to ensure Thailand's compliance with IMO 's instruments. Regarding marine casualty investigation, the strategy prescribed Strategic Objective 1 - Promote safety of life at sea as a flag, coastal and port state, Target 1.9 Transparent marine safety investigation and the action plans to achieve target 1.9. The latest action plan of target 1.9 is to establish an independent marine casualty investigation agency. Now, the Marine Accident Investigation Office was established in 2022 as per Ministry of Transport Order No. 367/ B.E. 2565 (2022) on the establishment of the Marine Investigation Office, but there is yet to be further target and or action plan regarding marine casualty investigation.

This lacking of further target and or action plan regarding marine casualty investigation of target 1.9 raised concerns among interview participants particularly participants from the MAIO, INV1 and INV2, who expressed that;

*“The MAIO would like to emphasise that policy on marine casualty investigation is the priority to be prescribed within Thailand’s maritime strategy, such as Thailand's Overall Maritime Strategy in order to be in accordance with IMO’s IMSAS as policy is the first to be audited in the common area responsibility of the member state. Otherwise, despite available legal basis or the efforts of the agencies, this shall remain a challenge not only for IMSAS, but also in further operation”*

This concern is found to be plausible as it is prescribed in the III Code, a main instrument of IMSAS that

*'23 A flag State should develop and implement a control and monitoring programme, as appropriate, in order to: .1 provide for prompt and thorough casualty investigations, with reporting to the Organization as appropriate;'*

of which national plan and policy are the primary basis of this *'develop and implement a control and monitoring programme'* prescribed herewith.

An interview participant from the Marine Department's Planning bureau, POL, also as a secretariat of the committee, sub-committee and working groups expressed that

*'The detailed discussion to optimize the work of MAIO has been continuing in the Flag State KPI working group under the sub-committee for Maritime Strategy under the National Committee for Coordination with IMO of which got a full power authorized by the cabinet. As it was considered to be the matters regarding the working performance of the flag state agencies including MAIO rather than policy matters that have to discussed in the sub-committee for Maritime Strategy.*

*Nevertheless, matters that are considered to be out of the power of the Flag State working group such as allocation of budget and manpower and the cooperation of MD and MAIO can be submitted to the sub-committee and thus the Maritime Strategy can be amended, implemented and monitored accordingly.'*

Thus, Thailand's Maritime Strategy can be amended to reflect Thailand's policy regarding casualty investigation of which shall be discussed in Chapter 5.

## 4.2 Legal challenges

As briefly mentioned in the previous chapter, before the establishment of MAIO in 2022, MD was also responsible for conducting marine casualty investigation despite such responsibility is not explicitly prescribed in any legislation or policy, including Thailand's main maritime legislations namely the Navigation in the Thai Waters Acts, B.E. 2456 (1913) as amended and Thai Vessel Act, B.E. 2481 (1938). The Navigation in the Thai Waters Acts, B.E. 2456 (1913) as amended prescribes procedure for casualty investigation as follows (with the parts that are significant for this study's discussion are highlighted and underlined);

### *CHAPTER VI MISCELLANEOUS REGULATIONS*

*Section 102.59 Every master who has obtained the certificate of competency shall exercise caution in controlling the vessel with full ability to avoid any accident or dangerous incident. **If there occurs any incident on duty while he or she is controlling the vessel, the master shall report such incident to the competent official as follows:***

*1. the vessel that does not immediately leave the harbor to the sea shall, after the occurrence of the incident, report the matter to the harbor Master<sup>5</sup> within twenty four hours. If that vessel is about to leave the harbor to the sea, she shall report the matter via registered post on the first possible occasion, or stop to report to the District Department<sup>6</sup> or local police in the near area or deposit such report with the Customs officer in the near place so that he or she can pass it to the Harbor Master. The report shall expressly state the following particulars;*

- (1) the place at which the incident occurred with a concise map, if possible;*
- (2) the date of the incident;*
- (3) the name of the vessel owner or his or her agent and the registration number of the vessel;*
- (4) the causes of the incident and circumstances;*
- (5) the damage suffered;*

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<sup>5</sup> Harbor Master, as prescribed in these regulations, means the Marine Department. A usual mistranslation using Google Translate. Many translated Thai regulations including these ones available on official sites usually apply Google Translate and usually cause this mistake.

<sup>6</sup> District Department, as prescribed in these regulations, means Thailand's provincial administration

*(6) where the vessel has a logbook, the copy of the daily statements in the logbook both at the deck and the bottom;*

*2. the vessels other than that in sub-section 1 shall report the incident occurred to the Harbor Master or the District Department or local police in the near area within forty eight hours;*

*3. the District Department or police shall, upon receiving the report, make an inquiry and carry out his or her duties and shall expeditiously send the copy of the enquiry to the local Harbor Master or the Marine Transport and Maritime Department<sup>7</sup>.*

### **CHAPTER III STEAM-LAUNCHES OF ANY KIND**

***Section 173. Where a dangerous incident has occurred on any steam-launch to the hull, boiler, engine or passenger or any other person, or where a dangerous incident caused by such vessel has occurred, the report on the matter shall be promptly made to the Harbor Master.***

It can be noted that the act only prescribes the procedure only for the reporting of marine casualty that the ship master must report marine casualty as soon as possible, but it does not explicitly prescribe the procedure of marine casualty investigation nor giving MD the authority to conduct casualty investigation.

Nevertheless, before the establishment of the MAIO in March 2022, marine casualty investigation was conducted by an marine casualty investigation committee established by MD on a case-by-case basis and no clear legal basis prescribed as such and these marine casualty investigation committees usually consist of personnel of MD, as a maritime administration that registered, issued certificate and inspected the vessel and thus usually raising concerns over the independent of the investigation conducted by such committees.

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<sup>7</sup> local Harbor Master is Marine Department's local branches as elaborated in Chapter 3 No. 3.2.3, the Marine Transport and Maritime Department was the previous title of the Marine Department, thus Marine Transport and Maritime Department means the Marine Department's Headquarter as elaborated in Chapter 3 No. 3.2.3,

This is also reflected in one of the findings during a mock audit in August 2021 as part of Thailand’s preparation for IMSAS in February 2023. The finding prescribes ‘The III Code and the Casualty investigation Code require that accident investigations have to be undertaken in an impartial manner and in a way that they cannot become subject to external direction. The fact that the Secretary of the Sub-Committee for maritime casualty investigation is from the Marine Department and that investigations also involve employees from the Marine Department cannot fully ensure that such impartiality is maintained during accident investigations. The finding of this mock audit prescribes that

***“Member State: THAILAND***

***Audit period: August 2021***

***Finding No.: 8***

***STATEMENT:***

***Casualty Investigation***

***The III Code and the Casualty investigation Code require that accident investigations have to be undertaken in an impartial manner and in a way that they cannot become subject to external direction. The fact that the Secretary of the Sub-Committee for maritime casualty investigation is from the Marine Department and that investigations also involve employees from the Marine Department cannot fully ensure that such impartiality is maintained during accident investigations.”***

Hybrid Mock Audit, Form A, Findings/Observations Notice dated August 2021 is as appeared in **Appendix E**

Furthermore, this procedure of establishing an investigation committee on a case-by-case basis still persists even after the establishment of the MAIO in March 2022, as an investigation committee consisting mostly of Marine Department’s personnel, including Director of the Marine Office Samutsongkram branch, Acting director of the 3<sup>rd</sup> Marine Office as the Chairman of the committee, MD’s local Harbor Master and Surveyor as members and MD’s Director of Administration and Planning as Member and Secretary and MD’s local Legal Officers as Member and Assistant Secretary, was established in January 2023 to investigate the explosion and fire



accident of the tanker SMOOTHSEA 22 occurred on 17 January 2023 which resulted in 8 deaths of dock workers.

The Unofficial Translation of the 3rd Marine Local branch's order No. 2/B.E. 2566 (2023) on the establishment of causal investigation on SMOOTHSEA 22 explosion and fire accident at Ruam Mitr Dockyard co. ltd's dock is as appeared in **Appendix F**.

Despite the severity of the accident of which caused 8 deaths of dock workers, the MAIO did not involve with the investigation of the accident. When interviewed INV1 and INV2 for the MAIO's involvement in investigating the SMOOTH SEA 22 accident, they responded that

*'The MAIO doesn't consider Smooth Sea 22 as a marine casualty that has to be caused by direct on-board operation in accordance with casualty investigation code as this accident occurred when the vessel was docking at the port.'*

Summarizing the situation up, the MAIO did not conduct the casualty investigation of SMOOTHSEA 22 because it strictly adheres to its order, Ministry of Transport Order No. 367/ B.E. 2565 (2022), of which adheres to the IMO's Casualty Investigation Code. The researcher could not access to any sort of official investigation of the SMOOTHSEA 22, but according to information accessible, 3 maritime based journalist sources<sup>8</sup> reported coherently that the explosion occurred when the vessel SMOOTHSEA 22 was indeed docking at the port, thus, any occurrences involving the vessel at the time of the accident were in the regime of the port.

However, upon examining the Ministry of Transport Order No. 367/ B.E. 2565 (2022) and SMOOTHSEA 22's specification, the vessel, classified as local trade

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not-the-ship-it-claimed-to-be/

(3) Bergman, J. (2023, January 19). *Tanker explosion kills two, injures many, leaves several missing*. Riviera Maritime Media. Retrieved September 24, 2023, from <https://www.rivieramm.com/news-content-hub/news-content-hub/tanker-explosion-kills-two-injures-many-leaves-several-missing-74612>

vessel, is of 2,998 GT<sup>9</sup> of which meet the “2. *Authorities and functions 13) Investigate the very serious marine casualties for domestic passenger ship which carries 100 passengers or more, and domestic cargo ships of 500 gross tonnage or more*”, though with the reasoning that the vessel was docking and thus not fitting the criteria of IMO’s casualty investigation, such casualties must also be addressed for the sake of Thailand’s maritime safety and also to ensure that MAIO focus its resources to investigate ‘very serious’ marine casualties to ensure independent of the investigation and in line with IMO’s regulations. The researcher also observed that it is possible that the MAIO did not dispatch investigators nor conduct casualty investigation of this SMOOTHSEA 22 fire and explosion because of lacking of resources particularly manpower, this matter shall be discussed further in operational challenges.

Therefore, to optimize Thailand marine casualty investigations and to be more inclusive, not only for complying with IMO’s regulations, but for the sake of Thailand’s maritime safety, there must be an agency responsible for the investigation of these ‘non-very serious’ marine casualties. MD had taken that action to investigate such non ‘very serious’ marine casualties, but its legal basis did not explicitly prescribe such procedure nor the authorities for MD to perform such actions.

Not only that MD lacks legal basis for other marine or marine related casualty investigations apart from the MAIO’s authorities and functions to (1) ‘*Investigate the marine casualties, especially the very serious marine casualties that occurred to the ship which is a Thai ship engage on the international voyage, or the foreign ship within limits of the territorial sea of Thailand.*’ for Thai flagged ships engage on the international voyage, or the foreign ship within limits of the territorial sea of Thailand and (2) ‘*very serious marine casualties for domestic passenger ship which carries 100 passengers or more, and domestic cargo ships of 500 gross tonnage or more*’ domestic vessels and its adherence to IMO’s Casualty Investigation Code as per the Ministry of Transport Order No. 367/ B.E. 2565 (2022), the MAIO’s legal basis for the establishment and prescribing its duties and authorities. This Order No. 367 was issued

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<sup>9</sup>VesselFinder. (2022). *SMOOTH SEA 22, Oil Products Tanker - Details and current position - IMO 9870991 - VesselFinder*. Vessel Finder. Retrieved August 25, 2023, from <https://www.vesselfinder.com/vessels/details/9870991> and **Appendix F**

by the virtue of the State Administration Act, B.E. 2534 (1991) as amended which is an administrative legislation, not maritime legislation

*'By virtue of section 21 of the State Administration Act, B.E. 2534 (1991) as amended, Ministry of Transport issued the Ministry of Transport Order No. 367/B.E. 2565 (2022) on the establishment of the Marine Investigation Office to establish the Marine Investigation Office (MIO).'*

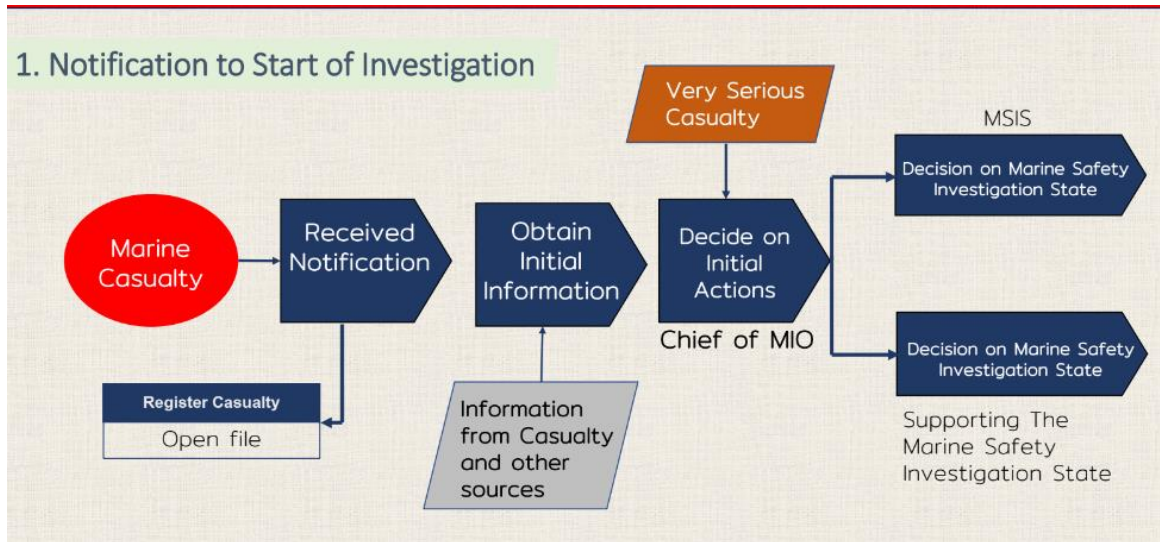
and despite Order No. 367 in the 'Missions' section quoting Thailand's main maritime legislation, the Navigation in Thai Waters Act the sections prescribed casualty investigation in the act are inadequate as they only prescribed an accident report for the master, but not specifying agency responsible for casualty investigation and neither investigation procedure.

#### ***'1. Missions***

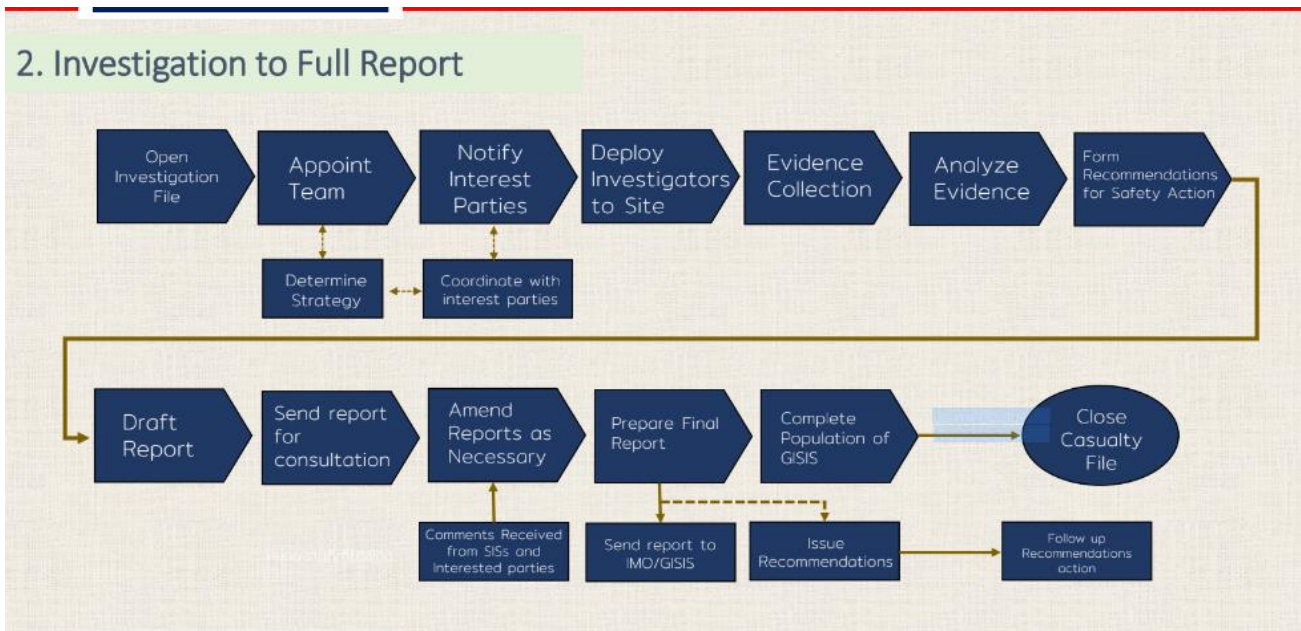
*1) Consider the casualty notification in accordance with Section 102 and Section 173 of Navigation in the Thai Waters Act, B.E. 2456 (1913) in which the marine casualty shall be investigated and reported to the IMO by the Marine Casualty Investigation Committee in accordance with the Casualty Investigation Code of the IMO.'*

Furthermore, the MAIO indeed has its' procedure for marine casualty investigation of which MAIO shall initiate marine casualty investigation upon receiving a report of a marine accident. At first, MAIO shall consider whether the casualty is a 'very serious casualty'.

**Figure 8** MAIO's procedure of Notification to Start Investigation



Afterward, MAIO shall initiate a marine casualty investigation and compile an investigation report as appeared in **Figure 9** MAIO's Procedure of investigation to full report



Despite MAIO having these elaborated marine casualty investigation procedures, the primary legislations, the Navigation in Thai Waters Act does not prescribe any implication for the MAIO to initiate its procedure for marine casualty investigation nor referring to the Ministry of Transport Order No. 367/ B.E. 2565 (2022) that prescribes the mission, authorities and missions and structures.

Regarding this challenges of a clearly prescribed legal basis, the findings of the dissertation titled ‘Analysis of the Draft of the Navigation Act B.E. ...: the Investigation of Marine Accidents’ by Achicha Panicha from Thammasat University, Thailand dated 10 August 2018 also emphasized that the Navigation in Thai Waters act has to be amended, adding more elaborated details on casualty investigations, defining roles, prescribing details of marine casualty investigation’s procedure, rather than prescribing only the master to report the incidents. Ms. Achicha’s dissertation also stressed that the amendment of the Navigation in Thai Waters Act should also authorize MD as Thailand’s main maritime administration to conduct casualty investigation.

The researcher is of the view that Ms. Achicha’s recommendation is partially plausible. Indeed, the Navigation in Thai Waters Act must be amended, adding more details on marine casualty investigation. However, the recommendation on authorizing MD to conduct casualty investigation is not quite a plausible one as it would jeopardize the principle of independent marine casualty investigation agency.

Nevertheless, currently, there is some development in amending the Navigation in Thai Waters Act, of which shall be explored and discussed further in Chapter 5.

### **4.3 Operational Challenges**

When Thailand participated in the IMSAS in February 2023, the finding also stated that ‘There was evidence that very serious marine casualties were not investigated in compliance with the Casualty Investigation Code, in particular, to conduct the investigation and the release of the reports to the public and reporting to IMO.’ with the evidence that The investigation into very serious casualty for the

vessels PATCHARAWADEE 12 (29.06.2016) and OBERON (19.02.2012) had not been conducted and investigation reports were not available as prescribed herewith;

*“Member State: Thailand*

*Department: Marine Investigation Office*

*Audit period: 18/2/2023 to 27/2/2023*

*Finding No.: FD-2*

**STATEMENT:**

*There was evidence that very serious marine casualties were not investigated in compliance with the Casualty Investigation Code, in particular, to conduct the investigation and the release of the reports to the public and reporting to IMO.*

**EVIDENCE:**

*The investigation into very serious casualty for the vessels PATCHARAWADEE 12 (29.06.2016) and OBERON (19.02.2012) had not been conducted and investigation reports were not available.”*

The IMO Member States’ Audit Scheme, Form A, Thailand’s Findings/Observations Notice during 18 – 27 February 2023 is as appeared in **Appendix G.**

Later on, the MAIO submitted the investigation report of the PATCHARAWADEE 12 (29.06.2016) and OBERON (19.02.2012) to GISIS in June and May 2023 respectively. However, upon reviewing those investigation report, the conclusions of the reports do not identify the causes of the accidents adequately and a little to no safety recommendations is made as follows;

**“No.1**

*Accident Case MT. "OBERON”*

*Accident Type STRANDING / GROUNDING*

*Location North of Chi-Pei Tao Penghu, Taiwan Strait, Taiwan*

*Date of occurrence 19 February 2012*

*Date of report submission MAY 2023*

*Conclusion Unspecified*

*Safety Recommendations Unspecified”*

**“No.2**

***Accident Case MT. "PATCHARAWADEE 12"***

***Accident Type FLASH FIRE ON MANHOLE COVER OF CARGO TANK***

***Location Bangpakong River Entrance Buoy, THAILAND***

***Date of occurrence 29 JUNE 2016***

***Date of report submission JUNE 2023***

***Conclusion*** *The source of the ignition which caused the explosion MAIO could not be determined, but it could reasonably be attributed to the sparks caused when unassigned crew members are familiar with the job operating procedures and want to help colleagues without the details of operation clarification. He holds the chain with bare hands, and it can be caused by static electricity.*

***Safety Recommendations*** *In view of the safety actions taken by the company, no safety recommendations were made.”*

**“No.3**

***Accident Case MT. "SMOOTH SEA 2"***

***Accident Type EXPLOSION AND FIRE***

***Location Port BKK13 Chao Phraya river, Samutprakarn, THAILAND***

***Date of occurrence 9 March 2022***

***Date of report submission MAY 2023***

***Conclusion*** *The source of the ignition which caused the explosion could not be determined, but it could reasonably be attributed to the sparks caused when turn on the fore winch motor and switch inside at the forward store room*

***Safety Recommendations*** *In view of the safety actions taken by the Marine Department, no safety recommendations were made.”*

These reports extracted from IMO GISIS are available in **Appendix H**

In addition, upon reviewing the investigation report of the NORDANA SOPHIE accident occurred in November 2019 and validated in June 2020. The Marine Department was the agency that conducted the investigation of the accident and produced the report, the conclusion and recommendations are as follows;

## *“Conclusion*

*Pursuant to the Statement; Minutes of interrogation of crew members; Report incidents of ship; weather conditions detailed in the region; Diary of Standing Representative of Ha Tinh Maritime Port Authority in Son Duong, Field record; testimony of related witnesses:*

*The cause of the maritime accident for the ship Nordana Sophie sunk in the waters of Ha Tinh seaport may stem from the following reasons:*

*1.1 The weather conditions change and the situation is bad, combined with strong currents leading to the ship dragged anchor into dangerous areas.*

*1.2 The captain has not fully calculate the evolution of weather to deliver measures to enhance fit when anchoring in the weather conditions deteriorate.*

*1.3 The Navigation chart was not proper scale and insufficient information for approaching, anchoring and berthing at port safely. The operation and exploitation of maritime equipment has not been really effective; observed by eye and track information from the maritime equipment not suitable in preventing dragging anchor.*

*1.4 After cutting anchor, during the process of maneuvering the ship to leave the danger area, however, under the impact of bad weather, it may also cause the ship to lose its ability to maneuver, leading to stranding.*

*1.5 The ship is anchored and stranded on Hon Chim Island, Hon Chim Island is an island with surrounding rocks, possibly during the process of being stranded, the ship has pierced the hull to penetrate the sea water to the engine room and other compartments in combined with bad weather, the ship tilted sharply to port lead to instability and become a shipwreck.*

## *Proposal<sup>10</sup>*

*To prevent similar incidents,*

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<sup>10</sup> The report applies the term ‘proposal’ which, considering from its contents, this term ‘proposal’ is equivalent to ‘recommendations’ or ‘safety recommendations’



*2.1 Update to the company's SMS and release to the fleet a memorandum to improve the task of anchoring watch and anchoring watch in bad weather conditions.*

*2.2 Always organize and maintain the watch lookout effectively, in accordance with the real situation; attaching importance to the use of available equipment appropriately to watch the scene, carefully calculate all hydro-meteorological factors when the ship is anchored.*

*2.3 Must diligently perform their duties and duties in accordance with the law, the Company and the requirements of the Captain.”*

This report extracted from IMO GISIS is also available in **Appendix H**

It is found that MD's investigation report of the NORDANA SOPHIE is more elaborated than the reports of the MAIO. However, MD should not be an agency conducting casualty investigation of such 'very serious' marine casualty in accordance with the IMO's regulations as it would jeopardize the principle of independence and would result in findings during IMSAS as appeared in **Appendix E**.

Despite MAIO's establishment for being an independent marine casualty investigation in Thailand, MD still has its role in marine casualty investigation of 'very serious' casualties according to IMO's regulations in Thailand and Thailand's investigation reports produced by MAIO submitted to IMO's GISIS inadequately prescribed causal factors and safety recommendations of the accidents. This has been elaborated by the interview participants, the investigators of the MAIO, INV1 and INV2, as follows;

*'If one accesses IMO's GISIS and searches the 'Thailand' as Flag Administration in the Marine Casualties and Incidents database, several cases including cases from the previous years even dated back in 1990s will appear. It should be noted that such cases from the previous years were not uploaded to IMO GISIS by the Thai administration, but it is the IMO secretariat inputting such data into the system obtaining information from general sources e.g. news agencies.*

*We found out that Thailand has 18 very serious cases on IMO GISIS in January 2023 just before IMSAS in February 2023. During, the first Foundation Course on Marine Casualty Investigation for International Maritime Organization (IMO)*

*member States took place from 9-13 January in Bangkok, Thailand, Singapore's representative from the Transport Safety Investigation Bureau (TSIB) also expressed that this is also an issue for Singapore.*

*After the IMSAS in February 2023, Thailand has been developing the Corrective Action Plan (CAP) to address the audit's findings including for the marine casualty investigation. The investigation of the cases from previous years is being conducted in accordance with the CAP. Currently 7 cases including 6 very serious cases and 1 serious case were finished and submitted to IMO GISIS.*

*By principle, investigators must be dispatched to the incident site as soon as possible; as time progresses further the evidence becomes more difficult to obtain. Thus, lacking a legal basis causes confusion in coordination and poses an obstacle to the investigation,'*

For the INV1 and INV2 explanation on the casualty data being inputted to IMO GISIS by the IMO secretariat who constantly monitors and reviewing marine accidents around the globe, upon examining the IMO GISIS, searching flag administration by Singapore, it appears that several marine accidents that can dated back until 1960s are appeared upon searching and not all of them have the uploaded investigation reports.

**Figure 10** IMO GISIS: Marine Casualties and Incidents, Flag Administration ‘Thailand’

55 incidents were found matching the specified criteria.

Reference	Ships involved	Location	Incident date	Type of casualty	Investigation Reports
C0000337	SIAM MIRA (-)		1981-11-02	Unspecified	-
C0000342	THIDATARA (-)		1981-12-01	Unspecified	-
C0000409	NAGARIT (-)		1983-12-02	Unspecified	-
C0000419	SPAN (-)		1984-01-27	Unspecified	-
C0000431	POOWANIDA (-)		1984-05-21	Unspecified	-
C0000002	THIDA NAVEE (-)		1986-01-06	Unspecified	-
C0000025	T.J.T.1 (-)		1986-10-14	Unspecified	-
C0000224	SEA DREDGE (-)		1990-11-08	Unspecified	-
C0000225	JUTHA MALEE (-)		1990-11-10	Unspecified	-

*Note.* From “ GISIS: Marine Casualties and Incidents, Flag Administration ‘Thailand’ ’, by IMO, 2023. (<https://gisis.imo.org/Members/MCI/Search.aspx> ) Copyright 2023 by IMO.

**Figure 11** GISIS: Marine Casualties and Incidents, Flag Administration ‘Singapore’

224 incidents were found matching the specified criteria.

Reference	Ships involved	Location	Incident date	Type of casualty	Investigation Reports
C0000612	PROTECTOR (-)		1991-01-12	Unspecified	-
C0000651	JURONG (-)	Ulsan Harbour (South Korea)	1991-04-18	Very serious	1
C0000758	MARISEA (-)	Ebitsu, off Kyushu Island (Japan)	1992-01-14	Serious	-
C0001612	CHOONG KONG III (-)		1992-06-20	Unspecified	-
C0001623	PACIFIC SUNRISE (-)		1992-08-13	Unspecified	-
C0000966	MAERSK NAVIGATOR (-) SANKO HONOUR (-)	Bay of Bengal	1993-01-21	Very serious	1
C0001030	LIAN GANG (-)		1993-06-27	Unspecified	-
C0000821	GOLD FAITH (-)		1993-11-24	Unspecified	-

*Note.* From “ GISIS: Marine Casualties and Incidents, Flag Administration ‘Singapore’ ’, by IMO, 2023. (<https://gisis.imo.org/Members/MCI/Search.aspx> ) Copyright 2023 by IMO.

Nevertheless, while there are challenges uncovering evidence of the marine casualties in the past, but the work on the recent and present ones can be improved particularly for the investigation reports to thoroughly conclude the causal factors of the accidents/incidents and provide tangible safety recommendations. The researcher is of the view that this improvement can be made through policy and regulatory framework of which shall be discussed further.

#### **4.4 Summary of Identified Challenges**

The summarized challenges of Thailand's marine casualty investigation and thus findings to research question (1) what are the challenges of Thailand's marine casualty investigation are as follows;

##### **4.4.1 Policy**

Currently, Thailand's main maritime policy, Thailand's Overall Maritime Strategy, prescribes action plans Thailand's Marine Casualty Investigation only to establish an independent marine casualty investigation agency, but no further action plans have been prescribed yet after the MAIO, Thailand's independent marine casualty investigation, was established in March 2022. This lack of statutory policy caused a lack of directions for the agencies related to Thailand's Marine Casualty Investigation resulting in a gap of measures to be taken further and perhaps causing the challenges in the legal and operational aspects of Thailand's marine casualty investigation.

However, Thailand's Overall Maritime Strategy can be amended, updating more inclusive action plans for further works in Thailand's Marine Casualty Investigation providing clear directions for related agencies and in line with IMO's III Code. This shall be discussed in the next chapter.

#### **4.4.2 Legal**

At the present, Thailand's primary maritime legislation, the Navigation in Thai Waters Act, only prescribes reporting of the marine casualty investigation, but not the investigation procedure and does not refer to the Ministry of Transport Order No. 367/ B.E. 2565 (2022) that prescribes the mission, authorities and missions and structures. Despite the MAIO having elaborated marine casualty investigation procedures, there is no clear linkage to Thailand's primary maritime legislation, the Navigation in Thai Waters Act that would authorize it to initiate marine casualty investigation.

#### **4.4.3 Operation**

Operational challenges occurred from policy and legal challenges, the absence of clearly prescribed coherent policy and legal basis elaborating the distinct roles of agencies responsible for marine casualty investigation namely, MAIO for 'very serious' marine casualties and MD for 'non-very serious' marine casualties and other casualties, results in shambles in operational level of Thailand's marine casualty investigations which can be observed from the investigation reports inadequately elaborate causal factors and conclusion of the casualties and inadequately provide further applicable safety recommendations.

While MAIO can strictly adhere to its mission prescribed in the Ministry of Transport Order No. 367/ B.E. 2565 (2022) to (1) Investigate *'the marine casualties, especially the very serious marine casualties that occurred to the ship which is a Thai ship engage on the international voyage, or the foreign ship within limits of the territorial sea of Thailand.'* for Thai flagged ships engage on the international voyage, or the foreign ship within limits of the territorial sea of Thailand and (2) *'very serious marine casualties for domestic passenger ship which carries 100 passengers or more, and domestic cargo ships of 500 gross tonnage or more'*, there is no legislation prescribing the other kind of casualties and 'non-very serious' marine casualties that MD may perhaps conduct investigation and subsequently make MAIO focuses its attention and resource to 'very serious' marine casualties in accordance with IMO's regulations. So far, investigations of such cases have been conducted on a case-by-case basis.

In addition, despite MAIO and MD have potential to cooperate on marine casualty investigation, building capacity and exchange best practices and perhaps even pooling resources, apart from reporting to IMO GISIS and Working groups on Flag state Key Performance Indicators (KPI) that evaluate the member agencies' performance in line with Thailand's Overall Maritime Strategy as appeared in **Figure 5**, **Figure 7** and **Appendix C** respectively, there are no other substantial cooperation initiated, yet.

The discussion in the next chapter shall elaborate more on addressing these challenges.

## **Chapter 5: Discussion**

In order to address research question (2) how can such challenges be addressed by policy and regulatory framework and thus enhance Thailand's casualty investigation, the discussion in this chapter shall focus on (1) examining the examples of marine casualty investigation in other countries (2) examining the recent development in Thailand and (3) providing researcher's observations and analysis, compiling these findings to address the challenges identified in the previous chapter and to reach conclusion and recommendations in the next chapter.

### **5.1 Marine Casualty Investigations in other countries**

This section shall explore maritime casualty investigation in other countries namely the Philippines and the United States in order to highlight the applicable lessons to Thailand's marine casualty investigation. The analysis of the compilation of Thailand's casualty investigation in Chapter 3 and 4 and the comparison between Thailand and the following countries' casualty investigation shall be discussed further in Chapter 6.

#### **5.1.1 The Philippines**

Among other countries the Philippines share similarities with Thailand as they are neighboring countries within Southeast Asia and, therefore, they share applicable lessons with each other.

This section discussing the Philippine's marine casualty investigation shall base on Alberto T. Ferre's dissertation titled 'Critical analysis of marine casualty investigation in the Philippines' as it has an elaborated analysis of the Philippines' marine Casualty investigation.

Ferre's dissertation prescribes that the Philippines' agencies related to its marine casualty investigation are the Philippine Coast Guard (PCG) and the Maritime Industry Authority (MARINA).

### **1) The Philippine Coast Guard (PCG)**

The PCG is an agency under the Philippines' navy with the primary responsibility to enforce the Philippines's regulations on safety of life and property within the maritime jurisdiction of the Philippines. The Philippines' Republic Act Number 5173 (RA 5173) 04 August 1967<sup>11</sup> and the Presidential Decree (P.D.) Number 601 dated 1971<sup>12</sup> prescribed responsibility of the PCG to investigate marine casualties. Afterward, the RA 5173 and P.D. 601 were revoked by the Philippines Coast Guard Law (PCG Law) of 2009<sup>13</sup>, but the responsibility of the PCG to investigate marine casualties is still prescribed within the legislation.

Thus, currently, the PCG is responsible for an expeditious and impartial investigation of the cause of maritime casualty and marine incidents which occurred within the waters subject to the Philippines' jurisdiction involving domestic, foreign, and Philippine flag vessels. (FERRE, T. A, 2022).

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<sup>11</sup> Section 5 of R.A. 5173, paragraph f stated that the PCG is "to investigate marine casualties and disasters including those arising from marine protest filed with the Bureau of Customs relative to the liability of shipowners and officers."

<sup>12</sup> P.D. 601 prescribes the PCG "to enforce laws and promulgates rules and regulations requiring performance of duties of shipowners and officers after accidents and investigate marine casualties and disasters including those arising from marine protest relative to the liability of shipowners and officers."

<sup>13</sup> Multiple rules in PCG Law 2009 prescribes the responsibility of PCG to conduct marine casualty investigation such as, Rule 3 (j) To investigate and inquire into the causes of all maritime accidents involving death, casualties and damage to properties and Rule 3 (j) 2. The conduct of maritime casualty investigation shall conform to international standards as recommended by the "Code of the International Standards and Recommended Practices for Safety Investigations into a Marine Casualty or Marine Incident" of the International Maritime Organization (IMO).

## 2) The Philippines's MARINA

The Philippines's MARINA was established under the Office of the President in 1974 by PD 474<sup>14</sup>, also known as the Maritime Industry Decree of 1974 with the task to promote and regulate the Philippines' maritime industry. Initially, the legislation prescribed marine casualties or accidents which shall be undertaken by the PCG. However, MARINA was gradually given more authority for marine casualty investigation. MARINA was transferred to the Ministry of Transportation and Communication in July 1979 and with the Executive Order No. 1011 issued March 1985, MARINA was given the powers and function to investigate violations that would cause the suspension or cancellation of the Certificate of Public Convenience.

Republic Act Number 9295 (the Domestic Shipping Development Act of 2004) enabled MARINA to investigate any complaint made in writing against the operator, shipper, or group of shippers regarding any matter of violation and, upon notice of hearing, impose such fines, suspend or revoke the certificate of any ship operator, shipper, or group of shippers found to be in violation of the provision of the Act.

Republic Act Number 10635, approved on 22 July 2013 and Executive Order Number 63, signed on 21 September 2018 strengthened the role of MARINA as flag state administration further particularly on the enforcement of STCW.

In January 2018, under Administrative Order Number 01-08, the Enforcement Service of MARINA was reorganized with the creation of the Marine Casualty Investigation Section (MCIS) as a responsible unit tasked to conduct marine safety investigations following the IMO Casualty Investigation Code. (FERRE, T. A, 2022). This is the most apparent legislation that gives the powers and functions of marine casualty investigation to MARINA.

Therefore, MARINA, as the country's flag State, conducts marine safety investigations in cases of very serious marine accidents/incidents that occurred within the territorial waters of the Philippines and all the ships flying its flag on international

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<sup>14</sup> Section eleven (11) paragraph b states "to undertake researches, studies, investigations and other activities and projects, on his own initiative or upon instructions of the Board, and to submit comprehensive reports and appropriate recommendations to the Board for its information and action."



waters. MARINA also investigates occupational accidents involving Filipino seafarers working on other flagships. (FERRE, T. A, 2022).

At first glance, with the Philippines' PCG under the navy with the powers and functions to enforce law, particularly maritime safety law within the Philippines' jurisdiction and MARINA under the Ministry of Transportation and Communication, as a national maritime administration and flag state, it seems that there is an overlapping role between the Philippines' PCG and MARINA as both agencies have legal basis for conducting marine casualty investigation.

However, the findings in Ferre's dissertation, particularly from his interviewing of participants from the PCG and MARINA, reveal that despite the interview participants expressing concerns over the lacking of budget, resources and manpower, occasional confusion caused by the overlapping of the two agencies and some expressing concerns over the need for an independent marine casualty, several participants expressed that in some cases that both the PCG and MARINA were investigating the same case, the PCG and MARINA can work together, cross-checking and reviewing each others' investigation report of which can be constructive and productive.

While Ferre's recommendation is that an independent investigation body must be established in the Philippines, the Philippine Transport Safety Board (PTSB), to ensure the effectiveness and independence of marine casualty investigation, the proposal for the establishment of PTSB was made in 2021, but then vetoed by the president in 2022, thus this proposal has to be revisited and reviewed, he also emphasises the cooperation between the Philippines' PCG and MARINA in conducting casualty investigation, including both agencies parallelly investigate incidents, pooling their resources, merge their investigation reports and then submit to the IMO.

In summary, the challenges the Philippines face in their marine casualty investigation share similarities with Thailand's challenges of two agencies investigating marine casualties, PCG and MARINA for the Philippines, MAIO and MD for Thailand with some deviation, the Philippines are facing with the overlapping

roles of two authorities and aiming for an alternative independent investigation agency, Thailand already established the independent investigation agency, the MAIO and the challenge are based on the absence of distinct prescription of MAIO and MD roles' as MD was responsible for marine casualty investigation before the MAIO's establishment in March 2022.

Nevertheless, the lesson learnt that is standing out in this Philippines' case is the potential cooperation framework between the agencies of which this approach's applicability shall be discussed further in this and next chapter.

### **5.1.2 The United States**

The United States can be another applicable example to Thailand's marine casualty investigation as there are two agencies in the United States that have the authority to conduct marine casualty investigation namely, the United States' Coast Guard (USCG) and the National Transportation Safety Board (NTSB). Furthermore, the United States also has a framework for the USCG and NTSB to cooperate on marine casualty investigation as there is a Memorandum of Understanding (MOU) between the USCG and NTSB.

#### **1) The United States Coast Guard (USCG)**

The USCG is part of the US Department of Homeland Security and the US Armed Forces and is the main maritime law enforcement, regulatory and response agency of the US. The Coast Guard is the principal Federal agency responsible for maritime safety, security, and environmental stewardship in U.S. ports and inland waterways, along more than 95,000 miles of U.S. coastline, throughout the 4.5 million square miles of U.S. Exclusive Economic Zone (EEZ), and on the high seas. (USCG, 2022).

The Coast Guard manages six major operational mission programs namely Maritime Law Enforcement, Maritime Response, Maritime Prevention, Maritime Transportation System Management, Maritime Security Operations and Defense Operations (USCG, 2022). The USCG also has roles in the US's marine casualty

investigation, particularly the US's public vessels<sup>15</sup>, a vessel utilized by government for non-commercial purposes. The USCG also has its marine casualty investigation unit, the Office of Investigations & Casualty Analysis (CG-INV) and such role is prescribed in 46 U.S.C. § 6301, as follows;

*'46 U.S. Code § 6301 - Investigation of marine casualties*

*The Secretary shall prescribe regulations for the immediate investigation of marine casualties under this part to decide, as closely as possible—*

- (1) the cause of the casualty, including the cause of any death;*
- (2) whether an act of misconduct, incompetence, negligence, unskillfulness, or willful violation of law committed by any individual licensed, certificated, or documented under part E of this subtitle has contributed to the cause of the casualty, or to a death involved in the casualty, so that appropriate remedial action under chapter 77 of this title may be taken;*
- (3) whether an act of misconduct, incompetence, negligence, unskillfulness, or willful violation of law committed by any person, including an officer, employee, or member of the Coast Guard, contributed to the cause of the casualty, or to a death involved in the casualty;*
- (4) whether there is evidence that an act subjecting the offender to a civil penalty under the laws of the United States has been committed, so that appropriate action may be undertaken to collect the penalty;*

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<sup>15</sup> 46 CFR § 4.03-40 - Public vessels. § **4.03-40 Public vessels.**

Public vessel means a vessel that—

- (a)** Is owned, or demise chartered, and operated by the U.S. Government or a government of a foreign country, except a vessel owned or operated by the Department of Transportation or any corporation organized or controlled by the Department (except a vessel operated by the Coast Guard or Saint Lawrence Seaway Development Corporation); and
- (b)** Is not engaged in commercial service.

*(5) whether there is evidence that a criminal act under the laws of the United States has been committed, so that the matter may be referred to appropriate authorities for prosecution; and*

*(6) whether there is need for new laws or regulations, or amendment or repeal of existing laws or regulations, to prevent the recurrence of the casualty.’ (LII, 1983)*

## **2) The National Transportation Safety Board (NTSB)**

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in the other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. NTSB determines the probable causes of the accidents and events we investigate and issue safety recommendations aimed at preventing future occurrences.

In addition, NTSB conducts transportation safety research studies and offers information and other assistance to family members and survivors for each accident or event NTSB investigates.

NTSB also serves as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and NTSB adjudicates appeals of civil penalty actions taken by the FAA. (NTSB, n.d.)

NTSB has a legal basis based on 49 U.S.C. § 1131, with the selections related to marine casualty investigation as follows;

*“49 U.S. Code § 1131 - General authority*

**(a) GENERAL.—**

*(1) The National Transportation Safety Board shall investigate or have investigated (in detail the Board prescribes) and establish the facts, circumstances, and cause or probable cause of—*

***(E) a major marine casualty (except a casualty involving only public vessels) occurring on or under the navigable waters, internal waters, or the***

***territorial sea of the United States as described in Presidential Proclamation No. 5928 of December 27, 1988, or involving a vessel of the United States (as defined in section 116 of title 46), under regulations prescribed jointly by the Board and the head of the department in which the Coast Guard is operating; and***

*(F) any other accident related to the transportation of individuals or property when the Board decides—*

*(i) the accident is catastrophic;*

*(ii) the accident involves problems of a recurring character; or*

*(iii) the investigation of the accident would carry out this chapter.*

*(b) Accidents Involving Public Vessels.—*

*(1) The Board or the head of the department in which the Coast Guard is operating shall investigate and establish the facts, circumstances, and cause or probable cause of a marine accident involving a public vessel and any other vessel. The results of the investigation shall be made available to the public.*

*(2) Paragraph (1) of this subsection and subsection (a)(1)(E) of this section do not affect the responsibility, under another law of the United States, of the head of the department in which the Coast Guard is operating.*

*(e) Accident Reports.—*

*The Board shall report on the facts and circumstances of each accident investigated by it under subsection (a) or (b) of this section. The Board shall make each report available to the public at reasonable cost. “ (LII, 2022)*

In summary, the USCG’s roles are based on the maritime law enforcement, being the enforcer and response unit to preserve national maritime interest which also includes marine casualty investigation, particularly marine casualty investigation involving public vessels while the NTSB is an agency specialized in transportation

accidents investigation, including marine casualty investigation. The relations between these two agencies are of substantial importance to the discussion of this study.

### **3) MOU between USCG and NTSB**

The USCG and NTSB appear to have a MOU of cooperation. The USCG and NTSB signed a MOU in December 2008. The MOU prescribes definitions, roles and functions of USCG and NTSB and their framework of cooperation in marine casualty investigation. This MOU was updated in 2021<sup>16</sup>, but not only that the 2008 version is the only accessible version, its prescription of definitions, roles and functions of the marine casualty investigation agencies and their cooperation framework proves to be quite a substantial example.

The significant substances of the MOU regarding the framework of cooperation on marine casualty investigation by USCG and NTSB are namely (1) prescribing which cases of marine casualty would the USCG or NTSB are responsible of (2) the prescription of ‘Significant Marine Casualty’ (3) notifying each other of marine casualty (4) designation of an agency as ‘leading agency’ for an investigation and (5) emphasizing close liaison, coordination and supporting each other of resources. The MOU prescribes the role of NTSB in marine casualty investigation as follows;

(1) prescribing which cases of marine casualty would the USCG and NTSB are responsible of

*“In accordance with 49 U.S.C<sup>17</sup>. § 1131, the National Transportation Safety Board is authorized to investigate any major marine casualty as defined in 49 C.F.R. Part 850 and 46 C.F.R. Subpart 4.40 (except a casualty involving only public vessels) occurring on, or under, the navigable waters, inland waters or territorial sea of the United States, or involving a vessel of the United States, or involving a public vessel of the United States and any other vessel.” (USCG & NTSB, 2018)*

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<sup>16</sup> Safety4Sea. (2021, June 28). *USCG, NTSB update cooperation on major investigations - SAFETY4SEA*. safety4sea. Retrieved September 24, 2023, from <https://safety4sea.com/uscg-ntsb-update-cooperation-on-major-investigations/>

<sup>17</sup> The United States Code, a consolidation and codification by subject matter of the general and permanent laws of the United States

The MOU prescribes the role of USCG in marine casualty investigation as

*“In accordance with 46 U.S.C. § 6301, the USCG is authorized to investigate any marine casualty involving death, serious injury, material loss of property, material damage to vessels, or significant harm to the environment occurring on the navigable waters or territorial sea of the United States, or involving a vessel of the United States, or involving a public vessel of the United States and any other vessel. The USCG is also authorized to investigate certain marine casualties outside the territorial sea.”* (USCG & NTSB, 2018)

(2) The MOU also prescribes the ‘SIGNIFICANT MARINE CASUALTY’ which activates the marine casualty investigation mechanism as follows;

*“For the purpose of this Memorandum of Understanding:*

*Significant marine casualty means a casualty involving a vessel, other than a public vessel, that results in--*

*(1) The loss of three or more lives on a commercial passenger vessel;*

*(2) Loss of life or serious injury to twelve or more persons on any commercial vessel;*

*(3) The loss of a mechanically propelled commercial vessel of 1600 or more gross tons;*

*(4) Any marine casualty with loss of life involving a highway, bridge, railroad or other shore side structure;*

*(5) Serious threat, as determined by the Commandant and concurred in by the Chairman, or their designees, to life, property, or the environment by hazardous materials;*

*(6) Significant safety issues, as determined by the Commandant and concurred in by the Chairman, or their designees, relating to Coast Guard marine safety functions.”* (USCG & NTSB, 2018)

(3) The MOU prescribes USCG and NTSB on notifying each other of significant marine casualty as follows;

*“NTSB and USCG agree that upon report of a major marine casualty, a significant marine casualty as defined in Appendix 1, or a casualty involving public*

*and non-public vessels, each agency will immediately notify the other of all information received regarding the casualty, and both agencies will quickly coordinate the appropriate investigative response.*

*Additionally, if either agency is notified of a marine casualty where the United States is a substantially interested state under the International Maritime Organization (IMO) code, “Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident,” each agency will immediately notify the other of all information received regarding the casualty, and NTSB and USCG will expeditiously coordinate the appropriate investigative response. When the United States is invited to participate or decides to conduct an independent casualty investigation, USCG and NTSB may each participate in the investigation.” (USCG & NTSB, 2018)*

(4) Designation of an agency as ‘leading agency’ for an investigation is prescribed as follows;

*“NTSB and USCG anticipate that when NTSB and USCG both decide to investigate a marine casualty, one agency will be designated as the lead Federal agency for the investigation. The Chairman of the National Transportation Safety Board and the Commandant of the United States Coast Guard, or their designees, will determine which agency will lead the casualty investigation; the NTSB may lead the investigation of “significant marine casualties” as defined in Appendix 1; and the USCG may lead the investigation of all other marine casualties*

*NTSB and USCG agree that regardless of which agency leads an investigation, the other agency may participate as an equal partner in gathering evidence and establishing facts, with due consideration to keeping their analysis and conclusions separate and independent. In those cases where the public interest demands on-scene live media engagements or written press releases, the parties agree that the lead investigative agency will act as the sole spokesperson for casualty investigation information and activity, and press conferences and press releases will identify the lead and supporting investigating agencies. Participation by the non-lead investigative agency in any press conference is encouraged. Once the on-scene portion*



*of the investigation is complete, both agencies may issue independent press releases and conduct any press conferences as necessary.” (USCG & NTSB, 2018)*

(5) Emphasizing close liaison, coordination and supporting each other of resources

*“Close continuing liaison and cooperation will be maintained between the two agencies so that common objectives can be achieved efficiently with cooperation and coordination, so that problems and differences can be minimized and resolved expeditiously. The Chairman and the Commandant agree to meet at least annually to review the previous year’s investigations, and to consider improvements to this agreement, the USCG/NTSB joint regulations, marine casualty investigation procedures, status of NTSB recommendations to the USCG, or other matters relating to marine casualty investigations and marine safety.*

*NTSB will provide to USCG, as resources permit, investigative support for casualty investigations, such as voyage data recorder information retrieval and materials properties analysis, typically conducted by the NTSB laboratory staff. USCG will provide to NTSB, as resources permit, logistical assistance at the scene of a casualty, such as air or water transportation and office facilities. NTSB and USCG agree to establish, sponsor, and conduct joint training opportunities for their investigators with each encouraged to make courses and training facilities available on a reciprocal, no cost basis.” (USCG & NTSB, 2018)*

The MOU is as appeared in **Appendix I**

The relationship between the USCG and NTSB, particularly the inter-agency cooperation prescribed in this MOU, is indeed a significant example of applicable practical lessons for Thailand’s marine casualty investigation of which shall be the significant substance of the discussion in the next sections.

### **5.1.3 Summary of the case studies**

From the case studies of the Philippines and the US, the similarity and lessons that can be applicable to Thailand is the relationship between two agencies, both having responsibility related to marine casualty investigation.

The lesson from the Philippines' case is that despite the possible positive outlook of the existing agencies, PCG and MARINA cooperating on marine casualty investigation, according to Ferre's finding, an independent marine casualty investigation still has to be established. However, the researcher is of the view that even the Philippines could establish its new independent marine casualty investigation, PCG, MARINA and this new agency still have to develop a framework of cooperation, to work together, similarly to Thailand's situation that MAIO, as an independent marine casualty investigation, is established, but lacking of resources still poses challenges and require inter-agency cooperation to address, at least in the short term.

Meanwhile, the US also has the inter-agencies relation situation between the USCG and NTSB, but the US already has a MOU between USCG and NTSB, an established cooperation framework between these two agencies. The interpretation of both USCG and NTSB legal basis can be challenging similarly to the Philippines PCG and MARINA, but the MOU between USCG and NTSB prescribes quite clearly how USCG and NTSB would work together, as it prescribes (1) which cases of marine casualty would the USCG or NTSB are responsible of (2) the prescription of 'Significant Marine Casualty' (3) notifying each other of marine casualty (4) designation of an agency as 'leading agency' for an investigation and (5) emphasizing close liaison, coordination and supporting each other of resources.

The lessons from these cases shall be discussed for their applications to Thailand's marine casualty investigation in the following sections and the next chapter.

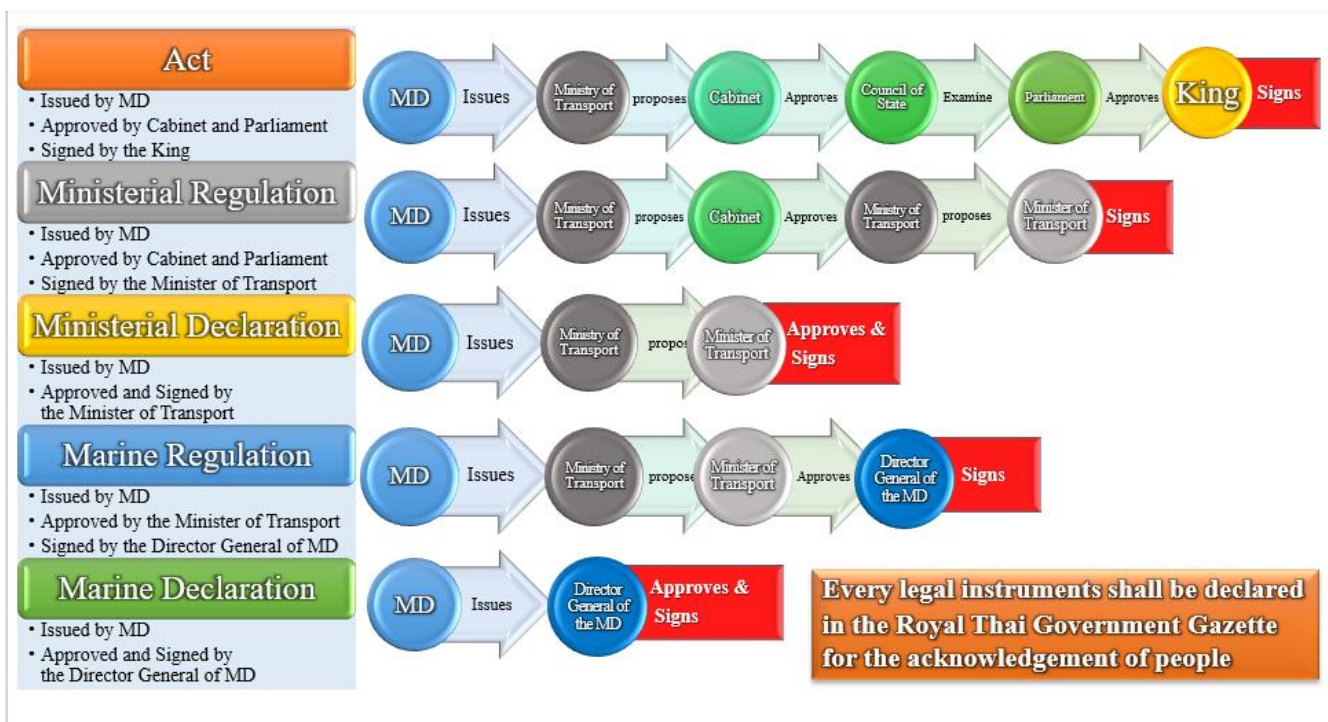
### **5.2 Possible distinct framework for MAIO and MD**

There has been a significant development in Thai marine casualty investigation's legislation, particularly the Navigation in Thai Waters Acts. LEG, an interview participant from the legal bureau, MD expressed that

(1) It is agreed that the casualty investigation clause in the Navigation in Thai Waters Act lacks elaborated procedure for casualty investigation and only reporting by master was prescribed.

(2) It is worth noting that despite the process, 18 amendments were already made to the Thai Nav Act with the earliest amendment made in March 2023 regarding MARPOL Annex V.’

The ‘despite the process’ stated by this interview participant refers to Thai legislation process as appeared in **Figure 12**<sup>18</sup> Thailand’s maritime legal instrument process



<sup>18</sup> The researcher produced this flowchart ‘Thailand’s maritime legislation process’ in close cooperation with MD’s Legal Bureau as a preparation for Thailand’s IMO Hybrid Mock Audit in 2021

It can be seen from this figure that an act has the most lengthy process among other Thai legal instruments as it has to start from MD issuing the draft amendments to Ministry of Transport which then proposes to the Cabinet which considers and approves, then the Council of State shall examine the draft of which the Parliament shall approve and then has to be signed by the king.

Nevertheless, the act is Thailand's primary law that serves as basis for the other secondary laws, thus it has to be amended to be up to date with global development including to accommodate the substances of IMO's regulations. LEG statement emphasises that despite the process, an amendment to the act is possible and has been done before in the past.

LEG elaborated further that;

*(3) Currently, an amendment of the casualty investigation clause in the Thai Nav act is undergoing and subsequently with the other 3 amendments of the act namely (1) SAR, (2) VTS, (3) penalties and port matters (totally 4 amendments).*

*The amendment on Casualty investigation shall be submitted to the Office of the Council of State and the draft act shall be available; right now the act's amendments on SAR, VTS, penalties and port matters are available on Thailand's <https://law.go.th/>.*

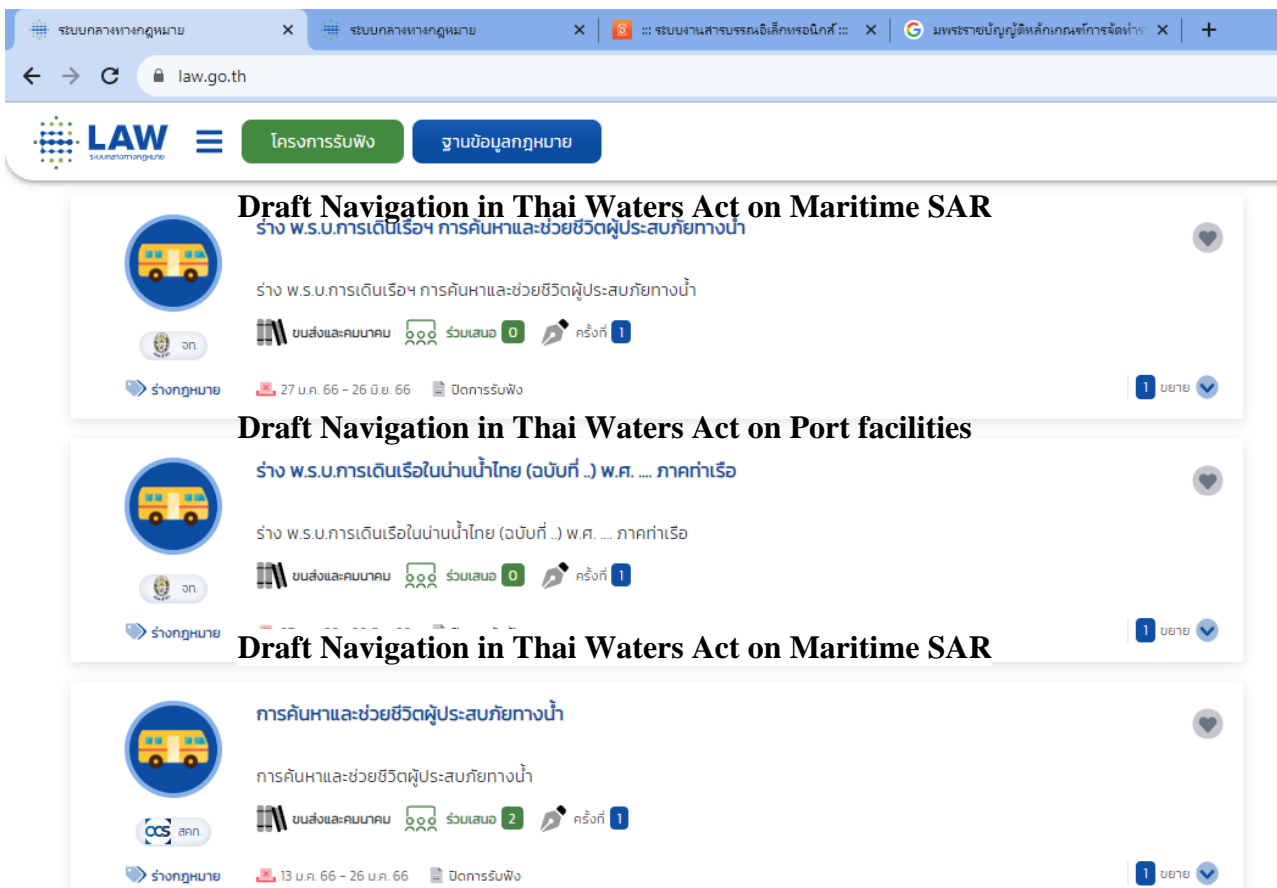
*Nevertheless, the new amendment on Casualty Investigation shall prescribe the role and duties of investigators and the procedure of investigation more elaborated than the existing amendment.*

*This new amendment shall enhance Thailand's IMO flag state obligation on casualty investigation as the legal basis including, Ministry Order, Thai Nav Act shall be more coherent to each other.*

*However, the detailed operation such as investigation procedure, training, personnel qualification of each relevant agency such as the Marine Department and Marine Investigation Office shall be processed further.'*

The <https://law.go.th/> database mentioned by LEG is Thailand’s public legal database that allows every Thai citizen to review draft legislation that is currently in process as per the Requirements on drafting legislation and legislation evaluation Act B.E. 2562 (2019), of which emphasises that the stakeholders must be aware of the impact of laws under the drafting process thus the database was developed.

Upon visiting the <https://law.go.th/> database searching keyword ‘navigation’ (‘เดินเรือ’ in Thai language) only the act’s amendments on SAR, VTS, penalties and port matters are available, in line with LEG’s statement as appeared in *Figure 13* Thailand’s <https://law.go.th/> database, keyword “navigation” (‘เดินเรือ’ in Thai language)



The screenshot shows a web browser with the URL law.go.th. The page title is "Draft Ministerial Regulations issued as per the Navigation in Thai Waters Act". There are two main entries:

- Entry 1:** "ร่างกฎกระทรวงฉบับที่ ... (พ.ศ. ...) ออกตามความในพรบ การเดินเรือ ๒๕๖๑" (Draft Ministerial Regulation No. ... (B.E. ...) issued pursuant to the Marine Traffic Act, B.E. 2561). It is from the Ministry of Marine and Coastal Affairs, dated 31 B.E. 2565 - 29 B.E. 2565, and is currently in the stage of "อยู่ระหว่างการสรุปผล" (under review). It has 1 comment.
- Entry 2:** "ร่างพรบ.การเดินเรือในน่านน้ำไทย พ.ศ. .... (การค้นหาและช่วยเหลือทางน้ำ)" (Draft Marine Traffic Act, B.E. .... (Search and rescue)). It is from the Department of Maritime Safety, dated 16 B.E. 2565 - 30 B.E. 2565, and is currently in the stage of "ปิดการรับฟัง" (closed for public comment). It has 1 comment.

The footer contains the logos for CCS (สำนักงานคณะกรรมการกฤษฎีกา - Better Regulation for Better Life) and DGA (กรมการขนส่งทางน้ำและพาณิชยนาวี). Contact information is provided: โทรศัพท์ : (+66) 2612 6060, โทรสาร : (+66) 2612 6011-12, อีเมล : contact@dga.or.th.

Note. From “ Thailand’s <https://law.go.th/> database”, by Thailand’s Office of the Council of State, 2021. Copyright 2021 by Thailand’s Office of the Council of State.

Therefore, as per the process, the draft amendment of a section regarding marine casualty investigation in the Navigation in Thai Water Acts is in the process and shall be uploaded to this database after the other sections are considered and approved.

Furthermore, this development expressed by LEG also in line with INV1 and INV2 who expressed that

*‘Currently, we were informed that MD has drafted the Navigation in Thai Waters Act’s new amendment on Casualty Investigation, it was approved by the Council of State in April 2023. This new act’s amendment shall designate a committee on managing marine accident and incident with powers and duties to issue relevant announcement or regulations. ’*

From this statement that the draft amendment of the act was approved by the Council of State in April 2023, referring back to **Figure 12** that means the draft is to be considered and approved by the parliament respectively and making the draft available on the <https://law.go.th/> database is a part of this parliamentary process.

Regarding the distinct role of MAIO and MD, HM, an interview participant, a Harbor Master from Marine Safety and Environment Bureau, MD, expressed that

*'Lacking of resources, particularly budget and manpower of MIAO and lacking of clear working definition, leading to confusion. With the establishment of MAIO as an independent casualty investigation agency, MD as a maritime administration should not investigate the cases involving ships engaging international voyages particularly Thai flagged vessels, but only address minor situations involving smaller vessels. However, the role of the MAIO is not apparent when an accident involving ships engaging international voyages occurs.'*

*In my view, a better definition of 'very serious' casualty shall better clarify accident cases that would fall into MAIO's investigation and not the MD. As despite MAIO and MD being under the MOT, MAIO is a separate agency from the MD, perhaps this better definition of 'very serious' casualty shall be published in the form of MOT's Announcement.*

*However, such 'very serious' casualties involving ships engaging in international voyages do not occur often, there were no such cases occurring in the past 2 years (2021 - 2023) and Thailand doesn't have many ships of that type. A better definition of 'very serious' casualty should be defined and perhaps expanded to include more types of cases that fall into MAIO's responsibilities, otherwise, the MD, as a maritime administration on site, still has to contain and address the situation as appropriate which is not different from before the establishment of MAIO. This definition of 'very serious' casualties shall be discussed and assessed for amendment of existing legislation or even formulating new ones.'*

The interview participants, the investigators of the MAIO, INV1 and INV2 expressed their agreement on the lacking of resources and manpower of the MAIO, but they insist that the MAIO's current legal basis, the Ministry of Transport's Order No. 367/ B.E. 2565 (2022) has prescribed clearly on what is considered to be accidents to be investigated by the MAIO. INV1 and INV2 emphasized that

*'As prescribed in the 2. Authorities and functions (of the MAIO) in the Ministry of Transport's Order No. 367/ B.E. 2565 (2022), MAIO shall*

*12) Investigate the marine casualties, especially the very serious marine casualties that occurred to the ship which is a Thai ship engaged on the international voyage, or the foreign ship within the limits of the territorial sea of Thailand.*

*13) Investigate the very serious marine casualties for domestic passenger ship which carries 100 passengers or more, and domestic cargo ships of 500 gross tonnage or more.*

*With such a role of the MAIO prescribed, MD shall particularly investigate domestic local trade vessels which is a gap that has to be discussed. In addition, sometimes MD's Investigation Committee, the mechanism before the establishment of MAIO is still exercised.'*

Comparing this INV1 and INV2 statement from MAIO with the previous one from HM of MD, it implies that MAIO has a more solid substantial argument of its role ((1) *'Investigate the marine casualties, especially the very serious marine casualties that occurred to the ship which is a Thai ship engage on the international voyage, or the foreign ship within limits of the territorial sea of Thailand.'* for Thai flagged ships engage on the international voyage, or the foreign ship within limits of the territorial sea of Thailand and (2) *'very serious marine casualties for domestic passenger ship which carries 100 passengers or more, and domestic cargo ships of 500 gross tonnage or more'* for domestic vessels) and, thus, the researcher is of the view that MD should develop its investigation framework and procedure; specifying which cases MD shall investigate, defining and specifying more on cases involving



domestic local trade vessels that it shall investigate and not within the scope of MAIO and then discuss with MAIO regarding their cooperation.

However, a development of this issue is expressed by interview participants, the investigators of the MAIO, INV1 and INV2 as follows;

*'The Ministry of Transport, Thailand has a future vision for Thailand's marine casualty investigation that as every transportation mode, namely land, marine, railway and aviation, is having its own legal basis either already has or is being developed, a MOT Safety Centre responsible for investigating casualty of every transportation mode is aimed to be established by the end of 2023 covering accidents taking the example from NTSB of the United States. This centre shall be initially under the MOT, but in the future it shall be under the MOT's Office of Transport and Traffic Policy and Planning (OTP) and later on to the Office of the Prime Minister to ensure independence of the agency.'*

In line with the United State's NTSB agency's description that

*'The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in the other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space.'*

This is a very interesting development as it indicates that the MOT is aware of the challenge that the MAIO is lacking resources for its operation, particularly budget and manpower, but rather than allocating such resources to each agency, it aims toward a more ambitious goal of consolidating casualty investigation of every transportation mode into one agency and thus more convenient to allocate resources to.

However, regardless of MAIO or the new MOT Safety Centre serving as a casualty investigation unit, there will be an agency conducting marine casualty investigation of which should cooperate with MD. The ministry's vision may have a positive outlook to the future, but while Thailand's marine casualty investigation is developing towards such a future, an enhancement via policy to optimize Thailand's marine casualty investigation must be made for this instance.

The researcher is also of the view that the measures that can be taken are such as the reviewing of resources allocation, with re-assessment of the MAIO's resources, particularly manpower, more personnel can be allocated to deploy in MAIO as investigator assistants, as MAIO already has investigators that are expert in deck and engine departments as appeared in **Figure 2**, but seem to need assistant in compiling investigation reports which suit the roles of investigation assistant and thus, enhance and optimize MAIO's work in 'very serious' marine casualty investigations in accordance with IMO's regulations of which should be adequate as per HM's observation that 'very serious' casualties involving ships engaging in international voyages do not occur often, there were no such cases occurred during 2021 - 2023 and Thailand doesn't have many ships of that type and another measure is that perhaps a cooperation between MD and MAIO with MD can be responsible for investigating other marine casualties that are not 'very serious' marine casualty so that MAIO can focus its resources on 'very serious' marine casualty investigations in accordance with IMO's regulations. There are platforms that these measures can be discussed and proposed such as inter-agency meetings, Flag State KPI working group and Sub-Committee for Formulation and Steering on Overall Maritime Strategy as appeared in **Figure 7** and **Chapter 3 No. 3.2.1.** respectively. This shall be discussed in detail in the next chapter.

### **5.3 Possible cooperation between MAIO and MD**

Regarding this matter, HM, an interview participant, a Harbor Master from Marine Safety and Environment Bureau, MD, also expressed that

*'Currently none, but there are still possibilities of MD and MAIO cooperating and it can also be productive and constructive as MD has several personnel with expertise on casualty investigation and likely to be willing to cooperate with MAIO. However, such cooperation can only occur after the better clarifications of MD and MAIO regarding their roles in casualty investigations are made (thus referring to the discussion in the previous section regarding the distinct roles of the MAIO and MD).'*

Meanwhile, interview participants INV1 and INV2 shared the development of this matter that

*‘Currently, MD and MAIO have developed MD - MAIO joint procedures on marine casualty and proposed to the MOT for approval’*

’ Therefore, despite the challenge of role distinction between MD and MAIO, there is ongoing progress on the two agencies’ cooperation. There is no recorded discussion or report of this initiative available or accessible to the researcher, yet, but this is indeed an interesting development.

Furthermore, although MAIO is progressing towards MOT Safety Centre that investigates accidents of every transportation mode, MAIO and MD still have to cooperate during this transition and also shall be the basis for MD to cooperate with this MOT Safety Centre in the future.

Taking example from the US, the researcher is of the view that an inter-agency cooperation similar to the MOU between USCG and NTSB and also be made between Thailand’s MAIO and MD taking the key features of the US’s counterpart’s MOU namely (1) prescribing which cases of marine casualty would MAIO and MD would be responsible of (2) the prescription of ‘Very Serious/Significant Marine Casualty’ (3) notifying each other of marine casualty (4) designation of an agency as ‘leading agency’ for an investigation and (5) emphasizing close liaison, coordination and supporting each other of resources. For example, in a hypothetical situation where a ‘very serious’ marine casualty occurred, the casualty fits the prescription of ‘very serious’ marine casualty of which the MAIO shall be the leading agency, MD can also play supportive roles such as deploying its harbor masters to contain the casualty site, preventing the meddling of evidences and subsequently facilitating the MAIO’s investigation and thus preserving the independent of the investigation in line with the IMO’s regulations.

## Chapter 6: Conclusion and recommendations

It appears that the Thai agencies relevant to Thailand's marine casualty investigation, are aware of the challenges discussed in this study and developments are under process such as amendments of primary legislation namely the Navigation in Thai Waters Act adding more elaborated details regarding casualty investigation in the act. Relevant officers are considering causal factors of the challenges faced and initiatives to address them.

This chapter shall summarize the challenges and discussions once again and provide recommendations respectively.

1) Policy, an amendment to Thailand's Overall Maritime Strategy regarding Thailand's marine casualty investigation has to be made

As a primary basis for every government's actions, policy has to be stipulated to provide clear directions for the following actions taken by the government. Therefore, in this case, for Thailand's marine casualty investigation, Thailand's Overall Maritime Strategy, PART 11: TARGETS, RESPONSIBILITIES AND TIMEFRAMES, Strategic Objective 1 - Promote safety of life at sea as a flag, coastal and port state, Target 1.9 Transparent marine safety investigation needs to be amended. The action plans to achieve target 1.9 have to be expanded further than 'Establish the marine safety investigation authority under the Ministry of Transport' as the MAIO is now already established. This has to be discussed among relevant agencies, particularly MD and MAIO and proposed to the Sub-Committee for Formulation and Steering on Overall Maritime Strategy () for the strategy to be amended accordingly. The discussion may be held within the existing framework such as inter-agency meetings, the Working groups on Flag state Key Performance Indicators (KPI) (**Figure 7**) that MD and MAIO are members of and the substance of the working group is relevant to the discussion or the discussion can also be held separately, initiated by either MD or MAIO or by the Ministry of Transport and inviting MD and MAIO to participate, when the discussion is finalized the proposals can then be submitted to the Sub-Committee for Formulation and Steering on Overall Maritime Strategy for consideration and endorsement.

The expanded action plans for this target 1.9 can include the amendment or stipulation of legal instruments such as the Navigation in Thai Water Acts, new Ministerial Order, Marine Department Regulations, inter-agency MOU, capacity building activities, workshop, training, as appeared in blue text in this **Figure 14** *Draft sample of possible further action plans for goals 1.9 , Transparent marine safety investigation of Thailand’s Overall Maritime Strategy*

**Action plans for goals 1.9**

Transparent marine safety investigation.

Goals description: Thailand will establish an independent marine safety investigation authority under the Ministry of Transport to ensure that the investigation is impartial and without direction or interference from any persons or organizations that may be affected by its outcome and find the root causes of the accidents as well as issue recommendations with a view to preventing similar marine casualties and marine accidents in the future.			
Timeframe	Main agencies	Supporting agencies	Detail
June 2020	Ministry of Transport	Marine Department	The Permanent Secretary of the Ministry of Transport signs the Ministry of Transport order to establish the Marine Casualty Investigation Board, which consists of representatives from the public and private agencies involved. The Board is responsible for investigating marine casualty under the International Convention of IMO and submits the investigation report to the Permanent Secretary of the Ministry of Transport. The Permanent Secretary of the Ministry of Transport also signs the Ministry of Transport order to appoint the working group for establishing marine safety investigation authority under the Ministry of Transport.
July 2020	Ministry of Transport	Marine Department	Develop manuals and Standard Operation Procedures (SOPs) for the Marine Casualty Investigation Board to meet the standards and requirements of the Casualty Investigation Code and organize the meeting of the working

			group for establishing marine safety investigation authority to develop details for the establishment of the marine safety investigation authority.
August 2020	Ministry of Transport	Marine Department	Gather information to support the establishment of the marine safety investigation authority to determine the responsibilities and authorities of the authority. The Marine Casualty Investigation Board has developed manuals and Standard Operation Procedures (SOPs).
September 2020	Ministry of Transport	Marine Department	Organize a meeting of the working group for establishing marine safety investigation authority to summarize the guidelines/format of the establishment of the authority.
October 2020	Ministry of Transport	Marine Department	Begin the process of establishing the marine safety investigation authority in accordance with relevant legal procedures.
After the COVID-19 situation relieved	Ministry of Transport	Marine Department	Organize training for casualty investigators according to the model course of the International Maritime Organization (IMO).
June 2021	Ministry of Transport	Marine Department	Establish the marine safety investigation authority under the Ministry of Transport.
December 2023	Ministry of Transport	Marine Accident Investigation Office, Marine Department	The amendment of Navigation in Thai Water Acts regarding Thailand's casualty investigation is approved and signed.
January 2024	Ministry of Transport	Marine Accident Investigation Office	Reassessment of MAIO's resources is made, considering deploying more personnel such as investigation assistant to the MAIO
February 2024	Ministry of Transport	Marine Accident Investigation Office,	The Ministry of Transport's Ministerial Order referring to the amended

		Marine Department	Navigation in Thai Waters Act, elaborating more on the roles of both MAIO and MD in Thailand's marine casualty investigation is announced.
March 2024	Ministry of Transport	Marine Accident Investigation Office, Marine Department	Inter-agencies workshop for capacity building on marine casualty investigation is organized
April 2024	Ministry of Transport	Marine Accident Investigation Office, Marine Department	A MOU of cooperation on marine casualty investigation between MD and MAIO is signed.

*Note.* Adapted from “Thailand’s Overall Maritime Strategy”, by the Government of Thailand, 2023. ([https://md.go.th/wp-content/uploads/2021/03/full-translated\\_Thailands-Overall-Maritime-Strategy-as-of-21-01-2023.pdf](https://md.go.th/wp-content/uploads/2021/03/full-translated_Thailands-Overall-Maritime-Strategy-as-of-21-01-2023.pdf)) Copyright 2023 by the Government of Thailand.

2) Legislation, a secondary law has to be stipulated to prescribe the roles of MD in marine casualty investigation, subsequently distincting the roles of MD and MAIO.

As discussed in the previous chapter, the amendment of Navigation in Thai Water Acts regarding Thailand’s casualty investigation is in the process. After that amendment is approved and signed, the Ministry of Transport Order No. 367/B.E. 2565 (2022) on the establishment of the Marine Investigation Office to establish the Marine Investigation Office (MIO) that issued by virtue of State Administration Act, B.E. 2534 (1991) as amended, shall be elaborated further by a newer Ministry of Transport Order referring to the amended Navigation in Thai Water Acts that has sections and clauses elaborating the roles and procedure of marine casualty investigation rather than only reporting procedure as prescribed in the current amendment and referring to the act as Thailand’s main maritime legislation rather than State Administration Act which is less relevant to maritime affairs.

The proposed new Ministerial Order shall not supersede or replace Ministry of Transport Order No. 367/B.E. 2565 (2022) as Order No. 367 is the order on the establishment of the MAIO itself, but rather a further elaboration on roles and

procedures of marine casualty investigation of MD and MAIO. The existing prescription in Order No. 367 that the MAIO shall investigate the very serious marine casualties for domestic passenger ship which carries 100 passengers or more, and domestic cargo ships of 500 gross tonnage or more will still stand, but an elaborated definition of 'very serious' marine casualty which can be directly quoted from IMO Casualty Investigation Code and or as per Thailand's interpretation should be prescribed in the Ministerial Order. Furthermore, a definition of other marine casualties that are not 'very serious' marine casualty in accordance with the IMO's regulations should be prescribed too as such casualty shall not fall into the mission of the MAIO to investigate, but rather the mission of MD and thus the MAIO can focus on investigating 'very serious' marine casualties in accordance with IMO's regulations and subsequently preserving the independent of the investigation.

Not only that policy, primary law and secondary law are in line with each other forming a comprehensive basis for operation, this shall be a legal basis that also provides a distinct role in Thailand's marine casualty investigation of MAIO and MD respectively.

3) A cooperation framework on marine casualty investigation between MD and MAIO has to be made

With policy, primary law and secondary law are aligned, forming a solid comprehensive basis for operation and distinct roles of MAIO and MD are defined, the operation of casualty investigation should be effectively performed as MAIO and MD are authorized to investigate clearly defined different types of marine casualties, 'very serious' marine casualties in accordance with IMO's regulations for MAIO and other marine casualties, for MD.

Nevertheless, a cooperation between MAIO and MD in casualty investigation can also be made and can lead to a productive outcome and efficient investigation as MD also has personnel experienced in casualty investigation and necessary resources such as vessels and safety equipment. Therefore, a statutory cooperation framework such as MOU between MAIO and MD can be made to enhance their work on marine casualty investigation, similarly to the MOU between the USCG and NTSB of the



United States. The MOU can start with the cooperation such as pooling of resources between the two agencies, exchanging of information and practices, co-organizing casualty investigation capacity building activities and then can be amended in the future to accommodate more cooperation aspects. A limit of cooperation particularly on the MD side also has to be prescribed to ensure the independence of the investigation under this cooperation framework as MD also serves as national maritime administration, functioning as flag state administration. Under this framework, for 'very serious' marine casualty according to IMO's regulations, MD may deploy its personnel such as harbor masters to contain the casualty site, preventing the meddling of evidence and subsequently facilitating the investigation of MAIO, designating as the leading agency of the investigation, which can not only optimize the investigation, but also preserving the independent of the investigation.

As mentioned in the limitations that this study shall not examine marine casualty investigation in-depth of safety management and operational aspects, but rather focusing on policy and regulatory framework that can enhance Thailand's casualty investigation. Clearly defined coherent policy and regulatory framework shall facilitate and optimize casualty investigation in Thailand, enhancing the efficiency of marine casualty investigation and maintain independence of investigation.

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## Appendices

**Appendix A:** Interview questions addressing to Legal Officer, Transport Technical Officer and Harbor Master of MD and Investigators of MAIO.

### **Plan & Policy**

1. Currently, Thailand's Maritime Strategy prescribes Target 1.9 Transparent marine safety investigation and action plans to achieve it to Establish the marine safety investigation authority under the Ministry of Transport.

Now that the Marine Investigation Office has been established in 2022 as per Ministry of Transport Order No. 367/ B.E. 2565 (2022) on the establishment of the Marine Investigation Office, subsequently achieving Target 1.9 of Thailand's Maritime Strategy.

Is there any further plan or policy on Thailand's marine casualty investigation available, can you elaborate? Particularly, Strength, Weakness, Opportunity and Threat of this plan or policy?

2. Please provide your recollection of Thailand's IMSAS in February 2023 regarding casualty investigation.

### **Legal**

3. Have you received comments on amending current legislations or stipulating legislations to facilitate casualty investigation?

4. If new legal instruments are required to address the challenges in Thai casualty investigation, which form of such legal instrument should be stipulated?

\*coherently with the inputs from plan & policy and operational questions

### **Operational**

5. What are the current operational challenges of Thai marine investigation? Particularly, in relation to your organization? It seems that there is a lack of resources and particularly manpower. Would a policy and or regulatory framework optimize Thailand's casualty investigation, at least in the short term?

6. Can you provide comments comparing Thai marine casualty investigations between pre- establishment of MAIO and post-establishment of MAIO?

7. Currently, how do MD and MAIO cooperate or work together? Is there any framework available e.g. MOU, procedure or is it a case-by-case basis?

8. Do you think updated policy and legal instruments could assist in improving the approach to casualty investigations in Thailand in the future? If yes, how?

**Appendix B: Unofficial Translation of the Navigation in Thai Waters Act, B.E. 2456 (1913)**

Unofficial Translation

**NAVIGATION IN THE THAI WATERS ACT,  
B.E. 2456 (1913)**

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His Majesty King Vajiravudth is graciously pleased to proclaim that, in the view of His Majesty, the Navigation in the Thai Waters Act, enacted on the twenty fifth day of June R.E. 124, contains certain flaws that require revision to accommodate the present situation; Be it, therefore, enacted by the King as follows:

**INTRODUCTION AND DEFINITIONS UNDER THIS ACT**

---

**Section 1.** This Act is called the "Navigation in the Thai Waters Act, B.E. 2456 (1913)".

**Section 2.<sup>1</sup>** This Act shall come into force as from the first day of September B.E. 2456.

**Section 3.<sup>2</sup>** In this Act:

"vessel" means a water vehicle of any kind, whether used for carrying, transporting, towing, tugging, pushing, lifting, digging or dredging, and shall include a vehicle of any other kind that can be used on water in a similar manner;

"ship" means a vessel that is propelled by machinery or sail, and does not require oars, paddles or rows;

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Translated by Ms. Sudkhanueng Somboonwong, and reviewed by Professor Phijaisakdi Horayangkura under contract for the Office of the Council of State of Thailand's Law for ASEAN project.  
- Initial Version - pending review and approval by the Office of the Council of State.

<sup>1</sup> As amended up to the Navigation in the Thai Waters Act (No.16), B.E. 2550 (2007).  
<sup>2</sup> Published in the Government Gazette, Vol. 30, page 74, dated 4<sup>th</sup> August B.E. 2456 (1913).  
<sup>3</sup> Section 3 is amended by the Navigation in Thai Waters Act (No. 13), B.E. 2525 (1982).

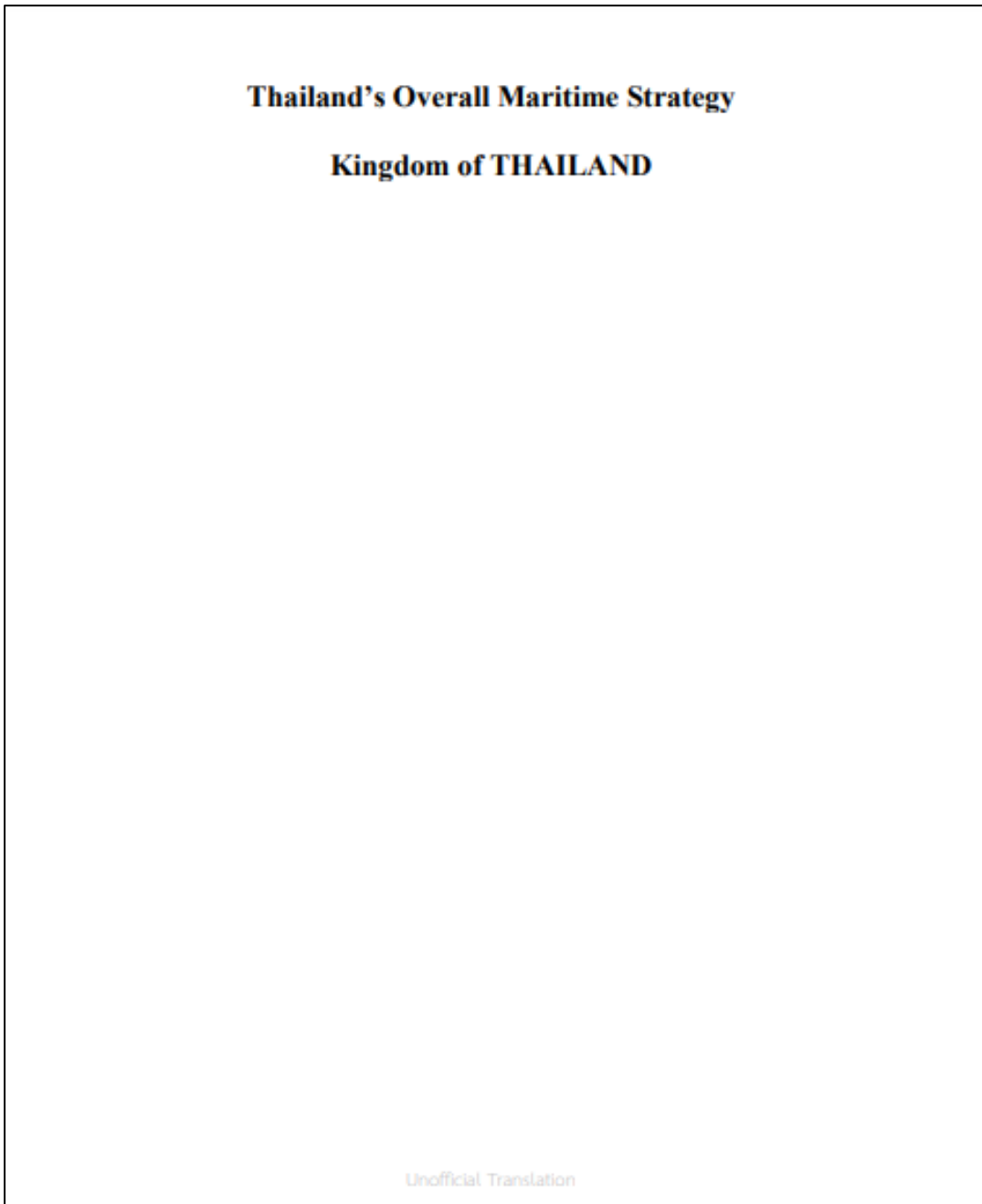
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**Appendix C: Unofficial Translation of Thailand's Overall Maritime Strategy**



Full text available at [https://md.go.th/wp-content/uploads/2021/03/full-translated\\_Thailands-Overall-Maritime-Strategy-as-of-21-01-2023.pdf](https://md.go.th/wp-content/uploads/2021/03/full-translated_Thailands-Overall-Maritime-Strategy-as-of-21-01-2023.pdf)

**Appendix D: Unofficial translation of Ministry of Transport Order No. 367/B.E. 2565 (2022)**

*(Unofficial Translation)*

**Ministry of Transport Order  
No. 367/2022  
Establishment of the Marine Investigation Office**

In order for the Ministry of Transport to have an agency responsible for safety at sea in line with the obligations of the International Maritime Organization (IMO) defined for member States to effectively implement such obligations and prepare for the Member State Audit Scheme (IMSAS) which will be conducted at periodic intervals by the IMO

By virtue of Section 21 of the State Administration Act, B.E. 2534 (1991) as amended, establishing the Marine Investigation Office to be the internal unit under the direct supervision of the Permanent Secretary of the Ministry of Transport, and is an agency responsible for maritime safety of the Ministry of Transport, with its missions, authorities and functions, as well as structures as follows:

**1. Missions**

1) Consider the casualty notification in accordance with Section 102 and Section 173 of Navigation in the Thai Waters Act, B.E. 2456 (1913) in which the marine casualty shall be investigated and reported to the IMO by the Marine Casualty Investigation Committee in accordance with the Casualty Investigation Code of the IMO.

2) Coordinate attendance with the representative, advisor, and specialist assigned by the Flag State, or relevant organization to participate in the marine safety investigation.

3) Prepare the marine safety investigation report of very serious marine casualties, including investigation reports of the casualties that shall be investigated.

4) Coordinate with the relevant agencies responsible for maritime safety and marine investigation to comply with the Casualty Investigation Code and report the final marine safety investigation report to the IMO and publish report.

5) Study, collect, and analyze the information and details regarding marine casualties, including compiling the statistics of the marine casualty under the Casualty Investigation Code.

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6) Propose the revision of national law of marine casualty investigation in accordance with the relevant IMO conventions or international agreements.

7) Prescribe the qualifications for Marine Casualty Investigator.

8) Provide training and relevant course of the marine safety investigation for the investigators.

9) Cooperate or support the work of relevant or assigned organizations.

## **2. Authorities and functions**

1) Perform as the secretariat of the Marine Casualty Investigation Committee.

2) Receive notification and inform substantially interested states, and consider the marine casualty occurred to the ship which is a Thai flag, or the foreign ship within limits of the territorial sea of Thailand.

3) Collect, record, and analyze the information on the relevant evidence according to the assignment from Marine Casualty Investigation Committee.

4) Prepare the technical report and the draft report relevant to the investigation to submit to the Marine Casualty Investigation Committee for its consideration.

5) Cooperate, communicate, and coordinate with the relevant organization, both domestically and internationally, in relevant to the investigation.

6) Set up follow up procedure for tracking the safety recommendations.

7) Study, collect database, and analyze the marine casualty statistics for use by the Marine Casualty Investigation Committee.

8) Prepare and publish the investigation; track the implementation of safety recommendations and preventive measures, casualty statistics and analysis, and other safety-related information for public according to the assignment from the Marine Casualty Investigation Committee.

9) Study and analyze to draft and develop the national law on the marine casualty investigation.

10) Provide relevant training course of the marine safety investigation for Marine Casualty Investigation Committee and relevant officers.

11) Arrange the investigation equipment.

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12) Investigate the marine casualties, especially the very serious marine casualties that occurred to the ship which is a Thai ship engage on the international voyage, or the foreign ship within limits of the territorial sea of Thailand.

13) Investigate the very serious marine casualties for domestic passenger ship which carries 100 passengers or more, and domestic cargo ships of 500 gross tonnage or more.

14) Train and provide knowledge on marine casualty investigation to the relevant officers.

15) Cooperate or support the work of the relevant or assigned organizations.

16) Perform other duties specified by law or as assigned by Marine Casualty Investigation Committee

### **3. Structures**

3.1 The marine safety technical section has the function as follows:

- Conduct case study research on the casualties that occurred in and outside Thai territorial waters.

- Develop, study, innovate and analyze the details information on the relevant evidence according to the assignment from Marine Casualty Investigation Committee to establish a guideline for preventive measures.

- Provide advice in preparing the draft technical report and draft report related to the investigation for consideration by the committee.

- Cooperate, communicate and coordinate with the relevant organization both domestically and internationally in relevant to the investigation, and consider and provide comments on the investigation report and research study.

- Follow up on the implementation of safety recommendations and preventive measures to report the progress to the committee.

- Study and analyze the statistics of marine casualties for the benefit of the committee.

- Participate in the study and analysis of drafting and developing the legislation regarding the investigation in order to meet the standards of the IMO.

- Provide comments and suggestions regarding the training of relevant officers to comply with the IMO standards.

- Cooperate or support the work of the relevant or assigned organizations.

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3.2 The operational section has the function as follows:

- Receive the notification and consider the casualties that occurred in and outside Thai territorial waters including notifying another substantially interested State.
- Collect, record and analyze the information on the relevant evidence according to the assignment from the Committee.
- Prepare the technical report and the draft report relevant to the investigation, to submit to the Committee for its consideration.
- Cooperate, communicate and coordinate with the relevant organization both domestically and internationally in relevant to the investigation.
- Follow up on the implementation of safety recommendations and preventive measures and report the progress to the committee.
- Provide comments and suggestions regarding the arrangement of tools, equipment, and necessary materials for investigations and preparation for the investigation to be proceeded effectively
- Other operations, working in conjunction with or supporting the operations of other relevant or delegated agencies.

The order is effective from this day onwards.

Ordered on the 28<sup>th</sup> day of March B.E. 2565 (2022)

(Mr. ChayatunPhromsorn)

Permanent Secretary, Ministry of Transport

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**Appendix E:** Hybrid Mock Audit, Form A, Findings/Observations Notice dated August 2021

**(HYBRID MOCK AUDIT)  
Form A**

FINDINGS/OBSERVATIONS NOTICE	
<b>Member State: THAILAND</b>	Audit period: August 2021
<b>Department:</b>	
<b>Finding No.: 8</b>	<b>Observation No.:</b>
<b>STATEMENT:</b>	
<p><b>Casualty Investigation</b></p> <p>The III Code and the Casualty investigation Code require that accident investigations have to be undertaken in an impartial manner and in a way that they cannot become subject to external direction. The fact that the Secretary of the Sub-Committee for maritime casualty investigation is from the Marine Department and that investigations also involve employees from the Marine Department cannot fully ensure that such impartiality is maintained during accident investigations.</p>	
<b>EVIDENCE:</b>	
Document review, Interview	
<b>APPLICABLE PROVISION OF THE AUDIT STANDARD AND/OR IMO INSTRUMENT:</b>	
Resolution MSC.255(84), Chapter 11, III Code para 38	
<b>Team leader: Prof. Jens-Uwe Schröder-Hinrichs Date: 23.08.2021</b>	
<b>Member State:</b>	<b>Date received:</b>

**Appendix F:** The Unofficial Translation of the 3rd Marine Local branch's order No. 2/B.E. 2566 (2023) on the establishment of causal investigation on SMOOTHSEA 22 explosion and fire accident at Ruam Mitr Dockyard co. Ltd's dock

*(Unofficial Translation)*



**3<sup>rd</sup> Marine Office's Order**  
**No. 2/B.E. 2566 (2023)**

**On the establishment of causal investigation on SMOOTHSEA 22 explosion  
and fire accident at Ruam Mitr Dockyard co. Ltd.'s dock**

.....

The 3<sup>rd</sup> Marine Office received a report from the Marine Office Samutsongkram branch that the vessel SMOOTHSEA 22, ship's license no. 620000791, local trade vessel, an oil tanker carrying oil product with flashpoint lower than 60 C, 2,998 GT, docked at the Ruam Mitr Dockyard Co. Ltd.'s dock located at no. 140, Moo 8, Laem Yai municipality, Mueng district, Samutsongkram province, postal code 75000, was exploded and totally caught in fire.

In order to identify causal factor in accordance with the report, the 3<sup>rd</sup> Marine Office has established the causal investigation committee consisting of

1. [REDACTED]	Chairman
Director of the Marine Office Samutsongkram branch Acting director of the 3 <sup>rd</sup> Marine Office	
2. [REDACTED]	Member
Harbour Master, Professional Level	
3. [REDACTED]	Member
Harbour Master, Practitioner Level	
4. [REDACTED]	Member
Ship Surveyour, Professional Level	
5. Expert from PSP Specialties co. Ltd.	Member
6. Expert from Shell co. Ltd.	Member
7. [REDACTED]	Member and Secretary
Director of Administration and Planning	
8. [REDACTED]	Member and Assistant Secretary
Legal Officer	
9. [REDACTED]	Member and Assistant Secretary
Legal Officer	

The Committee shall have the authorities and responsibilities as follows:

1. Investigate the causal factors of the explosion and fire accident of the vessel SMOOTHSEA 22, ship's license no. 620000791, local trade vessel, an oil tanker carrying oil product with flashpoint lower than 60 C, 2,998 GT including other circumstantial evidences related to the case.
2. Investigate whether seafarers and safety personnel of the the Ruam Mitr Dockyard Co. Ltd. relevant to tank cleaning/freeing gas procedures have any defecation during their operation and how.
3. Summarize recommendations of the case and report to the Director of the 3<sup>rd</sup> Marine Office

This committee shall report to the Director of the 3<sup>rd</sup> Marine Office within 10 days from the issuance of this order

Ordered on 17 January B.E. 2566 (2023)

[SIGNATURE]  
[REDACTED]

Director of the Marine Office Samutsongkram branch  
Acting director of the 3<sup>rd</sup> Marine Office

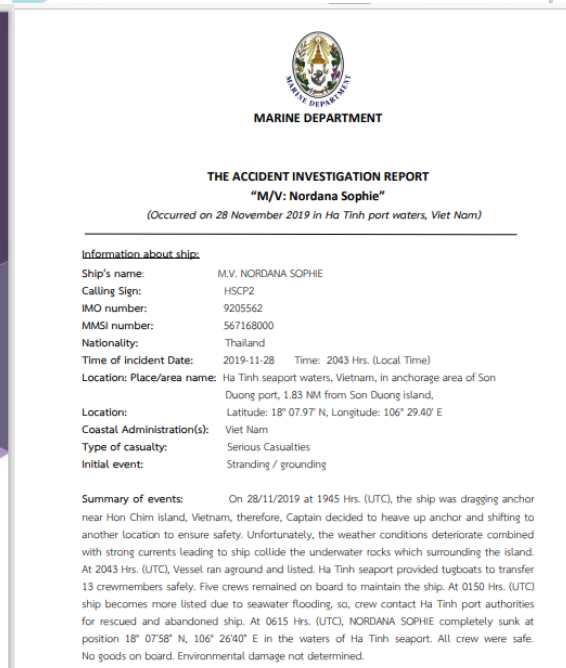
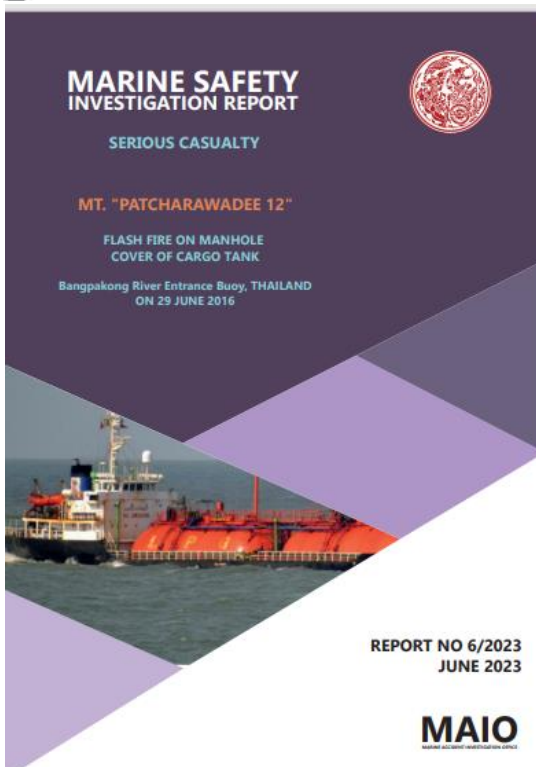
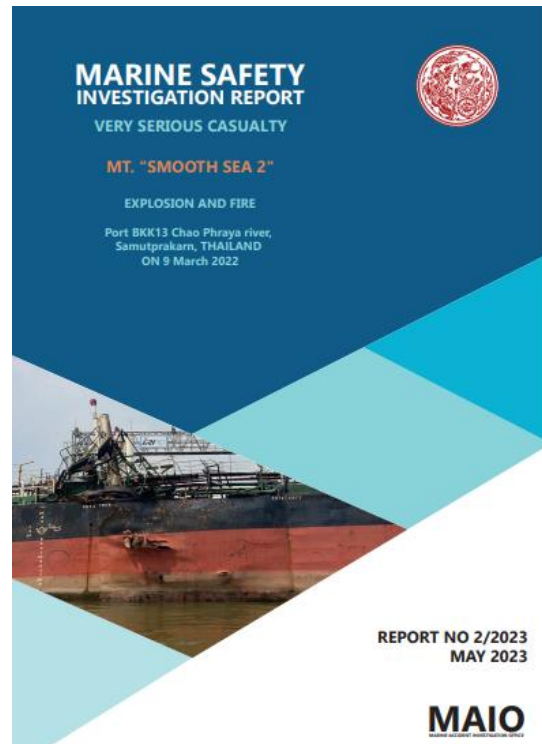
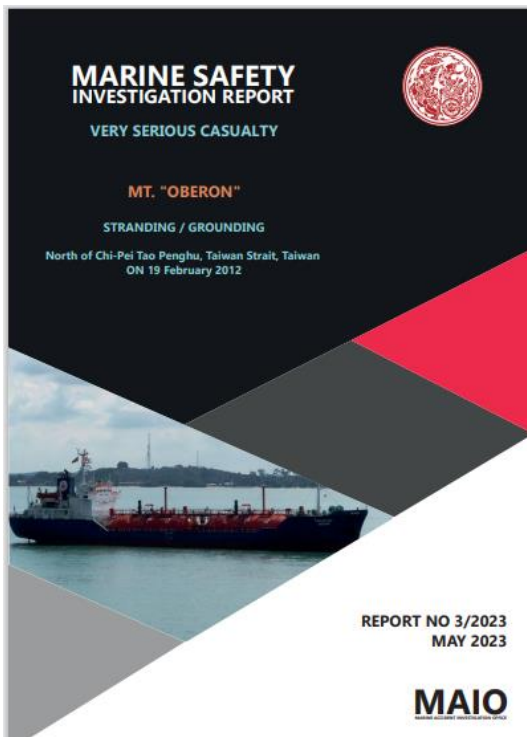
**Appendix G: The IMO Member States' Audit Scheme, Form A, Thailand's Findings/Observations Notice during 18 – 27 February 2023**

**(Form A)**

<b>FINDINGS/OBSERVATIONS NOTICE</b>	
<b>Member State:</b> Thailand	<b>Audit period:</b> 18/2/2023 to 27/2/2023
<b>Department:</b> Marine Investigation Office	
<b>Finding No.:</b> FD-2	<b>Observation No.:</b>
<b>STATEMENT:</b>	
<p>There was evidence that very serious marine casualties were not investigated in compliance with the Casualty Investigation Code, in particular, to conduct the investigation and the release of the reports to the public and reporting to IMO.</p>	
<b>EVIDENCE:</b>	
<p>The investigation into very serious casualty for the vessels PATCHARAWADEE 12 (29.06.2016) and OBERON (19.02.2012) had not been conducted and investigation reports were not available.</p>	
<b>APPLICABLE PROVISIONS OF THE AUDIT STANDARD AND/OR IMO INSTRUMENT:</b>	
<p><b>SOLAS 1974, regulation I/21</b> "Casualties"</p>	
<p><b>SOLAS 1974, regulation XI-1/6</b> "Investigations of marine casualties and incidents"</p>	
<p><b>MARPOL, article 12(1)</b> "Casualties to ships – investigations"</p>	
<p><b>LL 1966, article 23</b> "Casualties"</p>	
<p><b>Casualty Investigation Code, paragraph 14.4</b> "Marine safety investigation reports – available to public and shipping industry"</p>	
<p><b>III Code, paragraph 41</b> "Flag State investigations - Ship casualties shall be investigated and reported in accordance with the relevant international instruments, taking into account the Casualty Investigation Code, as may be amended, and guidelines developed by the Organization"</p>	
<b>Team leader:</b> Moain A. Y. Al-Zoubi <b>Date:</b> 24/2/2023	
<b>Member State:</b> Thailand	<b>Date received:</b>



**Appendix H: MT. "OBERON, MT. "PATCHARAWADEE 12"**  
 MT. "SMOOTH SEA 2" and "Nordana Sophie" investigation reports, extracted  
 from IMO GISIS and reuploaded on  
[https://drive.google.com/drive/folders/11Av1R0TcgPsHBTQMitGsEy63yUG5vgxP?usp=drive\\_link](https://drive.google.com/drive/folders/11Av1R0TcgPsHBTQMitGsEy63yUG5vgxP?usp=drive_link)



**Appendix I: Memorandum of Understanding Between The National Transportation Safety Board and The United States Coast Guard Regarding Marine Casualty Investigations**

MEMORANDUM OF UNDERSTANDING  
BETWEEN  
THE NATIONAL TRANSPORTATION SAFETY BOARD  
AND  
THE UNITED STATES COAST GUARD  
REGARDING MARINE CASUALTY INVESTIGATIONS

The National Transportation Safety Board (NTSB) and the United States Coast Guard (USCG) hereby revise and replace their previous Memorandum of Understanding (dated 12 September 2002) governing marine casualty investigations. The Chairman of the National Transportation Safety Board and the Commandant of the United States Coast Guard jointly affirm that interagency cooperation and mutual assistance in marine casualty investigations and swift implementation of safety improvements is essential for efficient and effective agency operations and for the public welfare.

In accordance with 49 U.S.C. § 1131, the National Transportation Safety Board is authorized to investigate any major marine casualty as defined in 49 C.F.R. Part 850 and 46 C.F.R. Subpart 4.40 (except a casualty involving only public vessels) occurring on, or under, the navigable waters, inland waters or territorial sea of the United States, or involving a vessel of the United States, or involving a public vessel of the United States and any other vessel.

In accordance with 46 U.S.C. § 6301, the USCG is authorized to investigate any marine casualty involving death, serious injury, material loss of property, material damage to vessels, or significant harm to the environment occurring on the navigable waters or territorial sea of the United States, or involving a vessel of the United States, or involving a public vessel of the United States and any other vessel. The USCG is also authorized to investigate certain marine casualties outside the territorial sea.

The intent of this agreement is to ensure interagency communication, cooperation, and coordination, and to engender the development of marine safety investigation processes that will best serve the maritime community and the public at large. This agreement is not intended to limit the statutory jurisdiction of either agency or to prevent thorough investigation of marine casualties.

## MARINE CASUALTY INVESTIGATIONS

NTSB and USCG agree that upon report of a major marine casualty, a significant marine casualty as defined in Appendix 1, or a casualty involving public and non-public vessels, each agency will immediately notify the other of all information received regarding the casualty, and both agencies will quickly coordinate the appropriate investigative response.

Additionally, if either agency is notified of a marine casualty where the United States is a substantially interested state under the International Maritime Organization (IMO) code, "Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident," each agency will immediately notify the other of all information received regarding the casualty, and NTSB and USCG will expeditiously coordinate the appropriate investigative response. When the United States is invited to participate or decides to conduct an independent casualty investigation, USCG and NTSB may each participate in the investigation.

NTSB and USCG anticipate that when NTSB and USCG both decide to investigate a marine casualty, one agency will be designated as the lead Federal agency for the investigation. The Chairman of the National Transportation Safety Board and the Commandant of the United States Coast Guard, or their designees, will determine which agency will lead the casualty investigation; the NTSB may lead the investigation of "significant marine casualties" as defined in Appendix 1; and the USCG may lead the investigation of all other marine casualties

NTSB and USCG agree that regardless of which agency leads an investigation, the other agency may participate as an equal partner in gathering evidence and establishing facts, with due consideration to keeping their analysis and conclusions separate and independent. In those cases where the public interest demands on-scene live media engagements or written press releases, the parties agree that the lead investigative agency will act as the sole spokesperson for casualty investigation information and activity, and press conferences and press releases will identify the lead and supporting investigating agencies. Participation by the non-lead investigative agency in any press conference is encouraged. Once the on-scene portion of the investigation is complete, both agencies may issue independent press releases and conduct any press conferences as necessary.

NTSB and USCG agree that an NTSB Board Member will not attend the scene of an investigation led by USCG and that NTSB may hold a public hearing on any casualty that it investigates.

NTSB and USCG agree that USCG may conduct a Marine Board of Investigation on any casualty it investigates, and will generally avoid convening the Marine Board until after NTSB has completed the on scene portion of any NTSB led investigation.

## GENERAL PROVISIONS

Close continuing liaison and cooperation will be maintained between the two agencies so that common objectives can be achieved efficiently with cooperation and coordination, so that problems and differences can be minimized and resolved expeditiously. The Chairman and the Commandant agree to meet at least annually to review the previous year's investigations, and to consider improvements to this agreement, the USCG/NTSB joint regulations, marine casualty investigation procedures, status of NTSB recommendations to the USCG, or other matters relating to marine casualty investigations and marine safety.

NTSB will provide to USCG, as resources permit, investigative support for casualty investigations, such as voyage data recorder information retrieval and materials properties analysis, typically conducted by the NTSB laboratory staff. USCG will provide to NTSB, as resources permit, logistical assistance at the scene of a casualty, such as air or water transportation and office facilities. NTSB and USCG agree to establish, sponsor, and conduct joint training opportunities for their investigators with each encouraged to make courses and training facilities available on a reciprocal, no cost basis.

Investigative information is that information obtained or generated for purposes of a casualty investigation. NTSB and USCG agree to share all information, testimony and evidence obtained during marine casualty investigations, consistent with 49 U.S.C. § 1131(a)(3). When investigative information is released to the public, it will be the responsibility of the releasing agency to comply with the provisions of the Privacy Act, the Freedom of Information Act, and associated federal regulations.

USCG will invite NTSB to participate as a member of the U.S. delegation to all IMO meetings where marine safety issues of interest to NTSB are expected to arise, and consult with NTSB in developing the U.S. position at IMO regarding matters related to marine casualty investigation.

This agreement is authorized under the provisions of 49 U.S.C. § 1131, 49 U.S.C. § 1113, 46 U.S.C. § 6301, 46 C.F.R. Part 4. 14 U.S.C. § 93, and 14 U.S.C. § 141.

Nothing in this agreement is intended to conflict with current law, regulation, or the directives of the NTSB, USCG, or the Department of Homeland Security. If a term of this agreement is inconsistent with such authority, then that term shall be invalid, but the remaining terms of this agreement shall remain in effect.

This agreement may be modified at any time upon written agreement of both agencies. Appendices to this agreement may be modified at any time by written agreement of the Chairman of the National Transportation Safety Board and the Commandant of the United States Coast Guard. This agreement may be terminated at any time by either agency by 45-days written

notice to the other party.

Jointly agreed and signed:

  
Acting Chairman  
National Transportation Safety Board  
19/Dec/08  
(Date)

  
Commandant  
United States Coast Guard  
19 December 2008  
(Date)

MEMORANDUM OF UNDERSTANDING BETWEEN THE NATIONAL  
TRANSPORTATION SAFETY BOARD AND THE UNITED STATES COAST GUARD  
REGARDING MARINE CASUALTY INVESTIGATIONS

APPENDIX ONE

SIGNIFICANT MARINE CASUALTY

For the purpose of this Memorandum of Understanding:

Significant marine casualty means a casualty involving a vessel, other than a public vessel, that results in--

- (1) The loss of three or more lives on a commercial passenger vessel;
- (2) Loss of life or serious injury to twelve or more persons on any commercial vessel;
- (3) The loss of a mechanically propelled commercial vessel of 1600 or more gross tons;
- (4) Any marine casualty with loss of life involving a highway, bridge, railroad or other shore side structure;
- (5) Serious threat, as determined by the Commandant and concurred in by the Chairman, or their designees, to life, property, or the environment by hazardous materials;
- (6) Significant safety issues, as determined by the Commandant and concurred in by the Chairman, or their designees, relating to Coast Guard marine safety functions.