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WORLD MARITIME UNIVERSITY
Malmö, Sweden

**IMPLEMENTATION OF THE CASUALTY
INVESTIGATION CODE IN GUATEMALA**

By

JOAQUÍN ANTONIO JUÁREZ ARANA
Guatemala

A dissertation submitted to the World Maritime University in partial
fulfilment of the requirements for the reward of the degree of

MASTER OF SCIENCE
in
MARITIME AFFAIRS
(MARITIME LAW AND POLICY)

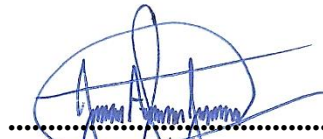
2021

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):

21 September 2021

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Acknowledgements

First, I thank God for allowing me the opportunity to live this unique and unforgettable experience of studying at the World Maritime University and living in Malmö. I am eternally grateful to Dr. Yohei Sasakawa and "The Sasakawa Peace Foundation", who provided funding for my scholarship at the university and my stay in Sweden.

My special thanks to my supervisor, Dr. Laura Carballo Piñeiro, for her support and guidance during my dissertation writing. Also, to Dr. Maria Carolina Romero, who was my supervisor for a short time.

Moreover, a special recognition to the professors of the World Maritime University, mainly to the professors of Maritime Law & Policy (MLP) specialization, for the knowledge acquired and all the support received during this journey.

I thank the Ministry of Defense and the General Directorate of Maritime Affairs of Guatemala for authorizing me to study abroad and providing support.

Finally, I am grateful to my mother, family, and friends who supported me, motivated me, and gave me words of encouragement during my stay in Sweden.

Abstract

Title of Dissertation: **Implementation of the Casualty Investigation Code in Guatemala**

Degree: **Master of Science in Maritime Affairs**

This dissertation is a study for the implementation of the Casualty Investigation Code in Guatemala. To achieve this, the research has used the comparative legal research method, using a descriptive approach by reviewing the main international instruments from the United Nations Organization (UN), the International Maritime Organization (IMO), and the International Labour Organization (ILO) that refers to the obligation to carry out investigations of marine casualties and incidents. It includes the United Nations Convention on the Law of the Sea (UNCLOS), the International Convention for the Safety of Life at Sea (SOLAS), the International Convention for the Prevention of Pollution from Ships (MARPOL), the Load Lines Convention (LL), and Maritime Labour Convention (MLC). Moreover, the legislation of Guatemala which refers to conduct marine safety investigations. Because in 2019, the lack of implementation of the Casualty Investigation Code was one of the findings that the audit team found within the framework of the IMO Member State Audit Scheme (IMSAS), which utilizes the IMO Instrument Implementation Code (Code III) as standard. The expected results of this investigation are to show the lack of implementation of the Casualty Investigation Code, observe deficiencies in the current regulation to improve the implementation and enforcement of IMO instruments in Guatemala.

KEYWORDS: Casualty Investigation Code, SOLAS, UNCLOS, Marine Casualty, Marine Incident, Maritime Safety, III Code.

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List of Abbreviations

COCATRAM	Central American Maritime Transportation Commission
COLREG	Convention on the International Regulations for Preventing Collisions at Sea
CPRG	Political Constitution of Guatemala
DIGECAP	General Directorate of Port Captaincies
DIGEMAR	General Directorate of Maritime Affairs
DIRECTEMAR	General Directorate of the Maritime Territory and Merchant Marine
EEZ	Economic Exclusive Zone
EMSA	European Maritime Safety Agency
GISIS	Global Integrated Shipping Information System
ILO	International Labour Organization
IMCO	Inter-Governmental Maritime Consultative Organization
IMO	International Maritime Organization
IMSAS	IMO Member State Audit Plan
LL	Load Lines Convention, 1966
MAIIF	Marine Accident Investigators' International Forum
MARPOL	International Convention for the Prevention of Pollution from Ships, 1973/1978
MCI	Marine Casualties and Incidents
MLC	Maritime Labour Convention, 2006
SFV	International Convention for the Safety of Fishing Vessels
SOLAS	International Convention for the Safety of Life at Sea, 1974
STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978
UNCLOS	United Nations Convention on the Law of the Sea
UN	United Nations

1. Introduction

1.1 Background

Ships carry more than 90% of international trade around the world. It is the most efficient and profitable means of transport for most goods (Allianz, 2021). The shipping industry is one of the world's most important and high-risk industries. For this reason, maritime safety plays a vital role, being necessary the correct implementation of international maritime instruments (Abuelenin, 2017; Farid & Elashkar, 2020). However, ships during navigation have a multitude of risks that can lead to accidents.

The International Maritime Organization [IMO] has promulgated a variety of international instruments to increase safe navigation and prevent pollution from ships (Abuelenin, 2017). However, the majority of existing maritime standards were created in a reactive approach, frequently in response to significant catastrophes, and are regarded as prescriptive, leaving little scope for adapting alternatives to those outlined in the regulations (Psarros et al., 2010).

Several authors have recognized that the investigations of maritime accidents seek to determine the causal factors of the casualties, analyze if it is necessary to amend the existing legislation, and prevent their recurrence from improving maritime safety and the protection of the marine environment. Investigations based on the instruments of the IMO are not intended to determine guilt or liability (Forbes, 2011; Black, 2011; Primorac, 2019).

In 2010, the IMO Casualty Investigation Code entered into force as an annex to the International Convention for the Safety of Life at Sea [SOLAS], International Convention for the Prevention of Pollution from Ships [MARPOL], and the International Convention on Load Lines [LL]; making the Code mandatory for Contracting Governments of those conventions. The purpose of the Code "is to provide a common approach for States to adopt in conducting maritime safety investigations of marine casualties and incidents" (McNamara, 2016).

Due to many accidents, it is recognized that investigations are necessary to obtain lessons learned and prevent future events. Therefore, in 2008, the IMO adopted the Code of Investigation of Maritime Accidents, of obligatory fulfillment, to look for a solution to the security problems to avoid the repetition of similar accidents in the future, which entered into force in January 2010 by Resolution MSC.255 (84) (Abuelenin, 2017; Kim & Na, 2017). Previously, the IMO had only published non-mandatory recommendations and resolutions to investigate maritime accidents and incidents, such as Resolution A.849 (20) in 1997.

However, an adequate investigation of maritime accidents "will obtain the underlying factors, unsafe acts and unsafe situations (causes and contributing factors) of any accident that could represent risks to life, property or the environment" (Farid & Elashkar, 2020; Kim & Na, 2017). Moreover, many marine casualties have occurred around the world; the ferry "Estonia" disaster in 1994 showed deficiencies in the casualty investigation system in Europe. The lack of co-operation between States and their maritime administrations was evident (Primorac, 2019).

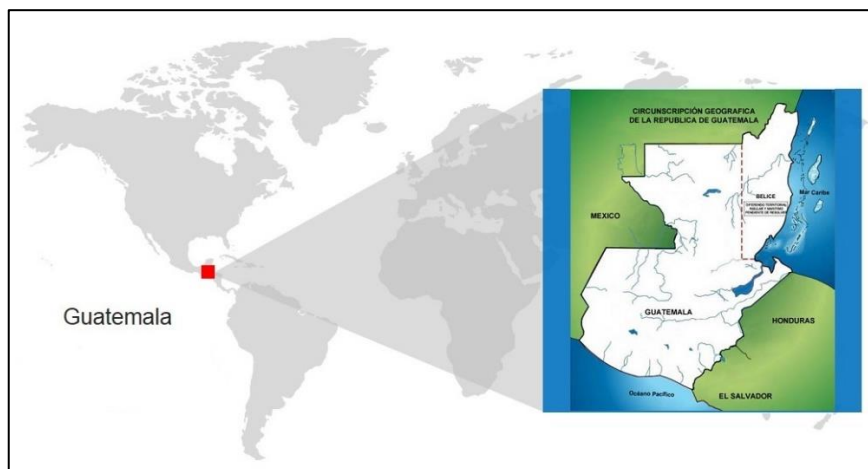
Statistics from the European Maritime Safety Agency [EMSA] (2020) have shown that in the period 2014-2019 there were 19,418 marine casualties and incidents involving 21,392 vessels. Moreover, the statistics show that 493 were very serious casualties, 496 seafarers' fatalities, and 6,210 seafarers injured. However, only 833 investigations were launched. Additionally, of the reported accidents in 2020, 54.2% of the accidents involving a ship were related to navigation issues, such as collisions and groundings. On the other hand, accidents involving people on board, 39.2% are attributed to slips, trips, and falls out of the board (EMSA, 2020).

Previous studies have shown that there has been a downward trend in the number of maritime accidents during the last decades. On the other hand, they also show that marine casualties occur regularly, highlighting that one of the fundamental causes of accidents is human error (Kim & Na, 2017 as stated by AGCS, 2017; Butt et al., 2013; TSB, 2016).

In the Central America region, the Central American Maritime Transportation Commission [COCATRAM] publishes relevant information on maritime trade, provided by the Maritime Authorities of Guatemala, Honduras, El Salvador, Nicaragua, and Costa Rica, Panama, Belize, and the Dominican Republic. Despite the high number of maritime accidents that have occurred in Central America, according to the findings of a study conducted by Porrás et al. (2006), information regarding these casualties has not been published in official records. Therefore, no publications or research were conducted with data and statistics on marine casualties or incidents in Guatemala.

The Republic of Guatemala is located in Central America, and it has a privileged position because it has access to the Pacific Ocean and the Caribbean Sea. Guatemala has a territorial extension of 108,889 square kilometers and a maritime extension of 101,930 kilometers approximately.

Figure 1. Geographic location of Guatemala



The Pacific Ocean coastline has 254 kilometers long, and the Caribbean Sea coastline is 148 kilometers long. Likewise, the country has three main ports facilities, two located on the Caribbean Sea coast (Puerto Barrios and Puerto Santo Tomas de Castilla) and one on the Pacific coast (Puerto Quetzal).

Additionally, as shown in Table 1, only five incidents are reported in the Global Integrated Shipping Information System [GISIS]. Nevertheless, the coastal State did

not investigate these accidents, nor was a report generated to determine the causal factors and present lessons learned to prevent future accidents.

Table 1. GISIS Casualties Reports – Guatemala

Reference	Ship Involved	Location	Incident Date	Type of Casualty	Investigation Reports
C0010882	Fairchem Filly (IMO 9323077)	Tourist pier “Marina Pez Vela”, Escuintla, GT	2018-02-26	Less serious	No
C0010683	Anita N (IMO 9554030)	Quetzal Port, Escuintla, GT	2017-04-24	Less serious	No
C0012448	Bomar Resolve (IMO 9307839)	Barrios Port, Izabal, GT	2014-08-04	Less serious	No
C0097885	Clipper Tobago (IMO 9209001)	Outside Santo Tomas de Castilla Port, Izabal, GT	2010-08-30	Serious	No
C0002842	Jin Yi (IMO 8223567) Jorita (IMO 8314469)	Off West Coast of Guatemala	1999-02-27	Serious	No

Note: Adapted from "GISIS: Marine Casualties and Incidents", Copyright 2021 by IMO.

1.2 Problem Statement

Over the years, the IMO has generally followed a reactive approach, establishing new regulations in response to a severe accident that gained international attention. On the other side, the Organization has recently begun to take a proactive approach, anticipating and recognizing critical needs before a disaster strikes (Guevara & Dalaklis, 2021).

For this reason, as a proactive mechanism, the IMO Member States Audit Plan was implemented in 2006 as a voluntary system. It became mandatory in January 2016 through the IMO Member State Audit Plan [IMSAS]; its purpose is to promote the effective application of IMO instruments and help improve Member States' performance (IMO, 2019a). In October 2019, to verify compliance with the obligations established in the different instruments of IMO, the State of Guatemala was subject to an audit, following the Audit Plan of Member States of the IMO. Moreover, one of the findings found by the audit team was that the investigations of marine casualties and incidents are executed without following the guidelines of the Casualty Investigation Code, which have not been adopted in national legislation.

Article 94, paragraph 7, of the United Nations Convention on the Law of the Sea [UNCLOS] (1982) establishes that in the event of a serious marine casualty or incident involving a vessel on the high seas, the Flag State shall provide a qualified person to investigate and cooperate with any other State to conduct it.

Besides, IMO identifies the significance of the investigations of maritime accidents to avoid reiteration and to the promotion of maritime safety and prevention of marine pollution. Therefore, regulation I/21 of SOLAS, articles 8 and 12 of MARPOL and article 23 of LL Convention, provides instructions to the Administrations to investigate any incident that occurs in the ships with the right to fly its flag and report the information to the IMO, on the results of the investigations carried out (IMO, 2019b).

1.3 Aim and Objectives

This research aim is to identify the actions required to implement the Casualty Investigation Code in Guatemala. The objectives of this dissertation are to examine the regulatory framework for the implementation of international instruments in Guatemala. Evaluate the obligations as a flag, coastal, and port State based on the IMO Instrument Implementation Code [Code III] to comply with the regulations established in the IMO international conventions of which the State of Guatemala is a party.

1.4 Research Questions

The research aims to obtain the answers to the following questions:

- What is required to comply with the Casualty Investigation Code?
- What is the current situation of the implementation of the Casualty Investigation Code in Guatemala?
- How was the Casualty Investigation Code implemented in other States?

1.5 Methodology

This research applies a comparative legal investigation method, describing and analyzing different international instruments related to the marine casualty

investigation. The study evaluates the conventions issued by the United Nations [UN], the International Labor Organization [ILO], and the International Maritime Organization [IMO] as the primary source of information. At the same time, IMO resolutions and articles published by different authors are used as secondary sources of information. Moreover, this study compares the implementation of the Casualty Investigation Code by Spain, Honduras, and Chile as maritime and Spanish-speaking nations, which have carried out harmonization of the Code in their national legislation with positive outcomes regarding its application, which is reflected in the audits carried out by the IMO.

1.6 Structure of the Dissertation

This dissertation is structured in five chapters. Chapter one provides the background, problem statement, aim and objectives, research questions, and methodology. Chapter two includes the international legal framework that contains the provisions for conducting marine casualty investigations and Guatemala's national and institutional legal framework. Chapter three explains the main sections of the Casualty Investigation Code, discussing definitions, the purpose of the Code, the obligation to investigate, the investigation procedures, among others. Chapter four develops a comparison of other States and Guatemala in implementing the main provisions of the Casualty Investigation Code, using Code III as a guide, as well as the process to fulfill the Code in national law. The dissertation's chapter five contains the conclusions based on the preceding chapters' analysis.

2. International and National Framework

There are international instruments such as conventions, codes, circulars and recommendations that provide the legal framework for the jurisdiction of the flag State, the port State, and the coastal State in the field of maritime safety, especially in the event of a marine casualty or incident. Therefore, this chapter details the international instruments developed by the UN, the IMO, and the ILO in relation to the investigation of marine casualties and incidents.

On the other hand, it will be investigated how Guatemala responds to these international instruments by developing a legislative and institutional framework to ensure marine safety. In addition, the Guatemalan maritime legislation related to the investigation of maritime accidents and the institutional framework of the maritime authority is presented to promote maritime safety investigations.

2.1 International Framework

International organizations have established rules for casualty investigations because of the various legal regimes under which an inquiry can be conducted; marine casualty investigation necessitates international standards and adherence to universal processes (Kofi, 2013). A large body of existing legislation provides that States Parties carry out a marine casualty investigation for each major accident and provide their findings in investigations that will be transferred to the IMO (Abuelenin, 2017; Farid & Elashkar, 2020). However, States may carry out a marine casualty investigation regardless of the accident's severity and inform IMO if they consider that the report provides recommendations to prevent future maritime accidents. The main objective of marine casualty investigations is to establish the reason for the accident, determine the need for new legal provisions, and determine whether existing policies and regulations need to be amended or repealed in order to prevent future tragedies (Forbes, 2011).

This section reviews the international legislation that establishes the responsibilities of States to carry out investigations and reports of marine casualties and incidents; because the findings of the investigations could result in amendments to the international instruments to benefit the global shipping community.

The United Nations Convention on the Law of the Sea [UNCLOS] establishes the fundamental framework of the flag, port, and coastal State jurisdiction over maritime subjects (McNamara, 2016). Specifically, it includes the duties of the State in the investigations of marine accidents and incidents involving national flag vessels sailing on the high seas, where vessels are subject to the flag state's exclusive jurisdiction (Yang, 2006); or any ship sailing within the jurisdictional waters of the State. In relation with the duties of the flag State, Article 94 (7) of UNCLOS (1982) establishes that each State shall have qualified persons to conduct an investigation into accidents on the high seas that involve a ship flying its flag and cause death or injury to foreign nationals, severe damage to foreigner ships, or serious harm to the marine environment.

Second, regarding the enforcement by port States, Article 218 (4) of UNCLOS (1982) determines that the record of a port State's investigation will be sent to the flag State or the coastal State upon request. When the incident occurs within the coastal State's internal waters, territorial sea, or exclusive economic zone [EEZ], any inquiry undertaken by the port State on the basis of said investigation may be suspended at the request of the coastal State, subject to the criteria of section 7 of the Convention.

However, Yang (2006) argues that UNCLOS makes no explicit provisions for what actions coastal States may take in the event of a marine casualty in their territorial sea. In addition, he argues that some articles can give references on this matter. Regarding Article 221, “coastal States may take and enforce proportionate measures beyond the territorial sea to protect their interests upon the occurrence of maritime casualties in accordance to international law” (p.213).

According to McNamara (2016), flag States have an obligation to conduct investigations of maritime accidents that affect ships that fly their flag and cooperate

with other coastal or port States when required. In addition, coastal States can take and enforce measures beyond the territorial sea to protect their coastline from pollution or the threat of pollution after a maritime accident. In addition, coastal States have the authority to initiate and enforce actions outside of their territorial sea to protect their coastline from pollution or the possibility of pollution following a maritime accident.

Consequently, UNCLOS provides a legal framework for activities related to the sea and oceans, establishing the obligations of the flag States with respect to administrative, technical, and social areas over ships flying their flag; this includes the investigation of marine casualties and incidents. Therefore, there is a link between UNCLOS and the international treaties of IMO and ILO since they shall address issues that involve maritime safety, the well-being of seafarers, the prevention of pollution. The investigation of marine casualties and incidents plays a fundamental role in preventing the recurrence of accidents involving seafarers and ships and, if necessary, making amendments to international conventions.

The International Convention on Safety of Life at Sea [SOLAS] is widely considered the most important international maritime instrument related to shipping safety. After the sinking of the Titanic in 1912, the first version was adopted in 1914. Currently, the fifth version from 1974 is in force (IMO, 2019c). Due to the occurrence of maritime accidents, the IMO decided to include regulations within the Convention for States to undertake to carry out investigations to avoid the recurrence of marine casualties or incidents. Moreover, the SOLAS Convention refers to investigating any marine casualty.

In relation to the investigation of marine casualty, Regulation I/21 of the SOLAS Convention (1974) states that every administration agrees to investigate any accident that befalls its ships if it concludes that doing so will assist in determining amendments to the provisions of this convention. Moreover, each administration is willing to provide the IMO with adequate data on the findings of such inquiries. No summary or conclusion will divulge the nationality of the ships in question, nor will it indicate that any ship or person is liable.

Afterward, on May 16, 2008, through Resolution MSC.257 (84), an amendment was made to Chapter XI-1 (Special measures to enhance maritime safety) of the SOLAS Convention to guarantee the investigation of all very serious marine casualties. In this regard, Regulation XI-1/6 of SOLAS Convention (1974) indicates that each administration shall start an investigation of marine casualties and incidents, taking into account regulation I/21 as supported by the provisions of the Code of International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code) approved by Resolution MSC.255(84).

IMO published the Casualty Investigation Code as an annex to the SOLAS Convention, which has been in force since 2010; it provides a framework for marine safety investigations. Within its structure, it contains "general provisions", "required standards" and "recommended practices" to assist a State or many States to conduct investigations (McNamara, 2016).

The LL Convention refers to investigations and requests to the States that the results of these inquiries be communicated to the IMO to carry out corrective measures to the Convention if necessary. In this respect, Article 23 of LL Convention (1966) shows that: each Administration commits to investigate any accident engaging ships under its control which are subject to the rules of the present Convention if it believes that such an inquiry will contribute in deciding whether or not amendments to the Convention are required.

Due to the impact that a maritime accident can have on the environment, the International Convention for the Prevention of Pollution from Ships [MARPOL] also addresses the investigation of marine casualties. According to Article 8 of the MARPOL Convention (73/78), the Administration shall produce “a report of an incident shall be made without delay to the fullest extent possible in accordance with the provisions of Protocol I to the present Convention.” (p.12). Moreover, Article 12 of MARPOL Convention 73/78) argues that “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” (p.13).

The Maritime Labour Convention [MLC] also refers to investigations of maritime incidents involving seafarers, which has jointly developed by the IMO and the ILO. However, the MLC, unlike other international instruments, specifies the types of marine casualties that the involved States shall investigate. Regarding marine casualties, Regulation 5.1.6 of the MLC (2006) establishes that any serious marine casualty involving a ship flying their flag that causes damage or death a person requires an official inquiry by the Member States. In addition, States must cooperate in expediting the investigation.

Besides, the Prevention of Accidents (Seafarers) Convention [C134] of the ILO takes into consideration the terms of the SOLAS Convention and the Regulations annexed to the LL Convention, which establish safety measures on board ships that provide protection to people working on board. According to Article 2(1) of the C134 (1970), the Administration “shall take the necessary measures to ensure that occupational accidents are adequately reported and investigated”; and Article 2(4) the responsible authority “shall undertake an investigation into the causes and circumstances of occupational accidents resulting in loss of life or serious personal injury, and such other accidents as may be specified in national laws or regulations”.

Finally, some international conventions refer to investigations of maritime incidents on fishing vessels. Firstly, Article 7 of the International Convention for the Safety of Fishing Vessels [SFV] (1977) emphasizes that the States shall investigate any incident occurring in any of their ships subject to the requirements of this Protocol. In addition, it will provide the results of the investigation to IMO for distribution to all interested parties. The reports will not reveal the nationality of the ships, nor will they imply a responsibility for anyone.

Secondly, fishing is considered a risky job by the ILO compared to other professions; due to this, a convention was adopted that takes safety and health measures at work and accident prevention. Article 31 of the Work in Fishing Convention [C188] (2007)

asserts that “each Member shall adopt laws, regulations or other measures concerning: (d) the reporting and investigation of accidents on board fishing vessels flying its flag”.

As mentioned in the previous section, the international treaties of different organizations that govern the investigation of maritime incidents and accidents have been included. In the next section of this chapter, mention is made of Guatemala's legal and institutional framework.

2.2 National Framework

In Guatemala, for any international instrument to enter into force in the domestic legal system, it must first be ratified and approved. The Political Constitution of Guatemala [CPRG] in Paragraph 1 of Article 171 establishes that the Congress of the Republic has the power to approve agreements, treaties, or any international convention. Subsequently, a regulation must be made that provides specific guidelines to comply with this new law. Aust described dualist nations as “States in which constitution accords no special status to treaties; the rights and obligations created by them have no effect in domestic law unless legislation is in force to give effect to them” (as cited by Sloss, 2020). Therefore, Guatemala is a dualist State; for the correct implementation of international instruments, a regulation must be issued that implements it properly.

With the purpose of promoting safety in navigation, the prevention of pollution at sea, and the protection of Guatemalan seafarers, the State of Guatemala has ratified the most important international conventions on these issues. However, the necessary regulations for its implementation in the national legal system are lacking.

The Congress of the Republic through Legislative Decree 20-76, Articles 1, 7, and 8 states that the Guatemalan Armed Forces will ensure the Republic's rights in its territorial sea and EEZ, a function that is executed by the Naval Forces.

According to Government Agreement No. 596-1982, Guatemala signed the instrument of adherence to the Agreement of the Intergovernmental Maritime Consultative Organization in 1982. Through which Guatemala became a Party Member of the IMO,

an organization that changed its name. that same year to give due importance to maritime issues in the country. Moreover, Guatemala has been a Member State of the UN and the ILO since 1945. Table 2 shows the international instruments ratified by Guatemala, which refer to the Investigation of Maritime Accidents and Incidents.

Table 2. International Instruments ratified by Guatemala in reference to Marine Casualty Investigation

Convention	National Law	In force since
SOLAS, 1974	Legislative Decree 74-82	1982
LLC, 1966	Ratification Instrument	1994
UNCLOS, 1982	Government Agreement 56-96	1996
MARPOL, 73/78	Government Agreement 77-96	1996

However, it is mentioned that Guatemala is not a Contracting Government of the ILO Work in Fishing Convention, the Prevention of Accidents (Seafarers) Convention, the MLC, and the SFV Convention, which refers to the obligation to carry out investigations of marine casualties. Moreover, all the IMO instruments refer that the investigations' results shall be reported to the IMO. This information is available in the database Global Integrated Shipping Information System [GISIS], which includes the Marine Casualties and Incidents [MCI] module where the reports of maritime accidents have been notified to the IMO (Abuelenin, 2017). Nevertheless, IMO Circular MSC-MEPC.3/Circ.4/Rev.1 includes an updated format for submitting reports from States conducting investigations to the new MCI2 module.

2.2.1 Legal Framework

This section reviews the national legislation related to the investigations of marine casualties and incidents in Guatemala. The first reference in national law is Article 2 (18) of the Regulation for the Government and Police of the Ports of the Republic of 1939, which establishes that among the obligations of the Commander and Captain of the Port is to visit the ships that have been the object of a maritime accident (collision or that have breakdowns) in jurisdictional waters, reporting and preparing a report of all the details of the incident.

The second reference in national law is the Government Agreement No. 130-2016, which establishes the internal structure, organization, and functions of the Ministry of Defense. Article 14 exposes that it is the function of DIGECAP "to administer and coordinate the processes of investigation of marine casualties, from the maritime technical point of view according to national laws and agreements on the subject, ratified by Guatemala".

The third reference in national law is the Government Agreement No. 165-2017, in Subsection H of Article 5 establishes that the Port Control Center and Harbor-Master's Office have the function of "administering and coordinating the processes of investigation of marine casualties, from the maritime technical point of view, in accordance with national laws and international conventions on the subject, ratified by Guatemala".

However, the lack of a national instrument that regulates investigations of maritime accidents is evident, such as a normative or regulation published through a Government Agreement or Ministerial Agreement. Examples of accurate implementation of IMO instruments are the National Regulation for Ships and Port Facilities Security through the Government Agreement 112-2021 for the International Code for the protection of ships and port facilities [ISPS Code] and the Regulations for Training, Certification and Watchkeeping of Guatemalan seafarers, through Ministerial Agreements 10-2014 and 07-2015 for the International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers [STCW].

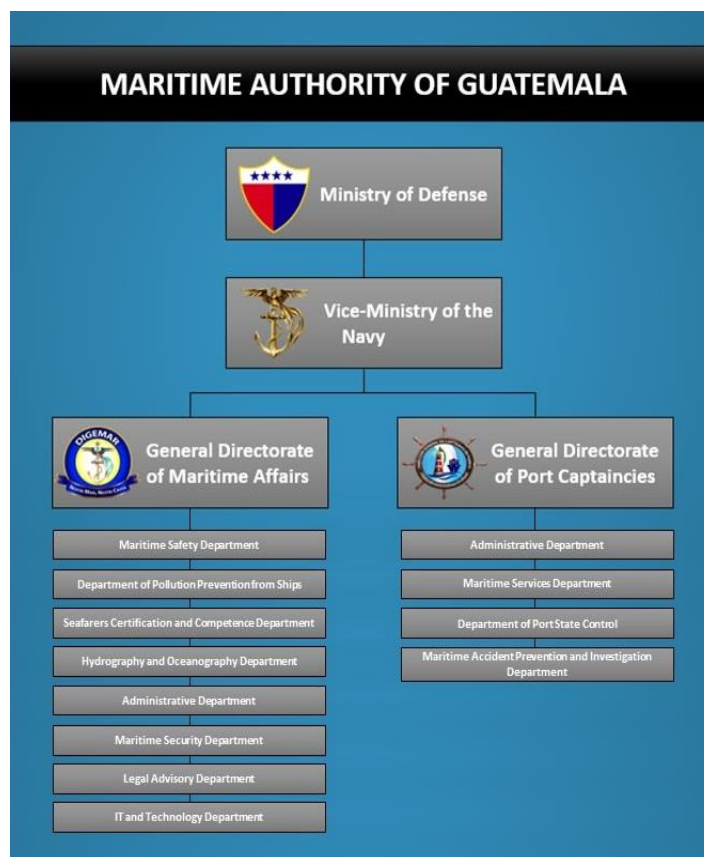
2.2.2 Institutional Framework

This section reviews the national legislation related to the institutional framework of the Maritime Authority of Guatemala. By Governmental Agreement No. 120-2004, the Ministry of Defense created the Maritime Department as a specialized unit within its organization, in charge of administering the flag, port, and coastal State functions. The Maritime Department was restructured in 2010 for a better performance of its responsibilities, by Governmental Agreement No. 383-2010 creating the General

Directorate of Maritime Affairs [DIGEMAR], which is responsible for the administration of Flag State and Coastal State tasks.

According to Government Agreement No. 44-2012, the Vice-Ministry of the Navy was created in the Ministry of Defense's organization in 2012, and it is responsible for the duties associated with the exercise of the Maritime Authority on behalf of the Ministry of Defense. In 2016, through Government Agreement No. 130-2016, a new reorganization was carried out with the creation of the General Directorate of Port Captaincies [DIGECAP].

Figure 2. Structure of the Maritime Authority of Guatemala



The Guatemalan Ministry of Defense exercises the functions of the Maritime Authority (see Figure 2); it is the institution in charge of managing international maritime agreements. Within its organization, it has the Vice Ministry of the Navy, which manages two specialized agencies to fulfill this responsibility. The DIGEMAR that is in charge of managing the functions of the Flag State (for ships that carry out

international navigation) and the Coastal State, and the DIGECAP that is in charge of managing the functions of the Port State and the Flag State (for ships that carry out national navigation).

Moreover, subsection I) of Article 14 of the Government Agreement No. 130-2016, establishes that it is the function of the DIGECAP to administer and coordinate the processes of investigation of marine casualties and incidents, from the maritime technical point of view, following the laws national and international conventions on the subject, ratified by Guatemala. Therefore, the DIGECAP includes within its structure the Department of Prevention and Investigation of Maritime Accidents, which is the entity in charge of coordinating and conducting marine safety investigations of marine casualties and incidents in Guatemala based on international regulations ratified by the State.

The Guatemalan Ministry of Defense is the executive entity in charge of carrying out the functions of the Guatemalan Maritime Authority, which is in charge of implementing maritime regulations in national maritime zones. The IMO was notified of this designation in 2003. As a result, the IMO informed the Member States via Circular Letter No. 2455 that the Ministry of Defense of Guatemala is responsible for ensuring conformity with IMO instruments.

According to the Government Agreement No. 85-2019, the Guatemalan President designates the Ministry of Defense as the Institution responsible for managing, regulating, and implementing the following IMO Conventions: International Convention on Safety of Life at Sea [SOLAS] 1974, International Convention for the Prevention of Pollution from Ships [MARPOL] 1973, as modified by the Protocol of 1978, and the International Convention on Load Lines [LLC] 1966, International Convention on Tonnage Measurement of Ships [Tonnage] 1969 and Convention on the International Regulations for Preventing Collisions at Sea [COLREG] 1972.

2.3 Conclusions

In conclusion, Guatemala has ratified the UNCLOS and the main IMO instruments related to the investigation of marine casualties and incidents. However, the ratification of the main ILO instruments that refer to this issue is still in process, which shows the lack of legal certainty in the investigation of marine casualties and incidents involving seafarers.

Moreover, as the administrator of SOLAS, MARPOL, and LL Conventions, the Ministry of Defense, through the Department of Prevention and Investigation of Maritime Accidents of DIGECAP, is the body in charge of carrying marine safety investigations of all casualties and incidents on ships that fly the Guatemalan flag or any foreign flag vessel suffering an accident in the maritime zones of its jurisdiction.

3. Casualty Investigation Code

In November 1968, the IMO adopted Resolution A.173 (ES.IV) on Participation in Official Inquiries into Maritime Casualties. The Inter-Governmental Maritime Consultative Organization [IMCO] approves these recommendations to ensure that the States affected by a marine accident can participate in the investigations significantly if hydrocarbons have polluted their coasts.

Subsequently, in 1975, Resolution A.322 (IX) was published on Conduct of Investigations into Casualties. This recommendation requests the Contracting Governments of IMCO to take into consideration the application of Regulation I/21 of the SOLAS Convention, 1960 (Fourth version) and Article 23 of the LL Convention, 1966; to inform the Organization; the lessons learned and conclusions resulting from the investigation of marine incidents.

In 1979, IMCO issued two publications: Resolution A.440 (XI) on Exchange of Information for Investigations into Marine Casualties; this requires administrations to investigate any accident that occurred in any of their ships, following Regulation I/21 of the SOLAS Convention, 1974 (version still in force). And Resolution A.442 (XI) on Personnel and Material Resource Needs of Administrations for the Investigation of Casualties and the Contravention of Conventions; invites to carry out investigations of marine casualties and incidents, to take measures to have qualified personnel and infractions to enforce international instruments.

Then, IMO (previously named IMCO) in 1989, published Resolution A.637 (16) on Co-operation in Maritime Casualty Investigations; it requests to the Member States for the first time to comply with its obligations to carry out investigations and cooperate when there are several substantially interested States. Following the provisions included in UNCLOS, the SOLAS and MARPOL Conventions. However, all the cited resolutions were not mandatory, only provided guidelines for IMO's Contracting Governments.

In 1997, the IMO decided to consolidate and extend these recommendations through Resolution A.849 (20) about the non-mandatory Code for the Investigation of Marine Casualties and Incidents. This non-binding Code seeks to encourage flag States to investigate all events of serious and very serious casualties; it also repeals Resolutions A.173 (ES.IV), A.440 (XI), and A.637 (16).

Then in 1999, Resolution A.884 (21) amended it, providing guidelines for human factors investigation to take preventive measures since it is one of the causal factors with the highest recurrence in maritime accidents and incidents. This Code was complete and valuable to fulfill the objectives for which it was created; however, it had a weakness because it was not mandatory and binding for the IMO Member States.

IMO adopted, in 2008, amendments to SOLAS Convention, Chapter XI-1 and the Resolution MSC.255 (84) on International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident, known as the Casualty Investigation Code (IMO, 2019b). Therefore, by making the Casualty Investigation Code compulsory, the IMO seeks to raise maritime safety by investigating the root cause of all marine casualties and incidents and avoid their recurrence.

Finally, in 2013, Resolution A.1075 (28) on Guidelines to assist investigators in the implementation of the Casualty Investigation Code (Resolution MSC.255 (84)) was approved, repealing resolutions A.849 (20) and 884 (21). The purpose of the Casualty Investigation Code is to standardize procedures and promote a common approach in investigating marine casualties and incidents; it also encourages co-operation between States to carry out investigations and determine what factors influence the occurrence of these incidents.

Therefore, to avert similar accidents, it is vital to conduct thorough investigations of marine casualties. Following the investigation, the Member State must submit a report to the IMO.

3.1 Definitions

The Casualty Investigation Code provides a chapter with definitions that should be considered when interpreting it. However, maritime administrations can expand these definitions if they judge it necessary within national legislation. The most important definitions included in Chapter 2 of the Casualty Investigation Code are listed below.

Causal Factor

Chapter 2.2 of the Casualty Investigation Code (2008) states that a causal factor is a combination of actions, omissions, events, or situations that, if they did not exist, the marine casualty or incident would never have occurred, or the negative repercussions associated with the marine casualty or would not have had critical consequences.

Marine Casualty

Chapter 2.9 of the Casualty Investigation Code (2008) defines a marine casualty as a sequence of events linked to the operations of a vessel that has resulted in the death or severe injury of a person; the loss or abandonment of a vessel; the involvement of a ship in a collision or a stranding; or critical harm to the environment generated by the damage to a vessel.

Janssen et al. (1999) affirm that all accidental grounding or incidents involving a ship that damages its clothing, equipment, cargo, or injury or loss of life to any person are classified as a "marine casualty". The concept includes "collisions, strandings, groundings, foundering, heavy weather damage, fires, explosions, failure of gear and equipment, and any other damage" that could impact or degrade the vessel's seaworthiness.

Marine Incident

According to Chapter 2.10 of the Casualty Investigation Code (2008), a marine incident involves an action or series of situations, other than a maritime accident, that

occurred in relation to the operations of a ship that, if not remedied, would endanger the safety of the ship, its crew, or any other person or the environment.

Moreover, Chapter 2.9 and 2.10 of the Casualty Investigation Code (2008) states that an intentional action or omission with the aim to endanger the safety of a vessel, a person, or the marine environment is not classified as a marine casualty or marine incident.

According to the previous definition of the Casualty Investigation Code, it can be concluded that a maritime casualty is an event that can result in serious injuries or in the death of people and/or in the partial or total loss of the ship. On the other hand, a marine incident, in consequence, is an event that occurs directly in connection with the activities of a vessel that can result in serious injuries or in the death of persons and/or in the partial or total loss of the ship. Nevertheless, these definitions are general regarding the possible damage that people or vessels can suffer due to a maritime disaster. Therefore, the national legislation of each State should consider expanding the concept if it deems it necessary.

Therefore, marine casualties and marine incidents on ships result from a series of events that come together to produce a situation that could end in the loss of life, property, human injury, or environmental damage, among other things. Accidents are technically later stages of "near-miss situations," thus, a near miss is considered a primary stage, and actions are taken to avoid such conditions in the first place before an accident occurs (Kaushik, 2021).

Marine Safety Investigation

According to Chapter 2.11 of the Casualty Investigation Code (2008), a marine safety investigation implies an investigation or inquiry into a marine casualty or incident that is carried out to prevent future events that occur. The process involves collecting and analyzing evidence, identifying causal factors, and making safety recommendations (p.8). However, it is important to note that this type of investigation is not to determine

who is liable for a marine casualty or marine incident; it is only a necessary procedure to increase maritime safety and avoid the recurrence of accidents in the future.

Substantially interested State

According to Chapter 2.20 of the Code (2008), a substantially interested State can be: the flag State of a ship involved in a maritime accident; or the coastal State involved in a marine casualty; or the State whose environment was seriously or significantly affected by a marine casualty; or when persons from a State were seriously injured or died as a result of a marine casualty, or a State has information that it considers essential when conducting a marine safety investigation.

Serious Injury

Chapter 2.18 of Casualty Investigation Code (2008) defines a serious injury as “an injury which is sustained by a person, resulting in incapacitation where the person is unable to function normally for more than 72 hours, commencing within seven days from the date when the injury was suffered” (p.9).

Very Serious Marine Casualty

According to Chapter 2.22 of the Casualty Investigation Code (2008), a very serious marine casualty is a “marine casualty involving the total loss of the ship or a death or severe damage to the environment” (p.10). The Casualty Investigation Code defines a serious injury and a very serious marine casualty; however, it does not include a definition for marine casualties and incidents that are not very serious or a more detailed classification of the types of marine casualties and incidents.

In contrast, the IMO classified ship casualties into four categories according to MSC-MEPC.3/Circ.3, published in December 2008, to obtain data on ship casualties to update the GISIS Marine Casualties and Incidents module: "very serious casualties", "serious casualties", "less serious casualties", and "marine incidents" (IMO, 2021; IMO, 2008a).

Firstly, the GISIS incident module defines "very serious casualties" similar to the Casualty Investigation Code, including the definition of severe pollution: "a case of pollution which, as evaluated by the coastal State(s) affected or the flag State, as appropriate, produces a major deleterious effect upon the environment, or which would have produced such an effect without preventive action" (IMO, 2021).

Secondly, according to the GISIS classification (2021), ship accidents that do not qualify as very serious casualties are called "serious casualties", which involve:

A fire, explosion, collision, grounding, contact, heavy weather damage, ice damage, hull cracking, or suspected hull defect, etc., resulting in:

- immobilization of main engines, extensive accommodation damage, severe structural damage, such as penetration of the hull under water, etc., rendering the ship unfit to proceed, or
- pollution (regardless of quantity); and/or
- a breakdown necessitating towage or shore assistance.

Finally, when the casualty of a vessel does not fall into any of the previous classifications, they are called "less serious casualties", information that is considered for registration as it can be helpful. Moreover, include hazardous incidents and near misses in the category of marine incidents (IMO, 2021).

3.2 Purpose of Marine Casualty Investigations

The purpose of the Casualty Investigation Code is to provide a standard methodology to conducting marine safety investigations into marine casualties or incidents and provide reports to IMO that allow the dissemination of information to all stakeholders to improve maritime safety (IMO, 2008).

The Casualty Investigation Code's primary goal is not to prosecute or penalize the people who caused a marine casualty; instead, it concentrates solely on investigations

that produce safety outcomes without assigning blame or responsibility. Moreover, under the Casualty Investigation Code, safety investigations are mainly focused on determining why an unsafe action or scenario resulted in a casualty, as well as the physical and organizational context in which the casualty took place (IMO, 2008; Marine Accident Investigators' International Forum [MAIIF], 2017).

Therefore, the Code has two fundamental purposes: first, to standardize the procedures for investigating marine casualties and incidents worldwide, to identify the causes and promote improvements in maritime safety; and second, to regulate the sending of reports to the IMO to identify improvements in regulations and share with the rest of the world lessons learned. Besides, the objective of a marine safety investigation is not to attribute responsibility or assess liability.

3.3 Obligations to Investigate

The Casualty Investigation Code contains procedures regarding the obligation to carry out marine safety investigations, which are mandatory for the Contracting Governments of the SOLAS, MARPOL, and LL Conventions, which are discussed below.

Chapter 6.1 of the Casualty Investigation Code (2008) states that “a marine safety investigation shall be conducted into every very serious marine casualty”. Additionally, Chapter 6.2 of the Code states that “the flag State of a ship involved in a very serious marine casualty is responsible for ensuring that a marine safety investigation is conducted and completed in accordance with this Code” (Bakhsh, n.d; IMO, 2008). This part of the Code is mandatory and states that the IMO Member States will ensure that safety investigations are carried out on the causal factors of all very serious maritime incidents. However, each State must determine in its national legislation when an accident is classified as "very serious", depending on the total loss of the ship, death of persons, or severe pollution of the marine environment.

According to Chapter 7.1 of the Casualty Investigation Code (2008), when a marine casualty occurs in a State's territory, particularly the territorial sea, the flag State(s)

implicated and the coastal State shall convene to determine which State will become the marine safety investigating State(s). Moreover, Chapter 7.2 of the Casualty Investigation Code (2008) argues that in case of a marine casualty happens in the EEZ of a State or on the high seas involving more than one flag State; the States shall negotiate to try to understand on which State will be the marine safety investigating State(s). In both circumstances, without affecting States' authority to perform their own independent investigations.

On the other hand, the Casualty Investigation Code also refers to investigating marine casualties and incidents that are not very serious. According to Chapter 17.1 of the Casualty Investigation Code (2008), the flag State of a ship involved in a marine casualty or incident should investigate; in the event, such investigation can provide information that can be implemented to avoid future accidents.

In general, more than one State (Substantially interested States) is usually involved in investigations of marine casualties or incidents. Because an accident could involve the flag State of a vessel, States that have affected crew members on board the vessel, the coastal State where the accident occurs; a neighboring State to the catastrophe area may even be involved, affected by the pollution caused by the accident, among others.

However, although exhaustive investigations are essential to avoid future disasters, the IMO cannot sanction non-compliance with this regulation; it is only responsible for motivating its member states to present their reports in the shortest possible time (Bakhsh, 2018; Bakhsh, 2019).

3.4 Investigation Procedures

As a specialized approach and technique, the investigation has become increasingly popular in recent years in various sectors of society, locally, nationally, and globally (Roed-Larsen & Stoop, 2011). The investigation of marine casualties and incidents is necessary to prevent similar events from happening again. However, the procedures for conducting these tasks play a fundamental role in investigations; more

than one State could be interested in carrying out a marine safety investigation in an accident.

To initiate the investigation process, when a maritime incident occurs on the high seas, in the EEZ, or within the territory of a State, the flag State of the vessels involved as soon as possible shall notify the substantially interested States without delay due to absence of sufficient information (IMO, 2008; IMO; 2014; MAIIF, 2014).

Chapter 7 of the Casualty Investigation Code (2008) establishes possible situations with other substantially interested States to carry out a marine safety investigation, which should not limit the right of States to conduct their own inquiry, including:

- A marine casualty that takes place within a State's territorial sea. In that case, the flag State or States implicated in the accident will meet with the coastal State to determine which State will be designated as the marine safety investigating State.
- A marine casualty within the high seas or in the EEZ that involves more than one flag State. In that case, the States implicated shall determine which State will be designated as the marine safety investigating State.

Therefore, if several substantially interested States carry out a marine safety investigation, it is considered that the flag State complies with the obligations established in the Casualty Investigation Code, SOLAS, MARPOL, and LL Conventions, also with section 7 of UNCLOS (IMO, 2008).

Chapter 8 of the Casualty Investigation Code (2008) establishes that all States shall guarantee that investigators conducting a marine safety investigation have the authority to board a ship, to interview any person involved, and obtain evidence data for the objectives of the investigation. Therefore, national legislation must grant the power to conduct investigations on board foreign-flagged vessels within the coastal State jurisdiction.

According to Chapter 9 of the Casualty Investigation Code (2008), the interested States conducting marine safety investigations in parallel “shall seek to coordinate the timing

of their investigations, to avoid conflicting demands upon witnesses and access to evidence, where possible” (p.13). Additionally, Chapter 10 of the Casualty Investigation Code (2008) argues that co-operation shall be joint between the State in charge of the investigation and the substantially interested States during a marine safety investigation.

Finally, Chapter 11 of the Casualty Investigation Code discusses that investigators conducting a marine safety investigation are impartial and objective. Moreover, the investigation results shall be reported without instructions or interference from any person or organization (IMO, 2008, p.13).

3.5 Reporting Procedures

For every maritime safety investigation performed into a very serious marine casualty, the investigating State shall send the final edition of a marine safety investigation report to the IMO. In addition, a final report will also be sent when a marine safety investigation is carried out concerning a marine casualty or incident that is not a very serious marine casualty that can provide information to prevent or reduce the severity of future accidents. These reports shall be available to the general public and the shipping industry (IMO, 2008). The importance of sending marine safety investigation reports is related to risk management; because maritime industry stakeholders cannot take preventive actions without these reports (Ghirxi, 2003).

Marine casualties and incidents data and detailed investigation reports submitted to IMO are published in the GISIS casualty module. In addition, the module provides an analysis of these reports to identify situations or problems that can prevent future accidents and thus promote maritime safety for the shipping sector (IMO, 2021).

Table 3 contains information that shall be submitted to the IMO according to the classification of the marine casualty or incident. In addition, it establishes a delivery time of 6 months after the accident for Annex 1 (Ship identification and particulars) only for “very serious casualties” and “serious casualties”.

However, compared with other provisions, the time to complete investigations in which Annex 2 (Data for very serious and serious casualties) and Annex 3 (Supplementary information on very serious and serious casualties) shall be submitted has not been determined. MSC-MEPC.3/Circ.4/Rev.1.

Table 3. Information to be submitted per casualty class (IMO, 2008a)

Information to be sent in accordance with the type of casualty	Very serious casualties	Serious casualties	Less serious casualties	Marine incidents
<i>Annex 1 of the attached reporting format</i>	To be provided within 6 months after the casualty in all cases	To be provided within 6 months after the casualty in all cases	<i>May be provided if there are important lessons to be learned</i>	<i>May be provided if there are important lessons to be learned</i>
<i>Annexes 2 and 3 of the attached reported format, as well as other relevant annexes</i>	To be provided at the end of the investigation in all cases	To be provided at the end of the investigation in all cases	<i>May be provided if there are important lessons to be learned</i>	<i>May be provided if there are important lessons to be learned</i>
<i>Full investigation report</i>	To be provided at the end of the investigation in all cases	<i>May be provided if there are important lessons to be learned</i>	<i>May be provided if there are important lessons to be learned</i>	<i>May be provided if there are important lessons to be learned</i>

Table 3. Information to be submitted per casualty class. From “MSC-MEPC.3/Circ.3, 2008”, by IMO, 2008a. Copyright 2008 by IMO.

Currently, according to Circular MSC-MEPC.3/Circ.4/Rev.1, IMO invites investigating States to complete the new module Marine Casualties and Incidents [MCI] 2 in GISIS, with the primary details of an accident as soon as possible. In this way, it will be registered in the module, indicating that an incident is being investigated. Therefore, initially, investigating States should complete at least the most critical fields in Appendices 1 (General information) and 2 (Factual information) and as much data as possible in Appendix 3 (Casualty analysis data). Finally, this new circular replaces MSC-MEPC.3 /Circ.3 (IMO, 2021).

The Casualty Investigation Code, mandatory for all SOLAS Convention contracting governments, does not specify a deadline for reporting casualty reports after an incident investigation. Still, regulations allude to completing the base annexes in the

GISIS MCI2 module "as soon as reasonably practicable" and "as quickly as possible" (Adamopoulos, 2019; King, 2018; Meade, 2019).

However, there are reasons for not filing reports in a timely manner, such as lack of resources, language barriers, or waiting for testimony. The investigations could even get held up due to legal battles; the whole process usually takes a year or more, depending on the complexity of the case, other parties involved, and the collection of information (Bakhsh, 2021).

According to data compiled by Lloyd's List from the IMO's GISIS, 322 accident reports have been submitted for the 526 very serious shipping incidents that occurred between 2017 and 2020, involving loss of life, significant pollution, or total loss of the ship (Bakhsh, 2021). Very serious incident reports published in GISIS accounted for 61% of all incidents during that period. It is necessary to mention that reports to the IMO are mandatory regarding the SOLAS, MARPOL, and LL Conventions. However, 39% of the 2017-2020 period reports are still pending submission, reflecting that they are not sent punctually since there is no maximum time to send the reports.

According to Table 4, between 2017 and 2020, there were 526 very serious casualties, with only 332 reports submitted to the IMO, representing 63%. In that period, the year with more submissions was 2018, with 120 reports representing 85%. On the other hand, the year with fewer submissions was 2020, with nine reports representing 30%.

Table 4. Flag States casualty reporting (Lloyd's List, 2021)

Year	No. of incidents	No. of reports submitted	Submission rate
2017	206	141	69%
2018	142	120	85%
2019	151	62	41%
2020	27	9	30%
Total	526	332	63%

Table 4. Flag States casualty reporting. From "Casualty reporting falling short of targets, 2021" by Lloyd's List, 2021. Copyright 2021 by Lloyd's List.

Bakhsh (2021) states that in the aviation industry, a preliminary report must be submitted within one month of the accident and the final report within one year. On

the other hand, the timing for submitting the final report to IMO is not established in the maritime industry, essential information to obtain the lessons learned and take action on the defects found.

Industry giants such as the Baltic and International Maritime Council [BIMCO], the International Association of Dry Cargo Shipowners [Intercargo], the International Union of Marine Insurance [IUMI], International Chamber of Shipping [ICS], and Protection and Indemnity Insurance [P&I] clubs had submitted a proposal to the IMO's III sub-committee stating that imposing an obligatory time restriction for the completion and submission of accident reports would increase the safety of life at sea and perhaps save lives (Bakhsh, 2021a).

On the other hand, flag State leaders disagreed with the proposal, claiming that imposing a deadline would lead to hasty reports of low quality, and hence would be of little use in saving lives at sea (Bakhsh, 2021a; Bush, 2021). Therefore, some flag States are unwilling to expedite the delivery of reports to determine the causal factors of marine casualties; the problem is that the more time passes, the more difficult it is to investigate the causes of the accident. Indeed, several flag States are demonstrating that well-timed reporting and publication of casualty investigation reports following IMO requirements are achievable, thereby assisting in preventing future accidents (King, 2018).

3.6 Qualifications and Training of Investigators

Marine safety investigation is a technical and complex activity; qualified and competent investigators should conduct investigations according to the guidelines established in Chapter 15 of the Casualty Investigation Code and the IMO Instrument Implementation Code [III Code], Resolution A.1070 (28) Paragraphs 15, 16, 23, and 38 to 41 (IMO, 2013; IMO, 2014; MAIIF, 2014). According to McMahon (2013), a reconstruction of a maritime accident allows analyzing evidence and initial factors that led to the disaster. For this reason, the training of marine casualty investigators is essential for the proper performance of their duties.

Another IMO instrument that provides guidelines to investigators to implement the Casualty Investigation Code establishes the areas of specialization that an investigator must have, including "evidence collection techniques, interview techniques, and analysis techniques and the identification of human and organizational factors in accidents and maritime incidents" (IMO, 2014).

In addition, it establishes that the investigators who attend the place where a maritime accident has occurred should know about personal safety due to the possible dangers in the site. On the other hand, the time it takes to investigate and write a report varies depending on the investigation's complexity (Bakhsh, n.d.).

Regulation I/5 of the STCW (1978) requires States Parties to implement and enforce procedures to investigate, among other things, any seafarer accused of incompetence, behave, or omission who holds a certificate of competence issued or endorsed by the administration, within their national legal framework. Ghirxi (2003) states that this procedure can be initiated as a result of an accident investigation; it corresponds to the State involved and its national legislation on addressing this situation. However, it is not the purpose of the Code to establish liability or guilt in the event of human error in a maritime accident but rather to focus on proposals to improve the training of seafarers to avoid human error.

Finally, the Administration should develop a training program to ensure that investigators acquire knowledge and competence in investigating marine casualties and incidents (IMO, 2014). In order to comply with the required standards, the IMO Model Course 3.11 on Safety Investigation into Marine Casualties and Incidents is the appropriate training that investigators appointed by the Administrations shall receive to prove their adequate training.

4. Implementation of the Casualty Investigation Code in Guatemala

Guatemala is the country in the Central American region with the most significant movement of ships. According to statistics from the National Port Commission [CPN] (2021), in the period 2016-2020, 16,379 vessels docked in the country's ports; 2016 was the best year with 3,347 vessels. However, although the movement of vessels is less than in other regions, there is a risk of a maritime accident. On the other hand, very serious marine casualties have not been reported, but minor incidents have occurred with different types of ships.

For this reason, it is up to the State if it conducts a maritime safety investigation to determine the root causes that originated the accident, to obtain lessons learned, and to avoid the repetition of these accidents. Therefore, these investigations shall be based on the Casualty Investigation Code and that the reports are available to all interested parties.

This chapter includes a comparison of the implementation of the Casualty Investigation Code by the three Member States. In addition, the audit findings regarding the marine casualty investigation are briefly presented. Finally, how international instruments are implemented in Guatemalan legislation is introduced.

4.1 Comparison of the Implementation of the Casualty Investigation Code of other States with Guatemala

This section compares different national laws with the existing legislation in Guatemala, including Spain, Honduras, and Chile, regarding the IMO Instrument Implementation Code [Code III] regulations that States must comply with regarding the Investigation Code of Claims under the IMO Member State Audit Plan [IMSAS].

4.1.1 Flag State investigations

Requirements for investigators

Paragraphs 38 of III Code describes that "marine safety investigations should be conducted by impartial and objective investigators, who are suitably qualified and knowledgeable in matters relating to the casualty". Moreover, "the flag State should provide qualified investigators for this purpose, irrespective of the location of the casualty or incident" (IMO, 2013).

In this regard, the national legislation in Spain, Article 12 of Royal Decree No. 800/2011, shows the list of requirements that marine casualty investigators shall meet. For example, officials must prove that they have passed a specialized course in accident investigation, which they should update every five years.

As well, in Honduras, the Annex II of the Agreement No. 005-2009, Maritime Accident Investigation Manual, refers to the competence that marine casualty investigators shall possess. However, it refers to Resolution A.884 (21) on the Guidelines for the Investigation of Human Factors in Marine Casualties and Incidents, which establish that the investigator should have the proper experience and have received specific training to investigate maritime accidents that it serves to determine the aspects of the human factor involved in marine casualties and incidents (IMO, 2000).

The General Directorate of the Maritime Territory and Merchant Marine [DIRECTEMAR] of Chile, through Directive G-03/001-2007, determined that the Directorate of Safety and Maritime Operations shall consider training for the inspectors of the Local Ship Inspection Commissions [CLINES] in marine casualty investigation.

On the other hand, Guatemala does not have national legislation that refers to the training or minimum requirements that marine casualty investigators shall meet to comply with the provisions established in the III Code.

Casualty Investigation and Reports

According to Paragraph 41 of III Code, casualties and incidents shall be investigated and reported following the Casualty Investigation Code. The investigation report should be submitted to IMO by the flag States, and the information will be public and available to those interested in GISIS (IMO, 2013); this obligation is also stated in Paragraph 23 of III Code.

To comply with this regulation, the Government of Spain published the Royal Decree No. 800/2011, which regulates the investigation of marine casualties and incidents and the permanent Commission for the investigation of maritime accidents and incidents. This Commission is the institution in charge of analyzing accidents, their causes and issuing a report to the different national and international organizations and institutions, mainly the IMO, the European Union, the European Maritime Safety Agency [EMSA], and the affected States.

Another example is the Maritime Authority of Honduras, through Agreement No. 005-2009 of the General Directorate of Merchant Marine, which approves and implements the Maritime Accident Investigation Manual. The manual establishes that the Department of Maritime Safety will carry out the investigations and reports on the circumstances and causes of marine casualties and finalized them as soon as possible. It will be made available to the IMO, the public, and the sector to improve the safety of human life at sea and protect the marine environment.

Finally, within the Directive G-03/001-2006 of the DIRECTEMAR, the Maritime Administration of Chile provides instructions on the Maritime Accident's operation Investigation and Analysis Division. The Directive establishes that once an investigation is concluded, an accident report will be drawn up, including conclusions and recommendations, so that the appropriate measures are taken to avoid the repetition of events that led to the accident. It also establishes that a casualty report shall be sent to the IMO, following the provisions of the Code. All of these national

laws, in general, adhere to the mandatory standards set forth in Part II of the Casualty Investigation Code.

However, there is ambiguity regarding who shall be in charge of conducting marine safety investigations and reports of accidents in Guatemala. As port State, the Harbor Master should prepare a formless regarding marine casualties in Guatemala's internal waters or territorial sea without establishing where it shall be sent, following the Regulation for the Government and Police of the Ports of the Republic of 1939. Likewise, according to Government Agreement No. 165-2017, the Harbor Master coordinates the investigation processes of maritime accidents.

Moreover, as a flag State, Government Agreement 130-2016 designates DIGECAP to coordinate the investigation of maritime accidents, does not provide further guidance, and does not establish that the respective report shall be prepared and submitted to the IMO.

4.1.2 Coastal State – Enforcement

According to Mukherjee & Brownrigg (2013), implemented IMO instruments can be enforced in two ways: by a preventative procedure that includes surveys, certification, monitoring, and inspection, or through a corrective method that includes appropriate penalties in a breach of implemented legislation.

In this regard, Paragraph 50.3 of III Code establishes that coastal States should improve and implement control and monitoring programs to "cooperate with flag States and/or port States, as appropriate, in investigations of maritime casualties".

As a Coastal State, with Article 14 of the Royal Decree No. 800/2011 of Spain, it regulates that the Permanent Commission for the Investigation of Maritime Accidents and Incidents will collaborate and provide the assistance requested in the maritime safety investigations carried out by the other Member States of the European Union.

The European Parliament's Directive 2009/18/EC establishes a harmonized European accident investigation framework, improves information exchange between the

Member States, and shares investigation experience by establishing effective mechanisms for the dissemination of results in order to reduce the risk of similar casualties occurring in the region. It also expedites investigators' access to the accident scene, the availability of evidence, and the interviewing of interested parties, while ensuring the investigators' independence.

In Honduras, Agreement No. 005-2009, Maritime Accident Investigation Manual in its Annex V refers to IMO Resolution A.849 (20) (Code for the investigation of marine casualties and incidents, 1997) regarding co-operation with other States to conduct marine safety investigations. However, it does not refer to the fact that the manual shall be updated when the Casualty Investigation Code is amended since the said resolution is not in force.

Chile, through Directive G-03/001-2006 of DIRECTEMAR, establishes the need to cooperate with other interested States in carrying out any investigation of maritime accidents, accomplishing the requirements of the Code.

In Guatemala, although the Regulation for the Government and Police of the Ports of the Republic of 1939, Government Agreement 130-2016, and Government Agreement No. 165-2017 refer to coordinating the investigation processes, they do not refer to cooperating in the investigation of marine casualties and incidents with other interested States.

4.2 IMO Audit findings in Guatemala regarding Marine Casualty and Incident Investigations

In October 2019, the IMO conducted an audit to the State of Guatemala within the framework of the Audit Plan of the Member States. The audit is performed through a series of in-situ visits, interviews, records and database surveys, and objective proofs to verify the extent to which the Maritime Authority fulfills the obligations established in the different IMO instruments that the State has ratified (IMO, as cited by Al-Mahariq, 2019). According to the statement of reasons of the Final Report of the Audit carried out by the IMO in Guatemala in October 2019, it establishes that:

The investigations of marine casualties and incidents were carried out without following the guidelines of the Casualty Investigation Code, which had not been adopted in its national legislation, nor the guidelines elaborated by the Organization. In particular, the impartiality and objectivity of the researchers were not assured, as well as their qualifications. Also, reports were not released to the public (p.18).

As part of the evidence collected by the IMO audit team, to determine this finding, an analysis of one of DIGEMAR's internal procedures was carried out, which includes some guidelines for conducting investigations of marine casualties and incidents. However, as it is a procedure, it is not categorized as a national law, so it was not accepted as an instrument to implement the Casualty Investigation Code in Guatemala.

In addition, the Government Agreement 130-2016 was analyzed, which determines the organization of the Ministry of Defense. Within the organization of one of the agencies of the Maritime Authority, DIGECAP, is the Maritime Accident Prevention and Investigation Department. However, despite being a national law, this governmental agreement does not establish the mechanisms to internalize the Code. Therefore, it is not a valid instrument to implement the Casualty Investigation Code.

The auditors used the III Code and the IMO instruments as a basis and provision for the auditing standard, which is detailed in Table 5.

Table 5. Applicable provision of the IMO Audit Standard and/or Instrument

Standard/Instrument	
Regulation XI-1/6	SOLAS, 1974
Article 12	MARPOL, 1973/1978
Article 23	LL, 1966
Paragraph 28	III Code
Paragraph 41	III Code

4.3 Application of International Instruments in the Guatemalan Legal Framework

4.3.1 Application of international law domestically

The CPRG establishes that the Executive and the Legislative State branches have the power to ratify international treaties, conventions, or agreements. According to Paragraph o) of Article 183 of the CPRG, the Executive branch has the function of directing foreign policy and international relations, also assigning the role of accepting, ratifying, and denouncing international treaties, conventions, and agreements. However, Paragraph k) of Article 183 of the CPRG establishes that it must be submitted to the Congress of the Republic (Legislative branch) for approval before ratification, in case the instrument affects the nation's interests.

Moreover, the Governmental Agreement 137-2002 establishes that international treaties, conventions, or agreements to which Guatemala becomes a party will be published in the Official Gazette (Diario de Centro America) after becoming internationally valid.

To increase maritime safety, the IMO made amendments to the SOLAS Convention, adding regulation XI-1/6 to make mandatory the Casualty Investigation Code. Rather than requiring that an amendment enters into force after being adopted, the "tacit acceptance procedure" stipulates that an amendment will enter into force at a specific time unless a set number of Parties object to it before that date (IMO, 2019d). This procedure binds member States to comply with the IMO international instruments that they have ratified.

In this case, the Guatemalan Congress did not receive the amendment to the SOLAS Convention, which makes the adoption of the Casualty Investigation Code mandatory for approval; therefore, it has not been published in the official gazette. However, this is not due to an omission of the procedures established for an international standard to be legally implemented in the country; it is due to the guidelines set in the convention that contains it. Implementing international law standards in national legal systems should be done on a national level just as much as it is required to meet these

international responsibilities (Anisimov & Truntsevskiy, 2021). Consequently, it is necessary to create a national instrument for the appropriate implementation of the Code because Guatemala approved and ratified the SOLAS Convention, which establishes and recognizes the tacit acceptance procedure as a valid method of ratification, so these standards are proper under the principle "pacta sunt servanda".

Due to changes in the technology and construction of ships, maritime conventions must be constantly updated to maintain safety standards. Therefore, the IMO decides to implement a mechanism to speed up this process of updating international instruments. Through the "tacit acceptance" procedure, it has greatly accelerated the amendment process. Generally, the amendments take effect within 18 to 24 months (IMO, 2019d).

4.3.2 International law incorporated into domestic law through an internal regulation

International law does not impose on States a specific modality for introducing its norms at the domestic level. However, it is convenient to be implemented somehow to facilitate the application of international instruments in domestic legislation. Furthermore, the ratification of the IMO conventions only imposes the obligation to ensure compliance with the regulations. Each State must establish how to apply the norm in its legislation according to its internal standards. The best course of action to incorporate an international instrument into national legislation, any State should publish a new norm that contains measures to comply with the commitments of a ratified convention.

In Guatemala, the Congress of the Republic decrees the laws, the President of the Republic, and the Executive Ministers dictate the Regulations and Agreements.

The procedure to present a bill to the Congress of the Republic, the guidelines of article 109 of Legislative Decree 63-94 (Law of the Legislative Power), must be followed. The bill must be submitted drafted in the form of a decree, separating the contracting party from the operative part, including a statement of reasons and the technical studies

and documentation that justifies the bill. The presentation of the initiative will be in written and digital format so that the Plenary of Congress of the Republic is aware of the document by reading the explanatory statement.

Then, Article 111 of Legislative Decree 63-94 establishes that when a bill comes from other entities of the State, it will go to the corresponding commission after being read by the Congress of the Republic Plenary. When the bills presented by the Executive branch are known, the respective Minister may present himself to the Plenary and justify or explain the initiative. Therefore, in matters related to the administration of the Maritime Authority of Guatemala, the Vice Minister of the Navy assists on behalf of the Minister of Defense.

According to Article 117 of Legislative Decree 63-94, three debates will be held on the bill to discuss general terms, addressing its constitutionality, importance, convenience, and timeliness. After the third debate, Congress of the Republic will vote if it continues to be reviewed by articles or if, on the contrary, the bill is rejected. Next, Article 120 of Legislative Decree 63-94 states that the bill is analyzed, article by article, amendments may be submitted by total deletion, by partial deletion, by addition, by partial substitution, and by complete substitution. However, there are occasions when the Congress of the Republic Plenary does not reach the minimum quorum (two-thirds of the deputies) for the endorsement of bills, which delays the process. In addition, the lack of awareness on maritime issues also jeopardizes the approval of this type of bill.

Otherwise, according to Castillo (2018), the Executive Branch dictates Agreements and Regulations, using three methods:

- a. Government Agreement issued in Council of Ministers: established by the President, the Vice President, all the Ministers, and the Secretary-General of the Presidency. These are based on Paragraph e) of Articles 183 and 195 of the CPRG.
- b. Governmental Agreement issued by the President, together with one or more Ministers (the participation of all the Ministers is not necessary), and the

Secretary-General of the Presidency. These are based on subsection e) of Article 183 of the CPRG.

- c. Ministerial Agreement issued by each Minister of the Executive (by simple Agreement) or several ministers (joint Agreement) and the Secretary-General of the Ministry concerned. These are based on Paragraph m) of Article 27 of the Executive Branch Law and Decree Number 1816 of the Congress of the Republic.

These are the appropriate legal instruments to give competence to the Maritime Authority of Guatemala to apply the Casualty Investigation Code; for the regulation of the organization and all the components of the system such as procedures, obligations, powers in an investigation, co-operation between States, and submission of reports.

Therefore, to comply with the State's obligations when ratifying the IMO instruments, a simple Government Agreement must be issued (signed by the President, Minister of Defense, and Secretary-General of the Presidency), which dictates a Regulation and is published in the *Diario de Centro America* for its entry into force.

Regarding the Casualty Investigation Code, ratified through the tacit acceptance procedure, the appropriate procedure would be creating an internal regulation, which develops the law in question (SOLAS Convention and the Code) that assigns specific responsibilities and endowment of competence to those who must apply the same. This is the case of the regulations implemented by Spain (Royal Decree No. 800/2011) and Chile (Directive G-03/001-2006), which designate specific responsibilities to comply with the Casualty Investigation Code.

4.4 Conclusion

The III Code determines the responsibilities of the flag, port, and coast States, under the SOLAS, MARPOL, and LL Conventions, which Guatemala ratified; these include obligations to conduct marine safety investigations and submit reports of such

inquiries to IMO. As part of the mandatory audits of Member States, Guatemala must implement maritime instruments in its national legislation.

In this regard, internal legislation is required in the absence of an instrument that implements the Casualty Investigation Code, which must be located at the lower or similar legal hierarchical level, to the existing laws on the subject, through a Government Agreement or a Ministerial Agreement. Therefore, the Maritime Authority of Guatemala, through the Department of Legal Advice of DIGEMAR, must carry out the process to propose the regulations recommended by the different departments of DIGEMAR and DIGECAP to implement the international instruments ratified by the State; which Government Agreements or Ministerial Agreements shall approve it.

Finally, the process to present a bill through the Congress of the Republic turns out to be bureaucratic and extensive; it is considered that it is not adequate for implementing the IMO instruments. On the other hand, establishing a simple Government Agreement or a Ministerial Agreement is the best option to regulate the instruments ratified by Guatemala.

5. Conclusions

This dissertation aims to present the lack of implementation of the Casualty Investigation Code in Guatemala. Currently, no national legislation has been implemented to effectively fulfill the marine casualty investigations, which was evidenced by the IMO Audit in 2019. Therefore, the method in which other States have implemented the Code through laws, directives, or manuals was compared to comply with the obligations as flag, coastal, and Port State concerning the guidelines of the Code. The Code is part of Chapter XI-1 of the SOLAS Convention, so the States that have ratified this international instrument have the obligation to comply with the Code. Guatemala ratified the agreement through Legislative Decree 74-82.

Many casualties and incidents have led to the awareness that marine safety investigations are required to acquire lessons and prevent future occurrences. The marine safety investigation is a valuable tool to detect existing patterns in maritime accidents. It should also be noted that, generally, maritime accidents are not usually caused by a specific failure but rather by a chain of errors, which end with a fatal outcome.

In this regard, contracting governments of the SOLAS Convention shall investigate very serious and serious marine casualties and incidents and submit a report to the IMO. The interested parties have access to it and, in this way, prevent similar disasters from happening in the future. However, it is not the only international instrument that emphasizes the obligation to conduct investigations. Other main international instruments such as UNCLOS, MARPOL, LLC, MLC also refer to marine safety investigations, which shows the importance of this issue in promoting maritime safety and protecting the marine environment.

Guatemala must adopt national legislation to carry out its responsibilities as flag, coastal, and port State, as well as comply with the criteria of international conventions established by the IMO.

Moreover, the mandatory part is to conduct an investigation for all very serious and serious marine casualties and incidents. However, the scope of application of the Code is not exclusively for very serious accidents; it can also be applied to avoid local accidents which carry out navigation in inland waters or the territorial sea.

Within the national legislation of Guatemala, some regulations refer to the investigation of maritime accidents. However, none of them provide the guidelines established in the Code. To address this issue, one of the weaknesses of the Maritime Authority of Guatemala is the lack of personnel to carry out bills to implement the IMO instruments properly. Added to this is the lack of maritime awareness and bureaucratic processes that delay the proposals presented for approval.

For the proper enforcement of the Casualty Investigation Code, it is necessary to develop and implement control and monitoring programs for the activities related to the investigation of maritime accidents established in the Code. In addition, a training program for marine casualty investigators is required, a function that the Naval Academy of Guatemala carries out. To comply with the requirements established by the Code to provide duly qualified investigators who are impartial and independent in their work.

Based on the comparative analysis of the domestic legislation of other countries, it is determined that the correct implementation of IMO instruments, in this case, the Casualty Investigation Code, must be carried out through a Governmental Agreement or Ministerial Agreement; which are the mechanisms provided by the national legislation of Guatemala. Therefore, the Executive branch can issue a Governmental Agreement, or the Ministry of Defense can issue a Ministerial Agreement.

Finally, implementing the Casualty Investigation Code in Guatemala is critical for persons engaged in commercial, service provision, transportation, fishing, recreational, and all stakeholders in maritime operations who use the jurisdictional waters. By formulating this national legislation, the safety of people, the conservation of the coastal marine environment, and the vessels that use the national aquatic spaces are benefited.

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