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WORLD MARITIME UNIVERSITY

Malmö, Sweden

**STUDY OF THE IMPACTS OF IMO'S
INITIATIVES TO ERADICATE SUBSTANDARD
SHIPS**

With special focus on the Latin-American region

By

SANTIAGO JUAN GEYMONAT
Republic of Argentina

A dissertation submitted to the World Maritime University in partial
fulfilment of the requirement for the award of the degree of

MASTER OF SCIENCE
In
MARITIME AFFAIRS

(MARITIME SAFETY AND ENVIRONMENTAL ADMINISTRATION)

2019

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): 24th September 2019

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Acknowledgements

I have been thinking in this part of the dissertation since I started writing it, I can assure that it was one of the most difficult parts of the paper. The reason? Maybe the fear is the answer... the fear to forget some of the valuable persons that have been next to me during this process, during the development of this work, but also during a very important stage of my life. This work is not only a paper to conclude the Master's study for me, but it is also much more than that; this paper represents the end of a period of my life that changed my perspective of many things, especially from the reality.

For that reason, I would like to begin thanking my supervisor who during the whole process was like a guide to transform this awkward idea of a paper. He was able to provide me the needed advice from his previous experiences on how to deal with a dissertation and how to place the attention to a specific region, my "Latin-American Region".

The Latin-American Region that helped me in this project too. The support exhibited for the members of the Latin-American Maritime Authorities, especially my friends from Bolivia (Plurinational State of), Chile, Ecuador, El Salvador, Mexico, Peru, and Uruguay, allowed me to collect the information through the questionnaire to arrive the conclusions of this work.

I did not mention my country on a purpose, because within it I would like to thank some persons without whose support this paper would never have had the information that it contains currently. First of all, I would like to start with Carlos Esteban Salaburu, who with his support made possible the interaction between a simple WMU student and the members of the Latin-American's Maritime Administrations. By thanking him I am also thanking the personnel of the International Affairs Office in the PREFECTURA NAVAL ARGENTINA that contributes in an enormous way helping with the translation of the questionnaire, resending emails and providing the always needed help.

Secondly, I would like to express my deepest gratitude to persons that had a huge amount of different obligations and work to do, took their time to provide the needed advice but

also the support to make this paper possible; therefore, Hugo Gabriel Cafaro, Italo D'Amico and Roberto Tomás Annichini...thanks a lot!

As much as I write as bigger the fear becomes because I do not want to forget anyone...I cannot conclude this part without thanking my ESSP's teachers because their help with the grammar corrections made this work possible and readable. It sounds simple, but for people like me, who are not native English speakers, this is a huge challenge...expressing in another language what we want to express.

Finally, I would like to express my entire gratitude to the SASAKAWA PEACE FOUNDATION, a key part of this paper because without their financial support nothing of this would have even been thought. Moreover, it is a pleasure and extreme pride for me to state that from now on I will be part of the Sasakawa's friendship, seeking from my place to promote the aim of the Organization, strengthening the conformed network, and contribute to fulfilling the sustainable development goals.

This paper is a result of a long term living in another country and during that period of time I have the blessing to meet "new" friends who will be part of my life forever. They also helped me to finish this; therefore, I would like to mention them here.

The mentioned distance was not a barrier to feel also the support of my "old" friends, those unconditional persons that have been in my life even during the worst stages of it, and this time was not an exception.

Finally, the remoteness was not an excuse to receive the warmth of the family, encouraging me to continue working.

For all of above mentioned I want to express a huge: TACK SÅ MYCKET!

Abstract

Title of Dissertation: Study of the impacts of IMO's initiatives to eradicate substandard ships – With special focus on the Latin-American region

Degree: Master of Science

The appearance of substandard ships in shipping was since the beginning a threat for the international community. These ships are the ones flagged by “convenience flags” which, in the majority of the cases, means minimum taxes, flexible crewing rules, and low costs, representing a dangerous situation to the other Member States.

Therefore, the International Maritime Organization (IMO), as a specialized United Nations agency in the field investigated the causes and concluded that the implementation of regulations was deficient considered as the main cause of the problem. Consequently, the IMO established several measures to provide a solution to those affected countries and to eradicate those ships.

In this paper, an analysis of those measures will be conducted, starting with the development of the Memorandums of Understanding on Port State Control (MOU's), the regulation for Recognized Organizations and, since 2006, the implementation of the “Voluntary IMO Member States Audit Scheme” (VIMSAS).

Taking into consideration the results of each measure, there will be a comparison between them through the use of indicators, in order to provide a critical explanation on the impact that those have had on the standard of ships supported by a questionnaire administered to the members of Viña del Mar Agreement. This study also will help to understand the contribution of the different measures towards reaching the current situation, with the full implementation of the IMSAS.

The concluding chapter provides a summary of the different findings, but also some recommendations to enhance the continuation of the analysis including other regions for the benefit of every stakeholder.

KEYWORDS: VIMSAS, IMSAS, MOU's, eradication, audit, substandard ships, flags of convenience, Viña del Mar Agreement, International Maritime Organization, Port State Control, detention rate, indicators, performance, Latin-America, Flag State.

“Today flag States are predominantly countries maintaining open registers with generally little maritime infrastructure. While some are keenly aware that operating a ship register entails responsibilities, a minority of flag States show little interest in these responsibilities and their performance record does credit neither to themselves nor to the shipowners who persist in using them. Their ships are substandard, that is, through their physical condition, their operation or the activities of their crew, they fail to meet basic standards of seaworthiness, violate international rules and standards, and pose a threat to life and/or the environment.”

The United Nations Secretary-General, Oceans and the Law of the Sea, para. 85-91, delivered to the General Assembly, U.N. Doc. A/58/65. (Mar. 3, 2003).

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List of abbreviations

CASR	Consolidated Audit Summary Report
CIC	Concentration Inspections Campaigns
COLREG	Convention on the International Regulations for Preventing Collisions at Sea
EEZ	Exclusive Economic Zone
EU	European Union
FAO	Food and Agriculture Organization
FOC	Flag of Convenience
FSI	Sub-Committee on Flag State Implementation
ICAO	International Civil Aviation Organization
ICJ	International Court of Justice
III Code	Code for the implementation of mandatory IMO instruments
III	Sub-Committee on Implementation of IMO Instruments
IMCO	Inter-Governmental Maritime Consultative Organization
IMO	International Maritime Organization
IMSAS	IMO Member States Audit Scheme
ISA	International Seabed Authority
ISO	International Organization for Standardization
ITCP	IMO's Integrated Technical Co-operation Programme
ITLOS	International Tribunal for the Law of the Sea
JWG	Joint Working Group
LL	International Convention on Load Line
MARPOL	International Convention for the Prevention of Pollution from Ships
MEPC	Marine Environment Protection Committee
MOU	Memorandum of Understanding
MSC	Maritime Safety Committee

NMA	National Maritime Administration
PAQ	Pre-audit Questionnaire
PSC	Port State Control
PSCO	Port State Control Officer
RO	Recognized Organizations
SG	Secretary General
SOLAS	International Convention for the Safety of Life at Sea
STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
TONNAGE	International Convention on Tonnage Measurement of Ships
UN	United Nations
UNCLOS	United Nations Convention on the Law at Seas
UNESCO	United Nations Educational, Scientific and Cultural Organization
USOAP	Universal Safety Oversight Audit Programme
USSR	Union of Soviet Socialist Republics
VIMSAS	Voluntary IMO Member States Audit Scheme
VMA	Viña del Mar Agreement
WHO	World Health Organization
WWII	Second World War

Chapter 1 – Introduction

1.1 Background

The International Maritime Organization (IMO) is a specialized institution of the United Nations. Currently, it has 174 Member States who voluntarily decided to be part of it through the adoption of the “IMO Convention” (IMO, 2019).

The main objective of the IMO is to set international regulations that ensure the safety of life at sea, prevent maritime pollution from ships, facilitate global shipping and provide the basis to guarantee the necessary and uniform knowledge of every seafarer. To accomplish these objectives, the IMO has published thousands of instruments, counting conventions, codes, resolutions, and guidelines, to provide legal support for almost every issue related to shipping. Each Member State has the right, provided by the IMO Convention, to decide which instruments it would like to ratify according to its particular situation (IMO, 2019).

Once a Member State decides to ratify an instrument, it assumes the responsibility and obligation to implement its measures into its national law, to provide the compulsory legal framework inside its jurisdiction. These requirements are established in the United Nations Convention on the Law at Seas (UNCLOS) 1982, which provides the background needed to understand the main issues of ratification and implementation.

For that reason, the UNCLOS serves as a "framework convention", crafting a delicate balance between, on the one hand, the rights and jurisdictions that may be exercised by coastal states in their maritime zones and, on the other hand, the historical freedom of

navigation enjoyed by all flag states and their mutations in various zones. Considering this, the IMO plays a central role in facilitating international cooperation and maintaining the balance between the pursuit of the flag and coastal State interests (Basaran, 2016).

Basically, the UNCLOS establishes key concepts that help to clarify rights and obligations related to the international navigation of ships. For example, in article 5 it establishes that every State (not only coastal States) has the right to sail ships under its flag, however, they must still comply with legislation contained in UNCLOS when operating on the high seas. In a few words, this is the main doctrine that circumscribes the obligations of a State as a “Flag State”. In article 94, UNCLOS establishes that every Flag State should set the basic measures to ensure the safety of its ships regarding construction and equipment (United Nation Convention on the Law of the Seas (UNCLOS), 1982).

UNCLOS also provides a clear explanation about the rights of another important actor in the “international shipping framework”: the coastal state. The law, in its article 56 sets the main rights for coastal states, establishing that the national legislation inside the jurisdiction of the coastal areas should be complied with by every foreign ship. Another important concept that the UNCLOS sets in its text is that every State has the right to verify ships in their ports, to ensure compliance with the requirements of the adopted international maritime legislation. It is this doctrine that establishes the framework for “Port State Control” (United Nation Convention on the Law of the Seas (UNCLOS), 1982).

All these concepts create an opportunity for the international community to establish the regulations to control the shipping activities conducted from one port to other, where the ships are flying different flags as well as complying with the international and national legislations, depending on the jurisdiction where they are navigating (Hosanee, 2009).

1.2 Problem raised and measures taken

The “rules of the game” have been clearly established with the rights and obligations; however, every law gives the opportunity to avoid its fulfillment, or at least it provides the possibility to operate in a “gray area” of the law. That is how the “open registries” appeared in the world. Radically, these registries, pejoratively known as “convenience flags”, are Member States’ ship registries that allow ships to fly their flags with fewer safety requirements, minimum taxation, flexible crewing rules, and more lenient labor laws. The proliferation of many “open registries” during the ‘80s resulted in a rise of “substandard ships” operating globally (Mejia & Mukherjee, 2013).

The IMO defines substandard ships as, “a ship whose hull, machinery, equipment or operational safety is substantially below the standards required by the relevant convention or whose crew is not in conformance with the safe manning document” (IMO, 2011).

Substandard ships were blamed for issues ranging from their being used by smugglers to traffic guns, drugs, people and in some sectors to threat of environmental disasters, such as the one involving the M/V “Prestige”, that occurred off Spain in 2002 (Lee, 2003).

With a view to counteract the spread of substandard ships, the IMO decided to take actions by the development of measures to be adopted by its Member States, such as:

- the establishment of Memorandum of Understanding on Port State Control,
- regulation for Recognized Organizations (RO), and
- the implementation of the “Voluntary IMO Member States Audit Scheme (VIMSAS)”

1.3 Aim of this dissertation

The main objective of this dissertation is to analyze each of the aforementioned measures adopted by the IMO and demonstrate if, throughout the time, they have had a positive

effect on the attempt to eradicate the substandard ships that are navigating all around the world.

Essentially, to conduct a proper analysis, it is crucial to understand the origins of the problems and how the measures have been developed; therefore, there will be a review of basic concepts.

With the results of the analysis, it will not only be possible to determine which measure was or is still the most appropriate one to eradicate those ships, but also the analysis will provide an overall vision of the current situation.

1.4 Chapter structure

The remainder of this dissertation is structured as follows. Chapter 2 to 5 discuss each of the aforementioned measures adopted by the IMO to eradicate substandard ships. The methodology is described in Chapter 6, and analysis is conducted in Chapter 7 to arrive at conclusions and recommendations, specifically for the member States of the Viña del Mar (VMA), which are to be found in Chapter 8.

Chapter 2 – Sources of rights and obligations for the Member States

This Chapter provides an introduction and explanation of the relevant concepts that are used in every maritime international legislation. These concepts help to support the establishment of rights and obligations that each stakeholder possesses. Therefore, it will provide the reader with the background to the overall problem treated throughout the dissertation. In order to do that, the explanation will begin with the analysis of the UNCLOS and it will conclude describing the development of the “*open registries*”.

2.1 Presentation of UNCLOS

UNCLOS is one of the components of public international law, as it involves relationships between countries and applies “norms regarded as binding on all members of the international community”. Particularly, UNCLOS provides the legal framework for the exploitation of the world’s oceans, and at the same time clarifies the responsibilities of the signatory nations that currently stand at 168, according to the chronological records of the Division for Oceans Affairs and the Law of the Sea of United Nations (Division for the Oceans & Law of the Seas - United Nations, 2019).

It can be defined as the overall framework for all oceans activities; however, by itself, it is not able to cover every issue that takes place in such a huge area; therefore, further substantiation and implementation is vital and necessary. It is in this point where other international specialized institutions, such as the IMO help to achieve that objective. To comply with that function, the IMO establishes regulations, generally, through “Conventions”, that are applied by the Member States providing a mandatory international framework. Therefore, the UNCLOS is considered on many occasions as the “*mother of every Convention*” (IMO, 2019).

The UNCLOS III (for historical references see Appendix A) is the current version, and covers all of the ground of its 1958 version, and quite a lot more throughout the 16 parts in which it is divided. Some of the areas covered are the continental shelves, straits, territorial sea, high seas, the deep seabed, EEZ, innocent passage, nationality of ships, collisions at sea, pollution, and settlements of disputes (Freestone, Barnes, & Ong, 2007).

Also, in its article 136, it provides that both the area that includes the seabed, ocean floor, and subsoil thereof beyond the limits of national jurisdiction or economic zone and its resources are “*the common heritage of mankind*” and that no sovereignty or other rights to this area and its resources may be recognized (United Nation Convention on the Law of the Seas (UNCLOS), 1982).

2.2 In-depth UNCLOS’ definitions providing conceptual basis

Among all the relevant topics covered by UNCLOS, some key definitions provide the needed background to other international conventions, to form and establish the legal international framework that allows the development of the maritime shipping as known-today.

Part II of the UNCLOS establishes the rights that every country has to set its own territorial seas and contiguous zone. To do so, the instrument provides key definitions about how to measure that by the establishment of the so-called “*baselines*”, regulated in its articles 5, 7 and special provision from 8 to 13 (United Nation Convention on the Law of the Seas (UNCLOS), 1982). It was one of the most important developments of this instrument because the baselines allow measuring the breadth of the territorial sea established as the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State. From that line, every country can establish “legally” its “Maritime Aquatory”. This definition includes the internal waters defined as the waters contained between the coast and the baseline and the territorial sea, the area contained from the

baseline to the mile number 12. Inside this area, the State has territorial sovereignty, which includes airspace over the area, as well the seabed and subsoil (Anderson, 2008).

From the line established as the end of the “territorial sea” till the mile 12, the country can establish the “contiguous zone”, where they have functional sovereignty. This type of sovereignty, in the corresponding cases, can be extended to till the mile 200 which is the limit of the “Exclusive Economic Zone (EEZ)” (Part V UNCLOS). The term “functional sovereignty” means that the coastal State is not the “owner” of this territory; however, its status is unique and can be described as something in-between, where the State has some rights, especially over the resources in there. From the final limit of the EEZ till the EEZ of another country, all the sea area in the middle is considered as “The High Sea” with particular regulation contained in Part VII of the UNCLOS.

Unlike the high seas, the seabed and the ocean floor beyond the limits of national jurisdiction, called “the Area” (UNCLOS Part XI) was put under the administration of a special international organization, namely the International Seabed Authority (ISA). In the article 136, the instrument states that this area is designated as a global common in light by their use for the whole community, having a strong relationship with the definition firstly utilized in 1967 as a “*common heritage of mankind*”, textually mentioned in the instrument (Nelson, 2005).

Undoubtedly, the definition of these areas was one of the most relevant developments included in the instrument, as it allows to set the basis to every other international regulation. It clearly defines the rights and obligation for every ship and, therefore, for every member State. As it was highlighted in Chapter 1, the UNCLOS also provides regulations detailing the rights and especially the obligations to the States divided into the mentioned categories: Flag State, Coastal State, and Port State.

The legal status of the areas described implies that the coastal state has the right to exercise a certain level of control and enforcement over-regulation related to customs, fiscal matters, immigration, and sanitary laws. For that reason, the State can impose penalties for a ship flying another *flag* is not complying with those regulations (Marten, 2011). Moreover, the current version of UNCLOS contains a procedure to settle disputes between States, which is considered relevant to solve differences in a peaceful form. (See Appendix B)

2.3 Appearance of “Flag of Convenience” / “Open Registries”

UNCLOS, in its article 94, provides the legal platform for the registration system specifying that each State should maintain a register of ships containing the particulars of each vessel flying the flag, as well as their names. As ship’s registration and nationality plays an important role towards security and safety of the maritime realm as well as significantly contributes to the protection and preservation of the maritime environment. It has been subject of many studies and research in order to analyze and better clarify the main issues regarding these essential legal components (Ermal & Krisafi, 2013).

However, issues of enforcement are always complicated in the context of international shipping due to the inevitable clashes of jurisdiction that arise. Vessels move around the world, subject to the law of their flag state, and enter waters over which coastal states have authority and, while in a coastal state’s waters a vessel may breach the law of either or both states, giving rise to a conflict of enforcement interests. The flag state may argue that it is primarily responsible for the vessel and insist on taking enforcement action itself. The coastal state may reply that its rights are more directly affected given the vessel’s location at the time of the breach and commence its enforcement actions (Mejia & Mukherjee, 2013).

In this context and as it was explained in Chapter 1, it is the flag State who has the main jurisdiction, right or obligation to ensure that the ship meets generally accepted

international safety, crewing, and anti-pollution standards, according to what is established in article 94 of UNCLOS. It also contributes to avoiding any clashes while it is entering in another country's jurisdiction.

Currently, most flag states have set ships' standards based on the many existent international maritime regulations such as the International Convention for the Safety of Life at Sea (SOLAS), and in an ideal world, flag states would also ensure that those standards are being implemented and adequately managed (The International Convention for the Safety of Life at Sea (SOLAS), 1974). However, the reality is that in many instances, adequate regulation is not being achieved, and "substandard ships" present a potential danger for the coastal state (Yu, Zhao, & Chang, 2017).

This is where the State with jurisdiction implements the "Port State Control", a concept that has existed for a long time. According to the territoriality principle as defined under customary international law, when a ship is in port, and thus under the sovereignty of the coastal state, it is subject to the laws of the port state (Cariou & Wolff, 2015).

Nonetheless, it would be inaccurate to blame all substandard ships and notorious incidents on the flag of convenience (FOC) states since many of the leading ship owners with excellent safety records are actually operating under FOCs, and a number of FOC states are parties to the principal maritime conventions and have made determined efforts to fulfill their conventional obligations (Lee, 2003).

There is still little doubt, however, that many of these states, which account for a majority of the world "registry market," act—as the expression FOC suggests—in a manner to encourage the registration of a greater number of vessels in their national registry. FOC states are usually reluctant to impose strict standards and do not have the ability, even when they are willing, to adequately discharge the international obligations weighing upon

them to exercise effective supervision of ships' standards (Thuong, 1985). This unsatisfactory situation is partially a result of the lack of any meaningful connection between FOC states, ship owners, and their ships. That is the main reason why the "FOC" name is used in some literature; however, it must be stated that some authors have highlighted that the proper term to be used should be "Open Registries" (Roe, 2015).

Although Article 91 of UNCLOS requires that there exists a *genuine link* between the flag state and a ship, it does not specify what elements constitute a genuine link and how this requirement should be enforced (United Nation Convention on the Law of the Seas (UNCLOS), 1982).

Trying to solve this huge worldwide problem that raised the attention of many "coastal States", especially during the '80s, the United Nations intended to create an international instrument "1986 United Nations Convention on Conditions for Registration of Ships". The main objective was to identify factors that would establish a genuine link: the participation of the state or its nationals in the ownership of ships; the involvement of nationals or persons domiciled or lawfully in permanent residence in that state in the manning of ships; and the establishment of the ship-owning company and/or its principal place of business within the territory of the flag state (Yu, Zhao, & Chang, 2017).

However, this convention emphasizes the existence of economic links between the flag state and a given ship. Unfortunately, this convention is not yet in force and some scholars predicted that the situation is unlikely to change, leaving the question of what constitutes "*a genuine link*" still unresolved, and therefore the spread of substandard ships along the world (McDougal, Burke, & Vlastic, 1960). On the other hand, some other States, such as China, decided to take stronger measures in its registration policies after assuming the failure of the emplaced system trying to handle the "flagging out" problem (Chen, Li, Liu, & Li, 2017).

Despite the fact that the rights and obligations for every stakeholder of the maritime community have been established since the origins of the international activities, the mentioned “grey areas” threatened the whole scenario. Therefore, an international actor had to enter into action in order to provide the needed mitigating which will be analyzed in the following chapter.

Chapter 3 – Measures adopted by the IMO against substandard ships

In Chapter 1 the substandard ships were defined, while in Chapter 2 it was explained how the international legislation allowed the appearance of the “open registries” or so-called “flag of convenience”. The IMO, as a specialized organization of the UN realized the threat that those ships represented and, therefore, it began to develop measures to counteract them. This chapter is aimed to introduce them.

3.1 Measures taken by IMO

It is usually said that the “*maritime safety*” can be seen as successive networks, where each of the networks represents an actor that interacts with others in order to ensure the safety of ships and crew at sea; starting with the IMO that, as a specialized United Nations’ agency, is in charge of providing the international instruments to regulate a safe and clean navigation along the oceans (see Appendix C for more information about IMO). Then, as a second net appears the flag State, with the responsibility to attest that its ships comply with the IMO regulations. The next step is the classification societies or Recognized Organizations that certify the seaworthiness of the ships since the construction. The crew members and the Captain are the ones who know the real situation of the vessel and that is why they are considered one of the main actors in this structure. Lastly, when the previous nets cannot work effectively, port state control comes into practice (Oya, 2004). Therefore, the first step by IMO was to focus on the development of its Member States in their function as “flag State”, as explained in Chapter 1.

3.1.1 Flag State implementation assistance measures

During the 18th Assembly (4th November 1993) the IMO adopted the Resolution A.740 (18). This document consisted of Interim Guidelines to assist flag States in the implementation of existing IMO regulations, recognizing the concern of many States and,

thereupon, the recommendations made by the Maritime Safety Committee (MSC) and the Marine Environment Protection Committee (MEPC). The instrument encouraged flag States to develop policies to implement the international regulation adopted in the national framework and enforce them. In order to do so, the instrument asked them to provide enough personnel with appropriate technical expertise and background, qualified to guide, direct and manage the programme, but also the needed facilities to comply with the regulations contained in the instruments.

The guidelines also established that if during the implementation of the international legislation the flag States faced difficulties, they should inform the IMO and also apply, when necessary, for technical assistance (IMO, 1993b).

At that time, authors like, for example, Andre Nollkaemper showed doubts about the effect that those guidelines would have, stating:

In particular as regards developed flag states, it can hardly be assumed that a clarification of what states are required to do will make any difference; there is no doubt that if sufficient will were present, the existing obligations would be sufficient (Wonham, 1998, p. 377).

On 27th November 1997, during the 20th Assembly, the IMO adopted the Resolution A.847 (20), revoking the previously mentioned resolution and establishing the “Guidelines to Assist Flag States in the Implementation of IMO Instruments”. In the text, again IMO placed the stress on the members as flag States, stating that they are the *ones* who should take any necessary step to ensure the observance of the international legislation on maritime safety and pollution prevention, standards laid down in the IMO documents. To do so, the document provides a set of steps that every member State should take as

recommendatory to fulfill the needs. For instance, the guidelines provided initial actions, steps for the correct implementation of the instruments, measures to ensure the delegation of authority, enforcement of the legislation and finally, requirements for the flag surveyors and investigators (IMO, 1997).

Continuing with the measures, the adoption of the Resolution A.912 (22) on 22nd January 2002, can be seen as a step forward by the IMO highlighting that flag States have the primary responsibility to have in place an adequate and effective system to exercise control over ships entitled to fly their flag, and to ensure that they comply with relevant international rules and regulations. Therefore, in this resolution, the IMO incorporated another tool to “*measure*” the level of compliance of each member by the use of a self-assessment questionnaire. The objective was that every member State, bearing in mind the Resolution A.847 (20) explained previously and the indicators criteria detailed in the appendix of the Resolution, could complete the self- assessment form and submit it to the Organization. The main idea of the member State filling the form was to provide to the IMO with the useful information so as to enable and assist the organization to identify, qualify and quantify, the needs and the priorities of the State in question. However, it had a second objective and that was to serve as a “wake-up call” to the member States acting as flag State, as they would be able to ascertain which function and obligation they were not complying with (IMO, 2002).

This instrument was created to be mandatory trying to improve the previous Resolution A.881 (21); however, due to the pressure and the unacceptable reception of many member States, there was a disappointing uptake of a voluntary process. As at November 2003, as Marten-Castex stated (Mansell, 2009), only 53 original responses and 18 updates had been received showing that the process was effectively moribund. Therefore, more robust initiatives were required to address the vexed issue of effective flag State implementation.

In the following sections, an explanation of the approach that IMO adopted after facing these experiences to develop more integrated measures will be provided.

3.1.2 Measures related to the delegation of authority

Another important aspect that concerned not only the IMO but also all the member States was the delegation of authority that many governments were doing at that moment, as briefly stated in Chapter 1. It can be seen that, since the very first interim guidelines, the topic was present and according to the text, the increased space dedicated to this issue was becoming even more relevant as a recognition of its importance.

During the 18th Assembly, the same meeting where the interim guidelines for flag States were approved, the IMO also approved the resolution A.739 (18), “Guidelines for the Authorization of Organizations acting on behalf of the Administration”. This instrument intended to set standards to the way the several member States were delegating the authority to some organizations (IMO, 1993a).

The main concern was, as Mansell argued, that although some statutory functions, such as the granting of exemptions, must be executed by the flag state. Many states have allowed delegation with regard to not only surveys, inspections and the issuing of certificates, but also to the entire maritime administration, including enforcement and granting of exemptions, in contravention of the relevant provisions (Takei, 2013).

The recommendatory instrument established that the Government should have a written formal agreement with the organization that from that moment would be the “recognized organization (RO)” to act on its behalf. It also settled that the State should provide to the RO with the national legislation to be considered by them during the certification or inspection of the ships. The evaluation and monitoring of the RO’s for the States is something that was also established in the resolution, in order to ensure that it has the

needed capacity and to maintain oversight of their compliance with the activities delegated.

In the appendix of the Resolution, it established the minimum standards for recognized organizations acting on behalf of the Administration. A certain number of prescriptions that the RO should comply with were settled, such as the number of personnel, and their qualifications, the need to implement and maintain an internationally recognized quality system, such as ISO 9000 among others. Moreover, it provided all the elements that the written agreement should contain, such as the legal basis to the statement of the activities delegated and the procedure to report to the Administration.

In addition, during the 19th Assembly, the IMO adopted the Resolution A.789 (19) “Specifications on the Survey and Certification Functions of Recognized Organizations Acting on Behalf of the Administration”. This document contains minimum specifications for organizations recognized as capable of performing statutory work on behalf of a flag State Administration in terms of certification and survey functions connected with the issuance of international certificates.

The main objective of this resolution was to divide the specifications required into different elementary modules to select the relevant modules for each function of certification and survey. Therefore, it divided the modules into four areas: management, technical appraisal, surveys and qualifications, and training (IMO, 1995).

Both resolutions showed the concern of the community on how the original role of the classification societies changed from determining the standard of ships construction into a new dominant, confusing and contradictory role where they were in charge of ship’s construction, equipment, safe and secure operation. Recognizing that they are the

depository of technical expertise it is hard to imagine a world without them, as Fairplay stated in 2005 (Mansell, 2009).

However, the problem of the substandard ships continued as these resolutions were not mandatory; therefore, its implementation was voluntary for the Member States. For that reason, the adoption of the Resolution MSC.349 (92) and MEPC.237(65) made mandatory the Code for Recognized Organizations (RO Code). It became mandatory owing to the amendments of the main international instruments, such as SOLAS, MARPOL and LL Conventions.

The RO Code is basically the conjunction of the previously explained two resolutions regarding RO's including more specifications gained through the experiences. It consists of three parts: the first one contains the mandatory requirements that an organization should fulfill to be recognized by a flag State; the second one the mandatory requirements that an RO should achieve when performing statutory certification and services on behalf of its authorizing flag States but also the mandatory requirements that flag States should adhere to when authorizing an RO; and the last one is recommendatory guidelines for flag State oversight of ROs (IMO, 2013).

The mentioned amendments allowed the entry into force of the RO Code since the 1st of January 2015; therefore, currently every delegation of authority is obliged to comply with the regulations contained in it. However, as it was previously observed by Barchue, this has not fully produced the desired result. Parties to SOLAS periodically provide information to IMO on the authorization granted to ROs based on the aforementioned regulation, but there is still no independent mechanism to verify that the RO Code's provisions are unscrupulously adhered to by Parties and ROs. For that reason, the competence of the various ROs, their representatives and ROs accountability to the international community cannot be verified (Barchue, 2009).

3.1.3 Development of MOU on Port State Control

Coming back to the concept of “maritime safety” as successive networks where each of them represents an actor that interacts with other in order to ensure the safety of ships and crew at sea, the IMO, especially during the ‘90s, recognized the importance of Port State Control (PSC), stated as the last net in that concept that will act when the others failed to do so (Marten, 2011).

PSC can be defined as the control of foreign-flagged ships while they are in jurisdictional ports. The IMO, continuing with its efforts to ensure maritime safety, participated actively in the first PSC Programme organized in 1982, and after some years, the world was divided into ten different MOU developed in a fast and effective way, covering most of the ports and coastlines (Li & Zheng, 2008).

However, for some authors, the reason of the existence of the port state control regime derives from the fact that a certain percentage of ship owners and flag states use the legal “loophole” created by the international legal framework and try to save costs by operating below the minimum safety standards (Knapp, 2007).

Following the initiative of the European Union (see Appendix D), it started to encourage the development of MOU on PSC (Qu, Zhen, Howlett, & Jain, 2019). Basically, the main objective of the MOUs is to provide a regional framework for the Maritime Authorities that conduct the PSC for having the same framework and procedures, facilitating the exchange of information and sharing the same database. This initiative has resulted in ten different MOU’s around the world (see Appendix E) covering huge extensions of coasts (Kulchytskyy, 2012).



Figure 1- World Wide MOU's

Adapted from *(The Mediterranean Memorandum of Understanding on Port State Control (Mediterranean MOU), 2019)*

Accordingly, the port inspectors are fulfilling an important task in upholding vessel standards, as well as helping protect the lives of seafarers. It has even been argued that effective port state control measures surpass flag state enforcement as a more practical means of deterring substandard vessels (Marten, 2011).

3.2 Support measures for the development of MOU

Moreover, the IMO created the Sub-Committee on Implementation of IMO Instruments (III) that brings together flag, port, and coastal States to consider implementation issues. The III receives and analyses port State control information and keeps under review the procedures for port State control. During the session, they analyze the yearly reports, that every MOU sends to the IMO (IMO, 2019).

To allow the development of inspections onboard a ship, as it was explained in Chapter 2, the UNCLOS sets the legal framework to conduct the inspection; however, the IMO

provided the needed empowerment through several articles in the international legislation, such as: SOLAS - Chapter I, Part B – Regulation 19, LL - article 21 or STCW – Article X.

As it is known each Member State has the right to decide which international convention to ratify; however, once a convention is ratified the State has the obligation to implement it to comply with the regulation. This concept was a huge problem at the beginning of the implementation of the MOU because many of the “flags of convenience” were not part of the most important conventions and therefore the PSC were asking for the fulfillment of regulation that was not recognized by the flag State (Lee, 2003).

This issue was easily solved by the implementation of the “non-favorable treatment” principle. It means that a ship cannot have a more favorable treatment compared with others. In other words, it means that a ship that enters into jurisdictional waters should comply with the international regulation that the State had adopted, independently from its flag (Graziano, Ölcer, & Schröder-Hinrichs, 2017). That is how discrimination was eradicated and also this unification prevents the existence of commercial barriers between countries. Another risk is the development of “ports of convenience”, which have less stringent enforcement and, therefore, the IMO should monitor closely if competition on law problems appear (Popescu, Varsami, Hanza-Pazara, & Acomi, 2011).

Progressively, many regions copied the model settled by the Paris MOU and currently, there are ten MOU’s around the world. However, there is not a unified patron of control as each MOU establishes freely some procedures based on the mentioned Guidelines provided by IMO. For example, not every MOU uses the same codification for the deficiencies and not all of them have access to other’s databases. That could lead to a ship being inspected in one MOU’s jurisdiction without deficiencies and once it enters to

another it could be inspected again and with a different result (Graziano, Cariou, Wolff, Mejia, & Schröder-Hinrichs, 2017).

In this respect, the IMO Assembly adopted Resolution A.1119 (30) on the procedures for PSC, 2017. It is a guide for the Member States to harmonize the way each administration conducts and implements the procedures in an attempt to standardize the world-wide implementation of those controls. This document is updated periodically and its main purpose is not only to provide a basic guideline, but also afford consistency in the conduct of these inspections, the recognition of deficiencies of a ship, its equipment, or its crew, and the application of control procedures (IMO, 2018).

However, many studies analyze a different characteristic to control in order to detect a substandard ship through a port state inspection, for instance, some of those analyses have been incorporated in the Concentration Inspections Campaigns (CIC), to target specific types of deficiencies (Cariou & Wolff, 2015).

The adopted route seems to be the correct one to increase the levels of maritime safety, however, the responsibilities as a flag State cannot be replaced by the PSC, which is why port state control is not, and can never be a substitute for the proper exercise of flag state responsibility. The primary responsibility to safeguard against substandard ships lies with the flag states. It is when flag states fail to meet their commitments that the port state comes into play. Therefore, the adoption of MOU was a first step taken by the IMO. The following two chapters will analyze one of the most controversial measures that the institution decided to take in its “battle” against substandard ships.

Chapter 4 –Voluntary IMO Member States Audit Scheme (VIMSAS)

This chapter will explain the development of another measure undertaken by the IMO, focused on the performance of its Member States regarding the accomplishment of the obligations contained in the international instrument adopted.

To proceed further it is essential to define another key concept – audit.

The University of Cambridge defines an “audit” as an official examination of the quality or condition of something. That definition is closely related with other words such as “externally” or “independently”, meaning that the process should be conducted by not member of “the something” being audited (University of Cambridge Dictionary, 2019).

4.1 Development of VIMSAS

Following the example and the experience of the aviation sector (see Appendix F), the IMO decided to establish an audit scheme too. The IMO Council, at its 88th session in June 2002, considered and approved, in principle, a proposal by nineteen Member States for the development of an “IMO Model Audit Scheme”. This proposal was originated mainly by developing countries expressing the existent concern about the huge number of substandard ships that were still navigating around the world (Barchue, 2006).

Recalling what was explained in the previous chapter, the Audit Scheme was a result of a lengthy process regarding increasing flag State compliance. The main problem observed by the IMO since the beginning was strictly related to flag States obligations. Proof of that is the statement mentioned by the IMO Secretary General at that time, Mr. William O’Neill, while he was introducing the self-assessment measure, also detailed in the previous chapter:

“I believe that the problems perceived today do not lie basically with shipping’s regulatory framework or with the mechanism by which that framework is constructed, but with its implementation.” (Mansell, 2009).

However, observing that the results were not as desired and the situation regarding the number of substandard ships was not improving, the IMO finally decided to approve the proposal to set an independent mechanism of examination of the Member States implementation of their obligations. It can be seen as an evolution from the Self-Assessment of Flag State Performance by the introduction of a third party to the assessment process (Molenaar, 2014).

Since that moment many decisions have been taken by the IMO to start the implementation of the Audit Scheme. The first measure was in 2003, namely the approval by the MSC together with the MEPC of a proposal made by the FSI Subcommittee consisting of the development of a new code to help the implementation of the IMO mandatory instruments. The approval was made immediately and they also agreed that the instrument would be considered as the standard to conduct the several audits under the scheme (Seo, 2010).

A set of documentation to support the development of the scheme was needed, therefore, the Council requested the MSC and MEPC for the establishment of a Joint Working Group (JWG) to do so. The inaugural meeting of the JWG was held in June 2003 during the MEPC 77 and the first outcome was a clear strategy, with timeframe, for the concurrent development of the documentation for the Audit Scheme and the Code (Seo, 2010).

During this period of time, the Council assumed a relevant role in the development of the Audit Scheme as it was designated to drive the entire process, transforming the character of monitoring the implementation of IMO instruments. Therefore, in June 2003 it took

several measures to set the basis of the scheme. The settlement of the principles that were going to be considered along the scheme was one of the most relevant one. The need of those principles was the concern shown by many member States that were worried about the scheme, arguing that it would cause lack of sovereignty or also allow to externalize the internal weaknesses of the Maritime Administration. For that reason, principles such as the respect of sovereignty, universality, confidentiality, fairness, and transparency were defined from the beginning.

Apart from the assignment of some function to the SG and some others to the JWG, the Council approved and submitted the text of the Resolution A.946 (23), which was finally adopted by the Assembly, in which it was stated the establishment and further development of the VIMSAS to be implemented on a voluntary basis without the exclusion of the possibility in the future of it becoming mandatory. The text also urged governments to volunteer to be audited to assist the Organization in its efforts to achieve consistent and effective implementation of IMO instruments, and it clarifies that the intention of the scheme is only for further enhancing the implementation of instruments and for determining the technical co-operation assistance needs of audited States that would otherwise be unable to remediate identified shortcomings and enhance further their recognized efforts in critical areas of implementation (IMO, 2003).

The following year, 2004, the Council decided to proceed forward with the Scheme by undertaking pilot audits of member States to obtain an outcome that could be analyzed by the JWG and contribute to the development of the documentation ongoing. Therefore, six Member States, in two groups of three, took up the offer to conduct pilot audits using the draft of an instrument called “Framework and Procedures” as were developed by the JWG in 2004 (IMO, 2005a).

Those pilot audits showed motivating results as the six members found that the instruments used during the process were effective, helpful, workable and consistent with the principles stated. They also recognized that the experience was useful to learn and realize chances for improvements. Moreover, they provided some feedback regarding the instruments to be considered by the JWG to finalize the work with them during the meeting in 2005.

The promising results observed during the pilot process encouraged the whole system to speed up the process of developing instruments. This led to the completion of the Code for the implementation of mandatory IMO instruments (III Code) and the Framework and Procedures for the VIMSAS, with both being adopted by the Assembly in November 2005 as resolutions A.973(24) and A.974(24), respectively (IMO, 2005b).

4.2 Kick-off of the VIMSAS

After four years of intense work, the basis to begin the development of the VIMSAS was ready, tested and approved. However, many challenges arose, the most important of which was the need of willingness of the Member States because by virtue of its voluntary status the Scheme was not going to begin without any voluntary nomination. It was considered as a key tool in the battle against substandard ships, according to IMO SG Efthimios E. Mitropoulos as he opened the second session of the ad hoc Council joint working group (Wolters Kluwer Legal & Regulatory, 2004).

The documentation, as it was designed, covered the considered ten most important IMO instruments (see Appendix G). This meant that the complexity of the process was considered another huge challenge together with the need for sufficient human resources to cover all these areas. The economic factor was another issue, as it was established at that point, the expenses to receive an audit under the VIMSAS scheme was under the nominated Member State, which in many cases, discouraged them to do so (Barchue, 2006).

From the IMO point of view, there were also many challenges to be overcome, one of the most important being the need of qualified and available personnel that could act as auditors. As it was settled, those auditors would be part of other Maritime Administrations as the Member States were invited to nominate staff with the expertise needed. Moreover, the administrative workload was going to experience a high increment, such as translation, reception of reports and statistics treatment.

By the end of 2006, the VIMSAS was fully operative and most concerns were resolved. The first Member State to be audited was Denmark, in September 2006, followed by Sweden, the United Kingdom, Ireland, and Liberia sending a message that the most developed countries were the ones in favor of the implementation of the Scheme. As of July 2007, thirty-two Member States had volunteered for audits. By 2008, forty-five Member States had volunteered to be audited and 27 of them had been audited. Meanwhile, the IMO had received nominations of 150 personnel complying with the requirements to become an auditor, from 42 Member States from all geographical regions of the world (Barchue, 2009).

The fact that the States as mentioned have been audited was one of the indications to other States of their support of the audit scheme and their commitment to implement it and together with the will to identify the lapses and shortcomings that should be amended to improve procedures and performance in their administration, made other States nominate themselves (Anthony, 2007).

Another important improvement was made by the provision of technical assistance, not only to train auditors but also to assist Member State to remediate shortcomings identified from audits. To deal with those problems, the IMO's Integrated Technical Co-operation

Programme (ITCP) had a fundamental role in holding courses around the world (Mansell, 2009).

The audits started being conducted following the established process (see Appendix H) and in general, the idea was a very welcoming development within the IMO framework and some authors expected that it was going to be transferred into the EU to help in improving the implementation and interpretation of IMO conventions. Although a voluntary tool, it was expected to become more or less mandatory for some large flag states and allow for giving an incentive through decreased port state control inspections (Knapp, 2007).

4.3 Institutionalization process

Taking into consideration what was established in Resolution A.946 (23), the Council during its 102nd session decided to make real the “*possibility in the future of it becoming mandatory*”. That decision was sent to the Assembly, which during its 26th session, November 2009, approved the Resolution A.1018 (26) endorsing the decision of the Council for a phased-in introduction of the Organization’s Audit Scheme as an *institutionalized* process through the inclusion of appropriate requirements in the IMO instruments (IMO, 2009).

The change of the status from voluntary to “mandatory” was considered as one of the most important decisions taken by the IMO. Some authors, like Barchue, argued that there were several benefits in doing so, mainly due to generic lessons learned from audits that could be provided to all the Member States so that the benefits could be widely shared (Seo, 2010).

The resolution provided a time frame and schedule of activities for the consideration and introduction of an institutionalized IMO Member State Audit Scheme and the Council outlined a schedule enlisting all the Member States and the order in which they were going

to be audited beginning with those without experience during VIMSAS and placing at the end the others. It also encouraged Member Governments to continue to volunteer to be audited.

That was considered as “the end” of VIMSAS itself because during the 28th session of the Assembly a new set of instruments was going to be approved changing the “voluntary” concept. Of course, the change was going to happen after a period of time when the activities were going to be conducted into a “*transitional status*”.

The VIMSAS provided an important basis to the new era, where 79 Member States and 2 Associate Members presented their willingness to be audited and 59 were finally audited together with the 2 Associate Members and 5 dependent territories (see Appendix N).

Countries like, for example, the Republic of Argentina recognized that the audit during VIMSAS was a successful process highlighting, however, that there were some issues to be improved such as the expenses of the audit, the comprehension of the local Maritime Administration. Moreover, the Member States recognized that the Scheme could incorporate more instruments but it was not the right moment to do so and agreed that the scheme could be institutionalized (Republic of Argentina, 2009).

However, 79 Member States only represents about half of the total Member States and there were also many other issues to be considered, for example, the Maritime Administration had the chance to excuse itself from a part of the audit during the process alluding that it was not ready or not in favor of the process. Bearing this in mind and considering that it was the first attempt to do so, the process was helpful but weak in certain aspects, so the decision adopted by the Assembly definitely was focused on those gaps detected, willing for a mandatory regime, that will be explained in the following chapter.

Chapter 5 – IMO Member States Audit Scheme (IMSAS)

This is the last theoretical chapter and the main objective of this chapter is to present the latest in the series of measures adopted by the IMO for implementation of IMO instruments by Member States: the IMSAS. This chapter discusses the introduction of the new Scheme, provides an overview of its principal characteristics, and the results of implementation of the Scheme before discussing associated concerns.

5.1 IMSAS - New instruments for implementation of IMO instruments

Since the adoption of the Resolution A.1018 (26), there have been many different changes in the instruments related to the IMO Audit Scheme and the framework approached was the one established in that resolution (Seo, 2010).

Starting from the III Code, explained in Chapter 4, it was modified because of the Resolution A.1070 (28) (IMO, 2013c). This last modification is considered the most important one due to the amendments proposed and introduced into the instruments covered by the Audit Scheme, this III Code became “mandatory”, following the success of VIMSAS (Basaran, 2016).

The III Code is not specifically drawn up to deal with IMSAS. It instead elaborates on how to correctly implement all IMO legislation. Because of the fact that IMSAS is incorporated into the major IMO Conventions - and the III Code applies to these major Conventions - the III Code is applicable to IMSAS (Candidate nr. 11, 2015).

In Chapter 4, it was also explained that the III Code was established as the “Audit Standard” whereas the Framework and Procedures was created to describe the objective,

principles, scope, responsibilities and capacity-building aspect of the IMO Member State audit and together constitute the strategy for the audit scheme.

However, during its 28th Session in December 2013, the Assembly approved the new, and current, version of the Framework and Procedures by the Resolution A.1067 (28). It was considered necessary because the amendments introduced in the most important IMO instruments were going to make the III Code mandatory; therefore, this instrument should support it properly (IMO, 2013a).

Another important decision taken by the Assembly during its 28th session was the adoption of the Resolution A.1068 (28), providing the needed clarifications on how to proceed from the VIMSAS to the IMSAS. It established that until the amendments of the applicable IMO documents enter into force, the instruments used to conduct the IMO Audit Scheme are going to be the “new” ones. However, what is important to highlight is that the process of the audit is going to be exactly the same used during the VIMSAS (IMO, 2013b).

5.2 Amendments to related IMO Instruments

The time frame contained in the analyzed Resolution A.1018 (26) delegated the functions of the adoption of amendments to the instruments related to the IMO Audit Scheme to the Committees. For that reason, since 2013 the different committees started to design the proper text to be included in the instruments to make the Audit Scheme mandatory and, therefore, all the related instruments (Seo, 2010).

These amendments were intended to enter into force on the 1st January 2015, but finally it happened a year later with the exception of the LL and Tonnage Convention as they have a different process to be amended; therefore, they need a resolution from the Assembly to complete it, which was approved during the 28th session (Resolutions A.1082 (28) and A.1084 (28) respectively) (IMO, 2013d) (IMO, 2013e) (see Appendix I).

5.3 Other relevant instruments developed by IMO

Two other instruments developed by the IMO are particularly useful and relevant in implementation of the audit scheme namely, the non-exhaustive list of obligations under IMO instruments and the Auditors Manual.

The first instrument was adopted with Resolution A.1077 (28), “The 2013 Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (hereafter referred to as the "Non-exhaustive list of obligations")”.

This instrument is considered one of the most important aids that every Member State can use during the preparation for the IMO Audit together with the Pre-Audit Questionnaire (PAQ) (Republic of Argentina, 2009). It consists of a list of “almost” every obligation that a Government has assumed by the ratification of the IMO instruments scoped in the Audit Scheme, divided by into four analyzed categories. By using the exhaustive list, a Member can individualize internal responsibilities and the method implemented to enforce those obligations.

Moreover, after the entry into force of the amendments to the IMO instruments, the non-exhaustive list of obligations has undergone several modifications, and the current list was approved during the 29th Session of the Assembly through Resolution A.1105 (29) (IMO, 2015).

The second instrument was transmitted to every Member State through the Circular N° 3425 (5 December 2013) “the Auditor's Manual for the IMO Member State Audit Scheme (IMSAS)”. This consists of an instrument that was approved by the Council during its 110th session and it has been developed as a guidance to assist in the planning, conducting and reporting by auditors in the execution of their duties as defined in the Framework and Procedures for the IMSAS (IMO, 2013f).

This instrument has no other intention than be a helpful tool to be used together with the Framework and Procedures during the audit itself. However, it could also be considered as a tool for the member States in their preparation to receive the Audit.

5.4 The IMSAS Scheme

As agreed in Resolution A.1018 (26) the “mandatory” Audit Scheme started on 1st January 2016, following the list approved by the Council during its 112th Session, where the SG had determined the audit schedule for implementation of audits under the mandatory Scheme. This was based on a random drawing with the member States and Associate Members who had not completed an audit under the voluntary Scheme, followed by those that had completed an audit in chronological order. That audit schedule presents the order of audits chronologically and the objective is that under the mandatory Scheme, audits will be conducted at periodic intervals not exceeding seven years (Secretary General, 2014).

5.5 First results of IMSAS

During 2016, a total of 18 audits were conducted under IMSAS according to the Framework and Procedures for the IMSAS and using the III Code as the audit standard.

The first report was transmitted by the SG vide Circular N° 3772, containing the consolidated audit summary report (CASR) (see Appendix J). Considering that the CASR became a valuable tool for the member States as they can find in them lessons learnt by others and challenges in the process of implementation of the international IMO instruments, the SG decided to continue with the dissemination of them via Circular Letters ensuring the overall coverage (IMO, 2017).

Through Circular N° 3879 of 10 October 2018, the SG provided the most recent information about the Audit Scheme, providing the second CASR, containing lessons

learned from one audit completed in 2016 and fourteen audits that were completed in 2017. This information has not yet been analyzed by the III due to the lack of time to do so before the 6th session; therefore, it will be presented in the next session (IMO, 2018). However, its analysis will be conducted and included in Chapter 7.

5.6 Practical implementation of IMSAS

Recently, China presented the document III 6/7/1 analyzing the difficulties in the implementation of the provision of the III Code encountered by flag States and proposed a manual to assist in its implementation (China, 2019).

Document III 5/7 provided the summary of the analysis of the first CASR from 18 audits conducted under the IMSAS. Therefore, China considered that document and the Circular N° 3772 to highlight that the most recurrent findings are in the flag States area from mandatory audits. They also concluded that an important reason for the difficulties in implementation within the mentioned area is related to the differences in understanding of the provisions of the III Code by flag States (Secretariat, 2018).

The document III 6/7/1 provides examples of different interpretation of the prescription contained in the III Code that an NMA or an Auditor could have and aiming to reduce administrative burden of the IMO Secretariat and the flag States. Further, the document promotes the effective implementation of the mandatory IMO instruments, recommends the III to consider the necessity and feasibility of developing a manual on the implementation of the III Code by flag States.

Taking into consideration this document together with the document III 6/INF.9 (presented by Canada, Denmark, Jamaica, the Netherlands and the United States) the III decided to develop a justification for a new output, with a view to developing additional guidance in relation to IMSAS to assist in the implementation of the III Code by Member States for submission to MEPC 75 and MSC 102.

The III6/INF.9 contained a draft Member State Manual for the IMSAS, aiming to assist Member States in the implementation of the III Code, as well as the effective preparation for the conduct of, and reporting from audits under the Scheme. The Sub-Committee agreed that the proposed guidance should be non-mandatory and developed it in a non-prescriptive manner to allow for the necessary flexibility in its use by Member States (Canada, Denmark, Jamaica, Netherlands and United States, 2019).

Finally, the Subcommittee requested the Committees to consider the inclusion of a new output on "*Development of guidance in relation to IMSAS to assist in the implementation of the III Code by Member States*" for inclusion in the biennial agenda for 2020-2021 and the provisional agendas for III 7 and 8 (Report of the Drafting Group, 2019).

5.7 First years of IMSAS

The IMSAS has become “mandatory” since 2016, however, most of the instruments amendments were NOT yet in force, as it can be seen in Appendix I. However, the schedule proposed by the SG and approved by the Council was implemented that very year.

19 audits have been conducted as per the approved schedule. Results of 18 of these audits are contained in the first CASR and the remaining one in the second report. The year 2017 witnessed 14 audits, according to information contained in the second CASR. This may be seen as a problem because the main objective of the Scheme since it was established was to conduct an audit of every Member State, every seven years. Taking into account that there are 174 Members, around 25 should be conducted yearly to comply with this aim.

As it was expressed, the first analysis made to the CASR raised the concern of some Member States arguing that the interpretation of the III Code is not the same from the point of view of the Government as the one used by the auditors (China, 2019). This

situation is currently being addressed by the III and may result in the appearance of a new instrument to guide the audits.

The real situation is that not every Member State is convinced of the measure adopted by the IMO. Therefore, the IMO is still working on the acceptance of the measure that was first adopted as a voluntary scheme 13 years ago to gain experience and changed in status to a mandatory one three years ago.

Nevertheless, by now the maritime community will agree that the idea expressed by the SG at that moment (2004) Mr. Efthimios E. Mitropoulos was correct when he declared that the *battle* against the *substandard ships* needed an external monitoring system to succeed, at that time he ensured (Wolters Kluwer Legal & Regulatory, 2004).

As a result of the audit Scheme, not only can an audited Member State identify its shortcomings, but other Member States can also benefit from the outcome of another State's audit and use it to implement and enforce IMO legislation in a better way (Barchue, 2009).

When all the IMO Member States act in accordance with the IMO instruments the result is that globally there will be more homogeneity in international regulations regarding shipping and safety (Candidate nr. 11, 2015).

The IMSAS seems to be a renovated and promising tool for IMO in its battle against substandard ships; however, it would be preferable to consider that the current status is somewhat premature to draw conclusions about its effectiveness. The analysis conducted in Chapter 7 will provide some insights into its effectiveness.

Chapter 6 – Research Methodology

6.1 Research method

This dissertation used a mix of qualitative and quantitative methods. The analysis was conducted by using three main sources, each of them related to each of the main measures adopted by the IMO as follows:



Moreover, to place the attention on a reduced population, a **questionnaire** was administered to the 16 Member States of the VMA: Argentina, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Panama, Peru, Uruguay and Venezuela (Bolivarian Republic of).

The questionnaire was originally designed in English; however, due to the language used by the recipients, it was translated into Spanish and Portuguese by professional personnel of the International Affairs Office of Prefectura Naval Argentina. (see Appendix K)

6.2 Period of time and hypothesis

The hypothesis stated is:

“The measures adopted by the International Maritime Organization (MOUs, VIMSAS and IMSAS) have been an efficient form to eradicate the substandard ships and enhance the maritime safety”

As the VIMSAS started in 2006, the period of time considered for the dissertation is from 2006 until 2017, resulting in a total of 12 years. The last year considered is 2017 because it is the one with the available information from IMSAS and MOU’s.

6.3 Data analysis and indicators

Through the analysis of the information contained in the mentioned sources, some data was extracted to develop a set of indicators.

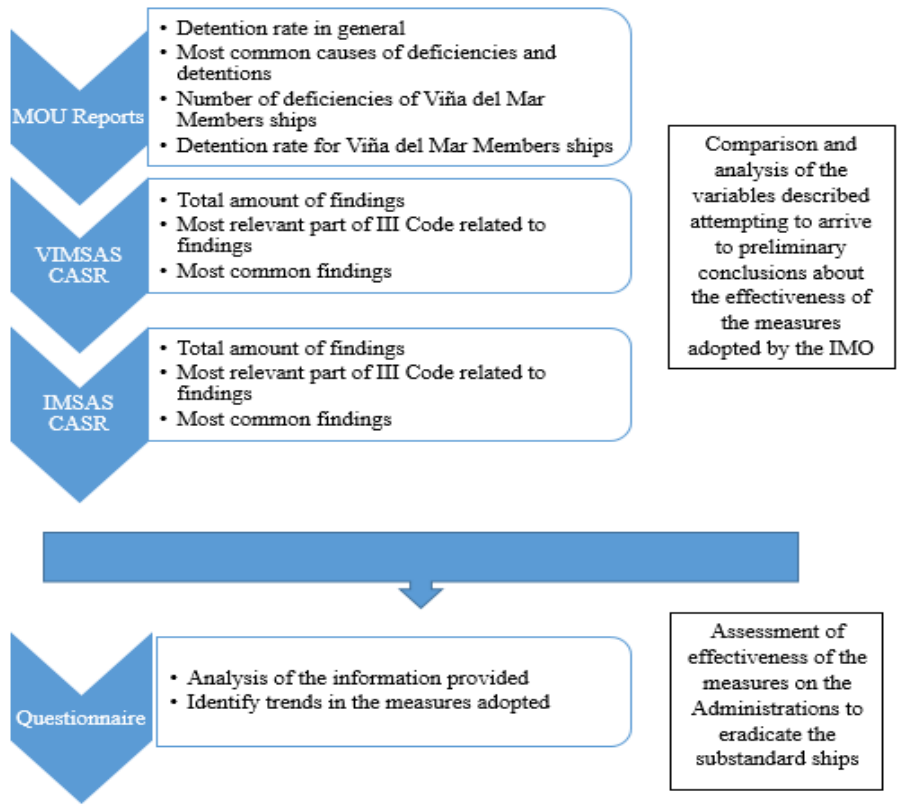


Figure 2- Information analyzed for development of indicators

Based on the MOU reports, CASR under VIMSAS and IMSAS and the Questionnaire survey, a total of 19 indicators were developed as described below

Indicator	Name	Description
PSC MOUs		
I1	Detention Rate	Average detention rate of the 10MOUs during the studied period
I2	Main cause of deficiencies detected	Most common cause of deficiencies detected yearly by the 10 MOU's
I3	Deficiencies rate of VMA fleet expressed in percentage	Deficiencies detected over inspections in VMA fleet expressed in percentage yearly by the 10 MOUs
I4	Detention rate of VMA fleet expressed in percentage	Detentions over inspections in VMA fleet expressed in percentage yearly by the 10 MOUs
VIMSAS		
I5	Average number of findings per audit	Total number of findings over number of audits conducted during VIMSAS
I6	Total number of findings as Flag State	Total number of findings as Flag State during VIMSAS
I7	Categorization of Flag State findings	Division of the Flag State findings during VIMSAS into different sub-categories
IMSAS		
I8	Average number of findings per audit	Total number of findings over number of audits conducted during IMSAS
I9	Total number of findings as Flag State	Total number of findings as Flag State during IMSAS
I10	Categorization of Flag State findings	Division of the Flag State findings during IMSAS into different sub-categories
Questionnaires		
I11	Relationship VMA fleet and PSC findings	Relationship between the number of VMA international ships with the I3 and I4
I12	Relationship VMA fleet and Ro's agreements	Relationship between number of VMA flagged international ships and number of RO's agreements
I13	Relationship VMA fleet and Flag State Inspectors	Relationship between the number of international ships for each VMA Member and their number of Flag Inspectors
I14	Relationship number of Flag State Inspectors and inspections	Relationship between the number of Flag State Inspectors of each VMA Member and the number of inspections conducted yearly
I15	Relationship VMA fleet and PSCOs	Relationship between the number of PSCO of each VMA Member and the number of inspections conducted yearly
I16	Intervention of the NMA in detentions	Discrimination of the interventions against a detention between NMA and RO's
I17	Number of persons in charge of instruments implementation	Number of persons per VMA Member available to work on the implementation of the international legislation
I18	Time lag between entry into force and ratification	Time lag between the date of enter into force of a international instrument and the VMA Member ratification
I19	Time lag between ratification and national implementation	Time lag between the date of ratification of an international instrument and its implementation in a VMA Member

Figure 3 - List of indicators used for the analysis

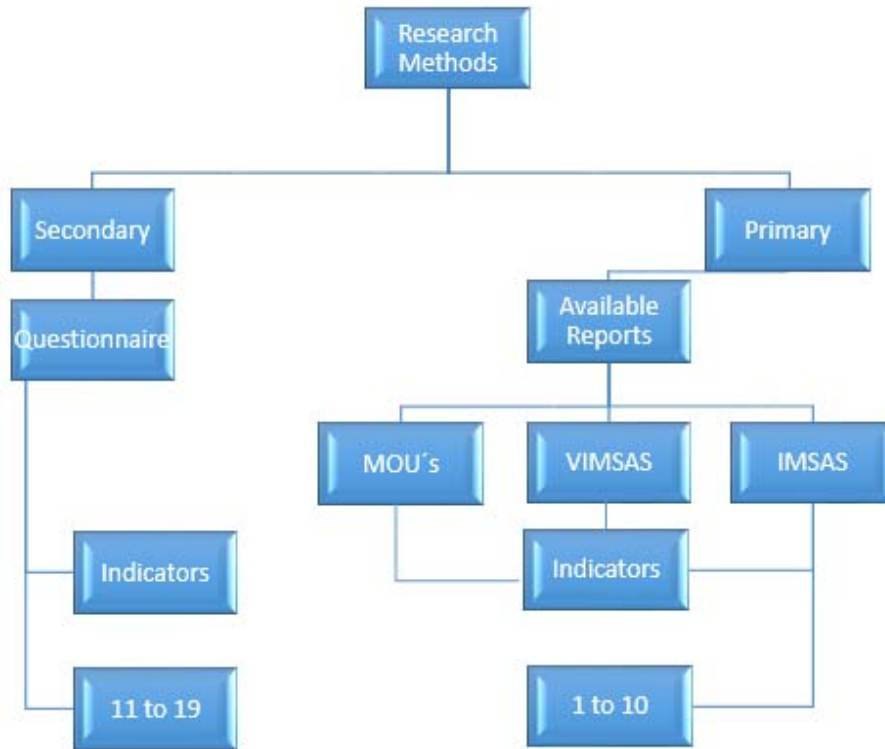


Figure 4- Development of indicators

6.4 Main research question

How efficient have the measures adopted by the International Maritime Organization (MOUs, VIMSAS and IMSAS) been in its “battle” to eradicate the substandard ships and enhancing the maritime safety?

6.5 Another research question

- How are the measures adopted by IMO (MOUs, VIMSAS and IMSAS) impacting in the Latin-American region?

Chapter 7 – Analysis and findings

This chapter presents the results of the analysis conducted, following the methodology explained in the previous chapter. To maintain an order, these results will be laid out following the sequence of the number of the indicators. For that reason, the first ones will be related to the MOU, then VIMSAS, IMSAS and finally those related to the questionnaires.

7.1 Analysis of MOU - Overall Analysis

In this section the analysis is conducted based on the “Annual Reports”, for the established period (2006 – 2017), provided by every MOU and published in their websites. The analysis will be conducted from the general information to the one related directly to the ships flagged with flags from the Members of the Viña del Mar Agreement (VMA). There will be an analysis of MOU by MOU following the alphabetical order of the MOU’s name (see Appendix L), but the overall information is contained in this chapter, allowing the development of the indicators.

7.1.1 II - Detention Rate

Figure 5 depicts the yearly detention rate of the 10 MOU’s during the analyzed period expressed in percentage, constructed as follows:

$$\text{Detention Rate} = (\text{number of detentions} / \text{number of inspections}) * 100$$

The detention rate (**Indicator 1**) of the 10 MOU’s shows that most of them are experiencing a decreasing trend, which can be also explained as a success of the aim that the IMO established by supporting the development of the MOU’s: “*eradicate the existence of substandard ships*”. This indicator can be interpreted as decrement of the

number of the substandard ships because it can also be seen that the number of inspections have been constant or even increasing yearly.

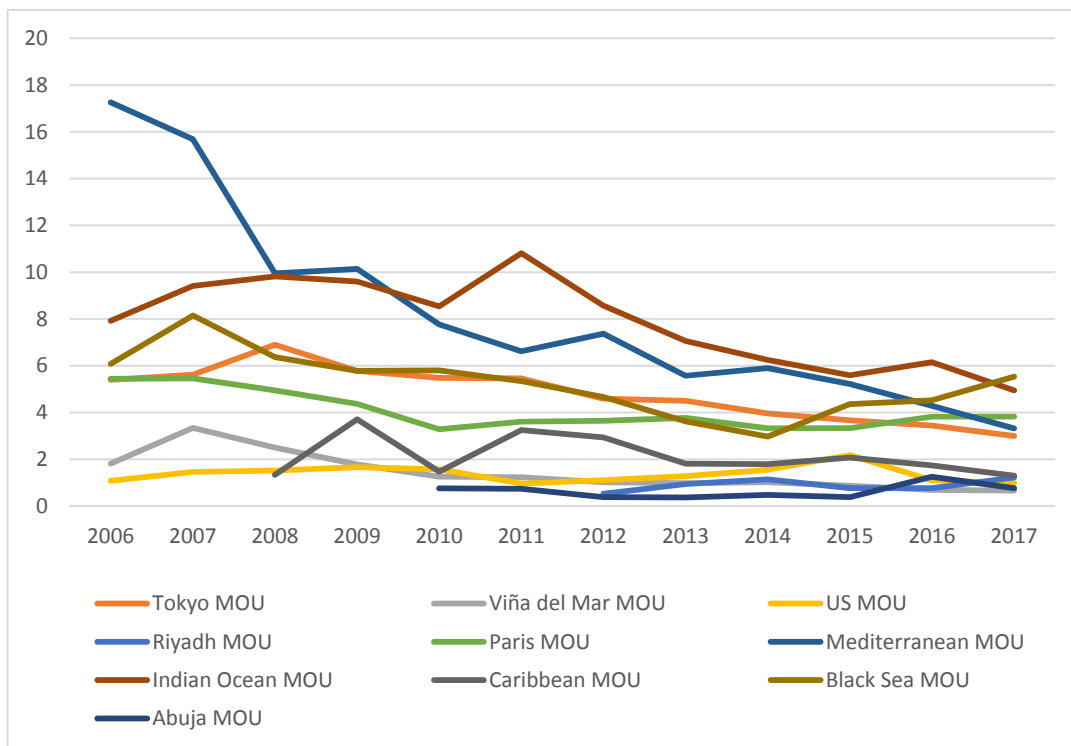


Figure 5- Annual PSC Detention Rate of each MOU (%)

Figure 6 shows the combined average detention rate in percentage of the 10 MOU's. It is in not more than the average of the detention rates of the 10 MOU's per year, in a single line, showing that the first impression while observing the previous figure is totally real, and the **II** can be considered as a point in favor for the IMO. It shows that the average percentage of detention reached in 2017 is the lowest of the entire period.

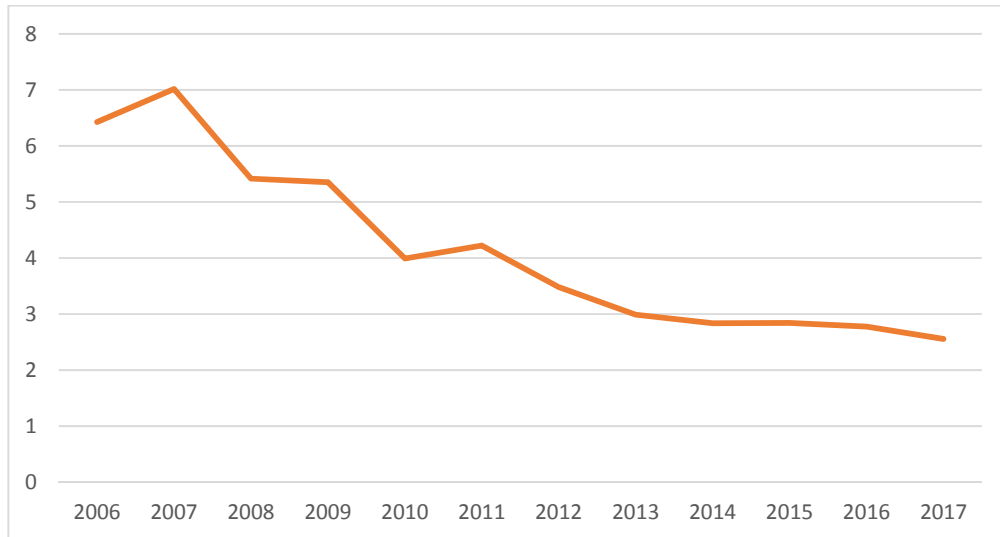


Figure 6- Average PSC Detention Rate of 10 MOU's (%)

7.1.2 I2 - Main causes of deficiencies detected

For the second indicator, 2 main causes of deficiencies were identified per report (see Appendix L). Then, considering *only* the main cause a total of 103 figures over 120 were analyzed, as some information was not available. As a result of the analysis a total of 12 different categories have been observed (see Appendix M).

Figure 7 shows that the category “Fire Safety System” is the one that has appeared as the most common cause of deficiencies in the period under review. It appeared in 37 occasions (years) in 6 different MOUs. The second highest detected cause was the category “Safety of Navigation”, in 30 instances. For that reason, the **Indicator 2** showed that the most common cause of deficiencies along the world can be considered these two categories.

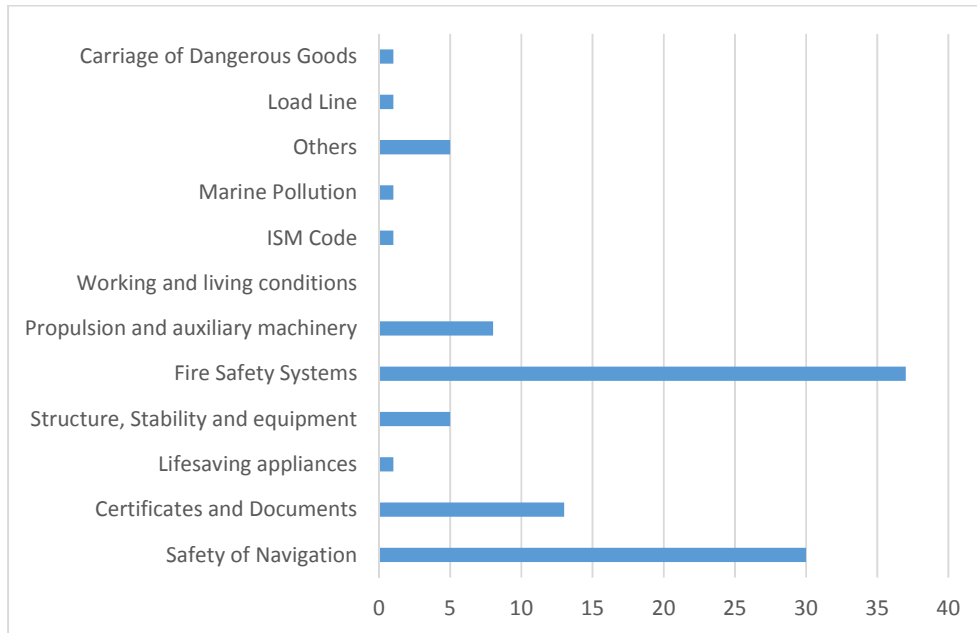


Figure 7- Main causes of deficiencies detected by PSC in the analyzed period

7.1.3 I3 - Deficiencies rate of VMA fleet expressed in percentage

In order to analyze the performance of the VMA Fleet it was considered over the total the inspections conducted yearly by each MOU the ones issued to these ships. Considering this number as a whole, the number those inspections containing deficiencies was analyzed and expressed as a percentage:

$$\text{Deficiencies rate of VMA ships} = (\text{inspections with deficiencies} / \text{inspections of VMA flag ships}) * 100$$

Figure 8 shows the deficiencies rate of the VMA Fleet in every MOU during the period analyzed. This rate represents the probability for a ship flagged with one of these flags to have a deficiency during a PSC inspection. It can be seen that, in general, the 10 lines showed that the chance to find a deficiency is decreasing yearly.

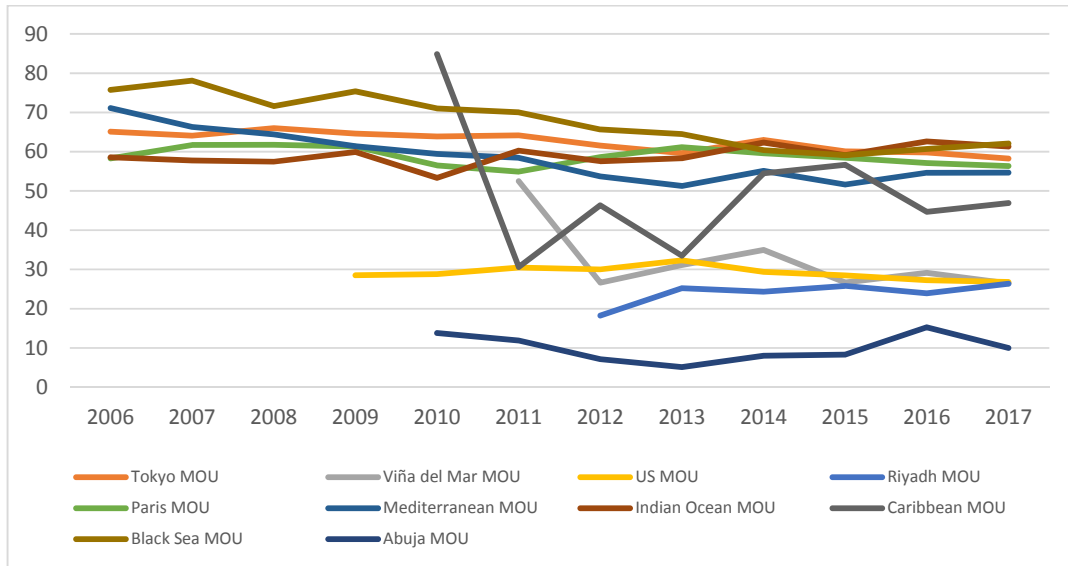


Figure 8- Deficiencies Rate of VMA Fleet in the 10 MOU's (%)

To make the analysis more comprehensive and easy to interpret, Figure 9 provides the graph of the average of the deficiencies rate observed in the 10 MOU's. In this graph, it is easily observed that the **Indicator 3** also shows that the measure adopted by the IMO has a positive result eradicating the existence of substandard ships, considering only the flags of the Latin-American region.

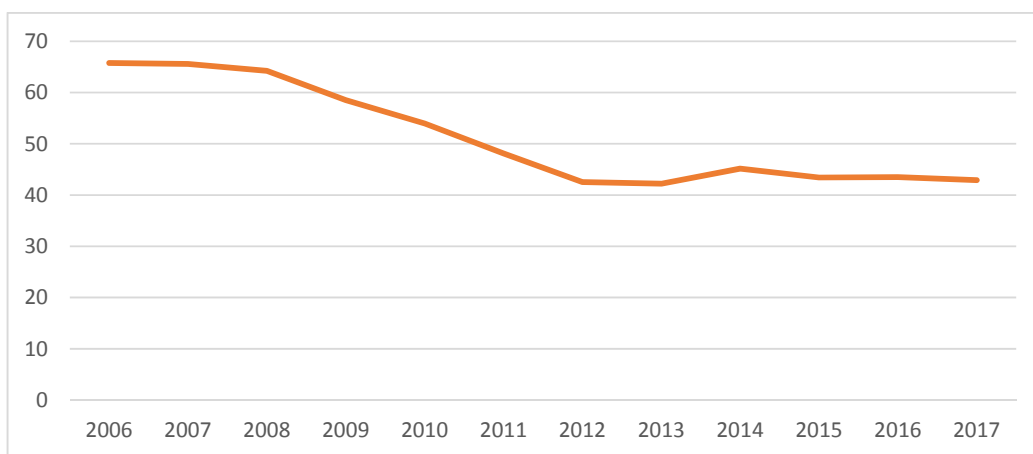


Figure 9- Average of the Deficiencies Rate of VMA Fleet considering the 10 MOU's (%)

7.1.4 I4: Deficiencies rate of VMA fleet expressed in percentage

This indicator is calculated similarly to the I3, analyzing the detentions of VMA flagged ships conducted yearly per each MOU over the number of those ships inspected:

$$\text{Detention rate of VMA flagged ships} = (\text{detentions} / \text{inspections of VMA flag ships}) * 100$$

This analysis is conducted with the information of the 10 MOUs and the result can be observed in Figure 10. It shows that, in general the performance of the VMA ships is increasing as the detention rate is decreasing since the beginning of the period until the last years analyzed.

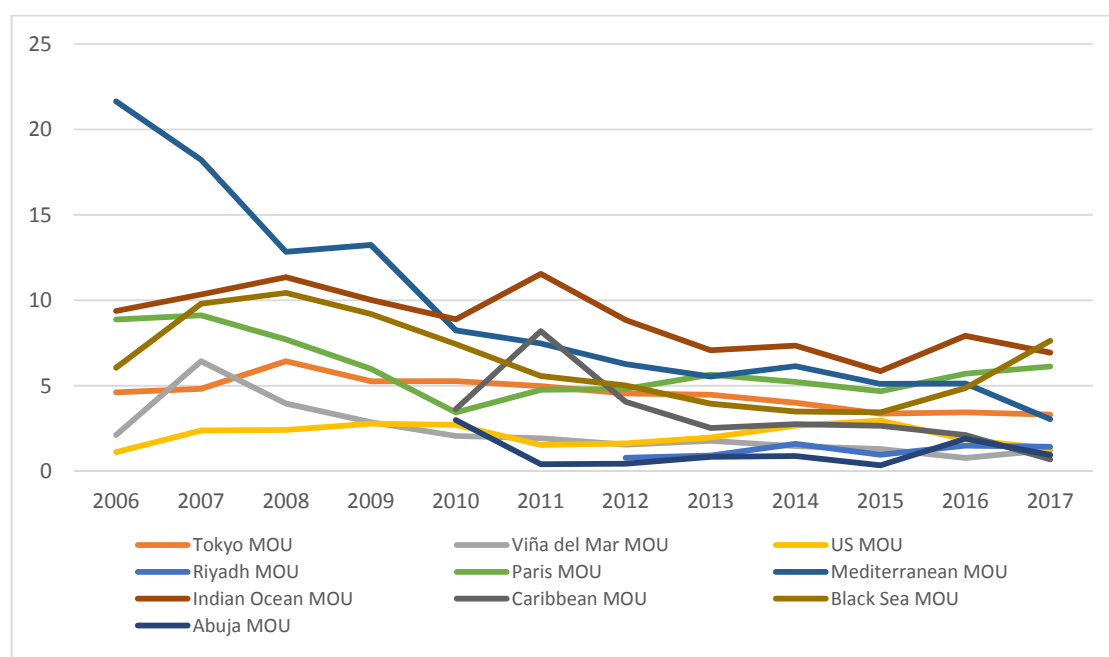


Figure 10 - Detention Rate of VMA Fleet in the 10 MOU's (%)

To provide a better picture of the situation, Figure 11 shows the yearly average of every MOU's detention rate for VMA flagged ships. It clearly shows that the performance of those ships is increasing yearly reaching a minimum of 3% in 2017. Therefore, as smaller the **indicator 4** is, the better standard those ships are showing to the PSC in the world, complying with the aim of the IMO.

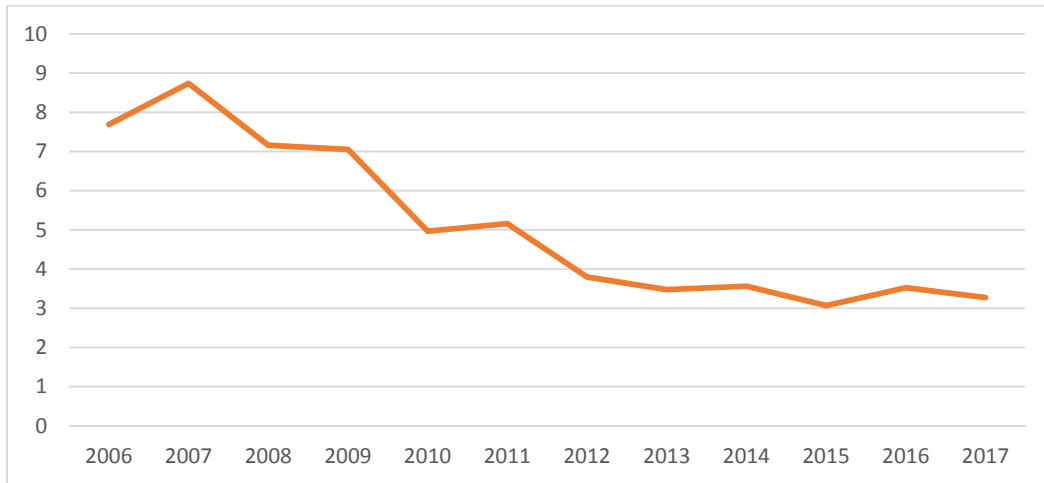


Figure 11 - Average of the Detention Rate of VMA Fleet considering the 10 MOU's (%)

7.2 Analysis of VIMSAS CASR

In this section, there will be an analysis of the audits that have been done during the VIMSAS. However, only for the purpose of the analysis, the VIMSAS audit will be considered together with the audits during the transitional period. Therefore, the following information will be the result of a total of 75 audits (59 from VIMSAS period and 16 from the transitional period). The audits covered 67 Member States (one Member twice), two Associate Members and five dependent territories.

The outcomes of the audits have been provided periodically by the IMO through several documents that can be seen in table 54 (see Appendix N), as well as the number of audits contained in them.

Through the analysis of the information, it was observed that there was a total of 762 findings in the 75 audits. These findings can be divided into non-conformities (301) and observations (461).

Relevant information to highlight is the definition of “findings”. In this section audits from VIMSAS and transitional period are analyzed together, but as it was explained in Chapter 4, the standard for the process was different.

Therefore, it should be noted that the term "*non-conformity*" had been used for non-compliance with the requirements contained in the mandatory IMO instruments in audits under VIMSAS, whilst in audits under the transitional period the term "finding" had been used to describe the same non-compliance.

However, in this analysis, the term "*non-conformity*" has been used to denote a non-compliance with the mandatory requirements for the whole data set. Moreover, in both cases, the term "*observation*" has been used for the lack of implementation of non-mandatory requirements of the Code and the III Code, as audits under the transitional arrangements were carried out prior to the entry into force of the amendments to the mandatory IMO instruments making the use of the III Code mandatory. (IMO, 2013a)

Finally, the term "finding" has been used in this analysis to denote both non-conformity and observation collectively.

7.2.1 I5 - Average number of findings per audit

As it was explained, during the analyzed period that started in 2006 with the first audit, a total of 75 audits until the last day of 2015 have been done because as explained in Chapter 5, since the 1st January 2016, the IMSAS began. During these audits a total of 762 findings has been detected, which means that per audit there is an average of 10.2 findings during this period.

There is also a division of the finding into non-compliance with the IMO instruments and observations. Therefore, the average number of findings per audit is around 4 non-conformities per audit and 6 observations per audit and the relationship is as depicted in Figure 12.

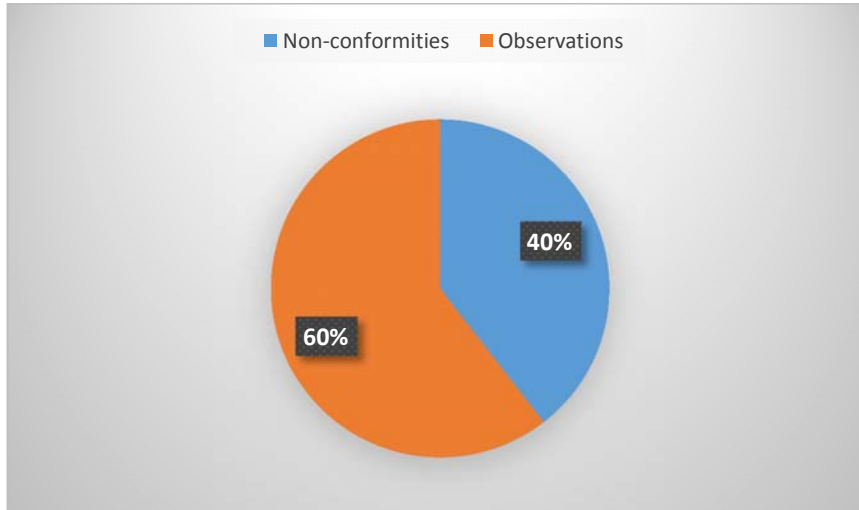


Figure 12 – Discrimination of the findings during VIMSAS into non-conformities and observations

7.2.2 I6 - Number of findings as a Flag State

As explained in Chapters 3 and 4, the III Code divided the findings/obligations into four main categories: Common Areas, Flag State, Coastal State, and Port State. Each Member State views the Code according to its own circumstances. By virtue of geography and circumstances, some States may have a greater role as a flag State than as a port State or as a coastal State and vice versa.

Figure 13 shows the breakup of the findings found during the VIMSAS process according to their main category.

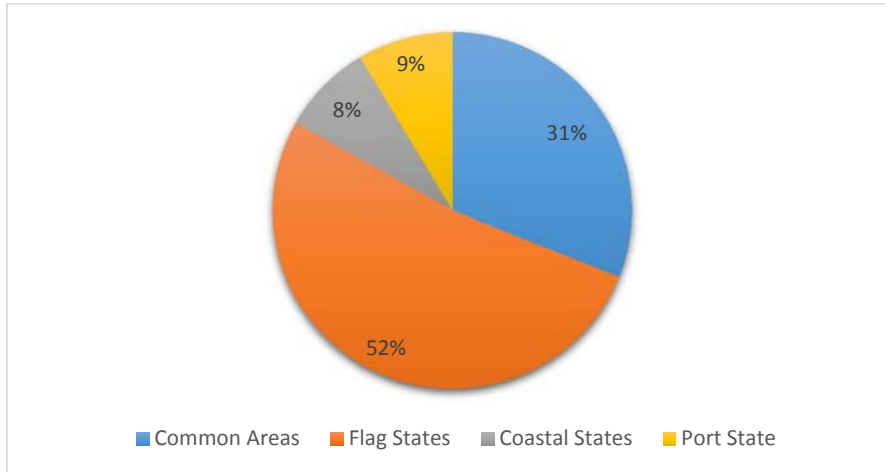


Figure 13 - Total findings during VIMSAS divided into the 4 main categories of the III Code

From Figure 13, it is evident that the main area of findings is the “Flag State”. Therefore, **the indicator 6** concluded that over the total of findings more than 50% of them are related to this category.

Following the result provided by the I6, the analysis will continue with the findings detected in the main area only, focusing the attention on “Flag State”. Figure 14 shows the distinction between non-compliances and observations in the category. It can be observed that most of the findings in this categories have been observations, which means that the Member States audited have experienced difficulty in complying with obligations that are not contained in the main IMO mandatory instruments, but with the recommendatory ones. However, a deep analysis of the main causes of these findings will be conducted subsequently

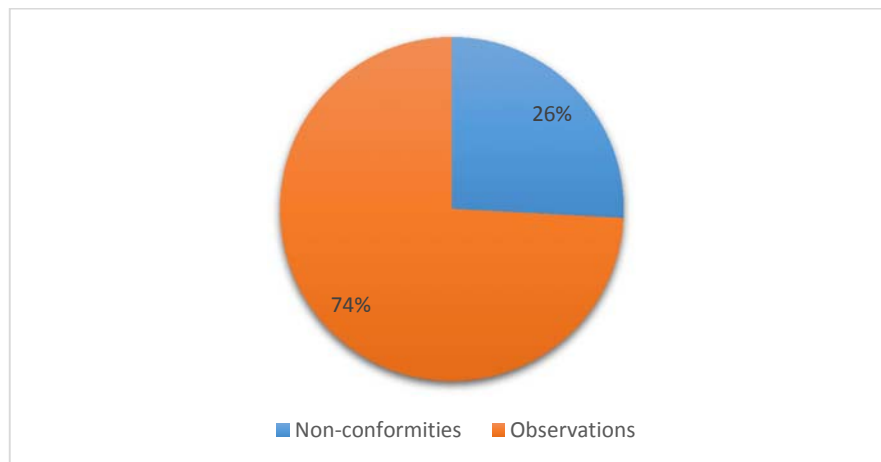


Figure 14 - Flag States findings discriminated into non-conformities and observations during VIMSAS

7.2.3 I7 - Categorization of Flag State findings during VIMSAS

In the same way, the III Code divides the obligations into 4 categories, and within the “Flag State” category, it divides the Member State obligations into 6 other sub-categories.

Figure 15 provides the information about the number of findings in each sub-category.

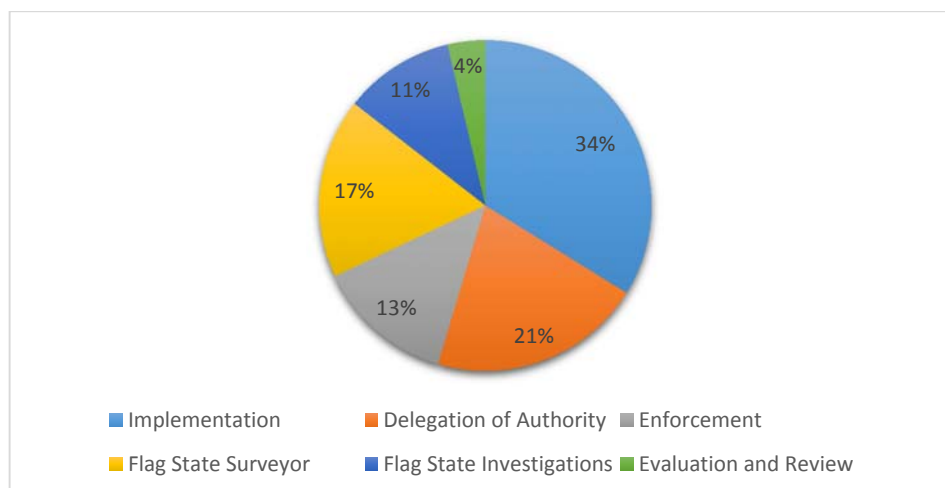


Figure 15 - Flag State findings in VIMSAS divided into the sub-categories

Here it can be seen that the indicator 7 shows that the main cause on finding as Flag State is problem with the implementation of the instruments. Moreover, in this sub-category, the main findings are related to the issuance of guidance to assist in the implementation

and enforcement of the requirements, and of administrative instructions to implement applicable international rules and regulations. Further, documentation and provision of guidance concerning mandatory requirements that are left to the satisfaction of the Administration are elements that need to be addressed by flag States. In addition, there are some findings related to resources to ensure compliance with the requirements of the mandatory IMO instruments.

If these results are considered together with the previously analyzed results of the MOU's trends, an interesting relationship can be found between them. The MOU's results showed that one of the main problems detected on-board as deficiencies was implementation in the regulation for the safety of the ships itself, such as propulsion and emergency engine, regulation to ensure the safety of navigation and also the certificates issued by the Authorities. Therefore, if the results of the indicator 7 are taken into consideration, it can be seen that the flag States are facing problems in implementing the international legislation (34%), but also as a second reason (21%) delegation of authority. Going back to what was explained in Chapter 2, the problem with delegation of authority was the main issue that allowed the appearance of the substandard ships.

In conclusion, it can be seen a relationship between the results of the indicators detailed, there is a connection between what the PSC finds and the problems that the Member States are facing during the audits. The implementation of the international legislation seems to be the key to it, according to figures shown by the indicator 7.

7.3 Analysis IMSAS CASR

As explained in Chapter 5, IMSAS started on 1st January 2016. Since that moment, and through the amendments of the main IMO instruments, the III Code became mandatory. Therefore, some of the findings during VIMSAS were considered as "observation" in this context are considered as "non-conformities". Also, it should be noted that the term "non-conformities" was replaced by "findings".

Another interesting point to highlight in the change of status of the scheme is that currently every part of the NMA should be considered compulsory during the process, which previously was not mandatory. Until the date of this analysis, the outcomes of 33 audits within the “new” framework have been published (see Appendix O).

7.3.1 I8 - Average number of findings per audit

From the analysis, it can be observed that during the 33 audits conducted during 2016 and 2017, 524 non-compliances have been detected. This number means that there was an average of 15.8 findings per audit. This number is also larger than the average detected during VIMSAS.

In addition, that number can be divided into findings and observations, noting that this time, for IMSAS the results are totally different. There have been 483 findings and only 41 observations. As can be seen in Figure 16, there are many more findings than observations, mainly due to the change of status of the III Code.

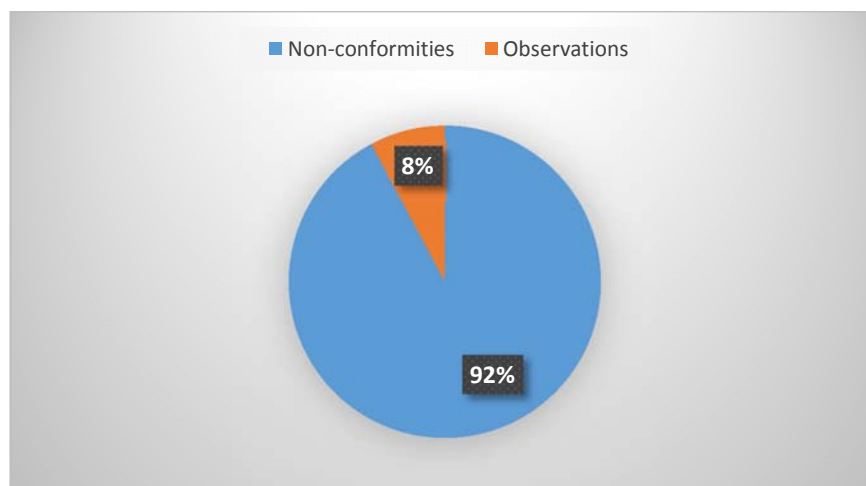


Figure 16 - Discrimination of the findings during IMSAS into non-conformities and observations

7.3.2 I9 - Number of findings as a Flag State

During IMSAS, the new III Code continues with the same structure; therefore, the non-compliances can be also divided into the 4 main categories of obligations: Common Areas, Flag State, Coastal State, and Port State.

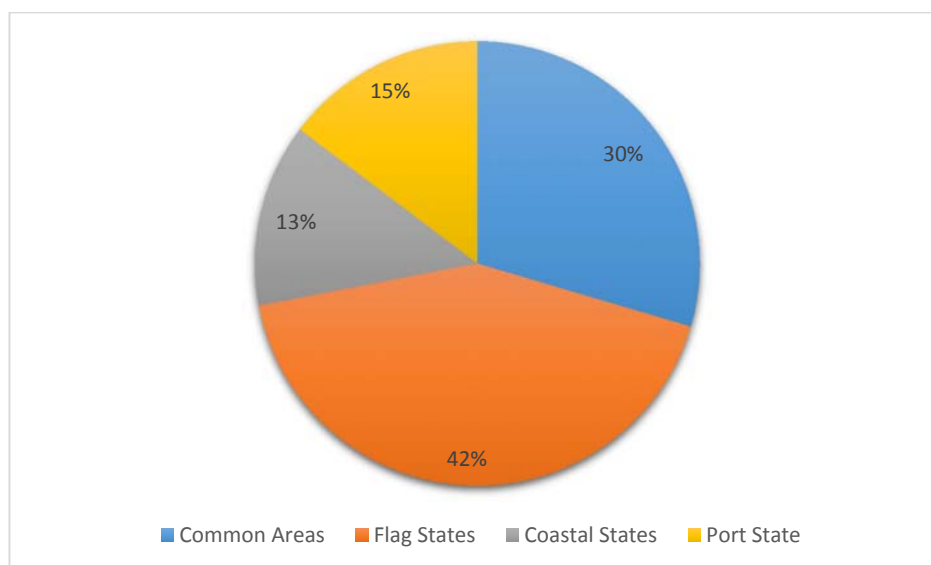


Figure 17 - Total findings during IMSAS divided into the 4 main categories of the III Code

Analyzing Figure 17, it can be seen that the division of the non-compliances into the 4 categories changed compared during VIMSAS. The trend is still the same where the number of non-compliances in the flag State category is the most relevant. However, the percentage of Flag State related findings is reduced, with a corresponding increase in the percentage of finding as Coastal State and Port State.

It is difficult to provide an explanation of this trend for many reasons. First of all, the analysis is being done over different Member States, where their geographical location and structure are not the same. Secondly, the population analyzed does not consist in the same number of countries. Lastly, the framework during VIMSAS and IMSAS is not the same. In Figure 18, it can be observed that most of the non-compliances as flag States are considered findings.

Nonetheless, the analysis showed that the flag State obligations are still the weak point of most of the NMA and that is why the largest number of non-compliances are appearing in this category.

To conclude the analysis of IMSAS, an observation on the sub-categories of the Flag States non-compliances will be conducted to determine which one is the most relevant, in Figure 19.

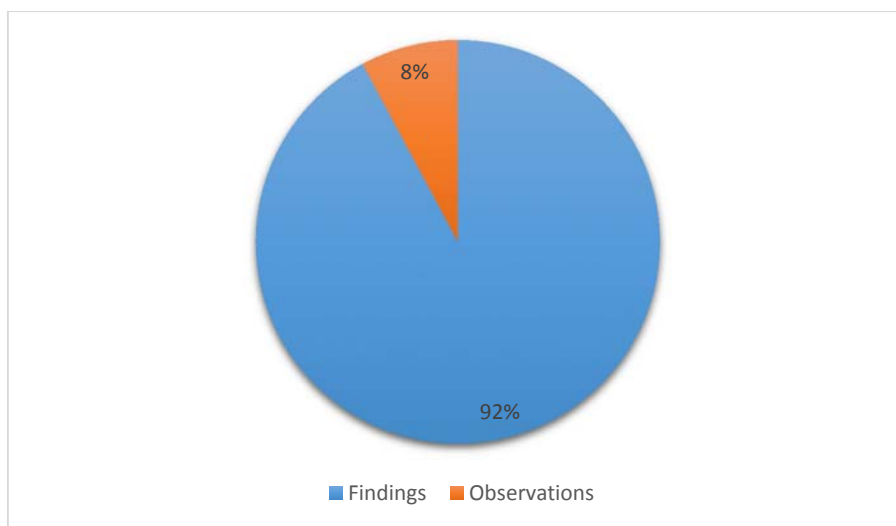


Figure 18 - Flag States findings discriminated into non-conformities and observations during IMSAS

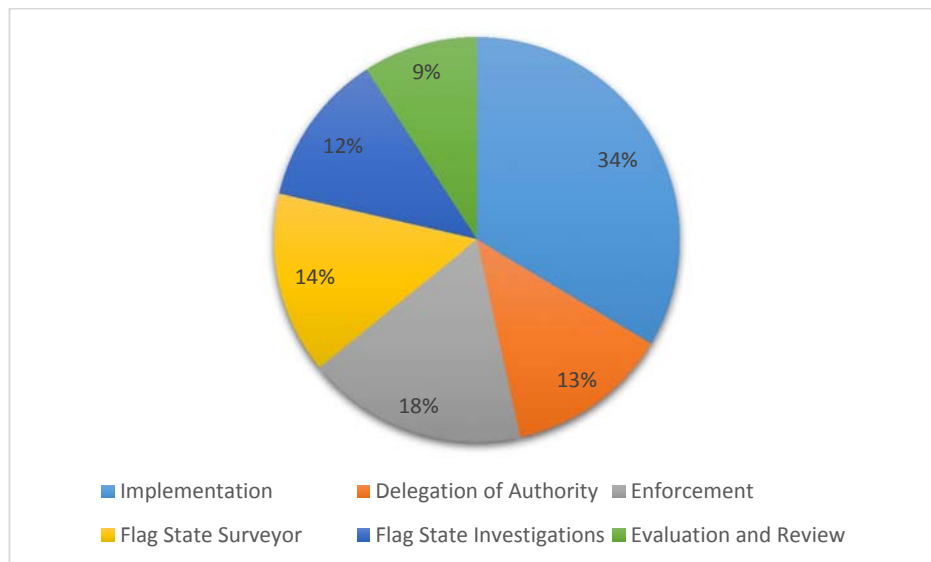


Figure 19 - Flag State findings in IMSAS divided into the sub-categories

7.3.3 I10 - Categorization of Flag State findings during VIMSAS

Figure 19 helped to analyze that the indicator 10 has the same results as the indicator 7. It means that during VIMSAS and IMSAS the main reason of non-compliances as flag State for the Governments is due to the implementation. Incidentally, it can be seen that the percentage of findings related to implementation vis-à-vis the overall non-compliances is exactly the same, 34%. However, changes are observed in the other categories, for example, there was a reduction in the non-compliances related to the delegation of authority. For this, there can be two explanations: one is the entry into force of the RO Code in its mandatory status. However, without the chance to know the Member State this cannot be assumed because the other possible reason is that the States audited are not delegating as many obligations as the ones observed during VIMSAS.

The sub-category that suffered an increase was enforcement and mainly due to the absence of appropriate national legal provisions, internal directives, and human resources to ensure effective enforcement and compliance with international obligations.

It is very difficult to make a comparison between VIMSAS and IMSAS for all the reason explained previously; however, by way of analysis of the information, some preliminary conclusions can be reached:

The Member States are experiencing difficulties to comply with the international regulation, mainly as flag States. This problem has been observed during VIMSAS and also in IMSAS. Moreover, the main reason for this problem appears to be lack of implementation. Also, the delegation of authority appears in both periods as the second main reason.

If both reasons are taken together with the results of the PSC deficiencies observed during the analysis of the MOU's reports, it is the conclusion that this lack of implementation and control on the delegation of authority is what is contributing to the existence of the substandard ships.

It is too premature to confirm that the Audit Scheme is contributing to the decrease of the number of substandard ships navigations along the world oceans; however, once the cycle of the audit is finished, a better analysis could be conducted. In addition, the analysis of the information obtained by the questionnaire that will be conducted in the following section will also contribute to understanding the changes what the measures are producing in the NMA.

7.4 Analysis of Questionnaires

The questionnaire was sent to the 16 members of VMA and answers were received from 8 of them. The information contained in some cases is not complete; however, the analysis is going to be conducted in this section. To ensure the confidentiality of the information the members are simply identified as A – H. The answers have been provided by members of institutions which are part of the NMA with the majority of the functions.

7.4.1 I11 - Relationship between VMA fleet and PSC findings

I4 showed that the average detention rate for the ships flagged with VMA Flags considering the 10 MOUs is currently (2017) around 3%. While I3 showed that the deficiencies rate for those ships is around 40%.

Considering that information and adding the numbers of international flagged ships provided by the members, it can be concluded that there are in total 7847 international ships flagged for them, and 235 of them can be detained during a PSC, while 3138 of them can have a deficiency. This is a significant number as it represents around 15% of the international fleet. Figure 20 shows the ships flagged for each country and estimated deficiencies and detention rate for each of them based on I3 and I4.

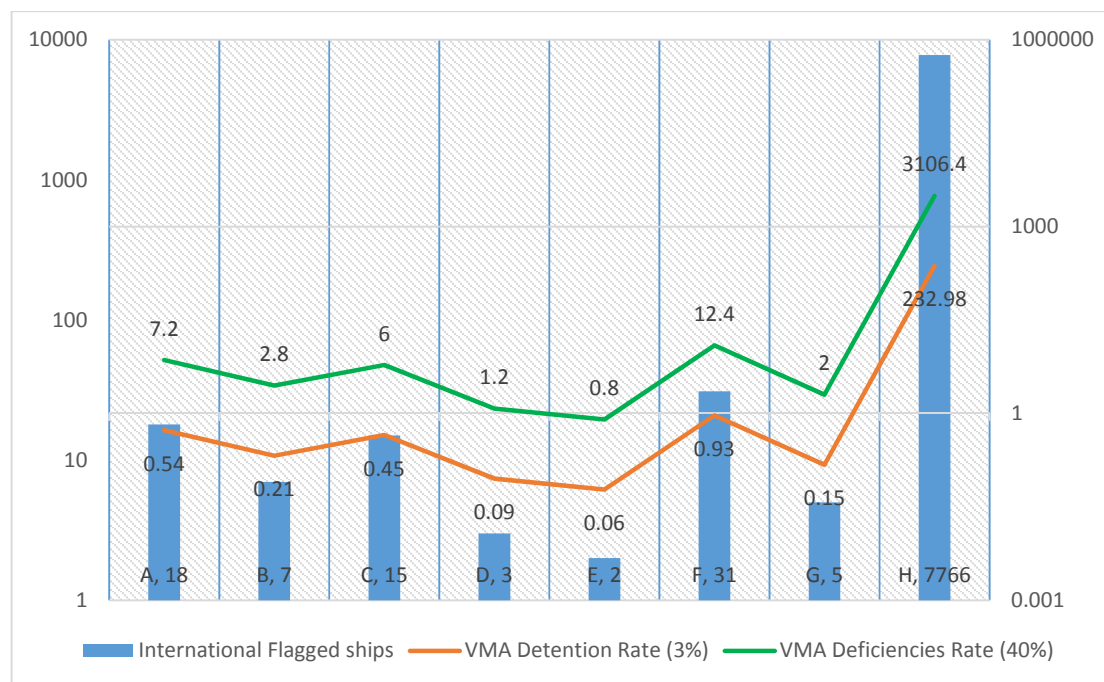


Figure 20 - Number of international ships flagged and relationship with the VMA detention and deficiencies rates (I3 and I4)

This figure helps to visualize in a single graph the relevance of the average rates analyzed from the PSC annual reports (I3 and I4) for VMA ships and contrast them with the number of international ships flagged currently by them.

7.4.2 I12 - Relationship between VMA fleet and RO's agreements

Of the 8 members that filled out the questionnaire, only 4 had an agreement with RO's. As can be seen in Figure 21, 3 over these members have a rate of 30% of the ships for each RO's while the remaining one is much lower due to the huge number of ships flagged. This indicator, in principle, shows that not every regional country is delegating the obligations in RO's.

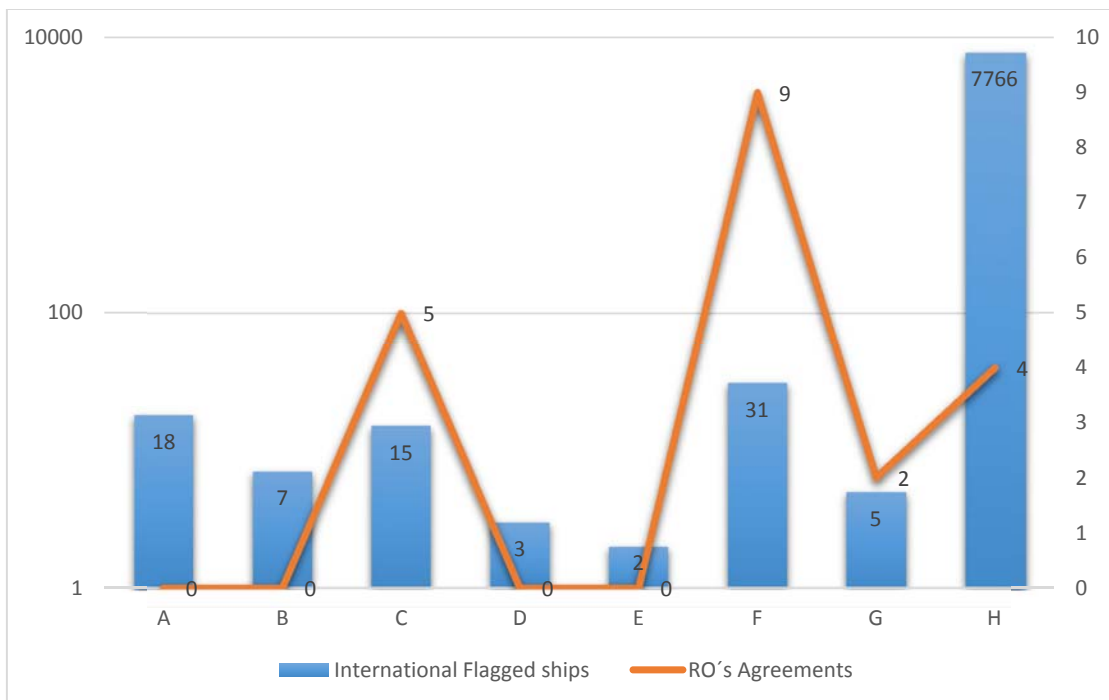


Figure 21 - Number of international ships flagged and RO's agreements

Moreover, other important detail of this indicator is the date of those agreements because as can be seen in Figure 22, most of them have been issued in the last years. The reasons can be due to the entry into force of the RO Code or to adapt the legislation to the audit standard.

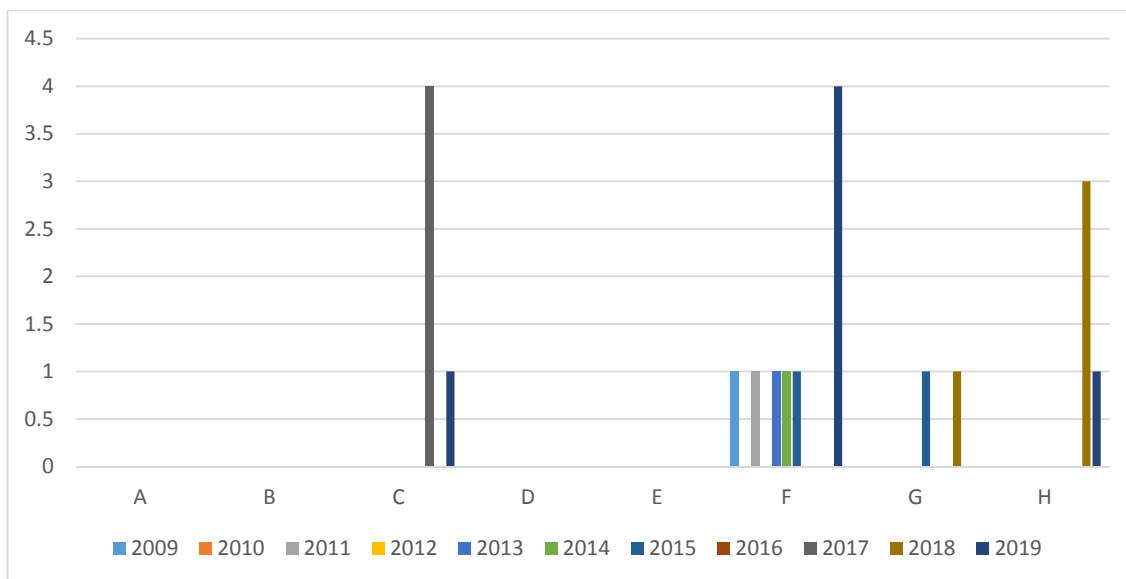


Figure 22 – VMA Members RO's agreement per year

Figure 23 shows the years in which each of the member signed the contracted with the RO's, highlighting the increment during the last years.

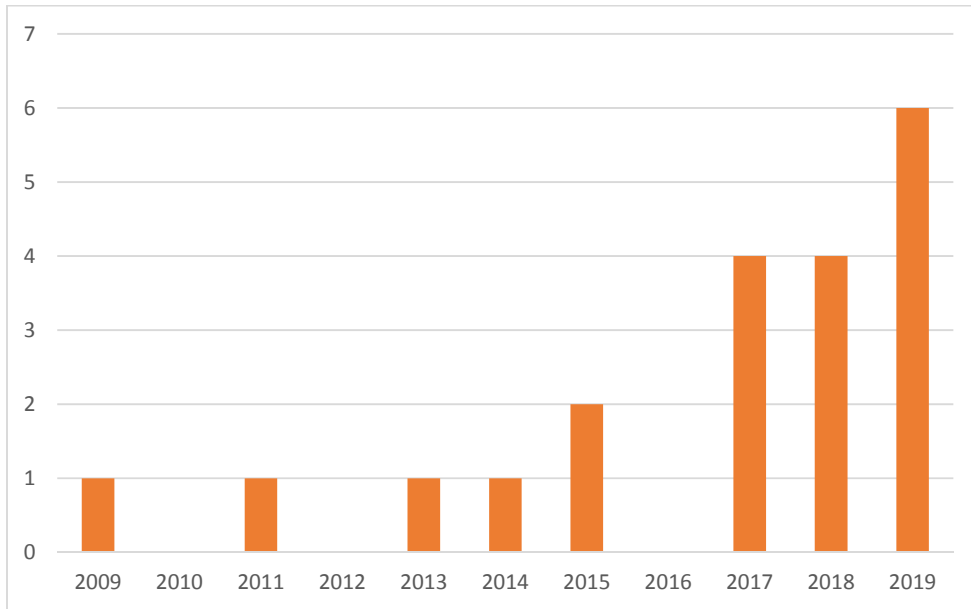


Figure 23 – Number of RO's agreements per year

7.4.3 I13 - Relationship between VMA fleet and Flag State inspectors

This indicator analyzed the information of 6 countries and it can be seen in Figure 24 that 3 of them have more flag inspector than international ships. However, regarding the other 3 countries, 2 of them have almost 1 flag inspector per ships and for the remaining one, the average is very small due to the number of ships flagged.

This indicator partially agreed with the analysis of VIMSAS and IMSAS information where the findings regarding flag inspectors, as a sub-category of flag States findings, was not one of the most relevant ones. It can be said that the VMA members seem to have a relatively sufficient capacity to conduct the obligatory inspections as flag State.

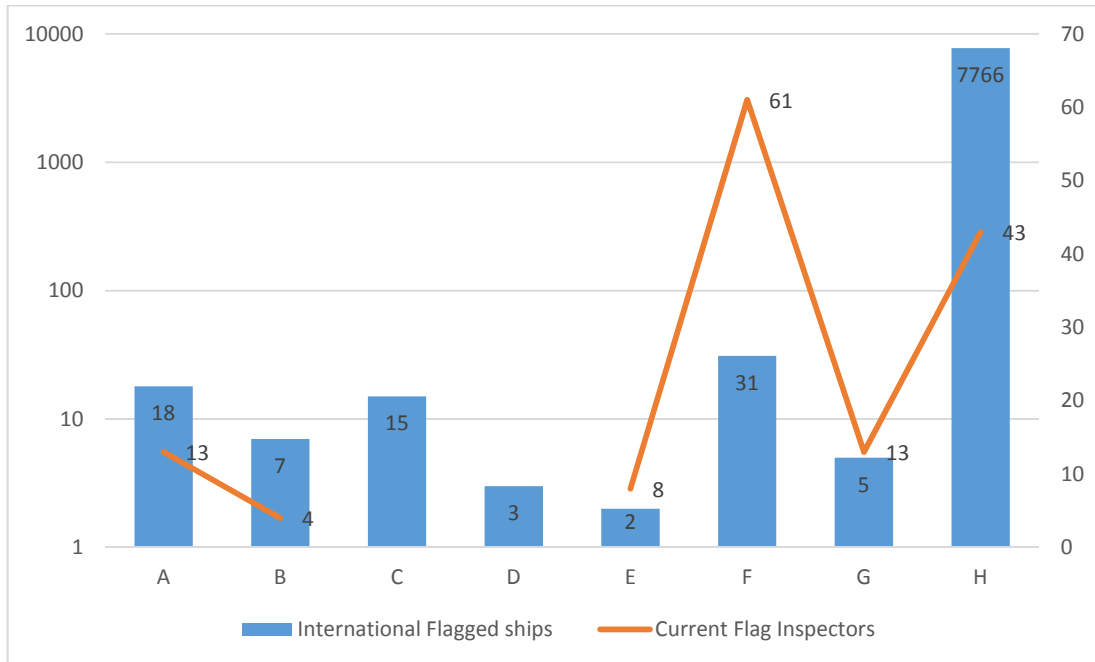


Figure 24 - International flagged ships and Flag Inspectors per VMA Member

7.4.4 I14 - Relationship between number of Flag State inspectors and inspections

This indicator shows the variation of the number of inspections and the number of flag Inspectors that all VMA member had during the period of time analyzed. Figure 25 shows that both figures have increased significantly since 2013, reaching levels three times higher than in the previous years. In principle, the analysis is not scoped to understand the reason of this effect; however, it can be assumed that the VMA members, during that year, decided to incorporate or train more personnel to fulfill the obligations as flag State considering the proximity to the scheduled IMO audit.



Figure 25 - Number of Flag Inspectors and Flag inspections of all the VMA Member during the period of time analyzed

On the other hand, Figure 26 shows the ratio of inspections per flag inspector, noting that it is experiencing a notable increment, which means that every flag inspector is conducting more inspections yearly.

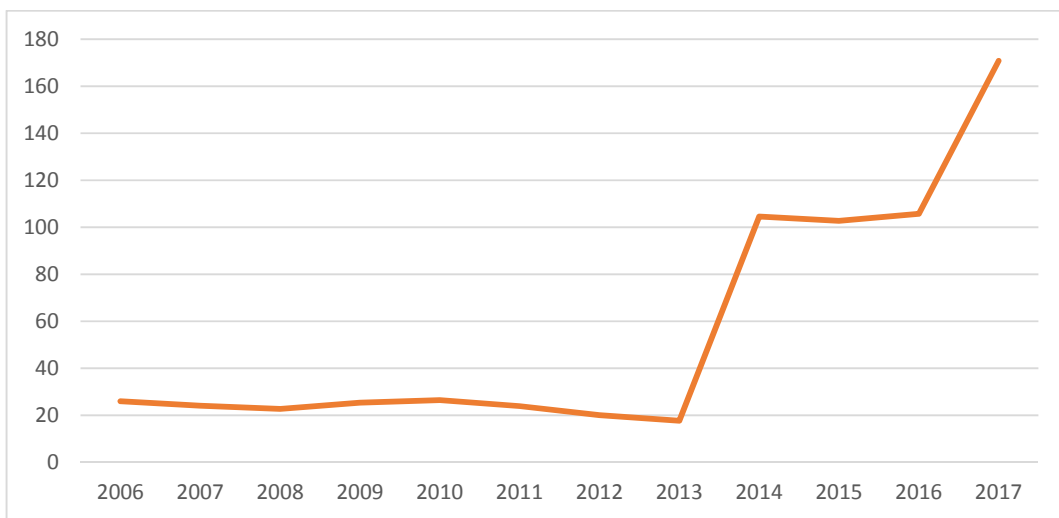


Figure 26 - Ratio of inspections per Flag inspector

This situation is not fully covered by the analysis conducted, nevertheless, it can be assumed that the possible reason for the increment is due to the implementation of higher and stricter regulations as flag State, resulting in the need for every inspector to conduct around 180 inspections per year (2017).

7.4.5 I15 - Relationship between number of PSCOs and PSC inspections

Figure 27 provides the figures regarding the number of PSCOs of the VMA members compared with the number of inspections conducted by them per year, during the period analyzed.

The number of inspections was almost constant during the period and it can be attributed to the obligation that every MOU has been trying to reach a fixed percentage of inspections over ships received. On the other hand, the number of PSCO saw a notable increment since 2009 until reaching a stable level since 2013. This situation can be also attributed to stricter regulations of the VMA members and to the development of regional training courses to form inspectors.

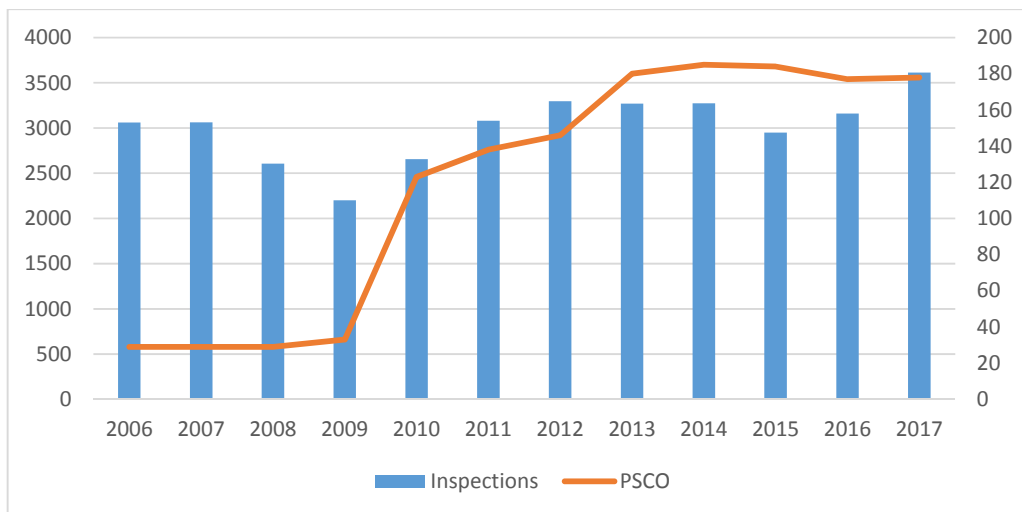


Figure 27 - Number of PSCO and inspections of all the VMA Member during the period of time analyzed

Figure 28, shows how the ratio of inspection per PSCO declined significantly during the last 7 years. This allows the PSCOs to conduct more detailed inspections and avoid an overload of inspections per person.

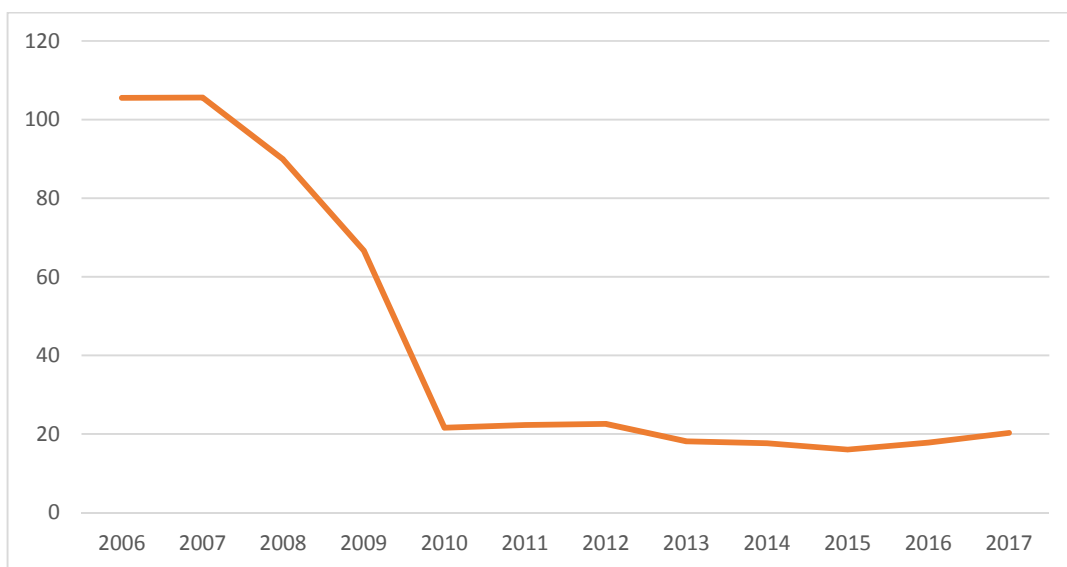


Figure 28 - Ratio of inspections per PSCO in VMA Members

7.4.6 I16 - Intervention of the NMA in the detentions

Regarding this indicator, only 4 out of the 8 countries provided information. From its analysis, it can be observed in Figure 29 that the majority of the detentions suffered for ships flagged with a flag of the VMA Members were undertaken with the participation of personnel of the NMA, rather than the RO's intervention, during the period of time analyzed.

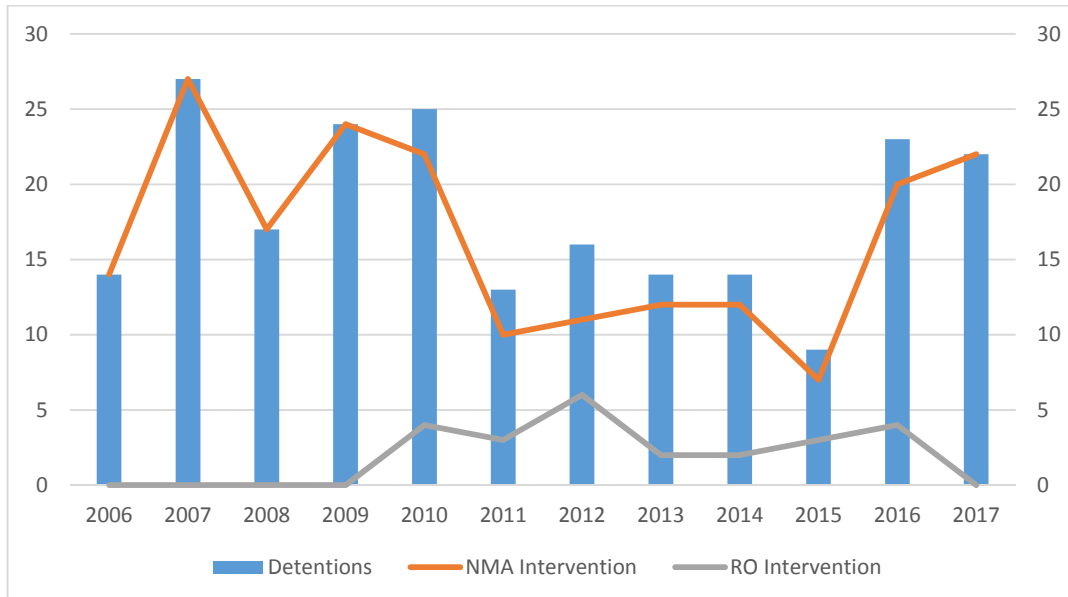


Figure 29 - Interventions of NMA or RO's when a VMA flagged ship is detained

7.4.7 I17 - Number of persons in charge of the implementation of the international legislation in the NMA

Unfortunately, the information provided for the 8 countries did not contain this numbers, therefore, this indicator could not be established.

7.4.8 I18 - Time lag between the entry into force and ratification

This indicator aims to show the time needed for the countries to ratify the international instruments observed during the IMO audits. Figure 30 shows the average in years that the analyzed member States lasted in ratifying each of the instruments. Depending on the instrument this number goes between the 2 years and 9, while the average is 5,6 years.

It was not the aim of the analysis but it can be observed that MARPOL Convention is the instrument that took longer time to be ratified for the VMA members. The reason for this is that environmental regulations usually tend to take longer to be ratified.

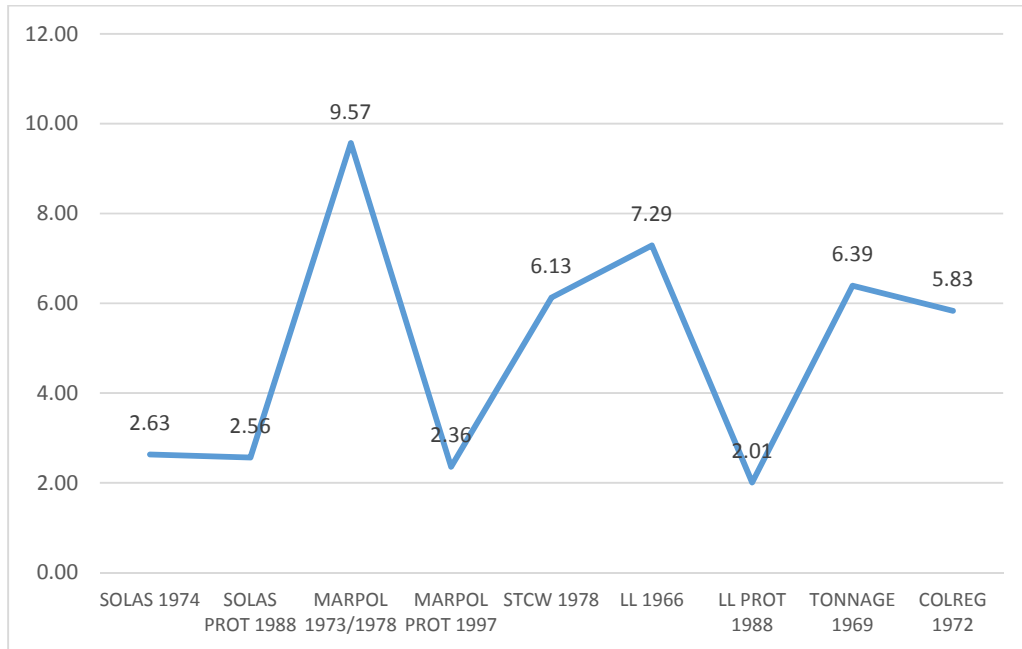


Figure 30 - Average time lag of VMA Members between entry into force of instrument and ratification (years)

7.4.9 I19 - Time lag between the ratification and the national implementation

This indicator is related to the previous one, but in this case it considers the time lag between the ratification of the international instrument and the final national implementation. It can be affirmed that the average is around 60 days if the exceptions of LL 1966 and STCW conventions are not considered. Those exceptions were due to extraordinary political situations experienced in the region. On the other hand, there are some examples such as COLREG whose average to be implemented was only 10 days as it can be clearly observed in Figure 31.

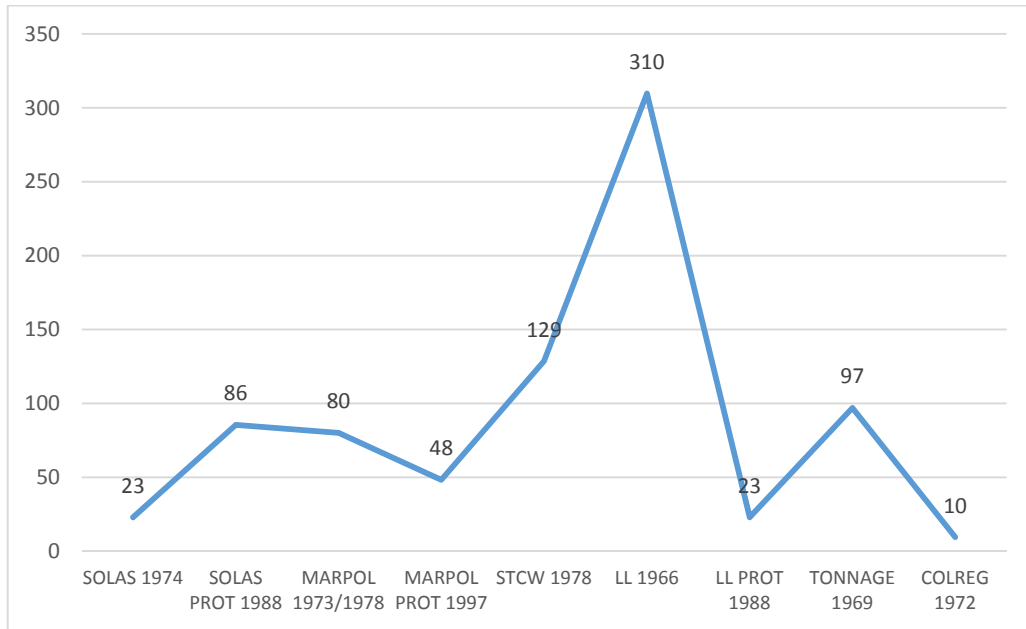


Figure 31 - Average time lag of VMA Member between ratification of instrument and implementation (days)

7.4.10 Further findings from the questionnaires

From the overall analysis of the indicators related to the questionnaire, some partial conclusion can be conducted. To do so, it should be firstly considered that the VMA has 16 members and the answers are from 8 of them. Secondly, some of the answers were not complete. Thirdly, the obligation of the countries varies according to their geographical location.

However, it can be highlighted that all of them are IMO members and 7 of them have been audited during VIMSAS and the remaining during IMSAS, which shows the proactive attitude of the region. Regarding the findings during the audits, the information shows that there have been in total 69 findings divided as Figure 32 shows:

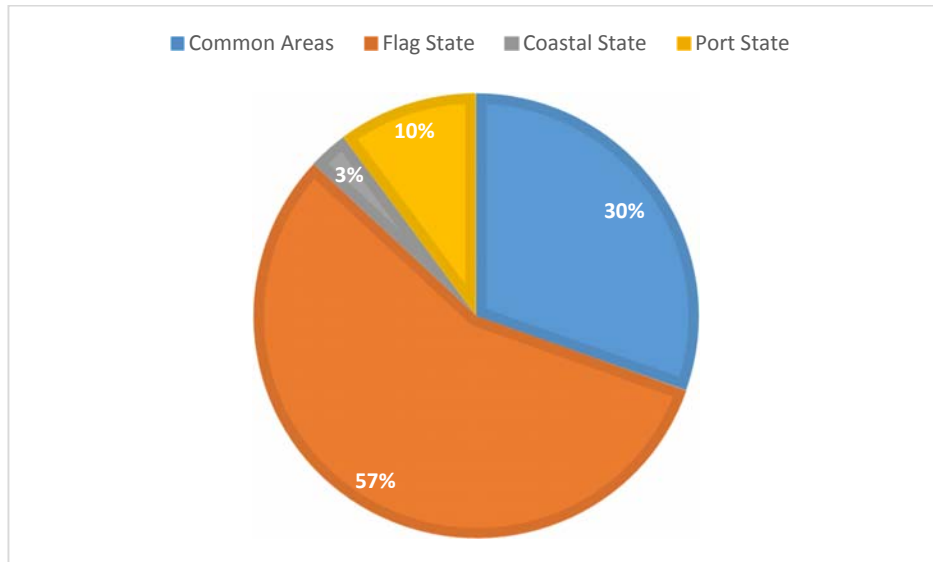


Figure 32 - Area of the audit findings informed in the questionnaires by the VMA Members

It shows that the percentage of the findings correspond with the general results of VIMSAS and also IMSAS, expressed in indicators 6 and 9, where the flag State seems to be the main issue. However, due to the analysis of previous indicators and the number of ships flagged by members of VMA, in general, the standard of them is high.

Regarding the composition of the NMA's the analysis shows that the number of RO's agreement is not high and neither is the number of cases in which these RO's intervene during a detention. In addition to the increment of the number of flag inspectors that in general the NMA's have shown, it means that the region is trying to maintain its duties with its own personnel and avoiding the delegation of authority despite the fact that the number of agreements showed an increment in the last 3 years.

Finally, the average gaps for ratification or implementation show that the region, in general, needs around 5 years since the international entry into force of an instrument and

the ratification, while the implementation will be fulfilled in an average lap of time of 100 days.

7.5 Summary of findings through the use of indicators

In order to provide a clearer picture of the findings obtained through the use of the 19 indicators Figure 33 will briefly summarize them as follows:

Indicator	Findings
PSC MOUs	
I1	There is a drop in the detention rate observed during the period in the 10 MOUs
I2	The main causes of deficiencies are related with the fire safety system
I3	There is a drop in the deficiencies rate of VMA ships observed in the 10 MOUs
I4	There is a drop in the detention rate of VMA ships
VIMSAS	
I5	The average number of findings per audit was 10,6
I6	The Flag State findings represented the 52% of the total figure
I7	The most relevant category was "implementation" with 34% of the Flag State findings
IMSAS	
I8	The average number of findings per audit was 15,8 (increment comparing with VIMSAS)
I9	The Flag State findings represented the 42% of the total figure (reduction comparing with VIMSAS)
I10	The most relevant category was "implementation" with 34% of the Flag State findings (same VIMSAS)
Questionnaires	
I11	Using the I3 and I4 it can be seen that during 2017 - 235 VMA ships could have been detained and 3138 deficient
I12	Only 4 VMA Members have RO's agreement, 3 of them with a ratio of one RO per 30% of the fleet and the remaining much lower
I13	3 over 6 VMA Members have more inspectors than international ships
I14	The number of Flag inspections per inspector increased reaching an average of 180 inspection per year
I15	The number of PSC inspections was stable while the number of PSCOs increased, therefore less inspection per PSCO
I16	Most of the intervention during a detention are conducted by NMA
I17	This indicator could not be analyzed due to lack of information
I18	The average of time lag since the entry into force until the ratification of the international instrument is around 5,6 years for the region
I19	The average of time lag since the ratification until the implementation of the international instrument is around 100 days for the region

Figure 33 - Summary of the conclusion per indicator analyzed

Chapter 8 – Conclusions and Recommendations

8.1 Conclusions

Evidently, to conclude this dissertation it is highly necessary to remember the assumption made at the beginning of it:

“The measures adopted by the International Maritime Organization (MOUs, VIMSAS and IMSAS) have been an efficient form to eradicate the substandard ships and enhance the maritime safety”

At this point, as the analysis of each measure adopted by the IMO has been finished the conclusion may not be entirely *conclusive*.

First of all, the IMO made huge efforts to help in the development of the MOU on Port State Control supporting the efforts of the European States through the establishment of the Paris MOU in 1982, despite the resistance of the USSR (Blanco-Bazán, 2004). Currently, 10 MOU's are found all over the world, working in a regional way to comply with the aim to eradicate substandard ships from their area.

The results analyzed in Chapter 7 showed that, during the period of time established, almost in every MOU the detention rate is decreasing (II), as well as the average rate. The situation was prematurely observed during the first years of the Paris and Tokyo MOUs. (Bang, 2008) There are two different strategies to obtain those results, ie the first one is to reduce the quality of the inspections and the second one is to receive ships that are complying with the international standards and, therefore, they cannot be detained. It is

hard to believe that the first option has been chosen by every MOU because it supposes a high level of coordination in reducing the level of inspections, accepting ships that are not totally safe, something that could almost be considered as against the ethic code of the inspectors. For that reason, the results allow concluding that the decrement in the detention rate is due to an improvement in the level of the overall standard of the ships that are navigating daily around the world. This first conclusion can be seen as a triumph for the IMO.

In addition, another rate was also analyzed in that Chapter, namely Deficiencies Rate. This is another important indicator to be analyzed because it showed that the probability of having deficiencies for a ship calling a foreign port is also decreasing. That also showed that the quality of the ships has been improving yearly.

The situation of the VMA fleet is not isolated from the general context. Both, the detention rate and the deficiencies rate, showed to be in a decreasing trend along the analyzed period (I3 and I4). Therefore, it can be concluded that the work of the Maritime Authorities Members of VMA are doing a huge effort to comply with the international standards on their fleet.

The analysis of VIMSAS was also important because it allowed identifying the areas in which the majority of the Member States are facing the biggest number of difficulties. The flag States' obligations appeared as the most challenging ones for the Member States that voluntarily have been faced the Audit Scheme (I6). Furthermore, while getting deeper into the causes of this situation, it was showed that problems in the implementation of the international legislation are the most substantial issue for the States, together with the delegation of authority (I7). It is important also to bear in mind that during VIMSAS only 75 audits have been conducted (Kim, 2017).

The IMO understood that the experience gained during VIMSAS was helpful to identify and help the Member States to correct those deficiencies; therefore, since 2016, the mandatory status of the Audit Scheme allowed the development of IMSAS. Until this moment, 33 Member States have been audited in this new version of the Scheme. However, the results showed the same trend as that in VIMSAS, around 34% of the non-compliances are related to flag States obligations (I9).

Obviously, there is a relationship between the trend analyzed in the information provided by the MOUs and the VIMSAS/IMSAS results. The Member States are facing problems in implementing the international regulations, and in particular problems dealing with the existence of ships that are not complying with the rules: “substandard ships”.

The questionnaire conducted to VMA members, in addition to the trends observed, showed that the Member States are working hard to comply with the international legislation in the region. The results of VIMSAS/IMSAS are a very useful tool that allows them to identify the areas in which others are facing difficulties and trying to improve them.

To provide a better picture of this Figure 34 show the detention rates trends of the oldest four MOUs and its comparison with the VMA fleet detention rate trend in the 10 MOUs. As can be seen, the VMA fleet detention rate trend is the one which has the biggest proportion of variance (0,8511). In other words, the VMA fleet is the one that during the period experienced the highest drop in the detention rate compared with the overall rate per MOU.

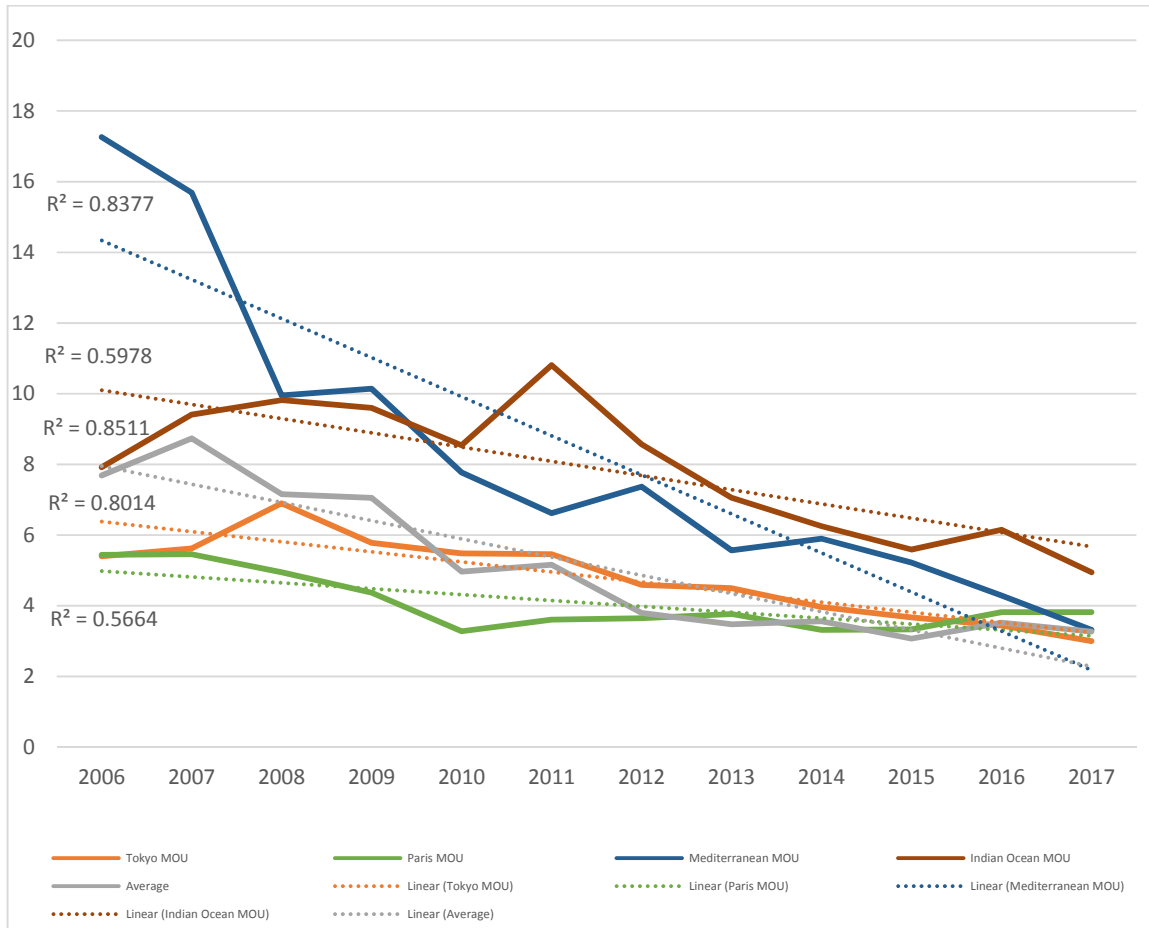


Figure 34 - Detention Rate Trend comparison between four MOU and VMA fleet

8.2 Recommendations

The analysis can be considered as helpful and hopeful because it showed that the standards of the ships are getting better and it also highlights some points that the Member States should consider to improve it.

However, to have an overall image of the real situation a new analysis should be conducted once the cycle of the audit is complete. As it was explained in Chapter 5, the IMSAS established that every country will be audited every 7 years. Considering the confidentiality status of the reports, the only reasonable way to conduct a proper analysis

will be comparing cycle against another cycle. Therefore, the results of the Audits conducted on the total Member States with another period of audits will be analyzed, which will allow identifying the aspects that are not showing improvements, so the IMO could place the attention on that.

Regarding the MOUs, it was shown that it was a very helpful tool to eradicate the substandard ships from the regions; therefore, the IMO should continue the promotion of them and every country should consider joining one of them. The results showed by the analysis of the VMA fleet can be also considered as an example, where the Member States are working hard to ensure that their fleets are complying with the international regulations by working regionally.

It could be useful to conduct similar analyses in other regions to identify the main problems that the Member States are facing while trying to implement the international legislation. Unfortunately, the dissertation is limited in the number of words and time; however, further studies can help to provide a worldwide analysis in the near future.

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Appendices

Appendix A – History of the UNCLOS

The current text of the UNCLOS is also known as the “UNCLOS III”, because it is the third attempt of an international law to control the seas, but its history can be considered since 1494. In that year, one of the most striking international agreement related with the seas took place and it was called “Treaty of Tordesillas”. Basically, it was due to a negotiation between the Ferdinand and Isabella, who were ruling Spain, and the Spanish-born pope Alexander VI. The main idea was to ensure the exclusive used of the oceans based on the recently discovery of the “New World” according Cristopher Columbus’ reports. In order to do so, the pope set a line from one pole to the other dividing the water, giving the rights to Spain to exploit the west side and to Portugal to continue the exploration of the east area. Obviously, no other European nation facing the ocean accepted this rules, however, it ruled for almost one century (The Editors of Encyclopaedia Britannica, 2019).

The discontent of the other countries was growing year by year dealing in many attempt to cancel those “rights” provided to 2 countries. For example, in the United Kingdom, the Queen Elizabeth (1558 – 1603) alleged that as the air can be used for everyone, nobody can have a title of possessions related to the oceans. However, in 1610, King James I. orders that fisheries activities “before English waters” are to be conditioned on a permission by English authorities.

This period of time was also known as the “war of books” related with the oceans’ rights. Famous writers all over the world started to write about the rights on the oceans, one of the cases was Hugo Grotius (1583 – 1645) who published the book “Mare Liberum” in favor of the liberty on the use of the international waters, that is still being used in many

International Tribunal sessions as an example. On the other hand, litterateurs such as John Selden (1584-1654) decided to take the contrary position in his book “Mare Clausum”.

The following era was known as the “French Era” (1648 – 1815), where the rights over the oceans was closely related to the so called “Ordonnance de la marine”, meaning that those nations with bigger military power was ruling the waters. In this period of time another of the main definitions established in the actual UNCLOS appeared. Since 1703, the definition of the “jurisdictional or internal waters” was applied for some countries and was established as the effective distance of a cannon shot, that was considered in approximately 3 nautical miles.

The English era is known to be started since the beginning of the 18th century, were the British Navy was ruling almost every ocean because of their high developed military fleet. Especially, since 1848, those vessels started to stop and control every foreign ship, basing this activity only in their fighting power. However, this activity settled the basis of another important article of the current UNCLOS, the article number 110 where its establishes the right to visit other ships, but it should be done under certain circumstances such as for example when there is a clear ground that the ship is related with a pirate activity, slave trade or without nationality (Sohn, 2010).

Before the Second World War, there have been many approaches to establish legal rules in relation to the oceans’ rights, especially on naval warfare, however, none of them with a successful result. Only there was a kind of success on regional treaties such as the “Montreux Treaty” (1936). But it was not until the period after the WWII that some further codification attempts were developed. Also, the Public International Law slowly started to be transformed into a law of coordination and cooperation among States. One of the most important legal terms that appeared in this period was the “territorialization” of the seas. One of the most famous example of that was the United States’ president Truman

proclamation of 1945 related to the Policy of the country with respect to the natural Resources of the Subsoil and Sea Bed of the Continental Shelf. The explanation was that the continental shelf may be regarded as an extension of the land-mass of the coastal nation and thus naturally appurtenant to it.

Finally, in 1958, during the Geneva Conference the Convention on the Law of the Sea (UNCLOS I) was adopted. It was a reaction to the international community request to the United Nations International Law Commission. The main objective was to consider the codification of the existing laws relating to the oceans. The commission began working towards this in 1949 and prepared four draft conventions, which were adopted at the first UN Conference on the Law of the Sea:

- The Convention on the Territorial Sea and Contiguous Zone;
- The Convention on the High Seas;
- The Convention on Fishing and Conservation of the Living Resources of the High Seas;
- The Convention on the Continental Shelf.

While considered to be a step forward, the conventions did not establish a maximum breadth of the territorial sea.

The Second United Nations Conference on the Law of the Sea (UNCLOS II) from March 17 until April 26, 1960, was considered as a failure because it did not result in any international agreements. The main problem was to fix a uniform breadth for the territorial or establish consensus on sovereign fishing rights.

In 1967, during an UN Assembly, the Malta's UN ambassador Mr. Arvid Pardo delivers a famous speech where for the very first time, the term "*common heritage of mankind*" (in particular in relation to the seafloor and subsoil thereof...) was mentioned.

Between 1973 and 1982, the Third United Nations Conference on the Law of the Sea (UNCLOS III) took place. It addressed the issues brought up at the previous conferences. Over 160 nations participated in the 9-year convention, which finally came into force on November 14, 1994, 21 years after the first meeting and one year after the ratification by the sixtieth state. The first sixty ratifications were almost all developing states.

Appendix B - Enforcement based on the UNCLOS

The UNCLOS is considered as one of the most important international agreement related with maritime issues, because it sets the basis for the rights and obligations of the stakeholders in the maritime community. Those attributes are going to be strongly related with the jurisdiction of each country that also will be related with the area defined as it was detailed recently.

In order to provide a solution to all this concern, the UNCLOS included as a part XV a procedure to settle disputes between States. In its article 279, the instrument encourages all the Members to solve the differences in a peaceful form. However, for the cases that a final solution could not be reached, it establishes a procedure where the parts has the chance to choose for an international independent forum to act as a third part on the dispute (United Nation Convention on the Law of the Seas (UNCLOS), 1982).

In this context, the International Tribunal for the Law of the Sea (ITLOS) was established in Hamburg, Germany. The decision taken by this institution are validated by the article 296, where it is settled that it shall be the final and be complied by all the parts involved (International Tribunal for the Law of The Sea (ITLOS), 2019). The mechanism established by the Convention provides for four alternative means for the settlement of disputes: the ITLOS, the International Court of Justice (ICJ), an arbitral tribunal constituted in accordance with Annex VII to the Convention, and a special arbitral tribunal constituted in accordance with Annex VIII to the Convention.

The ICJ was established in June 1945, in The Hague, by the Charter of the United Nations and began work in April 1946. The ICJ's role is to settle, in accordance with international law, legal disputes submitted to it by States and to give advisory opinions on legal questions referred to it by authorized United Nations organs and specialized agencies (International Court of Justice (ICJ), 2019).

And why are these institutions and their decision relevant for every State? Basically, because those disputes are related with the jurisdiction that every country is going to have under their sovereignty, that means that inside that established limits the “Coastal State” will be able to exercise its rights, according what it is established in the article 2 on UNCLOS: “*The sovereignty over the territorial sea is exercised subject to this Convention and to other rules of international law*” (United Nation Convention on the Law of the Seas (UNCLOS), 1982).

It also establishes some important rights for the Flag States, such as for example the “innocent passage” (article 17). It considers that every foreign ship has the right to navigate along the jurisdictional water as long as it is complying with the conditions of a navigation considered as a “innocent” (United Nation Convention on the Law of the Seas (UNCLOS), 1982).

Appendix C - Developing of IMO Convention

Understanding the necessity of an international body that can be able to assist in the development of the international cooperation in shipping, in 1889 an international maritime conference was held in Washington DC, The United States. Historically, it was manifested that actions for ships taking refuge in events of harsh weather conditions or in distress, despite the nationality of it, or the settlement of safety standard for international ships, should be centralized and treated in an international forum (Mansell, 2009).

By that time, some other international organizations have already been settled such as the International Telegraph (now Telecommunications) Union (established 1865); the International (now World) Meteorological Organization (1873); and the Universal Postal Union (1874). However, the main idea did not prosper at that time. The objective was basically rejected for the Conference stating *“for the present the establishment of a permanent international maritime commission is not considered expedient”*. The reason was not clearly explained, however, taking into consideration the period of time and the particularities of the economy at that era, it was easy to conclude that the shipping industry was doubting that the establishment of an international organization was only aimed to become a forum to control and restrict the freedom of the commercial activities in the shipping sector (International Maritime Organization (IMO), 2019).

Was not before the end of the Second World War where the plan was retaken. The establishment of the United Nations stimulated the development of many international specialized organizations. For that reason, The International Civil Aviation Organization (ICAO) was founded in 1944, the Food and Agriculture Organization (FAO) was created in 1945, the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1945 and the World Health Organization (WHO) in 1947. Therefore, in 1948, a conference was held in Geneva, Switzerland, in order to establish an international body specialized in shipping. It opened in February 1948 and on 6 March 1948 the Convention

establishing the Inter-Governmental Maritime Consultative Organization (IMCO) was adopted. That name was used for the Organization until 1982, when it was changed to the well-known “International Maritime Organization (IMO)”.

The text of the Geneva Convention, known as the “IMO Convention” suffered many modifications along the time in order to update its content according to the experiences. The main objective of the Organization can be found in its article 1: to provide cooperation on “technical matters of all kinds affecting shipping engaged in international trade”, to encourage the removal of discriminatory action and unnecessary restrictions by Governments affecting shipping engaged in international trade so as to promote the availability of shipping services to the commerce of the world without discrimination, and to act as a UN specialized agency in matters concerning shipping. Those statements, clearly, prevent the threats that discouraged the first attempt in 1889 (Convention on the Maritime International Organization, 1948).

The entrance into force was not an easy issue, in order to do so the convention establishes that it will do so "on the date when 21 States, of which seven shall each have a total tonnage of not less than 1,000,000 gross tons of shipping, have become Parties to the Convention". For that reason, on 17 March, 1958, the acceptance of the IMO Convention by Egypt and Japan brought the number of Parties to 21, and the Convention finally entered into force.

The text of the Convention, as it was explained, suffered many amendments, until it reached the current status. To become a party of the IMO, a State shall be first a member of the United Nations and after that it should ratify the IMO Convention. Currently, as it was highlighted in Chapter 2, the IMO is composed of 174 Member States.

Appendix D - Beginning of the Port State Control MOU's

As every important measure undertaken by the whole shipping community, the establishment of the MOU's was not the exception, as its appearance was due to a very important ship casualty. The history began in Europe, especially since March 1978, due to the Liberian-flagged oil tanker "Amoco Cadiz" that ran aground off the coast of Brittany/France, breaking into three parts. As a result of this, more than 220.000 tons of crude oil spilled out into the sea causing an incredible environmental impact where thousands of seabirds perished. According to the investigation, the accident was caused by a breakdown of the tanker's steering gear, insufficient monitoring of the ship's technical condition, inadequate training of the crew and deficiencies in the safety management on board.

The impact of this incident was huge, pictures of stricken seabirds and polluted beaches were seen all over the world and provoked discussions on the causes of the accident. Therefore, that was the beginning of port state control.

Just few days after the casualty, 14 European states agreed to join forces against unsafe ships, poorly trained crews and irresponsible ship owners. Since then (1982), the "Paris Memorandum of Understanding" (Paris MOU) on port state control has provided the basis to perform unannounced surveys of foreign-flagged merchant ships calling at ports of the member States of it (Deutsche Flag - Federal Ministry of Transport and Digital Infrastructure, 2019).

The Port state controls soon proved effective, in due course, the number of ships with numerous deficiencies declined, mainly because the permanent threat of possible surveys induced ship owners to take better care of their ships. The rapid and obvious success in Europe led the IMO to assist other regions and member States to conform to the same kind of agreements, dealing in the current situation explained.

Appendix E – List of Member States of every Memorandum of Understanding on Port State Control (MOU's)

Abuja MOU

Members: Benin, Congo, Gabon, Ghana, Guinea Cote d'Ivoire, Angola, Liberia, Nigeria, Senegal Sierra Leone, South Africa, The Gambia, Togo and Sao Tome and Principe

Signatories: Benin, Cape Verde, Congo, Cote d'Ivoire, Gabon, Ghana, Guinea, Mauritania, Namibia, Liberia, Nigeria, Senegal, Sierra Leone, South Africa, The Gambia, and Togo.

Black Sea

Members: Bulgaria, Georgia, Romania, Russia, Turkey and Ukraine.

Caribbean MOU

Members: Antigua and Barbuda, Aruba, The Bahamas, Barbados, Belize, The Cayman Islands, Cuba, Curaçao, France, Grenada, Guyana, Jamaica, The Netherlands, St. Christopher and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago.

Associated Member: St Kitts & Nevis.

Observers: Anguilla, Bermuda, The British Virgin Islands, Dominica, Haiti, Sint Maarten, Turks and Caicos Islands.

Indian MOU

Members: Australia, Bangladesh, Comoros, Eritrea, France (La Reunion), India, Iran, Kenya, Madagascar, Maldives, Mauritius, Mozambique, Myanmar, Oman, Seychelles, Sri Lanka, South Africa, Sudan, Tanzania and Yemen.

Observer: Ethiopia

Mediterranean MOU

Members: Algeria, Cyprus, Egypt, Israel, Jordan, Lebanon, Malta, Morocco, Tunisia and Turkey.

Paris MOU:

Members: Belgium, Bulgaria, Canada, Croatia, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Malta, the Netherlands, Norway, Poland, Portugal, Romania, the Russian Federation, Slovenia, Spain, Sweden and the United Kingdom.

Riyadh MOU

Members: Kingdom of Bahrain, State of Kuwait, Sultanate of Oman, State of Qatar, The Kingdom of Saudi Arabia, and United Arab Emirates.

Tokyo MOU

Members: Australia, Canada, Chile, China, Fiji, Hong Kong (China), Indonesia, Japan, Republic of Korea, Malaysia, the Republic of the Marshall Islands, New Zealand, Papua New Guinea, Peru, the Philippines, the Russian Federation, Singapore, Thailand, Vanuatu and Viet Nam.

Observers: Democratic People's Republic of Korea, Macao (China), Samoa, Solomon Islands, Tonga, United States Coast Guard.

US MOU

United States Coast Guard

Viña del Mar Agreement

Members: Argentina, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Cuba, Dominican Republic, Ecuador, Guatemala, Honduras, Mexico, Panama, Peru, Uruguay and Venezuela (Bolivarian Republic of).

Observer: El Salvador.

Appendix F: Implementation of Audit Scheme by the International Civil Aviation Organization (ICAO)

The first international organization to adopt this concept was the International Civil Aviation Organization (ICAO) by the establishment of the Universal Safety Oversight Audit Programme (USOAP) in accordance with the fixed strategic objective "Conduct aviation safety oversight audits to identify deficiencies and encourage their resolution by States." (A3). The USOPA is currently managed by the ICAO Safety Audit Oversight Section.

The mandatory programme was launched in January 1999 in response to widespread concerns expressed during the 29th ICAO Assembly in 1992. The concern was apparently due to there was detected an apparent inability of some Contracting States to carry out their safety oversight functions.

At the beginning the scope of the programme was only related to the personnel involved in the aeronautical operations. The objective was to audit them, detect the faults to the standards and after a certain period of time verify the corrective measures. In 2004, the ICAO decided to extend that scope including also issues related to the accident investigations and aerodromes. Finally, in 2005 the organization due to the success of the programme decided to incorporate all safety-related measures. Moreover, since 2010, the ICAO decided to make a continuous monitoring system, meaning that every Member State will be audited in a period of six-years cycle.

With the implementation of this programme, the ICAO established an independent and transparent mechanism to "examination of the quality or condition of something", being its Member States that "something" (International Civil Aviation Organization (ICAO), 2019).

Appendix G: List of instruments covered by VIMSAS documentation

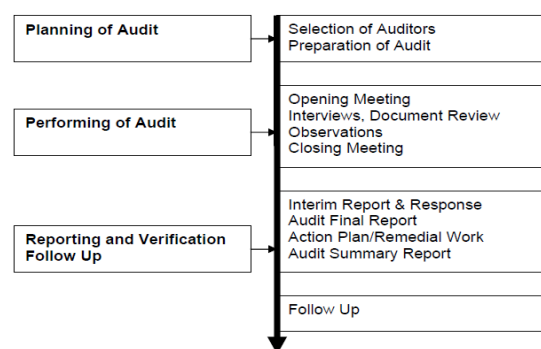
- the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS 1974);
- the Protocol of 1978 relating to the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS PROT 1978);
- the Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS PROT 1988);
- the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended (MARPOL 73/78);
- the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, as modified by the Protocol of 1978 relating thereto (MARPOL PROT 1997);
- the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended (STCW1978);
- the International Convention on Load Lines, 1966 (LL 66);
- the Protocol of 1988 relating to the International Convention on Load Lines, 1966 (LL PROT 1988);
- the International Convention on Tonnage Measurement of Ships, 1969 (Tonnage 1969);
- the Convention on the International Regulations for Preventing Collisions at Sea, 1972, as amended (COLREG 1972).

Appendix H: The Audit process

The instruments established the procedure to conduct the audit where the agreed timeline is the most relevant characteristic. Basically, the process begins when the audit is programmed, the Secretary General designed an audit team and then a Memorandum of Cooperation will be signed between him and a representative person from the Member State. At that moment the timeline will be settled and the Member State will start the communications with the team leader, providing the pre-audit questionnaire and every other documentation that it will be needed. Since that moment, both parts should have at least six months to prepare the audit itself, in order to check the information and also for the Government to inform every involved institution the scope of the process.

Once in situs, the audit should be conducted in an objective way, complying with the strategy and principles settled in the Framework, achieving also achieve the highest standards of objectivity, impartiality and confidentiality.

The audit could last around seven days and it should be conducted following what was established in the Code for the implementation of mandatory IMO instruments (III Code). Every non-conformity, should be discussed with the responsible Member State official and recorded as the Procedures indicates.



Source: IMO Resolution A.974(24)

Figure Appendices 1 - Audit Process

Appendix I – Dates of entry into force amendments making mandatory the Audit Scheme

Table 1 - Date of entry into force amendments making mandatory the Audit Scheme

IMO Instruments	Session of adoption and instrument	Acceptance	Entry into force
SOLAS Convention	MSC 93 (May 2014) Resolution MSC.366 (93)	01/07/2015	01/01/2016
MARPOL Convention	MEPC 66 (March 2014) Resolution MEPC.246 (66) Annexes I to V and MEPC.247 (66) Annex VI	01/07/2015	01/01/2016
Load Line Convention	A 28 (December 2013) Resolution A.1083 (28)	Common acceptance 3 years (28/02/2014 till 28/02/2017)	12 months later – 28/02/2018
Load Line Protocol	MSC 93 (May 2014) Resolution MSC.375 (93)	01/07/2015	01/01/2016
STCW Convention	MSC 93 (May 2014) Resolution MSC.373 (93)	01/07/2015	01/01/2016
COLREG	A 28 (December 2013) Resolution A.1085 (28)	01/07/2015	01/01/2016
TONNAGE Convention	A 28 (December 2013) Resolution A.1084 (28)	Common acceptance 2 years (28/02/2014 till 28/02/2016)	12 months later – 28/02/2017

Appendix J: Reports during the Audit Process

All the results obtained during the audit are placed in the several reports that should be produced during the process.

The first one is the interim report, that basically contains the findings and, usually, is presented during the closing ceremony. On its basis, the Member State will prepare the corrective action plan considering every finding. Once it is finished and submitted to the Audit team, they will include them to the interim report giving rise to the Final Audit Report (IMO, 2005a).

The Audit team will also prepare an audit summary report, which will as far as practicable not identify the audited Member State, but it will provide an overview of that audited Member State's adherence to the Code for the implementation of mandatory IMO instruments. Based on them, the Secretariat should prepare a consolidated report on a periodic basis containing lessons learned from the audits.

Finally, the Audit Team leader will also prepare a separate report describing the conduct of the audit, highlighting the positive elements and difficulties encountered and proposals to improve the planning and conduct of audits.

A record of all feedback and recommendations from mission reports of all audit team leaders and of action taken to address concerns raised should be maintained by the Secretary-General, together with the interim, final and summary reports.

Appendix K – Questionnaires used (English, Spanish and Portuguese)

Questionnaire (English version)

1- General information

1.1 Please state your position in your National Maritime Administrations (NMA)

1.2 Please mention the institutions that compose the National Maritime Administration regarding the following obligations:

Flag State	Institution	Coastal State	Institution	Port State	Institution
Implementation of the international regulations		Provide Search and Rescue service		Conduct ships inspections of foreign flagged ships	
Supervision of Recognized Organizations		Provide meteorological service		Train and designate PSCO	
Flag State inspections		Install and operate VTS		Provide and update information about port facilities	
Communications to IMO					

1.3 Please describe the resources and provision in your National Maritime Administration for developing, documenting and providing guidance concerning requirements of the mandatory IMO regulations that are to “the satisfaction of the Administration” (please refer III Code paragraph 16.5)

1.4 Please specify the number of ships flagged under your flag?
 • International cargo ships: International Passenger Ships:
 • Fishing Vessels: Domestic Passenger Ships:
 • National Trade: Others:

1.5 Does your National Maritime Organization delegate any function to any Recognized Organization?

YES	NO
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If the answer is YES, please provide the following details:

Name of the Recognized Organization	Date of the Agreement	Functions Delegated	Date of the last audit	Number of your flag ships classed with the RO

1.6 Please, specify the number of Flag State inspectors in your National Maritime Administration and number of inspections over the last 12 years?

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of exclusive Flag State Inspectors												
Number of Flag State inspections												

2- IMO Audit Scheme

2.1 Is your country an IMO Member State?

YES		NO
Since when?		

2.2 Did your Maritime Administration receive the VIMSAS Audit?

YES		NO
Year		

2.3 Did your Maritime Administration receive the IMSAS Audit?

YES		NO
Year		

2.4 The III Code divides the scope of the audit in four different categories (General aspects, Flag States, Coastal State, Port State). Please specify the number of findings your Maritime Administration face during the last IMO audit?

Number of Findings				
	General Aspect	Flag States	Coastal State	Port State
VIMSAS Audit				
IMSAS Audit				

2.5 Is your country's VIMSAS or IMSAS final report public and available?

YES	NO

3- Port State Control

3.1 Does your country implement Port State Control inspection?

YES	NO

3.2 Is your country part of any Port State Control MOU?

YES	NO
Which one/ones?	

3.3 Please list the number of Port State Control Officers in your National Maritime Administration over the last 12 years?

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of Port State Control Officers												
Number of Port State Control Inspections												

3.4 Please provide the number of detentions of your flagged ships during the last 12 years and the number of the National Maritime Administration intervention on that behalf

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of detentions												

Intervention of the NMA	Acted with own personnel											

	Delegate the actions to an RO												
	Other												

4- Statistics

4.1 Please list the number of personnel in your National Maritime Administration engaged in the implementation of international maritime law over the last 12 years

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of personnel												

5- Adoption of IMO Instruments

5.1 In the table below, please provide the date of ratification and the implementation of the following IMO instruments

Convention	Entry into force	Date of Ratification	Date of Implementation	National Legislation Reference
The International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS 1974)	25 th May 1980			
The Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS PROT 1988)	3 rd February 2000			
The International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended (MARPOL 73/78)	2 nd October 1983			
The Protocol of 1997 to amend the International Convention for the	19 th May 2005			

Prevention of Pollution from Ships, as modified by the Protocol of 1978 relating thereto (MARPOL PROT 1997)				
The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended (STCW 1978)	28 th April 1984			
The International Convention on Load Lines, 1966 (LL 66)	21 st July 1968			
The Protocol of 1988 relating to the International Convention on Load Lines, 1966 (LL PROT 1988)	3 rd February 2000			
The International Convention on Tonnage Measurement of Ships, 1969 (Tonnage 1969)	18 th July 1982			
The Convention on the International Regulations for Preventing Collisions at Sea, 1972, as amended (COLREG 1972)	15 th July 1977			

6- Technical Cooperation

6.1 Technical Cooperation is a key issue for every Member State to be ready to face the Audit Scheme. Has your National Maritime Administration approached the IMO for any TC activity?

NO	YES		
	Kind of activity	Date	Outcome

6.2 Is your National Maritime Administration considering to apply for any Technical Cooperation activity in the near future to prepare the next audit?

NO	YES	
	Kind of activity	Date planned

6.3 Has your National Maritime Administration engaged in bilateral or multilateral cooperation to prepare itself to receive IMO Audit?

NO	YES			
	Kind of activity	Date	Outcome	Which other country and Institution participate

Thank you very much for you kindly cooperation!

Questionario (Spanish version)

1-Información general

1.1 Cargo que ocupa en su Administración Marítima Nacional.

1.2 Mencione las instituciones que componen la Administración Marítima Nacional teniendo en cuenta las siguientes obligaciones:

Estado de abanderamiento	Institución	Estado ribereño	Institución	Estado rector	Institución
Implementación de la reglamentación internacional		Servicio de búsqueda y rescate		Inspecciones de buques de bandera extranjera	
Supervisión de Organizaciones Reconocidas		Servicio meteorológico		Capacitación y designación del Oficial responsable de la supervisión por el Estado rector del Puerto (OSERP)	
Inspecciones del Estado de abanderamiento		Instalación y funcionamiento del VTS [Servicio de tráfico marítimo]		Suministro y actualización de información sobre instalaciones portuarias	
Comunicaciones a la OMI					

1.3 Describa los recursos y las disposiciones de su Administración Marítima Nacional para desarrollar, documentar y brindar asesoramiento respecto de la reglamentación obligatoria de la OMI que se deja «a criterio de la Administración» (haga referencia al párrafo 16.5 del Código para la implantación de los instrumentos de la OMI (Código III)).

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1.4 Especifique la cantidad de buques que enarbolan su bandera.

- Buques de carga internacional:
- Buques de pasaje que realizan travesías internacionales:
- Buques pesqueros:
- Buques de pasaje que realizan travesías nacionales:
- Comercio nacional:
- Otros:

1.5 ¿Su organización marítima nacional delega alguna de sus funciones a las Organizaciones Reconocidas?

SI	NO
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Si su respuesta fue afirmativa, por favor brinde los siguientes datos:

Nombre de la Organización Reconocida	Fecha del acuerdo	Funciones delegadas	Fecha de la última auditoría	Cantidad de buques de bandera clasificados con Organizaciones Reconocidas

1.6 Especifique la cantidad de inspectores del Estado de abanderamiento de su Administración Marítima Nacional y la cantidad de inspecciones realizadas durante los últimos 12 años.

Año	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Cantidad de inspectores exclusivos del Estado de abanderamiento												
Cantidad de inspecciones												

del Estado de abanderamiento													
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2-Plan de auditorías de la OMI

2.1 ¿Su país es un Estado Miembro de la OMI?

SI	NO
¿Desde cuándo?	

2.2 ¿Se realizaron auditorías del VIMSAS [Plan Voluntario de Auditorías de los Estados Miembros de la OMI] en su Administración Marítima?

SI	NO
Año	

2.3 ¿Se realizaron auditorías del IMSAS [Plan de Auditorías de los Estados Miembros de la OMI] en su Administración Marítima?

SI	NO
Año	

2.4 El Código III divide el alcance de la auditoría en cuatro categorías diferentes (Aspectos generales, Estados de abanderamiento, Estado ribereño y Estado rector). Especifique la cantidad de resultados que obtuvo su Administración Marítima durante la última auditoría de la OMI.

Cantidad de resultados				
	Aspectos generales	Estados de abanderamiento	Estado ribereño	Estado rector
Auditorías del VIMSAS				
Auditorías del IMSAS				

2.5 ¿Se encuentra disponible el informe final del VIMSAS o del IMSAS realizado en su país y es de acceso público?

SI	NO

3- Estado rector del puerto

3.1 ¿Su país implementa las inspecciones del Estado rector del puerto?

SI	NO

3.2 ¿Su país es parte de algún MOU [Memorando de Entendimiento] sobre supervisión por el Estado rector del puerto?

SI	NO
¿Cuál/cuáles?	

3.3 Enumere la cantidad de Oficiales responsables de la supervisión por el Estado rector del puerto de su Administración Marítima Nacional registrada durante los últimos 12 años.

Año	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Cantidad de Oficiales responsables de la supervisión por el Estado rector del puerto												
Cantidad de inspecciones en el marco de la supervisión por el Estado rector del puerto												

3.4 Especifique la cantidad de detenciones de los buques que han enarbolado su bandera durante los últimos 12 años y la cantidad de intervenciones que ha realizado su Administración Marítima Nacional a tal efecto.

Año	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Cantidad de detenciones												

Intervenciones de su Administración	Intervenciones realizadas con												

ón Marítima Nacional	personal propio												
	Intervenciones delegadas a Organizaciones Reconocidas												
	Otros												

4- Estadísticas

4.1 Enumere la cantidad de personal de su Administración Marítima Nacional involucrado con la implementación del derecho marítimo internacional durante los últimos 12 años.

Año	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Cantidad de personal												

5-Adopción de los instrumentos de la OMI

5.1 En el cuadro que aparece a continuación, brinde por favor la fecha de ratificación e implementación de los siguientes instrumentos de la OMI.

Convenio	Entrada en vigencia	Fecha de ratificación	Fecha de implementación	Legislación nacional Referencias
Convenio internacional para la seguridad de la vida humana en el mar, 1974, en su forma enmendada (Convenio SOLAS de 1974)	25 de mayo de 1980			
Protocolo de 1988 relativo al Convenio internacional para la seguridad de la vida humana en el mar de 1974 (Protocolo del Convenio SOLAS de 1988)	3 de febrero de 2000			
Convenio internacional para prevenir la contaminación por los buques, 1973, modificado por el Protocolo	2 de octubre de 1983			

de 1978, en su forma enmendada (Convenio MARPOL 73/78)				
Protocolo de 1997 que enmienda el Convenio internacional para prevenir la contaminación proveniente de los buques, modificado por el Protocolo de 1978 (Protocolo de 1997 relativo al Convenio MARPOL)	19 de mayo de 2005			
Convenio internacional sobre normas de formación, titulación y guardia para el personal de los buques pesqueros, 1978, en su forma enmendada (Convenio STCW 1978)	28 de abril de 1984			
Convenio internacional sobre líneas de carga, 1966 (Convenio LL 66)	21 de julio de 1968			
Protocolo de 1988 relativo al Convenio internacional sobre líneas de carga, 1966 (Protocolo de Líneas de Carga de 1988)	3 de febrero de 2000			
Convenio internacional sobre arqueo de buques, 1969 (Convenio de arqueo de 1969)	18 de julio de 1982			
Convenio sobre el Reglamento internacional para prevenir los abordajes, 1972, en su forma enmendada (Convenio COLREG 1972)	15 de julio de 1977			

6-Cooperación Técnica

6.1 La Cooperación Técnica constituye un tema fundamental a los fines de que cada Estado Miembro se prepare para recibir un Plan de auditorías. ¿Su Administración Marítima Nacional ha tenido contacto con la OMI para realizar alguna actividad de cooperación técnica?

NO	SI
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	Tipo de actividad	Fecha	Resultados

6.2 ¿Su Administración Marítima Nacional está considerando solicitar alguna actividad de cooperación técnica en un futuro cercano para preparar la próxima auditoría?

NO	SI	
	Tipo de actividad	Fecha planificada

6.3 ¿Ha participado su Administración Marítima Nacional en actividades de cooperación bilateral o multilateral a los fines de prepararse para recibir Auditorías de la OMI?

NO	SI			
	Tipo de actividad	Fecha	Resultados	¿Qué otro país y qué institución participan?

¡Muchas gracias por su amable colaboración!

Questionário (Portuguese version)

1-Informação Geral

1.1 Cargo que ocupa na Administração Marítima Nacional.

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1.2 Mencione as instituições que compõem a Administração Marítima Nacional, levando em consideração as obrigações a seguir:

Estado de bandeira	Instituição	Estado ribeirinho	Instituição	Estado reitor do porto	Instituição
Aplicação da regulamentação internacional		Serviço de Busca e Salvamento		Inspeções de navios de bandeira estrangeira	
Supervisão de Organizações Reconhecidas		Serviço meteorológico		Formação e nomeação de Oficiais responsáveis pela supervisão de navios pelo	

				Estado reitor do porto (OSERP)	
Inspeções do Estado de Bandeira		Instalação e operação do VTS [Sistema de Tráfego Aquaviário]		Provisão e atualização de informação sobre as instalações portuárias	
Comunicações com a IMO					

1.3 Descreva os recursos e as disposições de sua Administração Marítima Nacional para o desenvolvimento, a documentação e as orientações sobre a regulamentação obrigatória da IMO que fica “ao critério da Administração” (faça referência ao parágrafo 16.5 do Código para a aplicação dos instrumentos IMO (Código III)).

.....

1.4 Especifique o número de navios que arvoram sua bandeira.

- Navios de carga internacional:
- Navios de passageiros que realizam travessias internacionais:
- Navios pesqueiros:
- Navios de passageiros que realizam travessias nacionais:
- Navios de comércio nacional:
- Outros:

1.5 Sua Organização Marítima Internacional delega alguma de suas funções às Organizações Reconhecidas?

SIM	NÃO
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Se sua resposta for SIM, por favor, complete os dados a seguir:

Nome da Organização Reconhecida	Data do acordo	Funções delegadas	Data da última auditoria	Número de navios de bandeira classificados com Organizações Reconhecidas

1.6 Especifique o número de inspetores do Estado de Bandeira de sua Administração Marítima Nacional e o número de inspeções realizadas nos últimos 12 anos.

Ano	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Número de inspetores exclusivos do Estado de bandeira												
Número inspeções do Estado de bandeira												

2-Plano de auditorias da IMO

2.1 Seu país é um Estado Membro da IMO?

SIM	NÃO
Desde quando?	

2.2 Foram realizadas auditorias do VIMSAS [Plano Voluntário de Auditorias dos Estados Membros da IMO] em sua Administração Marítima?

SIM	NÃO
Ano	

2.3 Foram realizadas auditorias do IMSAS [Plano de Auditorias dos Estados Membros da IMO] em sua Administração Marítima?

SIM	NÃO
Ano	

2.4 O Código III divide o escopo da auditoria em quatro categorias diferentes (Aspectos gerais, Estados de bandeira, Estado ribeirinho e Estado reitor do porto). Especifique o número de resultados que obteve sua Administração Marítima durante a última auditoria da IMO.

Número de resultados

	Aspectos Gerais	Estados de bandeira	Estado ribeirinho	Estado reitor do porto
Auditorias do VIMSAS				
Auditorias do IMSAS				

2.5 Está disponível o relatório final do VIMSAS ou do IMSAS realizado em seu país? É esse relatório de acesso público?

SIM	NÃO

3-Estado reitor do porto

3.1 Seu país realiza inspeções do Estado reitor do porto?

SIM	NÃO

3.2 Seu país é membro de algum MoU [Memorando de Entendimento] sobre supervisão pelo Estado reitor do porto?

SIM	NÃO
Qual/quais?	

3.3 Determine o número de Oficiais responsáveis pela supervisão de navios pelo Estado reitor do porto de sua Administração Marítima Nacional registrado nos últimos 12 anos.

Ano	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Número de Oficiais responsáveis pela supervisão de navios pelo Estado reitor do porto												
Número de Inspeções realizadas para a supervisão												

de navios pelo Estado reitor do porto													
---------------------------------------	--	--	--	--	--	--	--	--	--	--	--	--	--

3.4 Especifique o número de detenções de navios que arvoram sua bandeira produzidas nos últimos 12 anos e o número de intervenções de sua Administração Marítima Nacional a respeito desse assunto.

Ano	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Número de detenções												

Intervenção de sua Administração Marítima Nacional	Intervenções com pessoal próprio												
	Intervenções delegadas para as Organizações Reconhecidas												
	Outros												

4-Estatísticas

4.1 Determine o número de pessoas em sua Administração Marítima Nacional envolvidas na aplicação do Direito Marítimo Internacional nos últimos 12 anos.

Ano	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Número de pessoas												

5-Adoção de Instrumentos IMO

5.1 Na tabela a seguir, por favor, indique a data de ratificação e de aplicação dos seguintes instrumentos IMO.

Convenção	Entrada em vigor	Data da ratificação	Data de aplicação	Legislação nacional
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				Referências
Convenção Internacional para a Salvaguarda da Vida Humana no Mar, 1974, em sua forma emendada (Convenção SOLAS 1974)	25 de maio de 1980			
O Protocolo de 1988 sobre a Convenção Internacional para a Salvaguarda da Vida Humana no Mar de 1974 (Protocolo da Convenção SOLAS de 1988)	3 de fevereiro de 2000			
A Convenção Internacional para a Prevenção da Poluição por Navios, 1973, modificada pelo Protocolo de 1978, em sua forma emendada (Convenção MARPOL 73/78)	2 de outubro de 1983			
O Protocolo de 1997 que emenda a Convenção Internacional para a Prevenção da Poluição por Navios, modificado pelo Protocolo de 1978 (Protocolo de 1997 da Convenção MARPOL)	19 de maio de 2005			
A Convenção Internacional sobre Padrões de Instrução, Certificação e Serviço de Quarto para Marítimos, 1978, em sua forma emendada (Convenção STCW 1978)	28 de abril de 1984			
Convenção Internacional sobre Linhas de Carga, 1966 (Convenção LL 66)	21 de julho de 1968			
O Protocolo de 1988 sobre a Convenção Internacional sobre Linhas de Carga, 1966 (Protocolo de Linhas de Carga 1988)	3 de fevereiro de 2000			
Convenção Internacional sobre Arqueação de	18 de julho de 1982			

Navios, 1969 (Convenção de Arqueação de 1969)				
Convenção sobre o Regulamento Internacional para evitar Abalroamentos no Mar, 1972, em sua forma emendada (Convenção COLREG 1972)	15 de julho de 1977			

6-Cooperação Técnica

6.1 A Cooperação Técnica é um assunto importante para cada Estado Membro que procure se preparar para o Plano de Auditorias. Sua Administração Marítima Nacional entrou em contato com a IMO para realizar alguma atividade de Cooperação Técnica?

NÃO	SIM		
	Tipo de atividade	Data	Resultado

6.2 Sua Administração Marítima Nacional está considerando a realização de alguma atividade de Cooperação Técnica com o objetivo de se preparar para as próximas Auditorias da IMO?

NÃO	SIM	
	Tipo de atividade	Data programada

6.3 Sua Administração Marítima Nacional participou alguma vez de atividades de cooperação bilateral ou multilateral com o objetivo de se preparar para as próximas Auditorias da IMO?

NÃO	SIM			
	Tipo de atividade	Data	Resultados	Outro país ou instituição participante

Agradecemos muito sua gentil cooperação!

Appendix L – Analysis of Annual Reports conducted MOU by MOU

Abuja MOU

An analysis of information provided by The Memorandum of Understanding on Port State Control for West and Central African Region (Abuja MOU) will be conducted in this section. It will be done through the “Annual Reports” of the years contained in the period established (2006 – 2017). However, in this occasion the analysis is conducted since 2010 as the previous Annual Reports are not available in the website of the MOU (Memorandum of Understanding on Port State Control for West & Central African Region, 2019).

Table 2 - General Information

Year	2010	2011	2012	2013	2014	2015	2016	2017
N° Inspections	1966	1483	2074	3211	2916	2348	1922	2074
N° inspections with deficiencies	173	129	108	173	179	143	153	174
N° Detentions	15	11	8	12	14	9	24	16
Main area of deficiencies	Not available	Not available	Certificates and documents 24,22% SOLAS-Safety of navigation 9,9%	Others 25,3% Certificates and documents 16,27%	Others 39,9% Certificates and documents 7,06%	Others 41,67% Certificates and documents 8,33%	Others 30,06% Certificates and documents 12,15%	Others 27,94% SOLAS-Safety of navigation 14,48%

Table 3 - Information related ships flagged with a Viña del Mar Agreement's Flag

Year	2010	2011	2012	2013	2014	2015	2016	2017
N° Inspections	333	244	224	470	338	289	262	311
N° inspections with deficiencies	46	29	16	24	27	24	40	31
N° Detentions	10	1	1	4	3	1	5	3

The two tables above have been made by using the information provided in the Annual Reports mentioned. The following step, in order to obtain the indicator 1 to 4, is to determine the Abuja MOU detention rate per year, and then analyze the information related the ships flagged Viña del Mar Agreement's Flags.

Table 4 - Yearly Detention Rate

Year	2010	2011	2012	2013	2014	2015	2016	2017
Detention Rate	0.76	0.74	0.38	0.37	0.48	0.38	1.25	0.77

Table 5 - Yearly Deficiencies Rate

Year	2010	2011	2012	2013	2014	2015	2016	2017
Deficiencies Rate	8.8	8.7	5.2	5.38	6.13	6.09	7.96	8.38

Table 6 - Behavior of Viña del Mar's Fleet in Abuja MOU

Year	2010	2011	2012	2013	2014	2015	2016	2017
Deficiencies Rate	13.81	11.88	7.14	5.1	7.99	8.3	15.26	9.97
Detention Rate	3	0.41	0.44	0.85	0.89	0.35	1.9	0.96

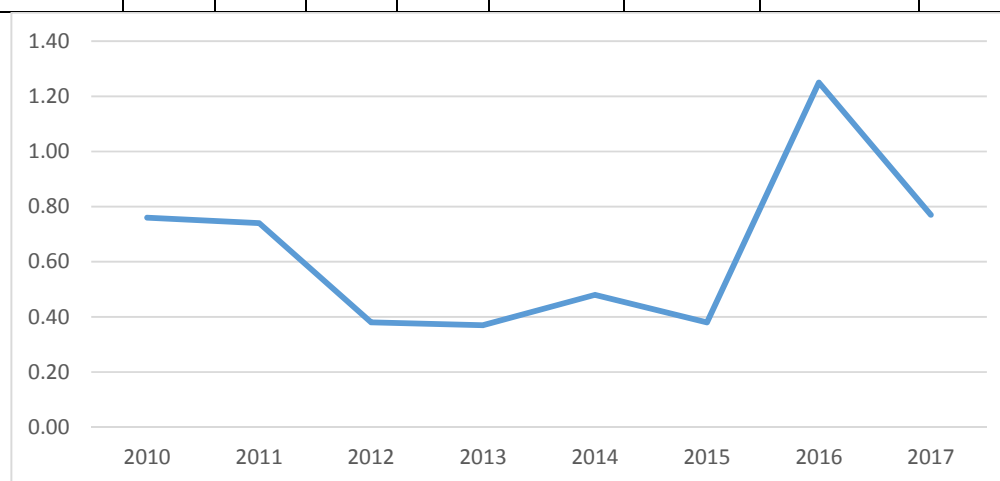


Figure Appendices 2 - Yearly Detention Rate

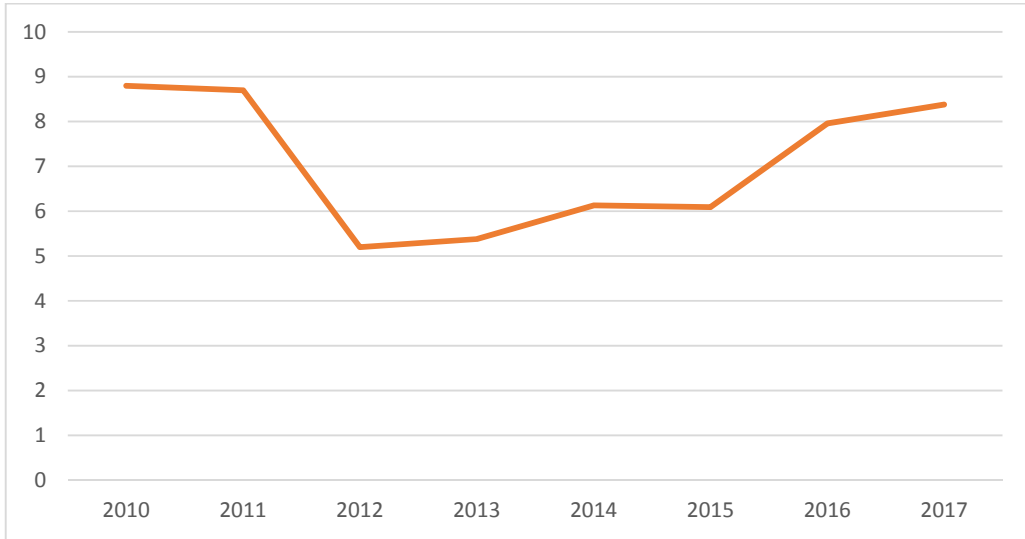


Figure Appendices 3 - Yearly Deficiencies Rate

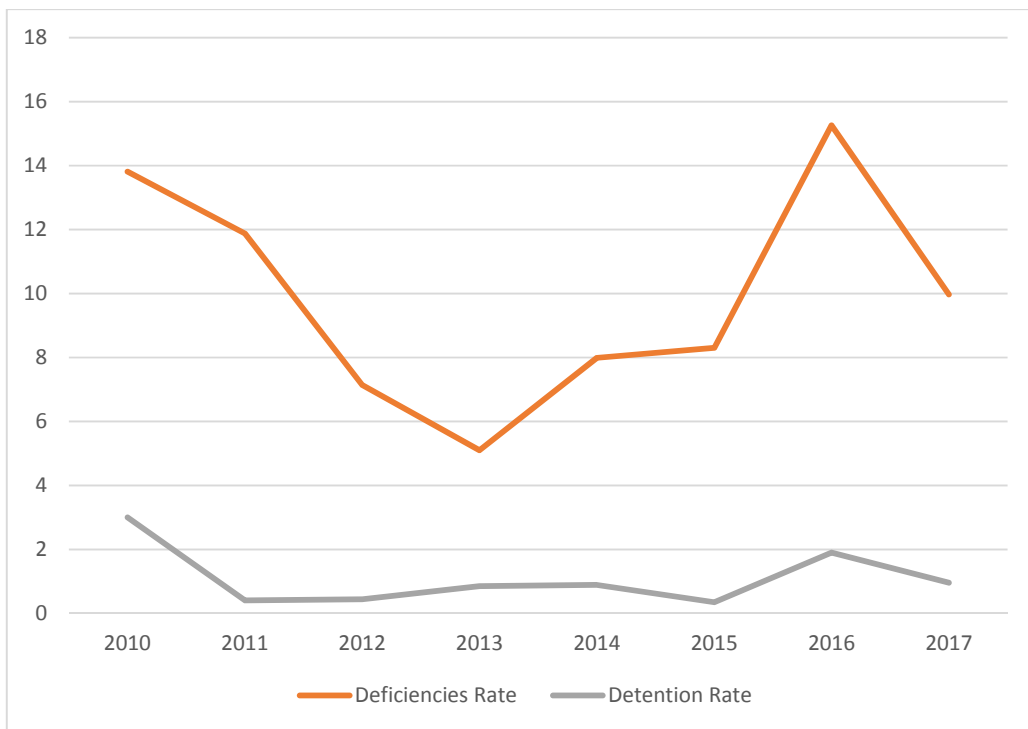


Figure Appendices 4- Behavior of Viña del Mar's Fleet in Abuja MOU

In the Abuja MOU it was seen that the detention rate in general was experiencing a decrease since 2010 until 2013, where there was a slight increment, followed but another one in 2014. However, in 2015 another decrease happened, but it was followed but an important increment in 2016. This figure was followed by a decrement in 2017 reaching almost the same point reached in 2010.

Regarding the deficiencies rate, since 2010 till 2012 there was a decrement of it, but since that year the rate showed a yearly increment until 2017 where it almost reached the same level shown in 2010.

The ships flagged with flag of the Viña del Mar Agreement showed a similar trend in deficiencies to the general rate, but the final figure, in 2017, finished in a lower level than the one showed in 2010, however, is higher than the one 2012, 2013, 2014 and 2015. The detention rate showed a decrement from the first figure in 2010, showing another peak in 2016, but ending in 2017 showing an important decrement.

The causes of the deficiencies, were first analyzed in the Annual Report of 2012, showing that the main reason of deficiencies were problems related with the certificates and documents (24,22%), followed by lack of compliance with SOLAS regulations related to the safety of navigation (9,9%). From 2013 to 2017 the category of “Other” was the one that showed the biggest amount of deficiencies (25,3%, 39,9%, 41,67%, 30,06% and 27,94% respectively). However, in every year, except in 2017, the second category observed were problems with certificates and documentation. In 2017, the second place was again lack of compliance with SOLAS regulations related to the safety of navigation (14,48%).

Black Sea MOU

From now on, an analysis on the information provided by The Black Sea Memorandum of Understanding on Port State Control (Black Sea MOU) will be conducted. It will be

done through the “Annual Reports” of the period considered, available in the official website (Black Sea MOU, 2019).

Table 7 - General Information

Year	2006	2007	2008	2009	2010	2011
N° Inspections	4260	4499	5161	4805	4929	4657
N° inspections with deficiencies	3232	3258	3504	3216	3191	3156
N° Detentions	259	367	329	278	286	249
Main area of deficiencies	SOLAS – Safety of navigation 13.06% - Lifesaving appliances 12.81%	SOLAS – Safety of navigation 13.14% Structure, Stability and equipment 12.75%	Certificates and documents 20,95% SOLAS- Fire Safety 19,05%	Structure, Stability and equipment 17.21% Certificates and documents 14,75%	Structure, Stability and equipment 16.9% Certificates and documents 16.9%	Structure, Stability and equipment 38.24% SOLAS- Fire Safety 15,69%

Year	2012	2013	2014	2015	2016	2017
N° Inspections	4607	5080	5092	4997	5066	5112
N° inspections with deficiencies	3002	3306	3051	2825	2845	3018
N° Detentions	215	184	151	218	229	283
Main area of deficiencies	Certificates and documents 22,81% Load Line 21.05%	Certificates and documents 22,22% Structure, Stability and equipment 16.67%	Load Line 20.00% Lifesaving appliances 16.67%	Structure, Stability and equipment 27.66% Certificates and documents 17,02%	SOLAS-Fire Safety 24,39% Lifesaving appliances 21.95%	Structure, Stability and equipment 20.22% Lifesaving appliances 20.22%

Table 8 - Information related ships flagged with a Viña del Mar Agreement's Flag

Year	2006	2007	2008	2009	2010	2011
N° Inspections	462	530	680	565	618	484
N° inspections with deficiencies	350	414	487	426	439	339

N° Detentions	28	52	71	52	46	27
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Year	2012	2013	2014	2015	2016	2017
N° Inspections	498	608	629	668	700	760
N° inspections with deficiencies	327	392	380	395	425	472
N° Detentions	25	24	22	23	34	58

Table 9 - Yearly Detention Rate

Year	2006	2007	2008	2009	2010	2011
Detention Rate	6.08	8.15	6.37	5.78	5.8	5.34

Year	2012	2013	2014	2015	2016	2017
Detention Rate	4.66	3.62	2.97	4.36	4.52	5.53

Table 10 - Yearly Deficiencies Rate

Year	2006	2007	2008	2009	2010	2011
Deficiencies Rate	75.86	72.42	67.9	66.93	64.74	67.76

Year	2012	2013	2014	2015	2016	2017
Deficiencies Rate	65.16	65.07	59.9	56.53	56.16	59.03

Table 11 - Behavior of Viña del Mar's Fleet in Black Sea MOU

Year	2006	2007	2008	2009	2010	2011
Deficiencies Rate	75.75	78.11	71.61	75.4	71.03	70.04
Detention Rate	6.06	9.8	10.44	9.2	7.44	5.57

Year	2012	2013	2014	2015	2016	2017
Deficiencies Rate	65.66	64.47	60.41	59.13	60.71	62.1
Detention Rate	5.02	3.95	3.5	3.44	4.86	7.63

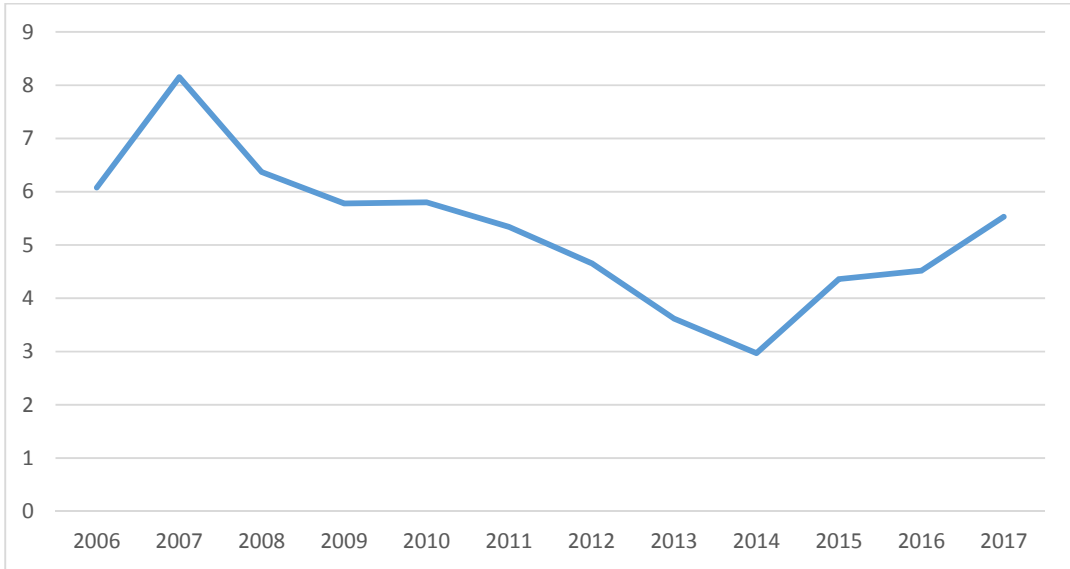


Figure Appendices 5 - Yearly Detention Rate

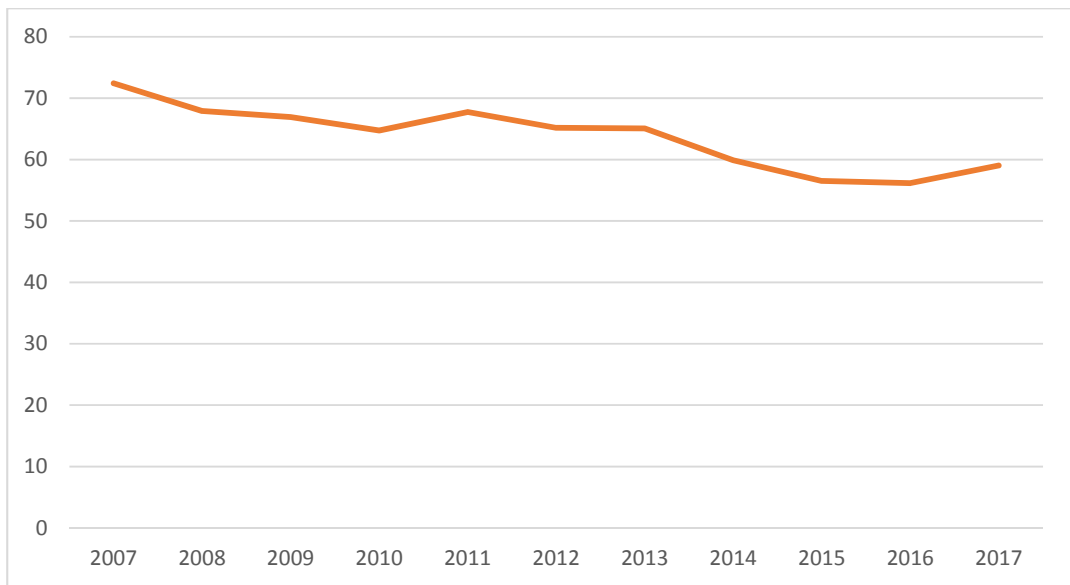


Figure Appendices 6 - Yearly Deficiencies Rate

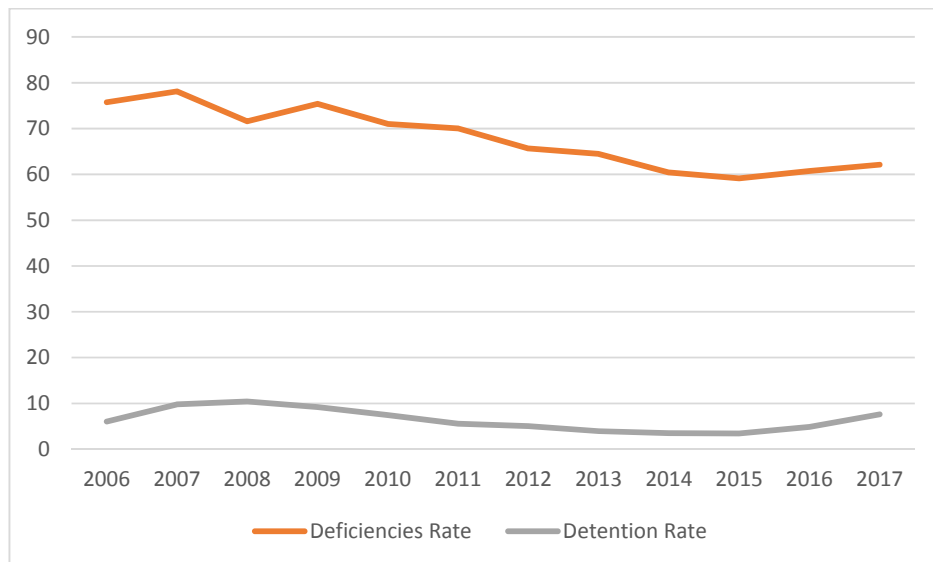


Figure Appendices 7 - Behavior of Viña del Mar's Fleet in Black Sea MOU

In the Black Sea MOU it was seen that the detention rate in general was experiencing a decrease. The peak was reached in 2007 and since that year it has been reduced significantly until reaching the minimum rate in 2014. Since that year there have been a slight increment.

The deficiencies rate started in 2006 with its maximum peak, since that moment it experienced a yearly decrement until 2016. During 2017, there was a slight increment.

The fleet flagged with Viña del Mar Agreement's flags showed the same behavior as the detention rate as well as the deficiencies one demonstrated a decrement. However, during the last two years analyzed showed a slight increment.

Finally, regarding the main category on the deficiencies found for the Members of the MOU, it can be seen that there have been 6 main areas, where issues related with the structure, stability and equipment have been the one who was the main one in five different years. In other three years, the deficiencies related with the certificates and documentation was considered as the first category. The remaining ones the main causes have been

different, in two of them issues related with the safety of navigation, one time the category with load line problem and the last one with problems in the fire safety system.

Caribbean MOU

In this section an analysis of information provided by The Caribbean Memorandum of Understanding on Port State Control (Caribbean MOU) will be conducted. It will be done through the “Annual Reports” of the years contained in the period established (2006 – 2017). However, in this occasion the analysis is conducted since 2008 as the previous Annual Reports are not available in the website of the MOU (Caribbean Memorandum of Understanding on Port State Control (Caribbean MOU), 2019). The MOU established as its mission “Eliminate the Operation of Substandard Ships in the Region through a harmonized system of Port State Control.”

Table 12 - General Information

Year	2008	2009	2010	2011	2012
N° Inspections	603	619	815	615	645
N° inspections with deficiencies	90	Not available	436	181	289
N° Detentions	8	23	12	20	19
Main area of deficiencies	Problems with Propulsion and auxiliary machinery 17.3 % Structure, Stability and equipment 11.95%	Lifesaving appliances 9.25% SOLAS – Safety of Navigation 8.9%	Certificates and documents 23% Structure, Stability and equipment 1157%	SOLAS-Fire Safety 13.1% Lifesaving appliances 11.7%	SOLAS-Fire Safety 17.55% SOLAS – Safety of Navigation 11.81%

Year	2013	2014	2015	2016	2017
N° Inspections	994	836	867	859	769
N° inspections with deficiencies	336	373	392	346	301

N° Detentions	18	15	18	15	10
Main area of deficiencies	SOLAS-Fire Safety 16.84% SOLAS – Safety of Navigation 11.34%	SOLAS-Fire Safety Certificates and documents 20.2% 15.23%	SOLAS-Fire Safety Lifesaving appliances 21.84% 15.53%	SOLAS-Fire Safety Lifesaving appliances 19.41% 15.62%	SOLAS-Fire Safety Lifesaving appliances 18.39% 17.31%

Table 13 - Information related ships flagged with a Viña del Mar Agreement's Flag

Year	2008	2009	2010	2011	2012
N° Inspections	142	Not available	165	134	123
N° inspections with deficiencies	Not available	Not available	140	41	57
N° Detentions	3	Not available	6	11	5

Year	2013	2014	2015	2016	2017
N° Inspections	197	145	150	141	145
N° inspections with deficiencies	66	79	85	63	68
N° Detentions	5	4	4	3	1

Table 14 - Yearly Detention Rate

Year	2008	2009	2010	2011	2012
Detention Rate	1.33	3.71	1.47	3.25	2.94

Year	2013	2014	2015	2016	2017
Detention Rate	1.81	1.79	2.07	1.74	1.3

Table 15 - Yearly Deficiencies Rate

Year	2008	2009	2010	2011	2012
Deficiencies Rate	14.92	Not available	53.5	29.4	44.8

Year	2013	2014	2015	2016	2017
Deficiencies Rate	33.8	44.6	45.21	40.27	39.14

Table 16 - Behavior of Viña del Mar's Fleet in Caribbean MOU

Year	2008	2009	2010	2011	2012
Deficiencies Rate	Not available	Not available	84.84	30.6	46.34
Detention Rate	2.11	Not available	3.63	8.2	4.06

Year	2013	2014	2015	2016	2017
Deficiencies Rate	33.5	54.48	56.66	44.68	46.89
Detention Rate	2.53	2.75	2.66	2.12	0.69

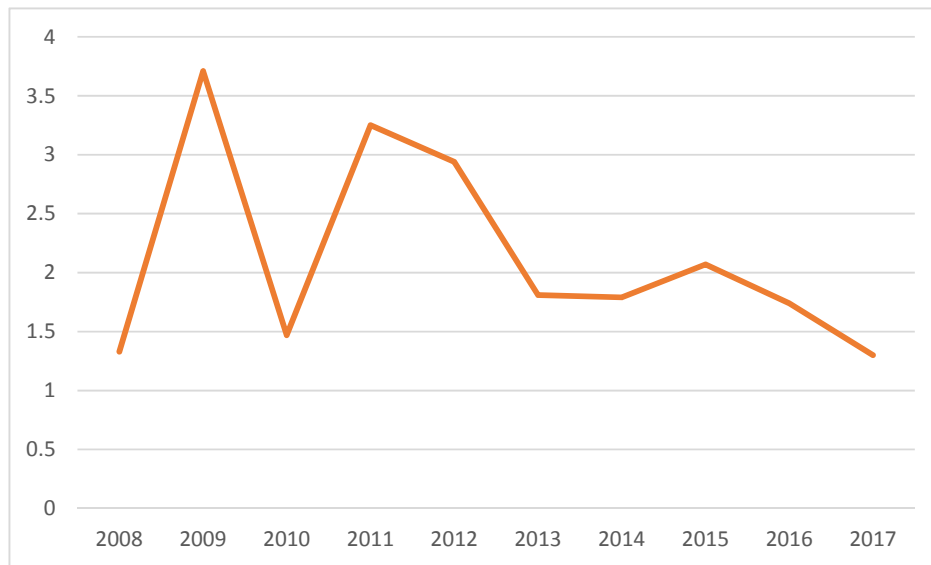


Figure Appendices 8 - Yearly Detention Rate

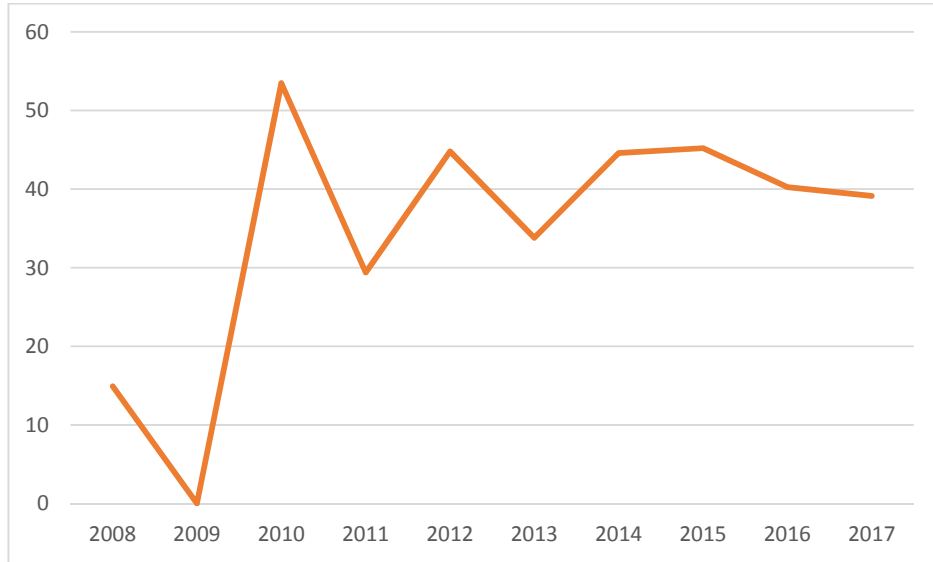


Figure Appendices 9 - Yearly Deficiencies Rate

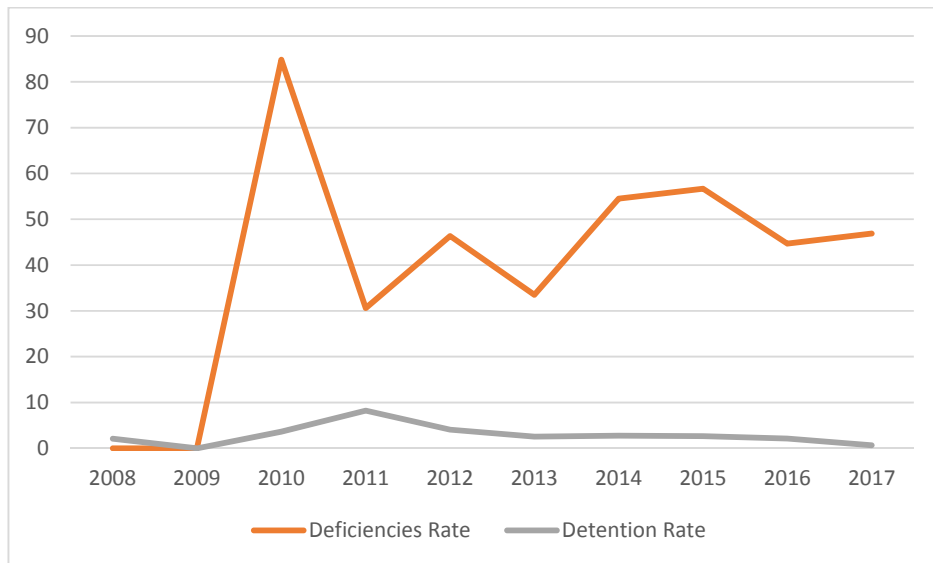


Figure Appendices 10 - Behavior of Viña del Mar's Fleet in Caribbean MOU

With the information provided by the Caribbean MOU, firstly it should be mentioned that it starts in 2008, because the previous reports are not available. Therefore, it can be seen that the detention rate has two peaks, the first in 2009 and the other one in 2011. However,

since that year the average rate was decreasing yearly, reaching the minimum value in 2017.

Regarding the deficiencies rate, it must be considered that the value of 2009 is not available. Anyway, the analysis was made with the other years and as it can be seen in Figure 40 the value was fluctuating yearly after reaching its peak in 2010. Since 2014 it adopted a value almost constant for the following years.

For the Viña del Mar Agreement flagged ships the information could be considered directly since 2010. That year was the peak of the deficiencies rate, that decreased in the following year to keep an almost constant value for the rest of the period. The detention rate had its peak in 2011 and after that it showed a constantly decrease, reaching the minimum value in 2017.

Finally, over the ten years analyzed, the category that showed the biggest amount of deficiencies in seven of them was the problem with “fire safety system”. Especially in the last seven years this was considered as the most relevant problem in foreign ships that call in ports of the Caribbean MOU’s Members.

Indian Ocean MOU

From now on, an analysis on the information provided by The Indian Ocean Memorandum of Understanding on Port State Control (Indian Ocean MOU) will be conducted. It will be done through the “Annual Reports” of the period considered, available in the official website, where it also can be read the following statement: *“our ultimate goal is to identify and eliminate substandard ships from the region”* (The Indian Ocean Memorandum of Understanding on Port State Control (Indian Ocean MOU) , 2019).

Table 17 - General information

Year	2006	2007	2008	2009	2010	2011
N° Inspections	5124	4810	5613	5383	5513	5550

N° inspections with deficiencies	2836	2630	3067	3116	2869	3306
N° Detentions	406	453	553	517	471	600
Main area of deficiencies	SOLAS-Fire Safety 14,8% SOLAS – Safety of navigation 14.19%	SOLAS-Fire Safety 16,77% SOLAS – Safety of navigation 13.72%	SOLAS-Fire Safety 16,15% SOLAS – Safety of navigation 13.19%	SOLAS-Fire Safety 15,40% SOLAS – Safety of navigation 14.20%	SOLAS-Fire Safety 15,33% SOLAS – Safety of navigation 14.34%	SOLAS – Safety of navigation 14.74% SOLAS-Fire Safety 14,42%

Year	2012	2013	2014	2015	2016	2017
N° Inspections	5051	5320	6059	6253	6010	5674
N° inspections with deficiencies	2800	2961	3469	3374	3393	3017
N° Detentions	433	376	379	350	370	281
Main area of deficiencies	SOLAS – Safety of navigation 15.79% SOLAS-Fire Safety 15,08%	SOLAS – Safety of navigation 15.78% SOLAS-Fire Safety 14,87%	SOLAS – Safety of navigation 15.58% SOLAS-Fire Safety 14,68%	SOLAS – Safety of navigation 15.13% SOLAS-Fire Safety 13,80%	SOLAS – Safety of navigation 15.62% SOLAS-Fire Safety 13,22%	SOLAS – Safety of navigation 15.37% SOLAS-Fire Safety 12,86%

Table 18 - Information related ships flagged with a Viña del Mar Agreement's Flag

Year	2006	2007	2008	2009	2010	2011
N° Inspections	1502	1497	1725	1595	1563	1480
N° inspections with deficiencies	880	865	991	956	834	892
N° Detentions	141	155	196	160	139	171

Year	2012	2013	2014	2015	2016	2017
N° Inspections	1355	1356	1495	1568	1528	1311
N° inspections with deficiencies	780	791	932	927	957	804
N° Detentions	120	96	110	92	121	91

Table 19 - Yearly Detention Rate

Year	2006	2007	2008	2009	2010	2011
Detention Rate	7.92	9.41	9.82	9.6	8.54	10.81

Year	2012	2013	2014	2015	2016	2017
Detention Rate	8.57	7.06	6.25	5.59	6.15	4.95

Table 20 - Yearly Deficiencies Rate

Year	2006	2007	2008	2009	2010	2011
Deficiencies Rate	55.35	54.67	54.46	57.88	52.04	59.56

Year	2012	2013	2014	2015	2016	2017
Deficiencies Rate	55.43	55.65	57.25	53.95	56.45	53.17

Table 21 - Behavior of Viña del Mar's Fleet in Indian Ocean MOU

Year	2006	2007	2008	2009	2010	2011
Deficiencies Rate	58.58	57.78	57.45	59.93	53.34	60.27
Detention Rate	9.38	10.35	11.36	10.03	8.89	11.55

Year	2012	2013	2014	2015	2016	2017
Deficiencies Rate	57.56	58.33	62.34	59.12	62.63	61.32
Detention Rate	8.85	7.08	7.35	5.86	7.92	6.94

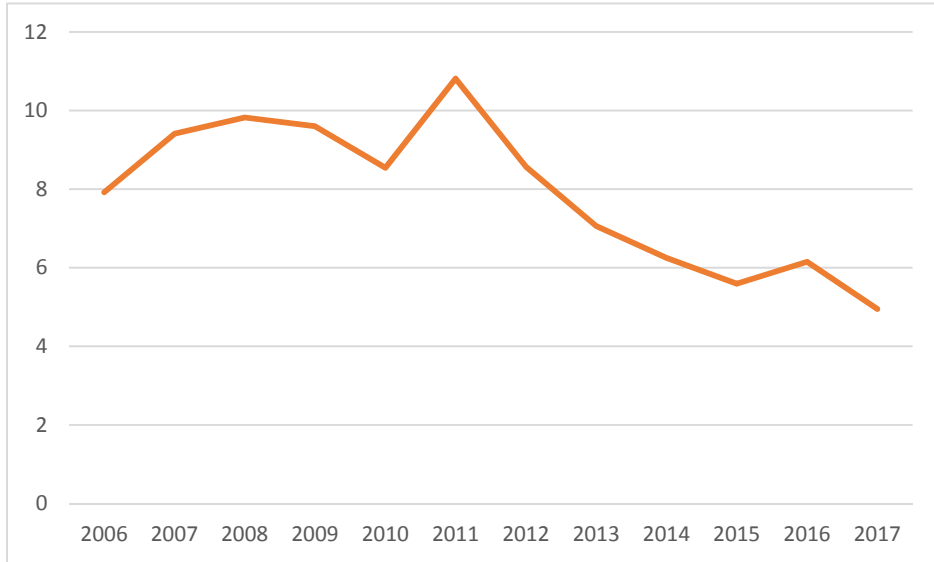


Figure Appendices 11 - Yearly Detention Rate

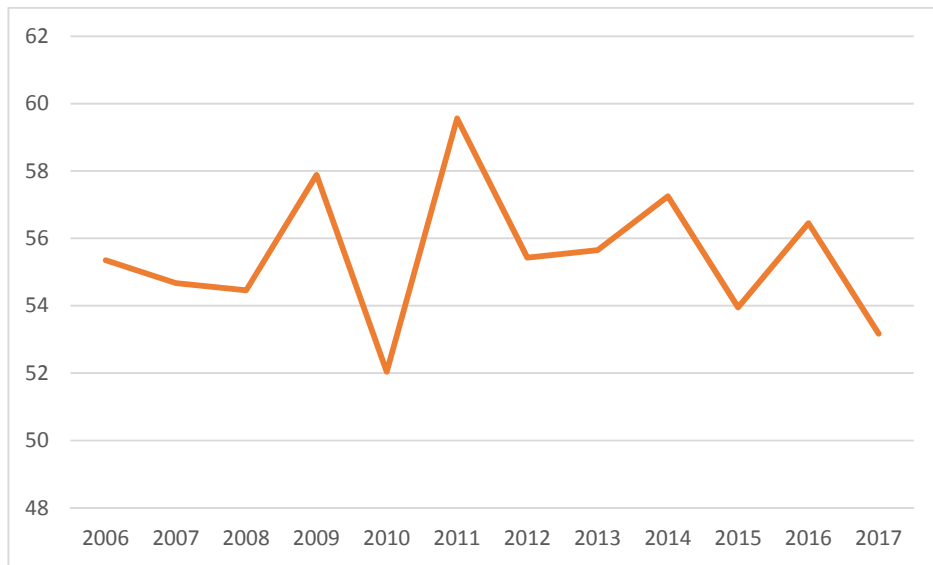


Figure Appendices 12 - Yearly Deficiencies Rate

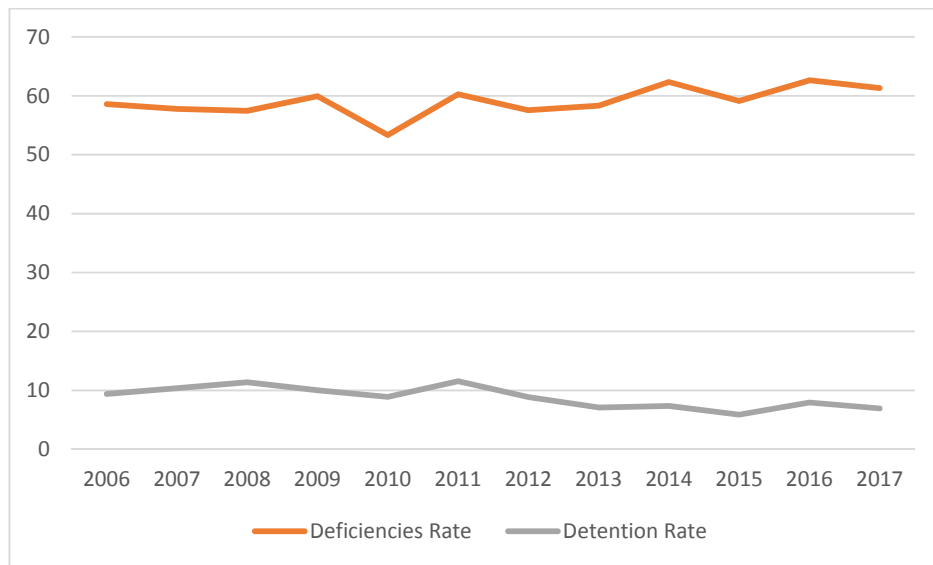


Figure Appendices 13 - Behavior of Viña del Mar's Fleet in Indian Ocean MOU

The information taken from the Annual Reports for the established period indicated that the detention rate in the Indian Ocean MOU showed a constant decrement, reaching the minimum value in 2017.

The rate of the inspections with deficiencies was very variable along the period, however, since reaching the peak in 2011, the values have been decreasing during the following years, reaching the second minimum level in 2017.

Considering the reasons of the deficiencies detected during the control in the Members of the Indian Ocean MOU, it was clear during the twelve years that there were two main reason of them, “fire safety system failure” and “problem with the safety of navigations equipment”. If both categories are added, every year they were detected as the reasons of the 30% of the deficiencies on board foreign ships in the regions.

Finally, analyzing the situation of the ships flagged with any Viña del Mar Agreement's Member flag, it can be seen that the rate of inspections with deficiencies showed a slight

increment in the last year, however, the level have been almost constant along the period. On the detention rate it can be seen that there was a notable decrement on the rate since the beginning of the period until 2017.

Mediterranean MOU

In this section there will be conducted an analysis on the information provided by The Mediterranean Memorandum of Understanding on Port State Control (Mediterranean MOU). It will be done through the “Annual Reports” of the period considered, available in the official website (The Mediterranean Memorandum of Understanding on Port State Control (Mediterranean MOU), 2019).

Table 22 - General Information

Year	2006	2007	2008	2009	2010	2011
N° Inspections	4582	5868	6317	6966	6783	6225
N° inspections with deficiencies	3231	3789	3772	4110	4053	3624
N° Detentions	791	921	629	707	527	412
Main area of deficiencies	SOLAS – Safety of navigation 19.91% SOLAS-Fire Safety 12,32%	SOLAS – Safety of navigation 19.62% SOLAS-Fire Safety 11,01%	SOLAS – Safety of navigation 22.94% Propulsion and auxiliary machinery 10,03%	SOLAS – Safety of navigation 25.26% Propulsion and auxiliary machinery 9,66%	SOLAS – Safety of navigation 26.29% Propulsion and auxiliary machinery 10,8%	SOLAS – Safety of navigation 23.1% Structure, stability and equipment 10,46%

Year	2012	2013	2014	2015	2016	2017
N° Inspections	5645	4698	5049	5740	5312	5200
N° inspections with deficiencies	3146	2550	2591	2862	2741	2697
N° Detentions	416	262	298	300	228	173
Main area of deficiencies	SOLAS – Safety of navigation 21.66%	SOLAS – Safety of navigation 20.9%	SOLAS – Safety of navigation 21.00%	SOLAS – Safety of navigation 18.00%	SOLAS – Safety of navigation 18.00%	Certificates and documentation 18,00% SOLAS – Safety of

	Working and Living Conditions 15,51%	Working and Living Conditions 16,53%	Certificates and documentation 16,00%	Certificates and documentation 16,00%	Certificates and documentation 16,00%	navigation 15.00%
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Table 23 - Information related ships flagged with a Viña del Mar Agreement's Flag

Year	2006	2007	2008	2009	2010	2011
N° Inspections	633	834	966	997	971	869
N° inspections with deficiencies	450	553	622	612	577	508
N° Detentions	137	152	124	132	80	65

Year	2012	2013	2014	2015	2016	2017
N° Inspections	797	667	764	821	816	819
N° inspections with deficiencies	428	342	421	424	446	448
N° Detentions	50	37	47	42	42	25

Table 24 - Yearly Detention Rate

Year	2006	2007	2008	2009	2010	2011
Detention Rate	17.26	15.69	9.95	10.14	7.77	6.62

Year	2012	2013	2014	2015	2016	2017
Detention Rate	7.37	5.57	5.9	5.22	4.29	3.32

Table 25 - Yearly Deficiencies Rate

Year	2006	2007	2008	2009	2010	2011
Deficiencies Rate	70.51	64.57	59.71	59.00	59.75	58.22

Year	2012	2013	2014	2015	2016	2017
Deficiencies Rate	55.73	54.28	51.31	49.86	51.6	51.86

Table 26 - Behavior of Viña del Mar's Fleet in Mediterranean MOU

Year	2006	2007	2008	2009	2010	2011
Deficiencies Rate	71.09	66.3	64.39	61.38	59.42	58.46
Detention Rate	21.64	18.22	12.84	13.24	8.24	7.48

Year	2012	2013	2014	2015	2016	2017
Deficiencies Rate	53.7	51.27	55.1	51.64	54.65	54.7
Detention Rate	6.27	5.55	6.15	5.11	5.14	3.05

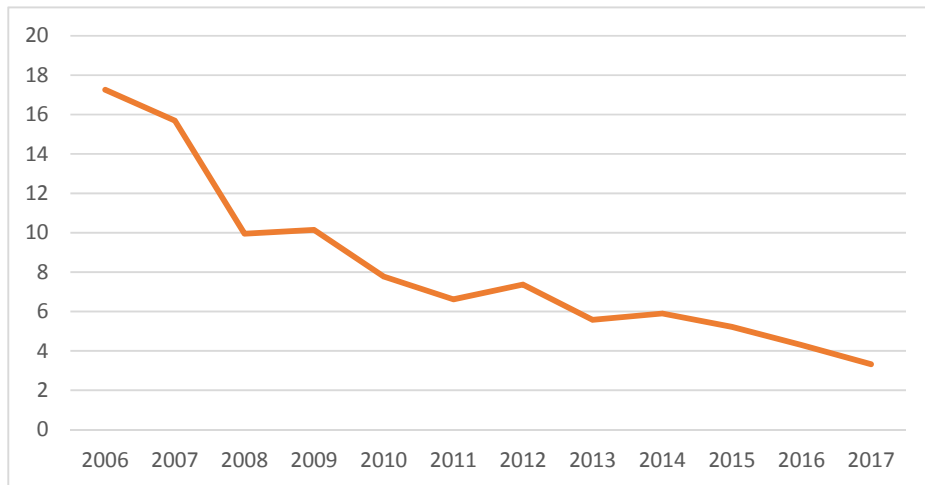


Figure Appendices 14 - Yearly Detention Rate

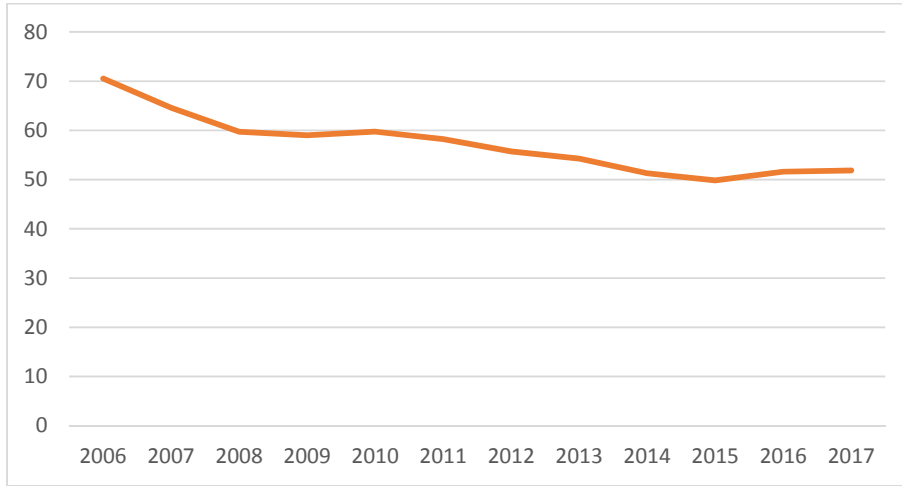


Figure Appendices 15 - Yearly Deficiencies Rate

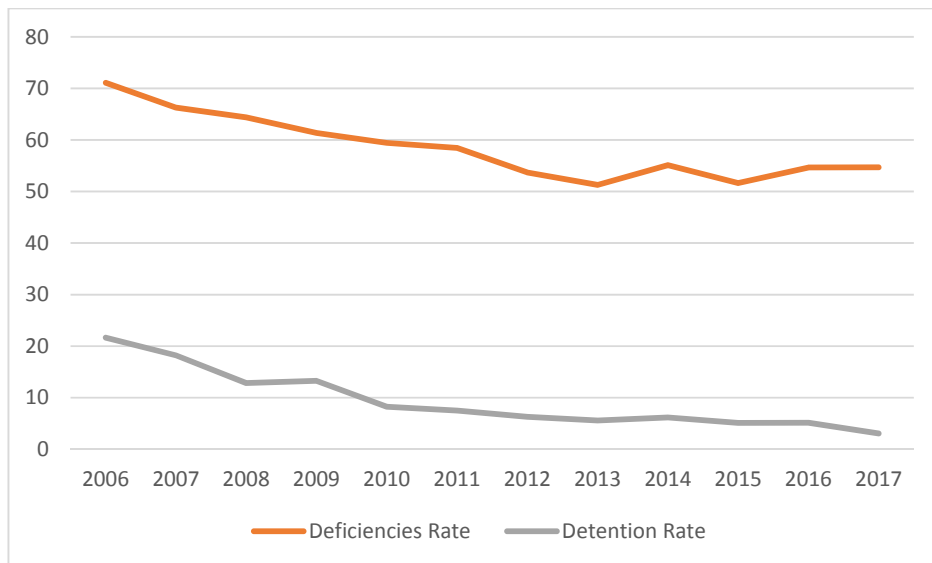


Figure Appendices 16 - Behavior of Viña del Mar's Fleet in Mediterranean MOU

The analysis of the Annual Report from the Mediterranean MOU seems to be one of the most hopeful one if we consider the aim of the International Maritime Organization (IMO) for the MOU's. The reason is because both, the detention rate and the deficiencies detected per amount of detection showed a yearly decrement since the beginning of the period until

the last year of it 2017. Both reached the minimum value in 2017 and the decrement was almost constant every year. However, it is important to highlight that the amount of ships inspected was constant too.

Regarding the common causes of the deficiencies, issues related to the safety of navigation was the main one in almost every year. Another issues showed an increasing relevance such as problem with the certification and documents, especially in last 3 years of the period.

The fleet flagged with flags of the Members of the Viña del Mar Agreement showed a similar behavior as the general rates. The deficiencies rate experienced a slight increment in 2014 and in 2016, however, the detention rate was decreasing every year of the period analyzed.

Paris MOU

In this section there will be conducted an analysis on the information provided by The Paris Memorandum of Understanding on Port State Control (Paris MOU). It will be done through the “Annual Reports” of the period considered, available in the official website (The Paris Memorandum of Understanding on Port State Control (Paris MOU), 2019).

Table 27 - General Information

Year	2006	2007	2008	2009	2010	2011
N° Inspections	21566	22877	24647	24186	24058	19058
N° inspections with deficiencies	11549	12896	14322	13844	13282	10731
N° Detentions	1174	1250	1220	1059	790	688
Main area of deficiencies	SOLAS-Fire Safety 12,87% - SOLAS – Safety of navigation 11.45%	SOLAS-Fire Safety 12,5% - SOLAS – Safety of navigation 10.5%	SOLAS – Safety of navigation 12.14% SOLAS-Fire Safety 11,98%	SOLAS – Safety of navigation 13.06% SOLAS-Fire Safety 11,69%	SOLAS – Safety of navigation 13.05% SOLAS-Fire Safety 11,86%	SOLAS-Fire Safety 12,89% - SOLAS – Safety of navigation 12.76%

Year	2012	2013	2014	2015	2016	2017
N° Inspections	18308	17687	18430	17858	17840	17916
N° inspections with deficiencies	10460	10331	10214	9381	9288	9287
N° Detentions	669	668	612	595	683	685
Main area of deficiencies	SOLAS-Fire Safety 15,12% - SOLAS - Safety of navigation 13,77%	SOLAS - Safety of navigation 13,98% SOLAS-Fire Safety 13,57%	SOLAS - Safety of navigation 13,47% SOLAS-Fire Safety 13,43%	SOLAS-Fire Safety 13,4% - SOLAS - Safety of navigation 12,4%	SOLAS-Fire Safety 12,88% - SOLAS - Safety of navigation 12,47%	SOLAS - Safety of navigation 13,66% SOLAS-Fire Safety 13,06%

Table 28 - Information related ships flagged with a Viña del Mar Agreement's Flag

Year	2006	2007	2008	2009	2010	2011
N° Inspections	2510	2661	3035	2785	2705	2244
N° inspections with deficiencies	1463	1642	1874	1708	1529	1232
N° Detentions	223	243	234	167	93	107

Year	2012	2013	2014	2015	2016	2017
N° Inspections	2031	2034	2085	2029	2014	2119
N° inspections with deficiencies	1191	1244	1243	1186	1150	1194
N° Detentions	98	115	109	95	115	130

Table 29 - Yearly Detention Rate

Year	2006	2007	2008	2009	2010	2011
Detention Rate	5.44	5.46	4.95	4.37	3.28	3.61

Year	2012	2013	2014	2015	2016	2017
Detention Rate	3.65	3.77	3.32	3.33	3.82	3.82

Table 30 - Yearly Deficiencies Rate

Year	2006	2007	2008	2009	2010	2011
Deficiencies Rate	53.55	56.37	58.11	57.24	55.20	56.3

Year	2012	2013	2014	2015	2016	2017
Deficiencies Rate	57.13	58.41	55.42	52.53	56.06	51.84

Table 31 - Behavior of Viña del Mar's Fleet in Paris MOU

Year	2006	2007	2008	2009	2010	2011
Deficiencies Rate	58.28	61.70	61.74	61.32	56.52	54.9
Detention Rate	8.88	9.13	7.71	5.99	3.44	4.76

Year	2012	2013	2014	2015	2016	2017
Deficiencies Rate	58.64	61.16	59.61	58.45	57.1	56.35
Detention Rate	4.82	5.65	5.23	4.68	5.71	6.13

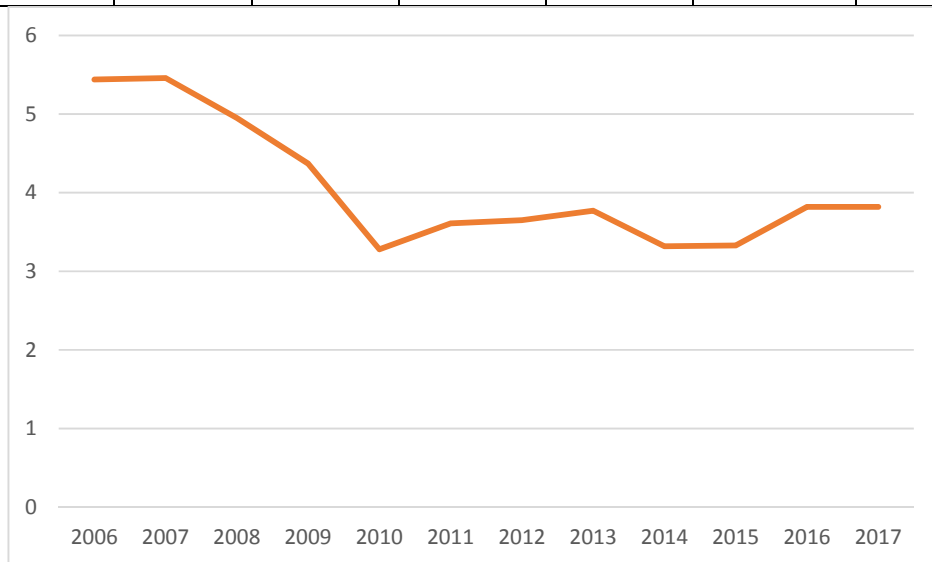


Figure Appendices 17 - Yearly Detention Rate

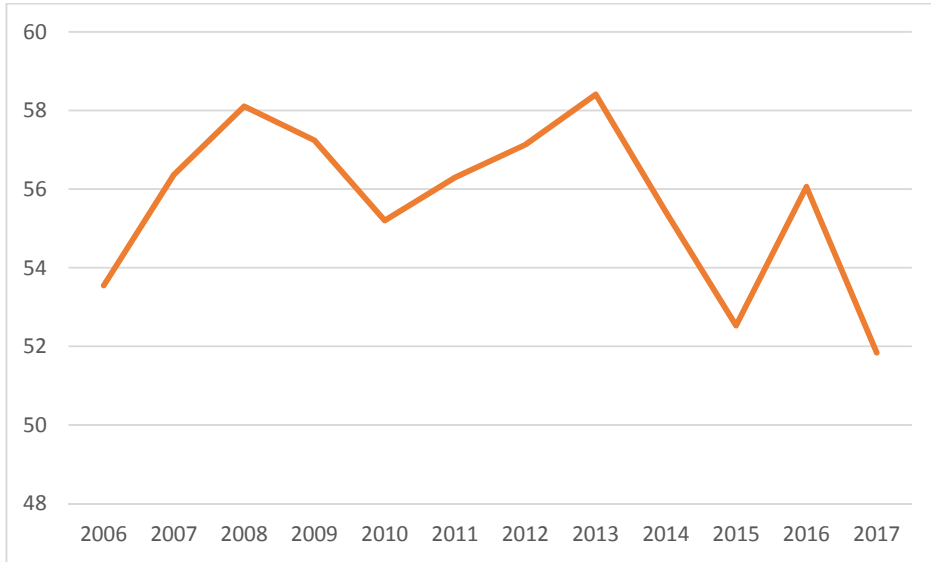


Figure Appendices 18 - Yearly Deficiencies Rate

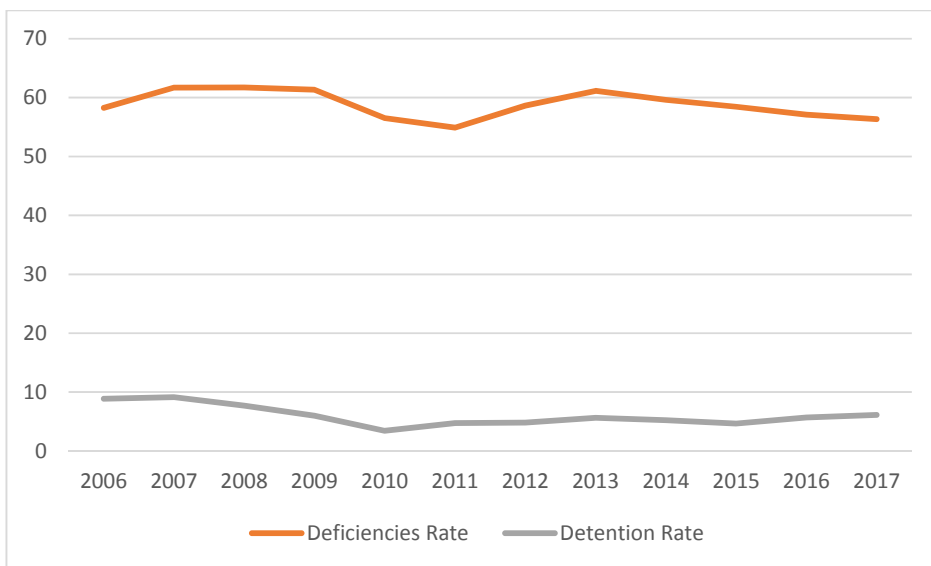


Figure Appendices 19 - Behavior of Viña del Mar's Fleet in Paris MOU

Analyzing the Annual Reports provided from the Paris MOU it can be seen that the detention rate one big decrement since the period started, until it reached the minimum value in 2010. Since that year it maintained a value between 4 and 5, that mean that every

100 ships between 4 and 3 have been detained considered a high risk for the navigation, according it was established by the IMO and explained in Chapter 3.

The amount of deficient ships while the inspections are taken place showed a highly variable rate. It showed two high peak, in 2008 and 2013. However, the minimum level has been reached in the last year analyzed that can be considered as a compliance with the IMO aim.

Regarding the most common deficiencies found during the inspections, can be clearly stated that along the period there was a tie between problem with the fire safety system and the navigation one, because those causes have been observed in 6 years each as the most common one.

Finally, analyzing the behavior of the fleet flying flags from the Viña del Mar Agreement's Member, it can be seen along the period that both rates have been mostly stable. The deficiencies rate was in a high level, over the 60 points during the years 2007, 2008 and 2009. After that period, it started to decrease reaching it minimum in 2011. And since that moment, with the exception of 2013, it kept the level below 60. It is good to remember that the 60 points indicate that there is a possibility of 60% that a ship flagged with those flags could have a deficiency.

On the other hand, the detention rate of those flags started the period in a high level, but after 2007 it gradually started to decrease, having the minimum level in 2010.

Riyadh MOU

In this section there will be conducted an analysis on the information provided by The Riyadh Memorandum of Understanding on Port State Control (Riyadh MOU). It will be done through the "Annual Reports" of the period considered, available in the official

website. Unfortunately, the reports are only available from 2012 (The Riyadh Memorandum of Understanding on Port State Control (Riyadh MOU), 2019).

Table 32 - General Information

Year	2012	2013	2014	2015	2016	2017
N° Inspections	3357	3508	3859	4165	3381	3104
N° inspections with deficiencies	626	816	821	953	742	693
N° Detentions	18	33	44	32	26	38
Main area of deficiencies	Safety of navigation 20.82% Certificates and documentation 16,83%	Certificates and documentation 18,1% SOLAS – Safety of navigation 11.45%	Certificates and documentation 16,71% SOLAS – Safety of navigation 14.18%	Carriage of Dangerous Goods 15.58% SOLAS – Safety of navigation 12.38%	SOLAS – Safety of navigation 16.93% Certificates and documentation 16,57%	Safety of navigation 19.50% Certificates and documentation 9,12%

Table 33 - Information related ships flagged with a Viña del Mar Agreement's Flag

Year	2012	2013	2014	2015	2016	2017
N° Inspections	762	757	875	926	740	698
N° inspections with deficiencies	139	191	213	239	177	184
N° Detentions	6	7	14	9	11	10

Table 34 - Yearly Detention Rate

Year	2012	2013	2014	2015	2016	2017
Detention Rate	0.53	0.94	1.14	0.77	0.77	1.22

Table 35 - Yearly Deficiencies Rate

Year	2012	2013	2014	2015	2016	2017
Deficiencies Rate	18.65	23.26	21.27	22.88	21.95	22.33

Table 36 - Behavior of Viña del Mar's Fleet in Riyadh MOU

Year	2012	2013	2014	2015	2016	2017
Deficiencies Rate	18.24	25.23	24.34	25.8	23.92	26.36
Detention Rate	0.78	0.92	1.6	0.97	1.49	1.43

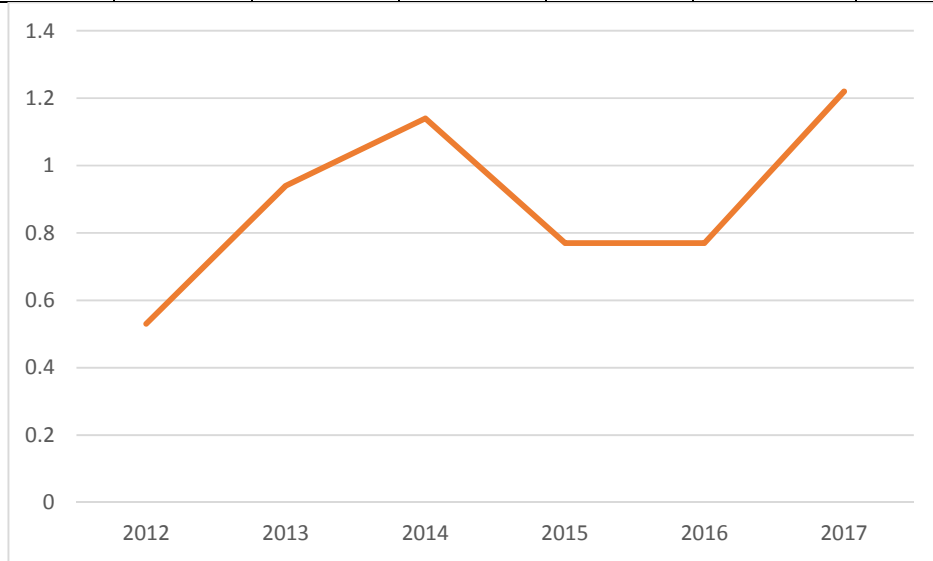


Figure Appendices 20 - Yearly Detention Rate

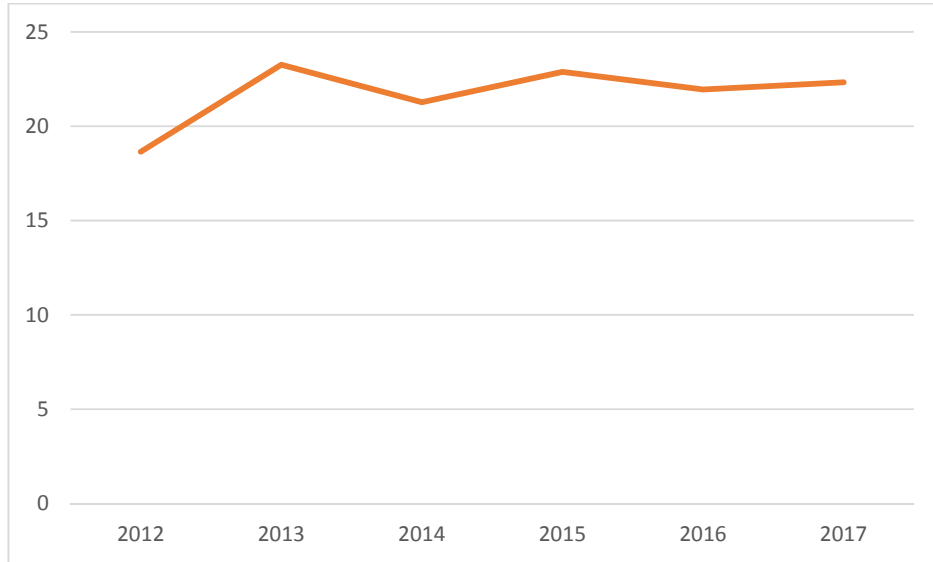


Figure Appendices 21 - Yearly Deficiencies Rate

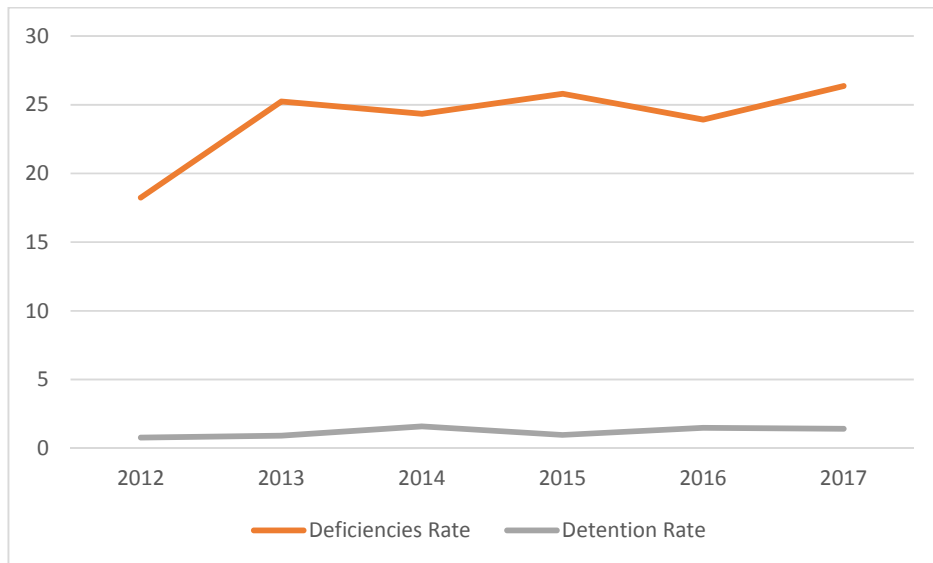


Figure Appendices 22 - Behavior of Viña del Mar's Fleet in Riyadh MOU

Unfortunately, the analysis will not be complete as the information for the whole period is not available. Therefore, it will start in 2012. Since that year the detention rate of the Riyadh MOU started to grow yearly, until it reached its peak in 2014. From that year it

decreased the following year and remained constant in 2016. However, in 2017 the rate reached surprisingly the maximum peak.

On the other side, the deficiencies rate increased from 2012 to 2013, but from that year on it remained almost constant in values near 23. That means that every ship that call in some of the port of the region has a 25% of chances to have a deficiency.

Regarding the most common causes of deficiencies on board, issues related to the certification and documentation have been present in 5 over 6 years analyzed. Another important amount of causes has been related to issues related to the safety of navigation. Finally, analyzing the behavior of the ships flagged with any flag from the Viña del Mar Agreement Members, it can be seen that the deficiencies rate has experimented a constant slight increment year by year, at the same level at the general rate for the MOU. The detention also showed a slight increment, but always close to 1.4.

Tokyo MOU

In this section there will be conducted an analysis on the information provided by The Memorandum of Understanding on Port State Control in the Asian – Pacific Region (Tokyo MOU). It will be done through the “Annual Reports” of the period considered, available in the official website (The Memorandum of Understanding on Port State Control in the Asian – Pacific Region (Tokyo MOU), 2019).

Table 37 - General Information

Year	2006	2007	2008	2009	2010	2011
N° Inspections	21686	22039	22152	23116	25762	28627
N° inspections with deficiencies	14916	14864	15298	15422	16575	18650
N° Detentions	1171	1239	1528	1336	1411	1562
Main area of deficiencies	SOLAS-Fire Safety 16,33% - SOLAS – Safety	SOLAS-Fire Safety 16,25% - SOLAS –	SOLAS – Safety of navigation 17.25%	SOLAS-Fire Safety 16,84% - SOLAS –	SOLAS-Fire Safety 17,74% - SOLAS – Safety of	SOLAS-Fire Safety 17,49% - SOLAS – Safety

	of navigation 15.74%	Safety of navigation 15.15%	SOLAS- Fire Safety 16,54%	Safety of navigation 16.36%	navigation 17.35%	of navigation 16.84%
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Year	2012	2013	2014	2015	2016	2017
N° Inspections	30929	31018	30405	31407	31678	31315
N° inspections with deficiencies	19250	18790	19029	19142	18943	18113
N° Detentions	1421	1395	1203	1153	1090	941
Main area of deficiencies	SOLAS-Fire Safety 20,45% - SOLAS - Safety of navigation 17.07%	SOLAS-Fire Safety 18,41% - SOLAS - Safety of navigation 17.08%	SOLAS-Fire Safety 18,60% - SOLAS - Safety of navigation 15.89%	SOLAS-Fire Safety 18,11% - SOLAS - Safety of navigation 15.09%	SOLAS-Fire Safety 18,41% - SOLAS - Safety of navigation 15.02%	SOLAS-Fire Safety 18,01% - SOLAS - Safety of navigation 15.37%

Table 38 - Information related ships flagged with a Viña del Mar Agreement's Flag

Year	2006	2007	2008	2009	2010	2011
N° Inspections	6622	6957	7172	7351	7969	8705
N° inspections with deficiencies	4312	4458	4732	4748	5092	5583
N° Detentions	306	336	462	387	420	434

Year	2012	2013	2014	2015	2016	2017
N° Inspections	9218	8950	8616	8563	8535	8287
N° inspections with deficiencies	5674	5337	5430	5147	5103	4826
N° Detentions	420	401	346	289	294	275

Table 39 - Yearly Detention Rate

Year	2006	2007	2008	2009	2010	2011
Detention Rate	5.4	5.62	6.9	5.78	5.48	5.46

Year	2012	2013	2014	2015	2016	2017

Detention Rate	4.59	4.5	3.96	3.67	3.44	3.00
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Table 40 - Yearly Deficiencies Rate

Year	2006	2007	2008	2009	2010	2011
Deficiencies Rate	68.78	67.44	69.06	66.72	64.34	65.15

Year	2012	2013	2014	2015	2016	2017
Deficiencies Rate	62.24	60.58	62.58	60.95	59.8	57.84

Table 41 - Behavior of Viña del Mar's Fleet in Tokyo MOU

Year	2006	2007	2008	2009	2010	2011
Deficiencies Rate	65.12	64.08	65.98	64.59	63.9	64.14
Detention Rate	4.62	4.83	6.44	5.26	5.27	4.98

Year	2012	2013	2014	2015	2016	2017
Deficiencies Rate	61.55	59.63	63.00	60.1	59.79	58.24
Detention Rate	4.55	4.48	4.01	3.37	3.44	3.32

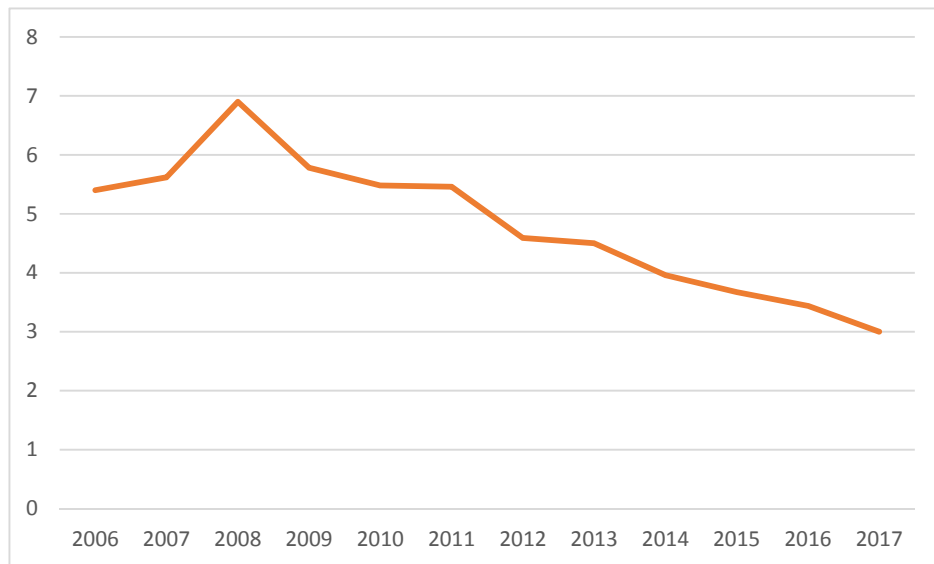


Figure Appendices 23 - Yearly Detention Rate

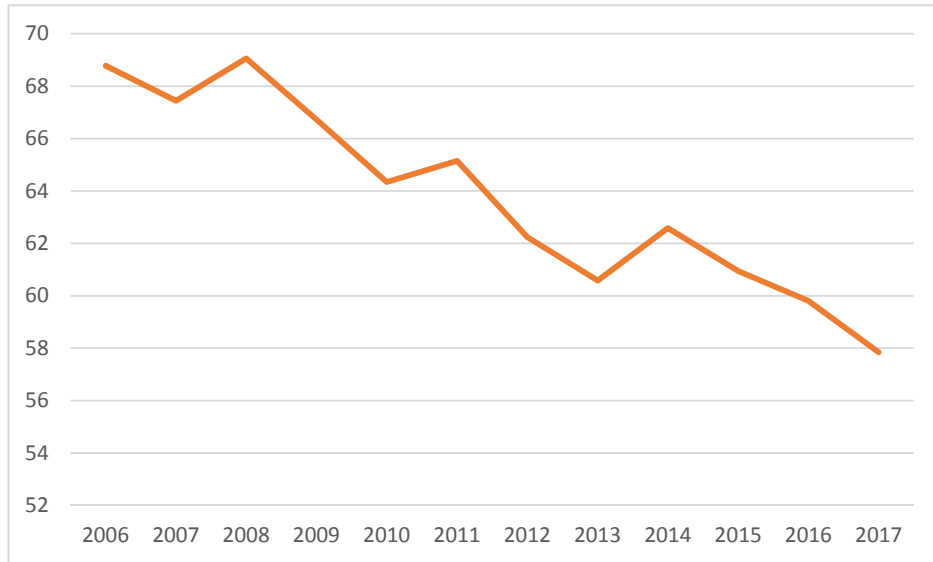


Figure Appendices 24 - Yearly Deficiencies Rate

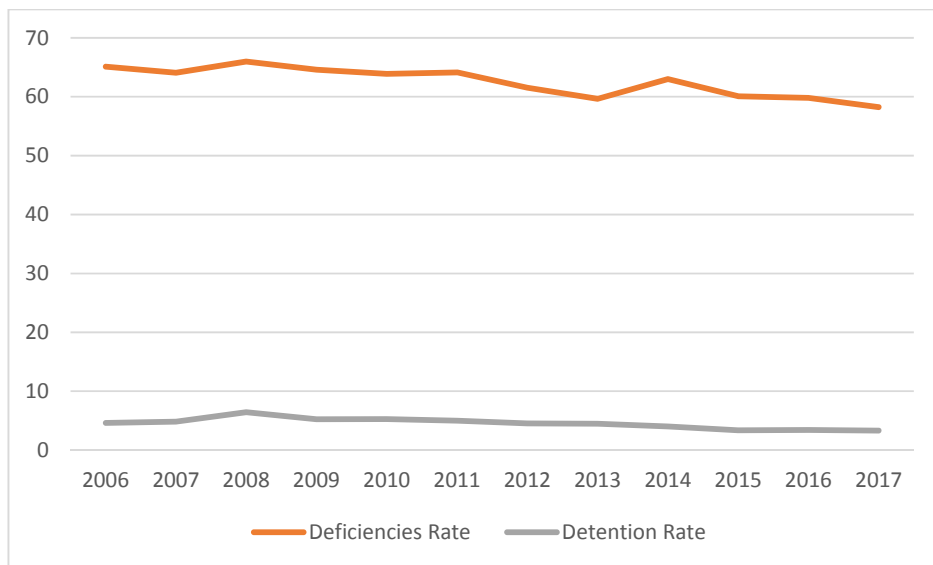


Figure Appendices 25 - Behavior of Viña del Mar's Fleet in Tokyo MOU

Analyzing the information provided by the Annual Reports of Tokyo MOU about the period established it can be observed that the detention rate presented a peak in the year

2008. However, it can be considered the only exception because for the rest of the years analyzed it was always presenting a decrement, until reaching the minimum level in 2017. The deficiencies rate presented a similar shape to the detention one. But in this case the difference is that it also presented an increment in 2011 and 2015 respective the previous year. However, in general it can be considered as a decreasing line until it also reached the minimum level in 2017.

Talking about the common cause that has been detected as deficiencies in Tokyo MOU there have been in every year presented two main categories, the lack of compliance with the safety of navigation regulation and the other reason were the problem in the fire safety system.

About the ships flagged with *Viña del Mar* Members flags, it can be seen that the behavior of both rates, detention and deficiencies, experimented the same movement along the period. They started in a peak or near it, and finished in 2017 in its minimum level. Both figures are very important to be highlighted because the number of ships with these flags during the whole period was almost constant, which means that the status of the vessels is the one that was improving.

United States MOU

In the United States, the Port State Control is a function delegated in its Coast Guard. To do so, the country decided not to join one of the existing Memorandum of Understanding but working as one of them, with the particularity of being composed by only one Member States. In this section there will be an analysis of the Annual Reports made by the United States MOU for the established period that are available in the official website (The United States Coast Guard - Port State Control Division (US MOU), 2019). Unfortunately, the reports for 2006, 2007 and 2008 do not provide the information related to the inspections with deficiencies neither the category of them. For that reason, some analysis that have

been carried in the previous MOU's was not possible not be done for those years. Since 2009, the analysis is complete as it was done in the previous MOU's analysis.

Table 42 - General Information

Year	2006	2007	2008	2009	2010	2011
N° Inspections	10136	10423	11578	9657	9907	10129
N° inspections with deficiencies	Not available	Not available	Not available	2651	2769	3025
N° Detentions	110	152	176	161	156	97
Main area of deficiencies	Not available	Not available	Not available	SOLAS-Fire Safety 18% - Marine Pollution 15%	SOLAS-Fire Safety 19% Propulsion and auxiliary machinery 15%	SOLAS-Fire Safety 25% - Marine Pollution 23%

Year	2012	2013	2014	2015	2016	2017
N° Inspections	9469	9394	9232	9265	9390	9105
N° inspections with deficiencies	2718	3022	2432	2661	2445	2358
N° Detentions	105	121	143	202	103	91
Main area of deficiencies	Marine Pollution 23% SOLAS-Fire Safety 17%	SOLAS-Fire Safety 31% - Marine Pollution 18%	ISM Code 21% - Marine Pollution 17%	SOLAS-Fire Safety 17% ISM Code 17%	SOLAS-Fire Safety 27% ISM Code 16%	SOLAS-Fire Safety 22% ISM Code 18%

Table 43 - Information related ships flagged with a Viña del Mar Agreement's Flag

Year	2006	2007	2008	2009	2010	2011
N° Inspections	2223	2173	2574	2082	2176	2144
N° inspections with deficiencies	Not available	Not available	Not available	594	649	654
N° Detentions	25	52	62	58	59	33

Year	2012	2013	2014	2015	2016	2017
N° Inspections	2142	2175	2133	1925	1768	1665

N° inspections with deficiencies	643	703	627	548	482	446
N° Detentions	35	43	57	57	33	22

Table 44 - Yearly Detention Rate

Year	2006	2007	2008	2009	2010	2011
Detention Rate	1.08	1.46	1.52	1.66	1.57	0.96

Year	2012	2013	2014	2015	2016	2017
Detention Rate	1.11	1.28	1.55	2.18	1.10	0.99

Table 45 - Yearly Deficiencies Rate

Year	2006	2007	2008	2009	2010	2011
Deficiencies Rate	Not available	Not available	Not available	27.45	27.95	29.86

Year	2012	2013	2014	2015	2016	2017
Deficiencies Rate	28.7	32.17	26.34	28.72	26.04	25.9

Table 46 - Behavior of Viña del Mar's Fleet in United States MOU

Year	2006	2007	2008	2009	2010	2011
Deficiencies Rate	Not available	Not available	Not available	28.5	28.83	30.5
Detention Rate	1.12	2.39	2.41	2.78	2.71	1.54

Year	2012	2013	2014	2015	2016	2017
Deficiencies Rate	30.00	32.32	29.39	28.47	27.26	26.79
Detention Rate	1.63	1.98	2.67	2.96	1.86	1.32

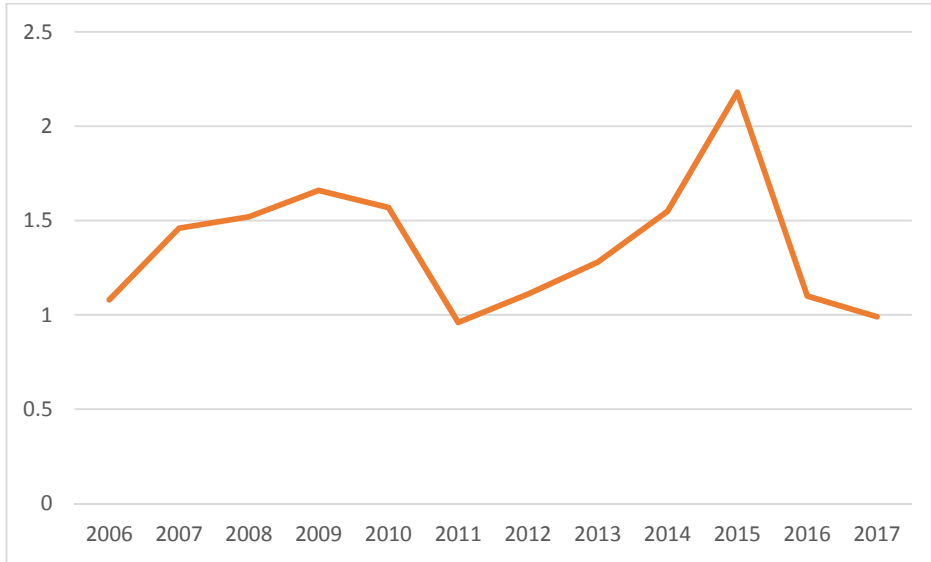


Figure Appendices 26 - Yearly Detention Rate

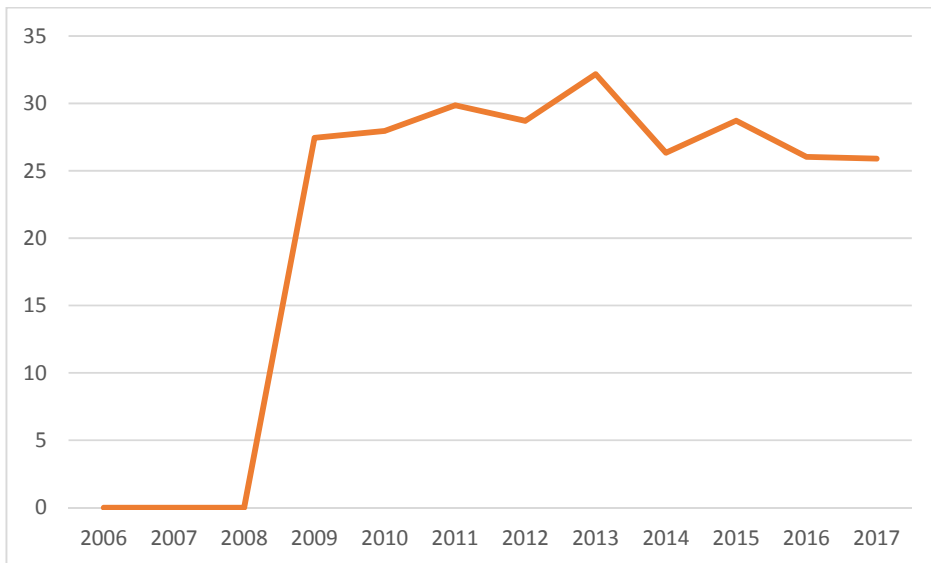


Figure Appendices 27 - Yearly Deficiencies Rate

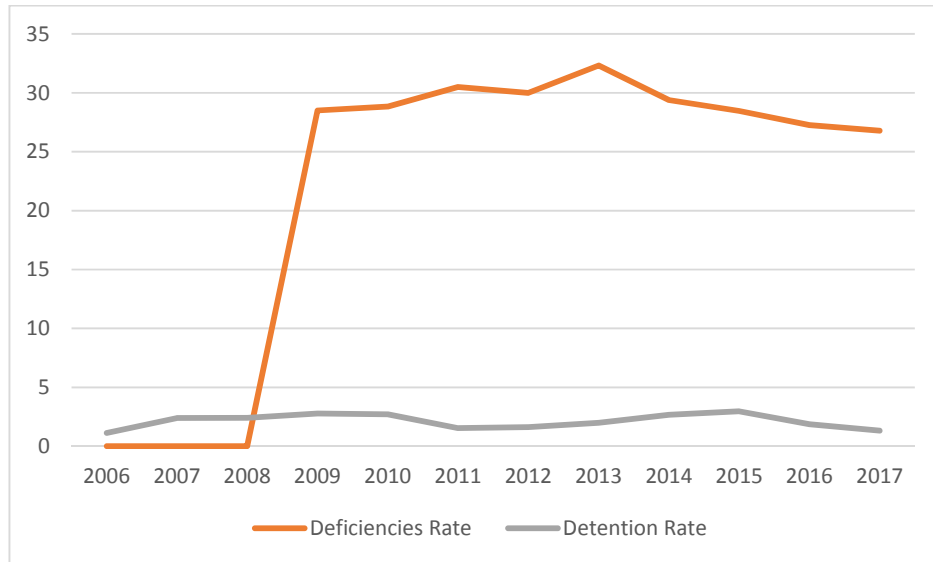


Figure Appendices 28 - Behavior of Viña del Mar's Fleet in US MOU

As it was explained, the United States MOU provided the Annual Reports in its website for the whole period but the first two years has not the information about how many inspections carried out showed deficiencies. However, since 2009, the information was complete.

The analysis of the detention rate was done within the information of the twelve years established and it can be seen that the results showed two incrementing periods (2006 – 2009 and 2011 – 2015) and two decreasing periods (2009 – 2011 and 2015 – 2017). The peak was reached in 2015, but the good news according the purpose of the IMO aim is that in 2017 the rate almost reached the minimum for the period and the decreasing status is going since 2015.

Regarding the deficiencies per inspection rate, it was analyzed since 2009. In this case the peak was reached in 2013 and it continues fluctuating until it reached the minimum in 2017.

The most common causes of deficiencies also are analyzed from 2009 because the explained reasons. From the analysis it can be observed that problem in the fire safety system has been the most relevant one in 7 over 9 years. That means that it was the main concern during the inspections, detecting problems in that area. It also should be highlighted that during the last four years may deficiencies concerned the compliment of the ISM Code has been detected as well.

About the ships flagged with Viña del Mar Members flags, it can be seen in both rate a decreasing trend. The detention rate had its peak in 2015 but in 2017 it reached the minimum value. Regarding the deficiencies rate, the peak was reached in 2013 and since that moment the decrement was constant until reaching the minimum level also in 2017.

Viña del Mar Agreement

The Latin American Agreement on Port State Control of Vessels (Viña del Mar MOU) provides the Annual Reports in its website (The Latin American Agreement on Port State Control of Vessels (Viña del Mar MOU), 2019). In this section, its analysis will be conducted, taken into consideration that the information regarding the amount of inspections with deficiencies was not provided in the reports from 2006 -2010, for that reason unfortunately the analysis is not following the previous models.

Table 47 - General Information

Year	2006	2007	2008	2009	2010	2011
N° Inspections	6546	6856	7596	7627	8586	8841
N° inspections with deficiencies	Not available	Not available	Not available	4047	4220	4173
N° Detentions	119	229	190	136	108	109
Main area of deficiencies	Propulsion and auxiliary machinery 15.04% Lifesaving appliances 10.58%	Propulsion and auxiliary machinery 10.89% Safety of	Propulsion and auxiliary machinery 13.42% Safety of	Propulsion and auxiliary machinery 14.47% Safety of navigation 11.12%	Propulsion and auxiliary machinery 16.22% Safety of navigation 11.34%	Propulsion and auxiliary machinery 16.12% SOLAS-Fire Safety 11.57%

		navigation 10.68%	navigation 10.77%			
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Year	2012	2013	2014	2015	2016	2017
N° Inspections	8946	7409	7440	6886	6830	7739
N° inspections with deficiencies	2062	1900	2368	1776	1668	1793
N° Detentions	91	73	76	60	47	51
Main area of deficiencies	Propulsion and auxiliary machinery 14.28% Safety of navigation 11.90%	Certificates and documentation 15,96% Safety of navigation 13.74%	Certificates and documentation 16% Safety of navigation 12.17%	Certificates and documentation 14.43% Safety of navigation 12.33%	Certificates and documentation 13.94% Safety of navigation 11.66%	Certificates and documentation 14.56% Safety of navigation 13.63%

Table 48 - Information related ships flagged with a Viña del Mar Agreement's Flag

Year	2006	2007	2008	2009	2010	2011
N° Inspections	1554	1691	1891	1848	2074	2071
N° inspections with deficiencies	Not available	Not available	Not available	Not available	Not available	1087
N° Detentions	33	109	75	53	43	40

Year	2012	2013	2014	2015	2016	2017
N° Inspections	2184	1745	1766	1686	1547	1682
N° inspections with deficiencies	582	543	618	450	451	445
N° Detentions	34	31	26	22	12	21

Table 49 - Yearly Detention Rate

Year	2006	2007	2008	2009	2010	2011
Detention Rate	1.82	3.34	2.50	1.78	1.26	1.23

Year	2012	2013	2014	2015	2016	2017
Detention Rate	1.02	0.98	1.02	0.87	0.69	0.66

Table 50 - Yearly Deficiencies Rate

Year	2006	2007	2008	2009	2010	2011
Deficiencies Rate	Not available	Not available	Not available	53.06	49.15	47.2

Year	2012	2013	2014	2015	2016	2017
Deficiencies Rate	23.05	25.64	31.82	25.79	24.42	23.17

Table 51 - Behavior of Viña del Mar's Fleet in its MOU

Year	2006	2007	2008	2009	2010	2011
Deficiencies Rate	Not available	Not available	Not available	Not available	Not available	52.49
Detention Rate	2.12	6.44	3.96	2.87	2.07	1.93

Year	2012	2013	2014	2015	2016	2017
Deficiencies Rate	26.65	31.11	34.99	26.69	29.15	26.45
Detention Rate	1.56	1.78	1.47	1.30	0.77	1.25

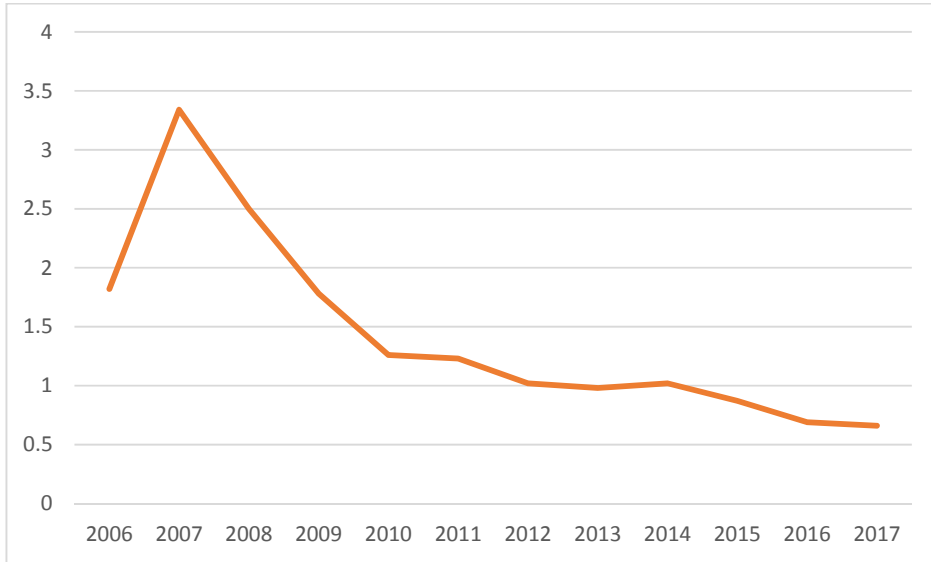


Figure Appendices 29 - Yearly Detention Rate

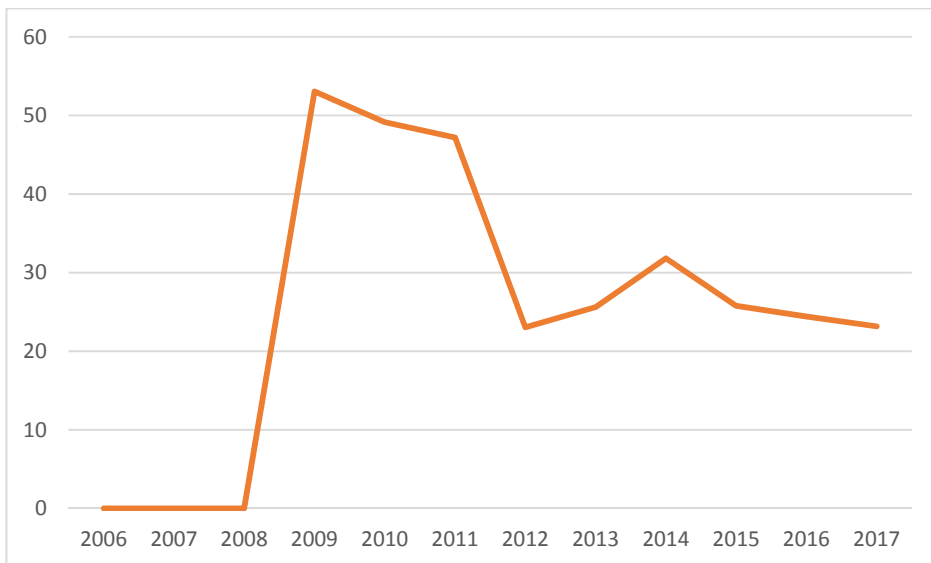


Figure Appendices 30 - Yearly Deficiencies Rate

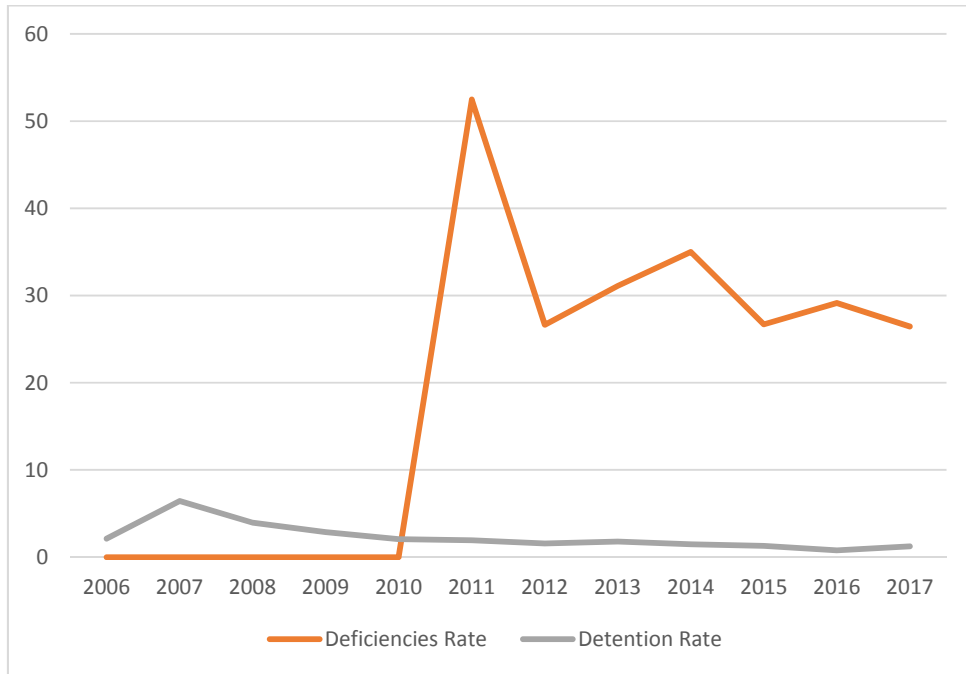


Figure Appendices 31 - Behavior of Viña del Mar's Fleet in its MOU

The general detention rate in the Viña del Mar MOU reached the peak in the second year analyzed but since that year it showed a constant decreasing trend, reaching the minimum level in 2017.

The deficiencies rate is analyzed since 2009 as the previous values are not available in the Reports. Since that year, that was its peak, the trend was decreasing almost every year. The only exception was in 2013 and 2014, however, in 2017 the rate reached a value very close to the minimum that was in 2012.

The analysis of the common causes of deficiencies can be done for the whole period as the information provided included that topic. Therefore, it can be seen that the first 7 years of the period the most common cause of deficiencies were problem in the machinery and

propulsion. However, since 2013 the main problem detected during the inspections have been related with the certificates and documentation.

Finally, the analysis of the Viña del Mar Agreement fleet navigating inside MOU's water, show that the detention rate has a similar behavior as the general one, as it has its peak in 2007, but since that year it experienced a decreasing trend reaching its minimum level in 2016. The deficiencies rate is considered since 2011 because of lack of information, therefore, since that year it showed a decreasing trend as the peak was precisely that year. Lastly, in 2017, the rate reached the minimum level.

Appendix M – Most common deficiencies detected by MOU

Table 52 - Most common deficiencies detected for every MOU

Year	Abuja	Black Sea	Caribbean	Indian	Mediterranean	Paris	Riyadh	Tokyo	US	Viña del Mar
2006		1		5	1	5		5		6
2007		1		5	1	5		5		6
2008		2	6	5	1	1		1		6
2009		4	3	5	1	1		5	5	6
2010		4	2	5	1	1		5	5	6
2011		4	5	1	1	5		5	5	6
2012	2	2	5	1	1	5	1	5	9	6
2013	10	2	5	1	1	1	2	5	5	2
2014	10	11	5	1	1	1	2	5	8	2
2015	10	4	5	1	1	5	12	5	5	2
2016	10	5	5	1	1	5	1	5	5	2
2017	10	4	5	1	2	1	1	5	5	2

Table 53 - Category for deficiencies detected for every MOU

1	Safety of Navigation
2	Certificates and Documents
3	Lifesaving appliances
4	Structure, Stability and equipment
5	Fire Safety Systems
6	Propulsion and auxiliary machinery
7	Working and living conditions
8	ISM Code
9	Marine Pollution
10	Others
11	Load Line
12	Carriage of Dangerous Goods

Appendix N: Documents contained the outcomes of the audits, number of audits and findings during VIMSAS

Table 54 - Documents contained the outcomes of the audits, number of audits and findings during VIMSAS

Document	Number of audits contained	Period of Audit Scheme	Total Number of findings	Non-conformities	Observations
A 25/8/2	8 audits	VIMSAS	57	19	38
C 101/6/2	9 audits	VIMSAS	54	11	43
A 26/9/1	9 audits	VIMSAS	76	30	46
C 105/6/1	8 audits	VIMSAS	74	29	45
A 27/8/1	11 audits	VIMSAS	96	46	50
C 109/5/1	7 audits	VIMSAS	71	27	44
A 28/9/1	7 audits	VIMSAS	110	43	67
C 113/5/2	4 audits	Transitional	31	13	18
A 29/9/1	4 audits	Transitional	59	27	32
C 116/6/1	8 audits	Transitional	134	56	78
TOTAL	75 audits		762	301	461

Appendix O: Documents contained the outcomes of the audits, number of audits and findings during IMSAS

Table 55 - Documents contained the outcomes of the audits, number of audits and findings during IMSAS

Document	Number of audits contained	Period of Audit Scheme	Total Number of findings	Findings	Observations
Circular N° 3772	18 audits	IMSAS	288	267	21
Circular N° 3879	15 audits	IMSAS	236	216	20
TOTAL	33 audits		524	483	41